

VOLUME IX.]

SCIENTIFIC AMERICAN, PUBLISHED WEEKLY. At 128 Fulton street, N. Y. (Sun Buildings.)

BY MUNN & CO. Agei

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High Temperature Procured from Carbon. The following communication has been made to the French Academy by M. Deville. "It is well known that near the tuyeres of blast furnaces, a very elevated temperature is developed, which M. Eblemen considers to be equal to the melting point of platinum. Some experiments made in the course of an investigation, although different, have led me to believe that the heat developed during the combustion of carbon, is capable of producing effects much more energetic and comparable with those obtained by means of a mixture of hydrogen and oxygen. Thus, by a suitable arrangement of the furnace, and with the proper kind of carbon, it is possible to melt and even to volatalize platinum and to melt pure silica. These results, and the simplicity of the means by which they may be obtained, have convinced me that they will become useful to the chemist and manufacturer. I have therefore decided upon submitting to the Academy the details of the operation, which, I trust, will not be found unworthy of attention. The apparatus which I employ **a** simple furnace, 30 centimetres high, and 18 centrimetres diamet r, supported on a plate of cast iron pierced with holes, arranged in a circle 5 centimetres from the centre. This is placed in connection with the bellows of a portable forge. The best kind of crucibles melt down at the temperature in question, to a perfectly liquid glass, and for a substitute I was obliged to have recourse to pieces of well burnt lime, which may easily be brought into the shape of thick crucibles. Their covers are that hydraulic limes were readily fused at a high temperature, and I have found they very frequently agglutinated. It is, therefore, indispensable to employ a somewhat porous lime .--With regard to the combustible, it must be ve and I should add, that I succeeded only when which fall from the grate of the heating apparatus and still at the Ecole Normale, passed through a wire sieve. With coal of the best quality, in very small particles, the effects are much more feeble, and do not differ from those which have already been obtained."-[Comptes

Painter's Colors.

neeting of the Soci a portion of the extra wood; or if one edge of stave will be parallel with the beds at the cut of agement of National Industry, in Paris, Presiis a lever to guide staves that have a short crook near the end. The transverse position of the the stave is thin, the thin edge of the stave is the knives, dressing both sides of the stave at dent Dumas proposed that the section on fine passed over the high side of the bed, F, which the same time, and with the grain of the wood. knives is shown in fig. 2, C being a side view arts should undertake to ascertain the colors is on a line with the cutting edge of the knives The combination of the inclined bed, F, and of the concave cylinder. The roller, K, rests which are used by the most distinguished paintupon the concave bed, and is held down by swiveled roller, G. Fig. 3 enables the machine in C, and the edge of the bed, J, consequently ers. He is of the opinion that the colors emto save all the thin edges, by running them the thin edge of the stave will pass along withployed in painting have a great influence on the springs or by weights. out being reduced by the knives of C or D. If through, more or less, up the inclined bed, value of pictures, especially as to their preser-OPERATION-When the machine is in motion, place an undressed stave between the chains the stave is of medium thickness pass it over and all the thin ends by running them askew vation of the flesh tints and local colors. A the middle of the bed, F, and the knives in C over the bed, F, and will dress a crooked and and upon the post of the table. marked P. and member of the society, a painter, has already winding or thin-hearted stave as economically place the end of the stave against the bar, M, will take off enough to smooth its outside; the shown that Rubens never used more than nine remaining extra thickness will be removed by and as smooth as it can be dressed by hand. which will pass the stave along endwise over kinds, and in some instances only seven, with This dresser is simple, compact, and entirely the knives in D; or if the stave is thick at one the inclined bed, F, and under the swiveled which he composed all the other colors. end and thin at the other, run it in askew, passmade of iron. roller, G, as shown in figs. 1 and 2. The The inventor represents the machine to be Inunction, or anointing, is said to be a sucknives in the concave cutter head, C, will round ing the thin end over the high side of the bed, capable of dressing 300 to 400 staves per hour cessful mode of treating scarlatina, relaxing, as it the lower side of the stave, and the knives in E, and the thick end over the lower side of the with the labor of one man. For further inforbed, the swiveled roller, G, always adapting itthe diagonal cutter head, D, will hollow the top does the skin, adminishing the heat, and in some mation apply to J. D. Elliot, Leicester, Mass. cases causing perspiration. side of the stave, and pass it over the concave self to the staves.

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The annexed figures illustrate a machine for | bed, J, and under the roll, K. Another undressing rived staves, invented by J. D. Elliot,

Figure 1 is a perspective view; fig. 2 is a

not then slip off, and the adjustable rolls, G and lower concave cutter head, C. D is the top or adding to or taking from it a single piece, ex-K, will keep the stave in its place, whether diagonal cutter head. E is the pulley which crooked or winding, and keep the position of cept the bed, J, which must be as hollowing as the stave between the beds, F and J, in a the stave is rounding. The knives in the cutdrives it. F is an inclined bed. G is an addistable roller, resting upon the bed, E, and ter head, C, are adjustable. straight line, so that it is dressed by the cut-The combination of the concave cutter head, hung in a swiveled frame, H and I, and is held ters, C and D, with the grain of the wood. If C, with straight-edged knives, and the diagonal down by springs or weights. Lare pulleys on the stave is thick it is placed on the further Rendus. cutter head, D, will allow the beds, F and J, a shaft for driving the endless feed chain." M side of the bed, P, which will pass it over the is one of the bars connecting the feed chains; lower side of the inclined bed, F, fig. 3. The and the self-adjustable rollers, G and K, to come N is a plate for the stave to run out upon. 0 knives in the cutter head, C, fig. 2, will take off so near each other that a crooked or winding

dressed stave is then placed upon the bed, P, and the succeeding bar, M, will carry it along. transversely, so that they will dress a stave as of Leicester, Mass. likewise made of lime. M. Berthier observed The feed chain carries the first bar, M, down in rounding as the cylinder is concavo and persectional view, showing the relative positions fectly smooth. The knives are adjustable in front of the bed, F, and the ends of the staves coming together, the second will shove the first cylinder C, to the diameter of half barrels, barof the principal cutting parts, and feed rolls. Fig. 3 is a sectional view of the inclined bed rels, and hogsheads; the diagonal cutter, D, is one through the machine. If the stave is with catch teeth on the face, and with the crooked, take hold of the end of the stave and made adjustable to any diameter by the slots in swiveled roller, G. Fig. 4 is an end section the stand, R, which allow the placing of the bar with one hand and lift it up, so that the othry porous and in a state of very fine division; view of the concave bed, J, and the roller, K, shaft more or less toward the perpendicular. er end of the stave will lie flat on the top of over it. The same letters refer to similar Some of the advantages of this machine the bed, F; when the stave has passed under I made use of the residue of the imperfect comover all others, are its being adjustable to all the roll, K, fig. 2, it is let go; the bar, M, will parts. bustion of coal, the clinkers mixed with cinders sized casks, and thicknesses of staves, without A is the table; B is a pulley, to drive the

The cutting edge of the knives are straight in the cylinder, C, fig. 4, but are placed in

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Researches on Ethers.

I. FORMATION OF THE COMPOUND ETHERS BY MEANS OF ETHER AND ACIDS .- Can ether, formed at the expense of alcohol by elimination of water, reproduce the alcohol whence it has arisen, or at least the combinations of which this alcohol forms an integral part? This question has been proposed more than once; and in spite of certain facts repeatedly announced, it is not, I think, regarded as settled, nevertheless it is not perhaps without some importance. In fact, in a theory widely received, the compound ethers are represented by an anhydrous acid combined with oxyd of ethyle, a substance isomerous or identical with ether. The direct production of the compound ethers by means of ether and the acids, has a tendency to support this view, although it is also susceptible of other explanations.

This production is effected by heating the acid and ether, enclosed in very strong tubes, to about 680° to 752° F.

The author has procured benzoic ether in this manner from ether and benzoic acid. It possessed the odor and specific properties of of benzoic ether, boiled at 416° F., and gave Formula. on analysis-

> Carbon . . . 72-2 . . . 72-2 Hydrogen . . 6-7 . . . 6-7

Treated with potash and water, it produces the benzoic acid; and in place of the ether, a volatile inflammable liquid, soluble in water, which, when touched with a drop of a mixture of sulphuric and butyric acids, evolves the odor of butyric ether. These characters belong to alcohol.

The ether employed in the preceding experiment had been shaken five times with its volume of water, so as gradually to dissolve the half; it was then dried upon chloride of calcium, and rectified. After nine hours' contact with the benzoic acid at 680° F., it furnished 30 per cent. of benzoic ether (16 grms. produced 5 grms.). The formation of the benzoic ether commenced at 572° F.; but at this temperature, even after long contact, there was but little of it.

With the view of acquiring greater certainty with regard to the purity of the ether employed, the author rectified the ether purified by the above method, distilling only the half of it at a fixed temperature; the distillation was then repeated upon this portion, only collecting the half of the product. The ether thus obtained furnished 25 per cent. of benzoic ether after three hours' contact with the acid at 680° .

Ether and butyric acid, kept for six hours at 680 F., produced butyric ether. The liquid in the tubes, submitted to distillation, only furnished ether, water, butyric ether and butyric acid. No gas was evolved.

At the same temperature, ether and palmitic acid produced palmitic ether, fusible at 72°.

In these instances neither the acid nor the ether was entirely combined, whatever might be the excess of one or other of them.

Ether and water, heated to the limit of decomposition (842° F.?), do not combine.

II. DIRECT FOMATION OF THE ETHERS OF ALCOHOL AND ACIDS.—The union of acid and alcohol to form ether is effected either directly or by the intervention of a mineral acid. The direct combination is generally easy with the energetic acids; but with the organic acids, such as acetic acid, becomes very slow and incomplete. But with the aid of sulphuric acid. the combination is immediately and almost comnlately affected

The combination of the alcohols with the fat- | gent, a shorter space of time than in case of | es should be fitted to the outer end of the ty acids is never complete, either for the alcohol or the acid. But these three ethers are most abundantly formed in the presence of an excess of acid, which is afterwards separated by lime and ether. When heated afresh to 500°. for fourteen hours, with eight or ten times their weight of palmitic acid, they are found, after the operation, to have undergone no change

With thirty hours, contact at 212° F., benzoic, acetic, and butyric ethers were produced in great abundance, especially the latter .--Stearic ether even begins to be formed in 102 hours, but in very small quantity. The addition of acetic acid to the mixture, in the latter case, causes the stearic acid to become completely etherified in 102 hours. This corresponds with the known action of sulphuric and muriatic acids, only differing in the comparative weakness of the acetic acid. It appears especially in this case, that the combination of the stearic acid with the alcohol is induced by that which takes place between the acetic acid and the same alcohol. It is a pretty clear instance of the propagation of molecular movement.

whatever.

The ready etherification of the fatty acids in an alcoholic liquid, rendered acid even by acetic acid, appears to the author often to render the purification of these bodies very delicate.

III. ON THE DECOMPOSITION OF THE ETH-ERS.-The ethers are split by the same agents which cause their formation. Thus-

Water heated to 212° F., for 102 hours, with stearic and oleic ethers, begins to split them, with regeneration of stearic and oleic acids.-Under these conditions it does not act at all upon benzoic ethers.

Acetic acid, diluted with 2 or 3 vols, of wa ter, when in contact with stearic ether for 1060 hours at 212°, distinctly acidifies the stearic ether without producing acetic ether; it partially decomposes butyric and benzoic ethers, with formation of butyric and benzoic acids.

Fuming muriatic acid, in 106 hours, at 212° produces double decomposition with acetic. butyric, benzoic and stearic ethers. The acids are set free, and muriatic ether is formed. The decomposition is never complete, unless in the case of stearic ether.

Thus a weak acid may be etherified or its ether decomposed at will under the influence of muriatic, or even of acetic acid. This difference in the action of the same substance results from the presence of excess of water in the one case, of alcohol in the other. The mass and relative energy of the acids are also to be taken into account .- M. Berthelet, "Comptes Rendus."

[For the Scientific American.] Wind Mills in the South.

It having been necessary for some time for me to use wind mills for different purposes, I have been struck with the fact that while every other motive power has received great attention from our most skillful machinists, to simplify and make them useful to man, the application of wind as a motor (except to sail vessels) remains in the same bungling condition now as it was centuries ago in the fens of Holland. It is yet more singular that, in this country, with such an extended sea-coast, and such widespread prairies, where the wind blows with force three-fourths of the year, that the subject wich to advance the idea by any means that

one of large diameter.

But the difficulty with a vertical wind mill is to gear off with simplicity and effect, from the necessity of always keeping the sails to the wind. This is perhaps the greatest difficulty for constructors and machinists to overcome another thing they should do is to construct the different parts ready to put on, and in the tower, something after the manner of the different kinds of horse-powers now in use, so that they can be taken apart, and snugly packed for transport to any part of the country.

They should be built of different sizes and for different purposes, such as turning the smaller kinds of grinding mills, sawing wood or lumber with either a circular or reciproca ting saw, pumping water, &c. That wind mills are now applied to many of those purposes is certain, for I have seen in Texas a' little vertical mill not more than six or seven feet in diameter, busily at work grinding hominy, in a common hand steel mill. And I have seen a larger one of about twenty feet in diameter, with six sails, doing a very fair business in sawing lumber, the power being conveyed to the saw by a crank in the center of the wind sail shaft. I have no doubt but that an enterprising man who would make the improvements I have suggested, and show to the world that his wind mills were efficient and durable, could sell thousands of them in Texas and on the western prairies, not to mention the seaboard, especially if he so built them that the purchaser had little else to do than to put up the tower, to set them into operation. They should be relatively as cheap as the different kinds of horse powers that are now made so compact and useful.

As I have given some thought to the method of simplifying the construction of the smaller kinds of wind mills above suggested, perhaps some constructor in that line may gather useful ideas by reading what I have to say, but I fear it will not be easily understood.

I think that, for the purposes named, wind sails from fifteen to twenty-five feet in diameter would be amply large, especially if six instead of four sails are put on them, and in order to get strength, compactness, and light ness, the different parts should be made of iron.

The shaft of the wind-wheel proper should be made of wought iron, with collars or flanches at each end of the bearings or journals for reasons that will be obvious hereafter, and the bearings for the journals of the above shaft should be made in iron chucks connected with an iron circle, say of from five to eight feet in diameter, which is made to revolve on a fixed iron railway circle, which railway should have projecting flanches on each side to grasp corresponding flanches on the chucks of the revolving circle, to keep said circle from lifting. There should be four of these chucks to the revolving circle, and in the case of a wind mill for pumping, &c., which requires a crank on the shaft in the center between the bearings, the bearing of the wind-wheel shaft should be made on two opposite chucks of the revolving circle. But in case of one required to communicate a revolving motion, by banding off from a perpendicular shaft, the outer bearing of the wind wheelshaft should be on one of the chucks and the other in the center of the circle-where it can be made by connecting the opposite chucks of the revolving circle by an iron bar at should not receive more attention. I do not right angles to the wind-wheel shatt, to which

wind wheelshaft, to fasten on the wind sail frame with bands and screws, which frame should be made of sheet iron, bent and molded to the right form for strength with wire. This frame can either be covered with canvas or boards.

As far as my experience goes the wind sails should incline with the plane of motion about 18° or 20°, or in other words should incline with the axis of motion 70° and 110° respectively.

It has been my intention in the above only to furnish hints, and it is for the mechanic and constructor to arrange and complete the details, but I will further add, that if the parts of wind mills above named, and likewise such as are there shadowed forth-strong, simple, compact, and cheap—could be got up by an enterprising man, who would persevere in introducing them, hundreds, yes thousands of them could be sold on our western prairies and in Texas, to say nothing of the sea-board. W. C. D. Key West, Fla.

> (For the Scientific American.) Light and the Eyes.

As several articles have been published in the Scientific American, in relation to the care of the eyes, I have a word to say on the subject, which may be useful. My eyes are weak, and though they see far and distinctly when not fatigued, they become dim, blood-shot, and painful whenever made to undergo exertion during candle light, even for half an hour. For years this infirmity prevented me from reading and writing after sun-down, until I happened one night, while traveling on a steamboat, to have in my hand a book which greatly interested me, and which I continued to read by the light of a chandelier which hung from the roof of the cabin, and which threw its light upon a table, beside which I was sitting. I expected that, as usual, I would soon be obliged to close the book; but to my surprise no dimness or pain occurred to my eyes, and I continued to read without the least pain or inconvenience till past one in the morning. The next day my eyes were as well as usual. I attributed this to the fact that the light was above my head, and fell upon the paper in the same manner as the light of day-from on high. Was I right in this? I leave you to answer. Certain it is, I have had a large lamp, with three branches, hung up in my office, several feet over my desk, and find that I can now read and write for hours by its light, without difficulty or suffering.

YANKEE CREOLE.

The Darien Ship Canal Expeditions.

Reports from both the Atlantic and Pacific expeditions across the Isthmus of Darien, to explore the country for a ship canal, have been received. The result of these observations is. that the proposed route is a continuous chain of mountains, with summits of four thousand feet. One portion of the Atlantic party is still on the way to the Pacific. The construction of the canal, according to these reports, is utterly impracticable: but whether the explorations were as thorough as they might have been, does not yet appear. Mr. Kennish, one of the canal engineers on the Pacific side of the expedition, says:

"I refrain from expressing my opinion as to the practicability of this route for a canal, because I do not consider our data sufficient to the bearing of the inner end of the wind- allow me to arrive at any conlcusion worthy of

Scientific American.

presery effected.		par the bearing of the inner end of the wind-	
The author has arrived at the following re-	wind can in any way compete with water or	wheel shaft can be attached near the center of	public confidence, even though I believe that
sults by employing close vessels, and the assis-	steam power where uniform and steady results	the revolving circle, and by the same arrange-	the expedition I had the honor to accompany
tance of long exposure to heat, in the direct	are to be obtained, yet there are hundreds of	ment, a bearing can be formed in the precise	explored further and with more detail than any
preparation of the ethers :		center of the said circle, for the journal of the	other individual or party before the present
		upright shaft, to the upper end of which, and	time."
		to the inner end of the wind wheel shaft, there	
pidity. In this manner the author produced at	to great advantage; provided our mechanics		ment of engineers sent out by the governments,
482° F. the following ethers :	will hit upon some cheap, simple, and efficient		of the United States, France, and England
Methylopalmitic ether, a crystalline substance,	method of constructing the windmill, and com-	volving circle I have named should have rollers	The construction of a ship canal, through the
fusible at 82° F., solidifying at 72° F.;	municating its power.	in them. These can be arranged by an obvious	Isthmus, seems to be impracticable; the expe-
Ethylopalmitic ether, fusible at 70°.7 F., sol-	I take it for granted that the common verti-	method, so that the revolving circle shall move	dition has been successful in settling this point
idifying at 64°.4 F., and reproducing by the ac-	cal wind mill, with inclined sails, is much more	easily over the fixed railway circle; there	—a very important one.
tion of potash, palmitic acid, fusible at 142° F.;	powerful than any horizontal mill yet invented,	should likewise be stops to the chucks, so that	
and.	with like spread of sails. In fact, horizontal	the wind wheel can be fixed firm to its place	The next meeting of the American Associ-
Amylopalmitic ether, a waxy substance, fusi-	wind mills are powerless things unless of very	when brought to the wind. To a mechanic	ation for the Advancement of Science, will be
ble at 48° F.; with potash it reproduces palmit-	large diameter, from the fact that in one of	the further arrangement of these parts will be	held in Washington City, commencing on the
ic acid, fusible at 142° F.	small diameter the wind acts at and near a tap-	obvious without further waste of words. Flanch-	' 30th of April.
(Qa.			



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office FOR THE WEEK ENDING MARCH 7. 1854.

FOR THE WEEK ENDING MARCH 7, 1854. ARRANGEMENT OF FUSIBLE PLUGS, OR DISKS, FOR STEAM BOILELS-William Burnett, of Boston, Mass: I do not claim to have invented the application of fusible plates of steam boilers for the purpose of permitting the steam to escape, when it has reached any assigned limit; nor do I claim the method described of preventing the plate, which is remote from the boiler, from being fused by the hear of the boiler. I claim the application to steam boilers of two plates or plugs of fusible alloy, arranged as described, one of said plates being remote from the boiler, and the other in the interior thereos, by which arrangement the res-sure of the steam is admitted on both sides of the inte-riorplate, as specified.

MACHINES FOR PLASTERING-Isaac Hussey, of Harveys burgh, Ohio: I claim the arrangement of the several parts of the machine as and for the purpose described. [See engraving of this machine on page 164, Vol. 8.]

[See engraving of this machine on page 164, Vol. 8.] VALVE MOTION FOR LOCOMOTIVE ENGINES-Caleb Cook, of Nashville, N. H.: I do not claim, for operating the valves, an arrangement wherein a link is employed, and has attached to it the valve rod and the eccentric rod, the central pin of the link working in the eye of a hori-zontal arm attached to a rocker shaft; nor dol claim modification of such, wherein would be the same link with the eccentric rod and valve rod attached, and hav-ing the center pin of the link moving in vertical or cur-ved guides attached to the rocker shaft, as such modifi-cations do not admit of the reversing the eccentric rod; whereas, with my improvement such can be effected by moving the eccentric rod only. I therefore limit my claim to my particular arrange-ment or construction of the openlever, as provided with two recesses, and connected to a rocker shaft, and ap-plied to and made to operate with respect to the eccen-tric and valve rods, as desoribed. The GAUGE OF STRAW CUTTERS-Warren Gale, of Lou-

THE GAUGE OF STRAW CUTTERS-Warren Gale, of Lou-isville, Ky. : I claim the arrangement of the adjustable gauge, as described.

[An engraving of this machine is published on page 136. of this volume.]

OPENING AND CLOSING GATES-W. G. Philips, of New-port, Del. : I claim the double span rotating gate, open-ing and closing continually forward, by means offevers and inclined planes, as well as by pulleys and cords, combined and arranged as set forth.

COMMONNED AND BEFELME THE HEARS OF BARRELS-J. P. Heacock. of Mariboro', Ohio: I claim rounding and be-veling a barrel head at one operation, in a very true and perfect manner, by the employment of a double edged adjustable cutter secured in a swinging frame, or forked lever, and moved from a vertical to a horizontal posi-tion and vice versa, back and forth from one end of the stuff to the other, in combination with the clamping jaws for holding the stuff in a proper position while be-ing operated upon, as set forth.

[See notice of this invention on page 60, Vol. 9.]

COTTON SEED PLANTERS-G. W. Cooper, of Palmyra, Ga.: I claim the combination of the saws and feeders, the said sawshaving a reciprocating rectilinear motion, and the said feeders having a reciprocating rotary mo-tion, the above parts being constructed and arranged as set forth set forth

[See notice of this invention on page 380, Vol. 8.]

SASH FASTENERS-H. B. Kimble, of Rochester, N. Y.: I claim the combination of the peculiar form of the bolt having a locking notch, with a weighted lever, formed and operating as described.

and operating as described. SEWING MACHINES-WM. H. Johnson, of Granville, Mass. I claim, first, the making of a seam with a single thread, by the combination of a single needle, forked hook, and expanding lever, as specified. Second, the forming or making of a seam from a single thread, by the running of a loop of the thread through the material to be sewed: the running of a second loop through the material, and putting the first loop through the second; the running of a third loop; the carry-ing of a fourth loop through the material, and putting the third through it, and so on ; putting the first loop through the second and around the third, the third loop through the second and around the fifth and so on,-forming the belaying double loop stitch, as set forth. Third, the feeding of the material to be sew by means of a vibrating needle, by which the material is moved along as required for the stitch, as specified. SASE NOWSAINES-G. C. Hinman, of New Haven, Ct.:

SASH SOCRATINGES-G. C. Hinman, of New Haven, Ct.: I claim the described sash sustainer, consisting of an arched rod attached to the horizontal part of the win-dow, in such a manner that the weight of the sash shall cause the clogged ends of the rod to bear equally on both sides

both sides. Also, as described, the lever thumb piece for increas-ing the arch of the rod, and relieving the pressure, so as to allow the window to be lowered, as described.

REMING MACHINES-George Seven, of West Earl Town-ship, Pa.: I claim the double disc, as constructed, with hinged wings, for the purpose of keeping the threads regularly stretched, and operating the sliding rail when one of the threads is broken, in the manner described.

SECTIONAL DEV DOCKS.-Samuel Loveland, destruct. N.Y.: I claim the transversely placed tank, trunk, or water chamber, of each section of the dock, forming not only a central water ballast in the float, directly under the keel of the vessel to be raised; but when empty, a dry tank for the purpose of giving access to the keel in

repairs. I also claim the tank, trunk, or chamber, in combina-tion with the buoyant chambers, or floats, hollow guards or chambers, or when combined with chambers or floats attached to the ends of the trunk or float, in the manner

SUSPENDING EAVES TROUGHS.—Chauncy D. Woodruff, of Toledo, Ohio: I claim the mode of suspending and fastening eaves troughs as described.

Insteining eaves trougns as described. SEED PLANTERS.—L. B. Fisher, of Coldwater, Mich.: I claim constructing the driving wheels of planters with cut rims and divided hubs, substantially as described, said hubs being made to traverse the driving shaft by means offorked levers operated by a screw or its equiv-alent, for regulating the alignment of the hills in a cross direction, as set forth. I also claim the scraper in combination with the two pins and the two levers, arranged and operating sub-stantially as described, for preserving a given space be-tween the edge of the scraper and outer surface of the rim of the wheel, as specified. Supp. PLANTERS. Unsprice O. Goston, of Panding

SEED PLANTERS.—Jeremiah C. Gaston, of Reading Ohio: I claim the reciprocating agitator, as set forth.

SEWING MACHINES.—Charles Miller, of St. Louis, Mo. I claim giving the cloth or material being sewed, a move ment laterally to the direction of the seam, between the successive stitchings or interlacings of the needle and shuttle threads, substantially as set forth, for the pur pose of receiving different kinds of stitches or seams. [See notice of this invention on page 268, Vol. 8.]

OPERATING HYDRAULIC RANS.-Clark Polley, of May's Landing, N. J.: I claim the air tight box or chamber, having within it and in combination therewith, and with each other, as set forth, the hydraulic ram and pump, and having suitable pipes attached in such a manner as that when the apparture is submerged, and the pump worked from above, the ram will be free to operate by the pressure and momentum of the water resting above it.

ARTIFICIAL LEGS.-David B. Marks, of New York City claim the combination of the rod which is attached to I claim the combination of the rod which is a trached to the foot, and moves upwards and downwards within the leg or lower part of the limb, the spring applied to the rod, and the curved bar, plate or way, attached to the thigh or upper part of the limb, the whole operating sub-stantially as described, to lock the knee stiff, and con-trol the position of the loto, until the ankle is bent, on throwing the body forward, and retain the foot in its bent position at the ankle, until the knee is again straightened, as set forth.

[This ingenious invention is illustrated in number 48. Vol. 8.]

BRICE, MACHINES,—Seaman C. Ripley, of New York City: I do not claim broadly the use of a gauge for guiding the molds in entering under the grating, as such a gauge, provided with a weighted lever for throw-ing it back to its place on the backward movement of the fore har, has been used in the machine of Collins B. Baker, patented March 22, 1830. I claim throwing the gauge back to its place by means of a tail, or cam, or equivalent, upon which the bre bar acts on its backward movement, as described.

MACHINES FOR SPLITTING RATTANS—Joseph Sawyer, of South Royalston, Mass.: I claim the combination of the feed rollers with the cutter, constructed and operating as described.

MACHINES FOR SPLITTING RATTANS-A. M. Sawyer, of Templeton, Mass. : I diain the employment of a tubular spurred cutter, or its equivalent, in combination with a guide for holding and guiding the stick thereto, as de-soribed.

SEWING MACHINE—Wm. Wickersham, of Boston, Mass. I do not claim the mere duplication of a sewing ma-chine or the placing of one of such machines by the side of or near to another, and similar machine, so as to per-form two rows of stitches by the operation of both ma-chines

of on these of various of stitches by the operation of both ma-chines. Or owns of stitches by the operation of both ma-chines. The stitches of the operation of both ma-chanical equivalents, another or second needle, and a second hole in the thread carrier, or equivalents there-for, that by the action of the same needle-moving ma-chanical two needles are made to operate similtaneous by sors to perform at one and the same time, two paral-lel rows of stitches, with separatelihreads, substantially as specified.

BRITANNIA TEA AND COFFEE POTS-Robert W. Andrews, of Staffordsville, Conn. :-I claim a tea pot, coffee pot, or other vessel. composed of a supporting letige, or base of iron, (or other metal which is not melted by ordinary degrees of fire heat) combined with a body of britan-nia metal as sat forth nia metal, as set forth.

CONNECTING JOINTS OF AIR HEATING PIPES.—J. Young f Franklin Furnace, ●hio: I claim forming a perfectly CONNECTING JOINTS OF AIR HEATING FIPES.—J. FORING, of Franklin Furnace, $\Thetaho: I claim forming a perfective$ tight joint for air heating pipes, by boring out recessesin the ends of the pipes, the recesses being sufficientlylarge to receive a thimble, which is made of a more ex-pensive metal than the pipes, and which thimble, uponbeing heated, will, in consequence of expanding morethan the pipes, bind tight against the recesses in whichit is fitted, and form a perfect tightjoint, as described.[This is a cond impurport[This is a good improvement, and is noticed on page 40 of the present volume.]

MACHINES FOR DRILLING STONES—William C. Wright, of Boston, Mass.: I claim the combination of mechan-ism herein described, for operating the drill bar, consist-ing of two pairs of grippers, at ached to rods, having slotted heads, which receive the wrists of two cranks, the said cranks being arranged diametrically opposite to each other, on a common axis, and the slots in the heads of the gripper rods being of such form as descri-bed. so as to cause one set of grippers to be always rising while the other pair are descending; but to cause a ces-sation of motion before every descent, in order to give time for the drill bar tofall, as herein set forth, I a notice of this invention is published on page 108 of

[A notice of this invention is published on page 108 of the present volume.]

HANGING GATES-Ashley Hotchkin, of Schenevus, N. Y.: I claim hanging a gate by means of two lower turning pivots, or pintles, working on separate step pro-jections of a box, or frame, the upper end of the gate being steadled and carried by suitable rollers, (any num-ber) or their equivalent, working or travelling in fixed grooves, channels, or spaces, so as to admit the gate opening either way,-the several parts being construct-ed, arranged, and operating, as described.

[This is agood improvement, and we hope the inventor will realize a proper remuneration for it.]

will realize a proper remuneration for it.] WATER CLOSETS—Daniel Ryan & John Flanagan, of New York City, : We claim, first, dividing the chest or penstock, into two compartments, communicating with each other,—the division being made by means of a flanch, or its equivalent, by which a sufficiency of water is reserved within said chest, or penstock, after the sup-ply has been stopped, to cover the opening, or mouth of the pipe, at the bottom of the bowl seat, and effectually prevents the escaping of effluvia into the apartments. Second, we claim the sliding tube within the trunk, or cylinder, said tube being constructed, arranged, and op-era ted as shown,—by which a direct communication is at all times cut off between the bowl seat and exit pipe, and at the same time the excrement allowed to pass in-to the exit pipe at the proper time.

APPARATUS FOR OPENING AND CLOSING GATES—Samuel G Dugdale, of Richmond, Ia. Additional to reissued letters, Jan 31, 1854: the nature of my improvement con-sists in hanging a pendulous lever provided with a notch, by which I cause the weight of the gate to be the means of holding the bottom to the point to which it is drawn, and at the same time holding the vertical lever down until the carriage has passed over it, thereby pre-venting any appendages that might be attached to said carriage, or vehicle, from catching said lever. The application of a pendulous lever provided with a notch, or its equivalent, as set forth.

RE-ISSUE.

RE-ISSUE. SHINGLE MACHINES—E*R. Morrison, of Troy, Pa. Ori-ginally Patented Nov. 22, 1853: I claim riving and carry-ing forward of the riven shingle, by the intermittenily reciprocating movement of the riving knife stock, or frame, so as to be operated upon successively by the shav-ing and edging knives, said motion being imparted by the movement of the riving knife lstock, through the inter-vention of the spring hooks, stops, or dogs, or their equi-valents, as described. NOTE.-In the above list of patents, eleven of the ap

plications were prepared at the Scientific American Patent Agency. We think it is the largest list ever issued to our clients at one time. We congratulate them upon their favorable prospects, and urge them to use diligence in bringing out their inventions before the public. Now they are fresh and can be more easily disposed of if they possses value.

Explosion of a Steamboat Boiler .-- The New Law.

On the 17th ult., the steamboat "Kate Kear ney" exploded one of her boilers while lying at the dock in St. Louis, Mo., by which catastrophe four persons were instantly killed, and twenty severely scalded, some of whom have since died. We have seen it stated that this explosion was caused by gross carelessness. The St. Louis "Republican" states that the U.S. District Attorney, Thomas C. Reynolds, has entered into a vigorous prosecution of the parties to whose carelessness and recklessness the deplorable catastrophe is attributed. The Captain has been arrested and required to enter into bonds of \$5,000 for his appearance at trial. One of the Deputy Marshals was subsequently sent to Alton with a warrant for the arrest of the engineer, Albert Hardy. Both of these officers of the "Kearney" will be prosecuted for manslaughter under the Steamboat Law. The affidavit of carelessness was made by the Inspectors, and 1s levelled exclusively against the Captain and Engineer.

It appears to us that the steamboat Inspectors under the New Law for that District are also blamable, and their conduct should likewise be subjected to a rigid examination. The 'Kate Kearney" was an old boat, and the Louisville "Evening News" states that part of the boiler which was blown on the Levee exhibited an old fracture, and was much incrustedinside. The same boiler had collapsed once before, in 1851, and was merely mended, as testified to by the Captain and one of the owners, and it had been in use altogether for six years. How the Inspectors ever came to test this boiler, as it is stated they did, and allow it to pass, is something that requires explanation. It makes no matter how many good laws may be enacted for the preservation of life from explosions; they will all be no better than blanks on the statute book, if the officers appointed to carry them out, neglect to do their duty. The constant tendency of our institutions has been to appoint men to all offices from political party motives, not for personal merit. This party policy should be abolished with respect to such offices as those of Inspectors under the Steamboat Law.

One great cause of explosions on our western boats, we see, has been brought to light by the investigation of the local Inspectors of Cincinnati into the causes of the collapse of a flue in a boiler of the steamer "Zach. Taylor," by which three lives were lost and several persons injured. Among other things, the testimony which has been laid before them shows that the iron of which the flues were made, instead of being uniformly one-fourth of an inch in thickness, had

other damage done. The boiler which exploded was nearly new, made of the best materials, was five feet in diameter, and twenty-four feet long. From the evidence presented before the Coroner's Jury, we are of the opinion that the cause of the explosion was allowing the water in the boiler to get below the fire line of the flue, whereby it-the boiler-became red hot, and weak at the fire line, and when cold water was let in, the steam began to generate so rapidly that the metal gave way-explodedscattering death and destruction around. It seems that the boiler had five flues, which were carried pretty high, thereby increasing the danger, and requiring greater attention.

It has been suggested to us that government should offer a suitable reward for some invention that will be a perfect preventive of steam boiler explosions. We must say that the cause of steam boiler explosions is not a mystery; it is well known, and such catastrophies can all be prevented if men are only cautions, careful, and attentive. We seldom hear of a steam boiler exploding in France. We believe that no more than two boilers have exploded in that country in twenty years. This has not been owing to any wonderful application of apparatus, or a superior mode of constructing French boilers, but simply because low pressure steam is generally used, and a good and rigid system of steam boiler inspection enforced. The most perfect means to prevent explosions is at the command of all, but they are not applied. The pressure of the steam on the exploded boiler was 80 lbs. to the square inch, or equal to something more than five tons and a half on every square foot. However strong the iron of the boiler might have been when cold, it became very weak when highly heated.

Professor Agassiz

In his lectures before the Lowell Institute, in Boston, says that the human racc existed on the globe a hundred and fifty thousand years ago. This he proves to his own satisfaction .---He points ont differences in the physical structures of the different races of men, greater than those existing between the orang-outang and the chimpanzee-animals which naturalists regard as different species. He concludes, therefore, that men sprang from different stocks.-Exchange.

We have seen many such opinions accredited to Prof. Agassiz, but have never been able to see a correct and certified report of his opinlions.

Remedy for Chilblains.

Take a sufficient quantity of hot water in a tub to bathe the feet in, and add a lye made of wood ashes or potash, until the water feels quite soft and slippery. Soak the feet which are troubled with chilblains thoroughly in this, then rub them with a towel until they are perfectly dry. After this rub them over lightly with the spirits of turpentine, and it will at once stay the disagreeable sensations arising from the chilblains. Follow up this operation for a few evenings, and a cure will assuredly be effected, as I have proved by experience.

J. M. T.

Irvine, Pa.

Reaping Machines.

We have in our possession some very rare and valuable information in regard to the progress of this class of agricultural implements, and shall present it in a series of articles, together with illustrations, as soon as we can find

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 This Strokes for Thesing Larges – R. F. Tree, of Lowell, Laws: I claim constructing and applying discussed by the constraint of the claim to compare the system of the claim to co	111	set forth.	to the exit pipe at the proper time.	and or an or an mon in one shows, had	Sciller with mubications, as boon as we can find
 Is the st, which make a better, of eaper, and far more dir gives a corresponding motion to the other; nor process. Borns And Moarnisme Carriage Hubsen, and the restore of rouge parts the switch by means of a bar form of a bar fo		TAIL STOCKS FOR TURNING LATHESL. B. Tyng, of	SELFACTING RAILROAD SWITCHES-Joseph Wilson, of	the appearance of piled iron, not welded in	pace for them.
 rable bearing that those made heretofore for such purposes. BORING AND MORTSING CARRAGE HURS—E. J. R. Stone, of Berlin, Ohio Claim the combination and arrange mentof the chisel and quadrant lever. In the manner specified, for the purpose set forth. CARRIAGE BEARTS—JORDE Sollenberger, of Higgins- the cars are on the three sides of the angular form a desired and the construction of a purpose set forth. CARRIAGE BEARTS—JORDE Sollenberger, of Higgins- the construction of a purpose set forth. CARRIAGE BEARTS—JORDE Sollenberger, of Higgins- the construction of the reals. Which and here is a sollence of the angular form as described. Applied to the fore rubbers as described, so that the fore wheels in grant of the dissegner to find and alter of the solution. Applied to the fore rubbers of a purpose to the construction of a proving the fore sand and here is the solution. Applied to the fore rubbers as described, so that the construction of a piece of metall.—Nor do I claim a loom tharress metallic e.e., or do I claim a loom harness metallic e.g., or wires twisel to getter and construction of the two section a rotary more, by the combination of the two section are stantially as described. Applied to the fore rubbers of a purpose of the dissegner to find the rest with the string of the angular form as described. Applied to the fore wheels in front, sub- and the rest with the construction of a piece of metall.—No do I claim a loom harness metallic e.g., or vince twise the biddle form wheel with explanation of the two section a loom wires, twisel dogether and compressed to getter and the more produced to the the dissegner to the target and the rest, and the rest wheels in front, sub- and the		boxes, substantially as described, to the tail stocks of	switch and a bar, by a jointed lever, so that the motion	rolling, and it varied in thickness as much as	
BORING AND MORTISING CARRIAGE HUBS.—R. J. R. Stone of Berlin. Ohio.—I claim the combination and arrange ment bit the chief and quadrant lever. In the mannet specified, for the purpose of boring out the mortise at any desired angle, as indicated by the index. I diam to the interval and other provise set forth. CARRIAGE BRAKES—Joseph Sollenberger, of Higgins monot the purpose set forth. CARRIAGE BRAKES—Joseph Sollenberger, of Higgins thind wheel rubbers, by means of the parties of the angular form, as described, so that the fore wheels in front, sub stantially as described, so that the fore wheels in front, sub stantially as described. Appredict on the fore synold of the two sections a rotary moo, by the combination of and/over, Mass): I do not claim a loon a rotary moo, by the combination of and/over, Mass): I do not claim a loon a rotary moo, by the combination of and/over, Mass): I do not claim a loon a rotary moo, by the combination of and wire, or wires twisted to greate are are secured to the two sectioned are of the wrise, twisted to greate are and the construction a rotary moo, by the combination of the two sections are secured together, and the moor retained in place at the previse of boring of the two sections are secured together, and the moor retained in place at the previse of the two sections are secured together, and the moor retained in place at the perioder which hollow arms or axles, through which names or at loss of the wires, twist of the secures and other safely are secured together, and the moor retained in place at the perioder to the two sections are secured together, and the moor retained in place at the perioder to the and the twist of the secures and compressions are secured together, and the moor retained in place at the perioder to the two sections of the parts of the secure and the two secures and other safety which the twist of the writes, wites, of the angle to the this that do claim a loon harness metallic eye, or the angle to the twist of the writes, and the reserves and the t		lathes, which make a better, cheaper, and far more du- rable bearing than those made heretofore for such pur-	do I claim to operate the switch by means of a bar form-	thirty per centbeing in some places little	Hobb's Lock Picked.
 Pointed AND Morrising CLRRIAGE HUBSR. J. R. Stone, of Berlin, Olino, -I claim the combination and arrange ment of the party set of the combination of the party set of boring out the mortise and quadrant lever. In the manner specified, for the party set of boring out the mortise and quadrant lever. In the manner specified, for the party set of boring out the mortise arrangement of the party set of boring out the mortise and quadrant lever. In the manner sides of the construction by means of the lateral pressure of the wheel is in connection with the sine in the manner are on the rails. CARRIAGE BRARSEJoseph Sollenberger, of Higgins, for the car are on the rails. Swinko MAGNINKS-Christopher Hodgkins, of Boston, ing the horizontal needle of the angular form, as described, so that the fore wheels may be acted to in there are, and the rear wheels in front, substantially as described. Appled to the fore rubbers as described, so that the fore wheels may be acted as of making it do claim a loom harness metallic eye, or selet, and its eye, as explained. Appled at the fore wheels may be acted to in there are, and the rear wheels in front, substantially as described. Appled to the fore rubbers as described, so that the fore wheels may be acted on in there are, and the construction of a robot setional and the construction of a robot setional area of the construction of a robot with and over, Mass): I do not claim a metallic eye, made of the sing stantile eye, or heddle, formed by round wire, or wires twisted together and the mon retained in placeas the partice of metall-wires of making it obligatory on all ferry steam- brown which the solut area of the more retained in placeas the part wheels in the maxing it obligatory on all ferry steam- provided with hollow arms of restore solution of the set were the rubber of the set were there there are not the more rubber of the set may and the more rubber of the maxing it obligatory on all ferry steam		•	I to return the switch to its position by means of a spring		
 ment of the chisel and quadrant lever, in the manner specified, for the purpose of boring out the morite any desired anzie, as indicated by the index. I claim this in connection with the sliding frame in the manner and for the purpose set forth. CARRIAGE BRARSS.—Joseph Sollenberger, of Higgins port, Chio: I claim the mode of a pupite to the him waking it to operate with respect to the angularity as described, and in the reser wheels in front, substantly as described. APPARATUS FOR PATING THE SEAMS OF VESSIS.—James wheels in front, substantly as described. APPARATUS FOR PATING THE SEAMS OF VESSIS.—James wheels in front, substantly as described. APPARATUS FOR PATING THE SEAMS OF VESSIS.—James wheels in front, substantly as described. APPARATUS FOR PATING THE SEAMS OF VESSIS.—James wheels in front, substantly with childs are secured to gether: Must a described. APPARATUS FOR PATING THE SEAMS OF VESSIS.—James the construction of a proce of metalic eve, or eyelet, made by being stample which passes a bolt having a nut, by which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks of the two section is which, and disk or average to prestance in the with of the with or of its whices, and directive at the or any directive at the origin of the two section is whices, and directive at the origin of the two section is whices, and directive at the origin of the two section is whices, and directive at the origin of the two section is whices, and directive at the origin of the work of th		of perilli, Unio1 claim the combination and arrange.	and catch after it has been displaced by the pressure of the flange of the car wheel ; but I limit my claim to the	Now, as a boiler can only be of the strength	land by the above name, has, it is stated by the
any desired anzle, as indicated by the index. I claim the model of applying the fore the man and for the purpose set forth. CARRIAGE BRAYSS—Joseph Sollenberger, of Higgins port, Ohio: I claim the model of applying the fore wheels may be and integed on the angular form. subject of the fore rubbers, as described, and in the eddle, and its eye, as explained. Miss (assignor to Nehemiah Hunt): I claim construction the reaction the reaction the reaction. J, applied to the hind wheel rubbers, as described, and in the connection, J, applied to the hind standing it to operate with respect to the vertical needle, and its eye, as explained. Miss (assignor to Nehemiah Hunt): I claim construction de (a pull) and its eye, as explained. Miss (assignor to Nehemiah Hunt): I claim construction of the fore rubbers as described, and in eedle, and its eye, as explained. Miss (assignor to Nehemiah Hunt): I claim construction of a creation the reaction the react on in the reary and the rear wheels in front, substantly as described. Arry more, by the combination of the two section a metallic eye, or eyelet, made by being stamp are secured together, and the more retained in place at the case should by round wire, or wires twisted together and compressed and fixed and fattened in the wisted together and compressed which passes a bolt having a nut, by which the disks provided with hollow arms or axles, through which passes a bolt having a nut, by which the disks are secured together, and the more retained in place at the or and fattened in the wisted together and compressed and fixed and fattened in the wisted together and compressed and fattene in the wisted together and compressed and fattene in the wisted together and compressed and fattene in the wisted together and compressed together and compressed and fattene in the wisted together and difference in the wisted together and difference in the wisted together and difference in the wisted of the wisted together and difference in the wisted		ment of the chisel and quadrant lever, in the manner	Drecise arrangement of the parts for operating the	of the weakest part of it, every boiler should	London papers, been picked at last by a Cock-
and for the purpose set forth. CARRIAGE BRAYES_Joseph Sollenberger, of Higgins, port, Ohio: I claim the mode of applying the fore wheels in front, sub- stantially as described, and its eye, as explained. APPARATUS FOR PATNOS THE SEAMS OF VESSEIS—James w. Stoakes, of Milan, Ohio: I claim the construction a rotary mop, by the combination of the two section are secured together, and the mop retained in place at the graph and the rear wheels in front, sub- stantially as described, and in secure of the construction of a rotary mop, by the combination of the two section which passes a bolt having a nut, by which the kinst of the secure of the secu		any desired angle, as indicated by the index. I claim	figures on the inner sides of the movable and fixed	be inspected with great exactness and care. If	ney. We have not yet received an account
CARRIAGE BARES Joseph Solienberger, of Higgins port, Ohio: I claim the index of a pupiler to the consection, J, applied to the hind rubbers, as described, and in the connection, J, applied to the hind rubbers, as described, and in the rear wheels in front, sub- stantially as described. APPARATUS FOR PAYING THE SEAMS OF VESSISJames W. Stoakes, of Milan, Ohio: I claim the construction of a rotary mop, by the combination of the two section which passes a bolt having a nut, by which the lists are secured together, and the mop retained in place at the periphery between the inside edges, or busy which passes a bolt having a nut, by which the lists the periphery between the inside edges, or busy which the disks, provided with hollow arms or axles, through which passes a bolt having a nut, by which the disks the periphery between the inside edges, or busy when the two and faitmened in the twisted to result wheters, and dimed in the twisted to the securet to gether and faitmened in the twisted to the securet of the two section dimenses metallic eye, and edit the twisted to result wheters wheels in front and the result be tween the twisted out of a piece of metaliNor do I claim a a loom harness metallic eye, made of a rotary mop, by the combination of the two sectioned in place at the periphery between the inside edges, or by anyther the disks where, wheter the twisted of its whices, and directly at the periphery between the inside edges, or by anyther the disks where, wheter the twisted of its whices, and directly at the periphery between the inside edges, or by anyther the disks where, where the inside edges, or by anyther the disks where, where the inside edges, or by anyther the disks where the inside edges, or by anyther the tween the inside edges, or the anyther the tween the twisted of its where, and directly at the periphery bay bay the the tween the inside edges, or by anyther the tween the twisted of its where, and directly at the periphery bay the tween the inside edges, or by anyth		and for the purpose set forth.		the Inspectors do not do this, they, above all	of the particulars connected with this affair.
In the weight the fore rubbers as described, and in the connection, J, applied to the hind rubbers as described, and in the rear, and the rear wheels in front, sub- stantially as described. Wire HSDLE EYES FOR LOOMS-Thomas Clegg, of acted on in therear, and the rear wheels in front, sub- stantially as described. Arparatus FOR PAYING THE SEAMS OF VESSIGJames W. Stoakes, of Milan, Ohio: I claim the construction of a rote of metal: -North Andover, Mass. I do not claim a loom harness metallic eye, or eyelet, made by being stamphares wetallic eye, or wies twisted disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided with hollow arms or axles, through which the disks, provided in place at the on and faitment of the two section disk. The orgin of the two section of		CARRIAGE BRAKESJoseph Sollenberger, of Higgins-	Mass. (assignor to Nehemiah Hunt): I claim construct	other persons, deserve to be severely punished.	
In adjoint to the function of a splice to the function of a splice to the function of the f		Innu wheel I unders, by means of the connections in and	I bed; and making it to operate with respect to the ver-	posses, asses to to set or only pumbled.	The locomotive "Manchester" exploded at
 rubbers, as described, so that the fore wheels in front, sub-stantially as described. APPARATUS FOR PATNOR THE SEAMS OF VESSELS.—James Wilk and the two sectional disks, provided with hollow arms or axles, through which the losis are secured together; and the more retained in place at the two sectional disks, provided with hollow arms or axles, through which the losis are secured together; and the more retained in place at the two sectional disks, provided with hollow arms or axles, through which the losis are secured together; and the more retained in place at the two sectional disks, provided with hollow arms or axles, through which the two sectional disks, provided with hollow arms or axles, through which the two sectional disks, provided with hollow arms or axles, through which the two sectional disks, provided with hollow arms or axles, through which the two sectional are secured together and flattened in the twist of its wires, and directly at the on and bettom of the two sections are secured together. 		nection therewith the connection, J, applied to the hind	tical needle, and its eye, as explained.	Another Terrible Steam Boiler Fralesion	-
APPARATORS FOR PAYNOR THE SEAMS OF VESSELS.—James W. Stoakes, of Milan, Ohio: I claim the construction of a rotary mop, by the combination of the two sections disks, provided with hollow arms or axles, through which passes a bolt having a nut, by which the lists the periphery between the inside edges, or by any other the transmitter is which and the more related in place at the periphery between the inside edges, or by any other the transmitter is which and the work of the two sections are secured together, and the more related in place at the periphery between the inside edges, or by any other the transmitter is which and the work of the two sections the periphery between the inside edges, or by any other the transmitter is which and the work of the two sections the periphery between the inside edges, or by any other the transmitter is which and the work of the two sections the transmitter is with the twist of its with the twist of		acted on in the rear, and the rear wheels in front, sub-	North Andover. Mass. (assignor to himself and Natha-		
W. Stoakes, of Milan, Ohio: I claim the construction of a rotary mop, by the combination of the two sectional which passes a bolt having a nut, by which the disks are secured together, and the mop retained in place at the periphery between the inside edges, or head up the together: But I do claim a loom harness metallic eye, made and fastened in the twist of its wires, and directly at the periphery between the inside edges, or head up the together is a loom harness metallic eye, made and fastened in the twist of its wires, and directly at the periphery between the inside edges, or head up the together is a loom harness metallic eye, made and fastened in the twist of its wires, and directly at the periphery between the inside edges, or head up the top set in the inside edges, or head up the inside edges, or head up th		stantially as described.	niel Stevens, of Andover, Mass): I do not claim a loom	with towifin wielence at the new feature of	
a rotary mote by the combination of the wo sectional disks, provided with hollow arms or axles, through which passes a bolt having a nut, by which the disks are secured together, and the moy retained in place at the periphery between the inside edges, or by any other the periphery between the inside edges, or by any other the number of the work of the			ed out of a piece of metal;-Nor do I claim a metallic		
are secured together, and the mop retained in place at and flattened in the twist of its wires, and directly at about twenty others severely wounded. The boats to carry life preservers and other safety		a rotary mon by the complitation of the two sectional	togetner:		0
		which passes a bolt having a nut, by which the disks	round wire, or wires, twisted together and compressed		
bed.		the periphery between the inside edges, or by any other	and flattened in the twist of its wires, and directly at the top and bottom of its warp thread opening as described		
	6	means, substantially as set forth.	bed.	building containing it was destroyed, and much	apparatus.
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Inbentions. Rew

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Alarm Gauge for Steam Boilers.

J. Hopkinson Smith, of the city of Baltimore has taken measures to secure a patent for an improved alarm water gauge for steam boilers. The nature of the invention consists in attach ing to a float a metal tube, which works directly through a stuffing box on the top of the boiler, and has an opening on one side, which is at such a hight that while the water is at a safe level, it is either within or above the stuffing box, but when the water falls to a dangerous level, it enters the steam space in the boiler, and allows the steam to pass through it into the tube and up to the whistle at its top, thus alarming the engineer, and informing him of the low state of water in the boiler. To the bottom of the float there is at tached a horizontal blade, which tends to keep it (the float) steady in the water, and prevents it from being much affected with the foaming and boiling of the water.

Improvement in Cotton Gin Saws.

J. H. Watson, of Palmyria, Ga., has applied for a patent on Cotton Gin Saws. The saws now in common use for cotton gins have the spaces between the teeth made with acute angular bottoms, which is the cause of much cotton being cut or napped, and drawn or twisted into kinks. They are also the cause of considerable difficulty in stripping or clearing the saws by the brushes. The object of this improvement is to obviate the above evils, the spaces therefore between the teeth of the improved saws are made with wide bottoms either round or square-the round are preferred. This improvement obviates the napping of the cotton, allows it to be easier blown off from the saws by the brushes, and gins it faster and bet-

New Railroad Switch.

ter.

An improvement in the operation of railroad switches, has been made by Asa A. Simmons, Narrowsburg, N. Y. It consists in attaching one end of the ordinary connecting rod of a switch to a circular plate at any point, between the center of said plate and its periphery, accor ding to the length of stroke required. The circular plate is attached to one end of a hori zontal shaft, at the opposite end of which there is a lever, by which the peculiar plate and shaft are turned, and the connecting rod and switch moved. An index is secured to the circular plate, for the purpose of denoting the exact position of the switch. Measures have been taken to secure a patent.

Machine for Softening Flax. Robert Boyack, of Poughkeepsie, N. Y., has invented an improved machine for softening flax. The improvements consist in having a vertical reciprocating plate with a slot through it, which works between two pairs of fluted rollers. The flax to be operated upon and softened passes from a feed trough, between one pair of the fluted rollers and through the slot in the reciprocating plate, and from thence through the other pair of fluted rollers. The reciprocating plate subjects the flax to a rubbing frictional action, which renders it soft and pliable, without injury to its fiber. Measures have been taken to secure a patent.

Castors or Foot Bollers.

rker, of this city, h

grates and air passages are arranged in such a so as to obtain advantages from this fuel, supemanner that very perfect combustion, and a sa- rior to those which can be derived from wood, ving of the heat are obtained. The combus- for burning bricks, presents important advantation can be controlled in all parts of the kiln, ges to all those who manufacture them. The and the heat can be concentrated on any part use of coal for burning brick is not new; the of it. These are very important and necessary improvements only relate to the better and regulations to a perfect kiln. The use of coals, more economical use of such fuel.

VARIABLE GAUGE WHEELS FOR RAILROAD CARS. Figure 1.



Philadelphia, Pa., for which measures have been taken to secure a patent. The improvemovable on the line of the axle, and this is done in the following manner, figure 1 being a perspective view, and fig. 2 a transverse section, the same letters referring to like parts on both figures :---

added to an ordinary wheel, and is made narrowing from the flange to the middle of the axle, and it encloses the latter at that point. As presented in the figures, the wheel, W, and case, C, are cast together, and fitted to the axle A so as to move lengthwise upon it, between a strong collar, O, in the middle, and another, N, at the end of the axle. Each wheel is allowed sufficient play between these collars, to suit the different gauges of track for which the cars are intended to be used. Upon the center of the FIG. 2.



collar, O a double toggle, T, is applied for mov ing each pair of wheels backwards or forwards simultaneously upon the axle. In practice, however, it may be found that converging grooved rails upon a track of sufficient length will answer the purpose as well. That part of each case, S, near the central collar, is made to project, in order that a suitable key may be applied to clamp each pair of cars together to the narrow, and key them apart to the widest gauge; said key having cross-cuts fitting the cases and axle respectively. Suitable pits under the track, will give access for shifting the wheels and introducing the key. Strong projections. P. must be placed upon the side of the truck for sustaining the weight of the carupon a movable track at the station, while the wheels are being shifted, but converging grooved rails name is more prominent than that of any other may supersede the necessity of this latter arman. rangement also. In the section, fig. 2, the wheel and case are made separate from each other,

The annexed engravings represent an im- means of carriers, R; in fig. 2 such carriers are provement on Wheels for Railroad Cars, in- made to move the cases simultaneously with vented by Messrs. W. W. & J. A. Solliday, of the wheels and axle. Rails shaped like the letter L must be made to support the outside of the wheel rims, while the flanges are being ment consists in making the flanges of wheels | shifted, in case they are movable upon the rims of the wheels. In fig. 2, W is the wheel; C is the case; S is the projection upon the case, F L is the flange rail; R is the carrier; K is the key introduced between the projections upon the cases and over the axle with a space (1)

A hollow conical case, or its equivalent, is fitting the case behind the projections at I, when used as a clamp. The inventors say :-"The greatly increased width of that part of the wheels bearing upon the axle, in fig. 1, will make them nearly equal to keyed wheels in their running qualities. The waste play of the flange between tracks will not be great; the difference being the sines of the angles express ed by the dotted lines, x y, fig. 2, drawn from a point in the middle of the axle to the flange itself, and upon a base crossing the axle at right angles through that point. The space between the lines represents the play necessary to allow the flanges to move freely across the rims of the wheels. The additional weight of the wheels will be equally balanced upon their centers, thus causing but little increase in the wearing of the journals."

For more information address Messrs. Solliday, No. 186 Callowhill street, Philadelphia.

Recent Foreign Inventions.

SUGAR MOULDS-Henry Bessemer, of London, pat .- The inventor constructs cylindrical sugar-loaf molds having a movable bottom, so that the syrups may drain off from a surface whose area is equal to the body of the mold. whereby the mould may be made of a much greater hight, because this increased area of outlet will allow the syrups to drain off quickly, which the hydrostatic pressure of a tall column also materially assists; this increased capacity of the mold will render it much too heavy to be handled by the workmen in the usual way. Mr. Bessemer, therefore, prefers to make them fixtures, or movable only with revolving apparatus, somewhat like a turn-table, and instead of detaching the loaf from the mold by a blow, he employs an hydraulic press or other suitable mechanical force to push out the loaf from the mold.

After this a very thin sheet of india rubber is made to adhere to it by pressure between two other rollers.

2. The second patent is for making substitutes for bristles out of india rubber, so as to fit them for making brushes. The india rubber is combined with sulphur and a metallic oxyde, then the mass subjected to heat until it becomes somewhat hard, when it is forced through perforations in a metal plate, forming bristles, they are hardened to the proper degree afterwards by heat.

3. The third patent is for manufacturing pens, pencils, and instruments used for writing and drawing. The pens are used for writing with ink, but the pencils are merely for marking on slates. These are made by combining slate powder with india rubber, then moulding and hardening them. He also combines slate powder with sheets of india rubber and forms marking slates.

4. The fourth patent is for purifying indi rubber, by subjecting it in a finely subdivided state to the action of an alkaline solution and then washing it well.

5. The fifth patent is for the manufacture of beds, seats, and other hollow flexible articles. The invention consists in employing knit or looped fabrics to contain air. Two surfaces of such fabrics are coated with india rubber cement, and are made to adhere at intervals, but where the hollow cells are to be, paper is interposed to prevent adhesion, and bands of non-elastic fabrics are cemented between the two surfaces to separate the cells. The cells may all be connected by a vulcanized india rubber tube and be inflated, thus forming an air mattrass or an air cushion. Such beds and cushions we think will not be very comfortable.

Spontaneous Combustion.

The Farmers' Factory, at McMinville, about 25 miles below Sparta, in this State, was burnt down on Sunday, 5th of this month, caused, as is said, by the spontaneous combustion of a pile of clean cotton waste, which had been lying in a corner of the mill for two years. Will cotton in a dry place, I mean card strippings, that are perfectly dry and free from oil, ignite spontaneously? I don't believe it will. Do you think a chance bunch of oily waste that had been used in cleaning machinery would cause it to ignite, or to be still more inquisitive, will cotton saturated with sperm or lard oil ignite spontaneously, and if so, how long would it take to do so in a dry place, such as a cotton mill heated by steam ? I know that linseed oil will, and I have often heard of waste houses taking fire where there was no linseed oil.

The fire in the Farmers' Factory broke out at four o'clock P. M., whilst the watchman and another were in the room. They were aroused by a noise similar to a hard blast of wind striking one side of the house, with a stream of fire shooting from the center of the waste pile. The flames spread with such rapidity that they were unable to save anything but a few bales of cloth, the books were in an upper room, and were lost. No insurance. Loss, \$95,000.

J. T. K.

Sparta, Tenn., Feb. 21st, 1854.

[Cotton perfectly free from oil would not ignite spontaneously, but a very small quantity of waste cotton, perhaps a handful, which had been used to wipe the machinery, and thrown into the heap, might have set it all on fire. On one occasion we saw 200 lbs. of cotton yarn ake fire spontaneously, which had been saturated with a preparation of olive oil and soda, and had been perfectly dried. The kind of oil is not material. Persons in cotton factories should be very careful of waste cotton, which has been used for wiping the machinery. - ED.

ures to secure a patent for an improvement in Castors, which is of no small importance for heavy bodies, such as iron safes, to which they may be applied. The improvement consists in having the fork in which the roller is placed work or rotate within a socket or guard, the shoulder of the fork having a washer resting upon it to prevent friction; the washer is within the guard.

Improved Brick Kiln. J. S. Speights, of Baltimore, Md., has made so that the flange and case to which it is joined a useful improvement in Brick Kilns, for may slide in and out upon the wheel rim. The which he has taken measures to secure a patent. wheels in this instance are keyed to the axle in The object of the improvement is to effect the holes for discharging dust, &c. In fig. 1 the burning of bricks in kilns by burning coal in a more perfect and economical manner. The fire wheels are shown as made to turn the axle by the prominent parts of the surface of the cloth. nuity, and assiduity.

INDIA RUBBER.-Charles Goodyear, formerly of this city, but now residing near London, has recently taken out five patents in England for india rubber good manufactures, with which his

1. The first patent is applicable to coarse fabrics, the object being to render it water-proof without impregnating and filling up the interstices. It consists in passing a piece of cloth with undissolved india rubber between two the ordinary way. The cases are provided with heated rollers driven with unequal velocities, by which means a thin coat is caused to adhere to

Superintendent of the New York and Erie Railroad.

We understand that D. C. McCallum, of Owego, has been appointed General Superintendent of this great railroad. The news gives us no small amount of pleasure; he is an able and an upright man, combining qualities of the very highest order to enable him to fill this situation with distinguished ability. He is a practical man, of sound judgment, great inge-

Scientific American.

NEW YORK, MARCH 18, 1854.

Our New Half Volume.

This number being the first of a new half volume, and as we always have had a large addition of new subscribers at such periods, we commence this number the same as if it were the beginning of a new volume; that is, so far as it relates to the commencement of a new series of articles. It is therefore a very excellent time for persons to become new subscribers, as they will have, in this volume, the best record in the world, of the progress of American Inventions and Discoveries for the next six months. We will also publish a series of miscellaneous illustrated articles in it, which we are confident will afford much gratification and impart a great deal of new and useful information. It affords us much pleasure to acknowledge during the past few weeks, an astonishing large increase of new subscribers.

Needful Discoveries.

The New York "Tribune" of the third inst., contained an article with the above caption, in which two new discoveries were suggested. It says :- "in order effectually to advance our civilization two discoveries in a different department are now urgently required. The first is a method of hardening metal, so that stone may be cut by it with the same celerity and ease, as we now cut wood with steel. It must be supposed that the rocks, which form so large a part of the crust and even of the surface of the globe were intended for the uses of man.-Wherever great wealth accumulates, either in the hands of a sovereign or a people, you may see its representation in their enduring structures of stone."

It then speaks very truly of the unenduring nature of wooden structures, and their liability to take fire, but the remedy which it suggests is founded in error. It says: "It seems within the limits of scientific possibility that a method may be discovered of hardening some of the present metals, or an amalgamation of some of them, so that a boulder from the side of a mountain may be sawed into blocks, pillars, and beams by means of machinery, similar to that used for reducing pine logs to planks and boards. If iron upon being heated in carbon can be made to change the combination of its particles so as to become capable of cutting simple iron, as readily as old cheese, may not an additional equivalent of carbon, or the addition of some known or unknown substance, so increase its tenacity and hardness as to make it capable of sawing granite? If not, have any other metals the property of becoming so indurated? It is said that the ancient Peruvians wrought stone with tools of tempered copper. Shall we never regain this lost art?"

We have heard a great deal of the copper the rice was ground. tools of the ancient Egyptians, as well as Peruduced in man, as stated above, by the combusjudiciously, will, we believe, prevent five out of The Privy Council, without going into any vians, but we must say, that they did not at all tion of atmospheric air, but by that of the carevery six fires which break out from becoming evidence, decided that there was not sufficient equal our modern steel tools in any respect; bon and hydrogen introduced into our system large and destructive. merit to warrant an extension, and whatever those who talk so much of ancient copper tools, in the shape of food and drink. It is estimated merit there was, the credit belonged to another, that the heat given off by a full grown man in The Independent. and the lost art of tempering, betray much igand the applicants were ordered to pay £100 Owing to the destruction of the publishing norance. The plain idea presented in the 24 hours, is sufficient to raise 63 lbs. of water, to liquidate the expenses of those who opposed office of the "Independent" by fire, some of above, as a suggested remedy for cutting from 32° F. up to the boiling point; the greatthe extension, as there was no grounds at all the subscribers will doubtless fail to receive stones like sticks, is simply the use of a harder est part of this heat is due to the combustion for them (the applicants) making the applicatheir paper. Those who do not receive it are of our food, but some is also due to the friction metal than any which is now used in stone tion. This appears to be a peculiar decision requested to inform the publisher, Mr. Joseph dressing. But suppose we had a metal ten caused by the action of the muscles and the and the first of its kind, we believe, in any coun-H. Ladd, No. 22 Beekman-street, New York, times harder than any we now have, we could nerves. There is no country in the world try, namely, awarding costs to those who opas soon as possible, and also state the time, as not cut stone with it as easily as we now can where the expense of fuel is equal to that of ed the application for the extension cut wood. The great obstacle to the cutting of food, but still, the expense of fuel in the coldest shown by their receipts, when their subscrip patent tions expire. Exchange papers and the press parts of our northern States is very great.stone with ease, lies in the nature of the mategenerally will confer a great favor by publishrial to be reduced and shaped. Its particles and this, let us say, is more in consequence of the The India Bubber Case Again. ing this notice. possess more cohesion, and are much harder violation of well known laws, than ignorance Three weeks ago (on page 187) we noticed of them; we allude to the want of exercise in than those of wood; they therefore require the the granting of an injunction by Judge Betts, Pure Milk. exercise of a greater amount of mechanical the open air, and the general immersion of peragainst the New England Car Spring Co., tor A bill has been introduced into the Leg force for their separation, either by cutting sons in hot unventilated apartments. The very an infringement of the patent of Edwin M. islature of New York, for the incorporation of a or abrasion. The needful discovery to effect fact admitted above, that the colder regions an-Chaffee, the extended term of which H. H. Day company to supply this city with pure milk .-this, has been made and applied; it is steam pear to be the cradle of races and nations, is had purchased of the patentee. Since that The cows of the company are to be fed on power. Perhaps, the most useful discovery, perfect evidence that the Creator has produced time the defendants in that suit have applied to grass, grain, &c .- no distillery slops. It is as a substitute for wooden structures, is a strong the best and most congenial atmospheric curthe Court to dissolve the injunction, which was scarcely possible to obtain any pure milk at cheap material, like cast iron, which is capable rents for general human happiness, and abunonly a temporary one. We do not know at present; the milk pedlar's best grass field is a of being moulded into any form without cutdant experiments have been made with fricpresent if the motion to dissolve will be grantwater hydrant. ting at all. It will be a happy day for our tional electricity, and the friction of bodies, to ed, but we would state that this Company citizens, especially in large cities, when all the satisfy any clear-minded man, that no amount claims to have a title to manufacture car We are obliged to Hon. F. B. Cutting, Hon. of experiment or study, can develope heat from buildings will be composed of cast iron in place springs of india rubber by a license from Good-S.A. Douglass, Hon. W. H. Seward, and Hon. these means so cheaply as by combustion. At year and Judson, who claim to have a superior H. Walbridge, for Congressional favors. of stones, sticks, mortar and mud.

says:-"The other great desideratum is the production of heat without combustion. The accumulation of population and power in the world has been for many centuries in the colder latitudes. The greater part of the habitable globe, best adapted to support human life, lies under the colder zones, there the homes of the great majority of the race must continue to be. Indeed, the use of fire seems to have been one of the earliest steps towards civilization. In all the northern States of this Union more is annually expended for fuel than for bread. It would almost seem to be one of the duties of the Creator, who had fitted up this planet for the abode of his creatures, to ventilate it with air of such a temperature as would be congenial to life. At any rate there must be in the mystery of his laws better methods of producing heat than the combustion of trees, or of coal, sparsely stored in the almost inaccessible bowels of the earth. Heat exists in all known substances. It gives to liquids and fluids their form, and chemistry has discovered the method of releasing it from each and making it available. It is a product of friction and of the combination of many common substances. In the human organization it is generated by the combustion of atmospheric air. It is above us in the clouds, that retain their vapory constitution through the winter, and beneath us in the earth, that keeps up its equable temperature through all seasons alike. Would not the same amount of energetic experiment and patient study that has been required to perfect the steam engine, if applied to the study of these laws, obtain results of incomprehensible importance

and influence ?" This fling at the duties of the Great Creator would never have been uttered by one who had drank deeply at the well of science.

The Great Creator has fitted up this world and does ventilate it with air congenial to life; he has also provided abundant means ; and has established the most beautiful and simple laws, for the health and comfort of man. If the Great Creator had provided only for an elevated temperature for domestic and manufacturing purposes, by the development of heat from friction man would be no better than the brutes which lie in the cave or the jungle, and know not the blessings of combustion. We feel grateful to the Creator for the beautiful law which he has established, for the development of heat by combustion. None can be more simple, and none require less labor from man in fulfilling the conditions necessary to its perfect realization .-We pity those who cannot see the beautiful adaptation in the laws of combustion to the wants and happiness of man, under all conditions, and in every clime. And when we reflect that the materials belonging to our globe, to produce combustion, are illimitable, we wonder at the spirit which called forth the above. Heat is produced by friction, and combustion-these two processes cover all the rest. It is not pro-

Respecting the other desirable discovery it | present we need not dwell at greater length up- | title to the patent of Chaffee. It seems to us on this subject; we will only say that simple combustion is a subject which has always afforded us deep cause for wonder and admiration; it is one of the most simple, yet most mysterious and sublime of nature's laws.

Value of Patented Improvements.

Within the past year we have noticed with much pleasure the increased attention which has been paid to patented inventions by men of capital. Several joint-stock companies have been formed for the manufacture and sale of good improvements, and we have no doubt that more attention will be given to this branch of industry in future. We could instance a great number of cases where inventors have realized a handsome competence from the sale of their patents within the past eighteen months, and it is by no means an uninviting field for men of means to undertake the management of good inventions.

The cost of an application for a patent rarely exceeds sixty dollars; and if the case is rejected, twenty dollars of this amount is returnable by law. Surely this is taking a very slender risk compared to the advantages likely to result from the sale of the invention if the patent is granted. If the aggregate number of patents issued did not directly or indirectly benefit the inventor, there would be less activity in this branch, and one reason why so many do little or nothing with their inventions, is owing to a want of energy in bringing them before the public.

We are always prepared to advise with applicants in regard to the novelty of their contrivances; and as managers of a Patent Agency the most extensive in the world, our facilities are not excelled, if equalled, by any other concern. Thousands of dollars have annually passed through our hands for disbursement, both at home and abroad, and not an instance can be produced where we have not faithfully accounted for every dollar entrusted to our care.

Starch Patent Extension Refused.

It will be remembered by our readers that we published, in No. 25, the specification of the patent of Orlando Jones, for making starch, who has petitioned for its extension, the official advertisement of which will be found in another column of this number. An application was made some time since for the extension of Jones' English patent; this was heard before the Lords of the Privy Council, in London, on the 8th of last month, and was decided in the negative-the extension was refused.

We learn by the "London Mechanics' Magazine," that in 1842 the inventor made a disclaimer in England, in consequence of a patent having been granted in 1824 to one Thomas Wickham, for the use of a solution of alkali, by subjecting rice to its action before it was ground, while all that remained of the patent of Jones, was for the use of the alkaline solution after

that our U.S. Courts are clumsy, elastic, and interminable in their actions and operations. There seems to be no power in them for bringing matters to a final issue, or else india rubber is too elastic for them to grapple with. No sooner does a case seem to be settled and the india rubber contracted to its natural dimensions, than some one gives it a long pull and a strong pull, and out it is drawn again before the courts to a length as endless as that represented by the ancients in the figure of a serpent swallowing its tail. In the decision of Judge Betts, it is stated that H. H. Day paid E. M. Chaffee, \$11,000 for this extended patent, which extension was granted in 1850 by Mr. Ewb'ank. The most curious part of this transaction perhaps is that H. H. Day was the most active opponent to the extension of the patent, and even after it was granted, he published a circular, with the opinions of a number of lawyers attached, asserting that it was granted illegally. At present he seems to consider it one of the most legal extension ever grantedworth at least \$11,000. Well, everything about this india rubber case partakes of the nature of the article itself; it is strong, elastic, durable, impervious to moisture, can stand a high degree of heat when sulphurized, it vulcanizes the courts, and electrifies the lawyers.

+. Telegraph Fire Alarm and Steam Fire Engines.

During the past winter our city has suffered severely by extensive conflagrations; these calamities naturally incite us to inquire "can no proper remedy be provided for them ?" Although we believe conflagrations cannot be prevented entirely, we have no doubt but they may be greatly lessened in extent and frequency. In Boston they have a telegraph fire-alarm system, by which, in a second of time, information is sent to almost every engine house, of the exact situation of a fire when it breaks out, so that the firemen can dash off in an instant to the point of action. This system has been the means of preventing many disastrous fires in that city. Let it be adopted in New York, and it will save the city some millions every year.

In Cincinnati there are one or two steam fire engines, which are stated to be very effective, and capable of throwing such heavy columns of water rapidly on a fire, as to drown it out in a very short period. Let our Common Council get one of these engines built, and give it a fair trial, and if it prove to be hall as good as has been represented, it will save a thousand times more than its expense, in a single season. Our city and the insurance companies can afford to expend a very large amount for the prevention of extensive fires, and they should not act penny wise and pound foolish to do so, but at once adopt more effective and energetic measures to accomplish such ends. We suppose that \$5,000,000 will not cover the losses caused by fires in this city during the past year; the one-tenth of this amount expended

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Scientific American.

Application of Heat to Produce Steam or Evaporation

The comparative effect of heat to produce

steam in a boiler depends upon the ratio of the absorbing and transmitting power to the velocity of the escaping products of combustion .-For if the velocity be greater than the absorption and transmisssion of the passing heat to the water, then there will be a corresponding loss of heat. In the locomotive boiler with a rap idly escaping current only from 1-10 to 1-16 of the absorbing surface is by direct contact at ordinary speeds of the engine, and the remainder at right angles to the escaping current of heat. At high velocities the surface of contact will be increased to about $\frac{1}{2}$ or $\frac{1}{2}$, whilst the velocity of the escaping gases will be also increased, a decreased length of tubes. Therefore as the velocity is increased the economy of fuel is decreased, from the failure of the absorbing transmitting power of the boilers to convey more heat in less time to the water.

The comparative heat transmitted by conduc tion, radiation, and convection may be tested by alternately placing a thermometer in contact with the flame of a candle, next by its side, then over the top of the flame, and noting the temperature at each of the three positions. On if the hand be cautiously substituted where a thermometer may not be convenient, the respective differences will be sensibly indicated. and give a clear idea of the heat lost by convection, when its velocity is considerable, and the absorbing space limited. In this respect long boilers have an evident advantage over shorter boilers, where the diameters of the tubes do not offer sensible obstruction, for the largest portion of locomotive heating surface is on the worst or radiatory portions, at slow velocities, but decreasing as the increase of velocity extends the flames through the tubes. The experiments made by Mr. G. Stephenson, many years ago, showing the comparative evaporative ratio between the fire box and tubes of an engine at rest, as 3 to 1, would scarcely apply to an engine at very high speeds, since the relative conducting or radiating surfaces are not uniform, but vary with the velocity of the engine and heating power of the fuel. With a low velocity these surfaces might be more uniform, if the flame acted only on the fire:box.

The economical evaporation of water into steam depends therefore, first, upon perfect combustion; and, secondly, upon the absorbing and transmitting power of the boiler.

Where the powers are equal, the effect would be in the ratio of the surfaces of con ducted and radiated heat, but where unequal, in the ratio of their transmitting power only .-Careful management of the fire to prevent "air holes" burning through in places, a due regard to the air-admission spaces being uniform, and a steady regular supply of fuel, have considerable effects upon the economical results from any boiler. A clear level fire, kept fed by regular-sized pieces of fuel and the fire-grate kept free from clinkers, all contribute to economy, and should be practiced. To aid the fireman or driver in their duties, as well as for the higher objects of research, there should be in every locomotive boiler one glass pane in the fire door, and one in the smoke-box door, that both the fire and the state of the escaping heat might be seen without opening either door, until such was really necessary. The chilly effect of opening the fire door in checking the production of steam is well known, and might be so far avoided whilst the experienced eye would tinues to work well.

the weight of the inclined plane; the car with Water Wheels---Article 1. the rope, R, fastened to the post, P, will hold Two of my correspondents have written to me for an opinion of the answer to your the car from descending the plane. Is it not correspondent, "W. A. S.," in Volume 9, page an axiom that the incline plane will move 16 15. One of them wishes me to give you feet, while the car by its gravity descends four

my views, as I did to him, and says you will be feet? Now to apply this to a Parker wheel, we will puzzled to find obscurity.

suppose a helical sluice, figure 2, under a ho-I illustrate it thus: suppose an incline plane, figure 1, 16 feetlong, and 4 feethigh, be placed rizontal wheel, 32 inches in diameter, with six





issues, consequently the bucket (so called) is 16 | moved 26.4355 feet, or 48.85 per cent. faster al curve, R, the issues 4 inches wide radially, than 71 per cent. in effect. (being in proportion to figure 1.).

The circle cutting the center of the issues is the inside of the outer cylinder; the circle within the inner end of the buckets is the inner cylinder. These two cylinders confine the water entering the sluice in the course of the arrows up the helix, the water impinges on the bucket from where the bucket crosses anglingly the inside of the outer cylinder, producing motion to the wheel by its percussive force. Inertia moves the water radially, and produces



what we term centrifugal force on the inner curve of the bucket; now is it not evident that the wheel must move the entire length of the radial inclination of the bucket, while the water in its velocity passes radially 4 inches? When the wheel is only moving with its own weight the radial motion of the water will be but very little changed. And if we examine the ninth experiment of the third table of the report of the Franklin Institute, we find the water moved axiom. If according to the proposition a car 17.76 feet velocity through the issue in one of 200 lbs. weight moves an inclined plane car-

inches from the end at the issue, I, to the radi- than the actual discharge, and returned more

P is the incline plane; e is the car of twice

Figure 3 is an elevated view of the helix and wheel, supposing both to be extended in a straight line, the arrows represent the direction of the water, and exhibit, the fact of each bucket being supplied simultaneously. The inclination of the sluice is in accordance with one for 96 square inches area of issue and inlet. The upper horizontal line represents the edge of the disk or head of the wheel in a line, d. The vertical lines with the curve of a quadrant represent the buckets, b, that receive the impulse of the water; i p is the edge view of the injunction piece, the sharp edge is radially with the dotted line across the sluice, figure 2, which brings the lower and upper currents of the water together, in the most smooth and gentle manner possible. Is it not evident the wheel must run at the periphery faster than the discharge water, to let the water pass radially through the issue ? JAMES SLOAN. Sloan's Mills, Shelby Co., Ky., Feb. 1854.

[The remarks of ours to which our correspondent refers, related to the velocity of a working water wheel like Parker's, running with a higher velocity than the water which propels it. We must say that we want some clearer explanation than any yet furnished. In relation to the question, "Is it not an axiom that the incline plane will move 16 feet while the car descends 4 feet." We say it is not an second of time, and the periphery of the wheel ¹ riage of 100 lbs. weight 16 feet, while the car

Figure 3.

momentum produced from $200 \times 4 = 800$ mo- move with a higher velocity than the moving mentum. Anything that we have said in refer- | force. That is the simple question. A wheel ence to the velocity of water and the wheel, 32 inches in diameter moving at the rate of 30 has been viewed like the question of a free body striking an object. We have never known the piston of any steam engine to move with a greater velocity than the steam which center is only 125 66360 feet per minute, and propelled it. We are well aware that the periphery of a wheel may have a higher velocity feet per minute. Water acting upon the buckthan the water which moves the wheel, but the periphery of a wheel is only a part of the wheel. A water wheel is like a capstan; the handspikes or levers of the latter represent the buckets or The power of the wate arms of the former.

descends 4 feet, then we have $16 \times 100 = 1600$, will that part of the arm at which it is applied revolutions per minute, has a peripherical velocity of 251.32720 feet per minute, but the surface velocity of the wheel at 8 inches from the at 2 inches from the center it is only 31.41590 et of a wheel of 36 inches diameter at 8 inches from the center, and having a velocity of 125. 66360 per minute, if it communicated all its velocity to the wheel would give its periphery speed of 251.32720 per minute

under the ground. The submarine line con- on a perfect level railroad, on rollers, thus: I out their heads or arms, many accidents having occurred from doing this, in spite of printed cards of warning. The recommendation is a good one.

> Consumption of Fuel in Steam Engines with Single and Double Cylinders.

M. Farcot, machinist, at Port St. Ouen, has made experiments upon two machines made by him for the plate-glass manufactory of St. Cobin, which may serve as a basis for a rigorous comparison between machines of one and two cylinders. The experiments were made under the direction of M. Laforet, engineer of the glass-works at Chauny. The first machine, with two cylinders, has a nominal power of 30 horse, and makes 28 revolutions per minute.-When tried on the 26th October, during 5 hours, at 38 horse-power, under a pressure from 4.75 to 5 atmospheres, it consumed less than 1.15 kil. $(2\frac{1}{2}$ lbs.) of common charcoal per horse-power per hour. Afterwards tried at 49 horse-power, it worked with the greatest ease

The second machine is horizontal, has but one cylinder, working at 42 revolutions per minute, and is also nominally 30 horse-power. Tried for 5 hours on the 28th October, it consumed only 1.106 kil. (2.4 lbs.) per horse-power per hour. Afterwards tried at 49 horse-power. it gave no evidence of injury to any of its running parts. These two machines have now been in regular service for several months, and work usually with a force of from 40 to 45 horse-power.

It has been hitherto admitted, that the double cylinder machines expended less steam and fuel than those with but one cylinder. The preceding experiments show that when well constructed, the expenditure is the same in both systems. If it be true, theoretically, that the double cylinder machines work more regularly, it is now certain, that practically, the one-cylinder machines of M. Farcot work with a perfect regularity. Horizontal (oscillating?) engines, for instance, drive spinning machinery, and paper works more regularly than the hydraulic motors which they replace, and actually leave nothing to be desired. Their price, for equal force, is less than that of fixed machines, and their velocity is in better adjustment to that of the shafts which they drive.

Our readers will observe the low rate of consumption in these two machines; it is much less than that required for the best engines turning an axis, hitherto known. The arts have therefore realized, in this respect, an immense progress of 2 or even 3 kilogrammes $(4\frac{1}{2} \text{ to } 6\frac{1}{2} \text{ lbs.})$ per horse-power per hour. This advance is especially due to the Society for the Encouragement of National Industry, for they have always excited, proved, sanctioned, and recompensed it .- " Cosmos ;" translated for the Journal of the Franklin Iustitute.

The above, we infer, relates simply to the connecting rod of one piston driving a single shaft, and the connecting rods of two pistons, also driving a single shaft. In theory there can be no difference, and we do not see how in practice any could be expected. We should like to see the results of experiments on the fuel used by engines with one cylinder exclusively, and one with two cylinders, a high pressure and an expanding one-the latter taking the steam from the former; such a set of experiments would be valuable. A saving of fuel has been claimed for such engines, but we like the single cylinder ones the best, cutting off at an early part of the stroke ; they are more simple, compact, and less expensive.



TO COBRESPONDENTS.

C. E., of Pa.-Your plan.in some of its parts, is patent able, and the patent would have to be on the peculiarly constructed truck for the object specified. The evil to be remedied is one we have often spoken of; but other plans than the one you have proposed, may also be substitu ted.

H. M. P., of Mass.-Your idea is that a certain an of heat will increase the pressure of a certain amount of air in a cylinder, and that if three times the quantity of air is packed in the vessel, the same amount of hear will increase its pressure three-fold-that is, perpetual motion. We have no wish to examine this at any great er length.

S. G. W., of Mich.-The best advice we can give you with respect to your spiles, is to dry them by steam, high pressure, and then burn them outside, so as to char them one-eighth of an inch deep, then drive them in a if you had apparatus to impregnate them with a solution of the sulphate of copper and alum, we would recommend you to do so.

J. E. B., of Conn.-In your letter on governors, the part of it which says that centrifugal force and gravity have nothing to do with the question, is liable to be mistaken, for although the action is dependent on incre ments of speed, the governor is employed for the very purpose of regulating the speed. The rest of your let ter is very good except that which relates to T., he is a sincere honest man.

A. B. B., of N. Y .- You have not told us the depth of your wheel buckets. But your wheel of 40 feet diameter, by using 13 feet of water per second, will exert nearly 40 horse power, and as your pond contains 20,000,000 cubic feet of water, it will run the wheel nearly 406 hours the power of the water is as the hight of the fall and the quantity that falls in a given time.

S. M. E. of Ohio-We cannot furnish you with the back numbers. Write to Stillman, Allen & Co., of the Novelty Works, this city, and give a full description of what you want: those engaged in the manufacture of the appara tus can give you the most minute information on the subject.

G. A. R. & Co., of N. H.-Have you any fire bridges under your boiler, or do you simply use straight flues It is no easy matter to get rid of sparks or smoke; if you get rid of the former you are sure to get rid of the latter You should at leasthave a very long furnace, and feed close to the door, then push back the red embers, as you feed in, by this plan the smoke and sparks would pass over the face of a red fire and be consumed. Make the flue to dip down at the back of the fire, if possible, so as to bring the sparks down on the red embers. You might use a copper gauze screen at the neck of your chimney. to catch the sparks.

E. W., of N. Y .- We have never known spiral springs used to strain muley saws, we cannot recommend you to try them; the speed of the saw usually varies from 200 to 300; 90 to 100 does very well for your engine; use a belt; a 20 feet flue boiler should be sufficient, with a cylinder 10 inch bore and 2 feet stroke; the proportions of cylinder may vary according to the fancy of the engineer. Old boilers, if clean and tight, will generate steam as rapidly as new, the varieties of iron affect the strength

of the boiler only. J. B. R., of N. Y.—The using heat over again is as great an absurdity as the attempt to create a perpetual mo-tion; Ericsson himself has abandoned it,—your ideas are impracticable.

F.B., of N.Y .- Yourplans for the propulsion of ves sels have both been tried long ago and abandoned.

N. Y., of Ohio.—Your plan, although a good one, per-haps does not fulfill the requirements of the committee as they call for an invention to prevent the changing the e of the bank as well as the denomination of the bill.

H. H., of Mass.-We are aware that gate saws hav been run with a belt, but we are stillinclined to prefer the crank; a balance crank should of course be used in allcases

A. P. C., of N. Y .- We have recently taken a patentin England for a propeller wheel, which embraces your idea identically.

H.S. W., of Ohio-Your Letters Patent have been received.

W. J. F. L., of Pa.-Wethink your plan for a Tuyere Iron is new and patentable. A circular, giving infor mation as to the size of models required by the Patent Office, and other hints concerning applications, has been sent you. The engravings of your Iron Punch are nearly ready for publication. J. L. of N. C.-For details of such machiney as you

may wish to purchase, we would refer you to Joseph E. Holmes, at the Crystal Palace. For a consideration he will attend to your enquiries, and we can recommend him as a very reliable man and a good mechanic.

G. T. P., of N. Y.-The manner you describe for ring-ing a bell at railroad crossings, is different from anything we have before seen, but we do not think that rail road companies would adoptit at their own expense.

R. S. Blount, of Galveston, Texas, wishes to procure a corn dryer capable of drying 100 bushels per day. We presume some of our readers can furnish him with an apparatus of this kind

0. S., of Pa.-Considerable call is made on us for sash door and blind machinery, but we are not acquainted with a single maker in the business,—can't give any information.

A. H., of N. Y.-We are gratified with the very high

opinion you have expressed in regard to the Scientific American, and also of our Patent Agency. It has been our endeavor at all times to publish a reliablejournal in every respect, and also to conduct an agency for securing patents governed by the strictest sense of honor. J. H. H., of ______You can purchase a hand printing press of Messrs. Hoe & Co., of this city ; we don't know the price

R. F., of Tenn.-We published an engraving and description of Barker's Pump in Vol.7; by referring to it

you willfind our remarks accompanying the engraving. J. M. K., of Mass.—The "Cloud Engine" is operated by a mixture of steam and hot.air or carbonic acid gas. We cannot describe its construction as it is very complicated.

Money received on account of Patent Office business for the week ending Saturday, March 11 :--A. J., of Ind., \$25; J. S. S., of Md., \$25; O. B., of Ind.

\$13; U.B. V., of Pa., \$30; K. & B., of N. Y., \$30; J. G., Senr., of Ind., \$30; C. H. P., of N. Y., \$275; A. A. S., of N.Y., \$25; T.F.C., of Vt., \$30; J.W., of Mass., \$25; J. C., of N. Y., \$300; T. H. P., of Me., \$30.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, March 11 :-A. J., of Ind.: A. H., of O.: O. B., of Ind.: J.S.S., of

Md.; J. C., of N. Y.; D. D., of Pa.: A. A.S., of N. Y.; J. W., of Mass.; B. S. W., of R. I.



oiumns at any price. All advertisements must be paid for before insert ing.

American and Foreign Patent Agency.

Agency. MPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chem-ical inventions, officr their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are heid with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express, or any other convenient medium. They should not be over 1 foot square in size, if possible. Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequal-led. This branch of our Jusiness receives the especial attention of one of the members of the firm, who is pre-pared to advise with inventors and manufacturers at all times, relating to Foreign Patents. MUNN & CO., Scientific American Office, 128 Fulton street, New York.

EUROPEAN PATENTS.—MESSRS. MUNN & CO. In foreign countries, and are prepared to secure patents in all nations where Patent Laws exist. We have our own special agents in the chief European cities; this en-ables us to communicate directly with Patent Depart-ments, and to save much time and expense to applicants.

FOR SALE—642 acres Heavy Timbered Land, situ-ated one mile from Spruce Grove, Pa, and two miles from the Lackawanna and Western R. R. now be-ing bullt: there is on the premises two dwellings, a bed-stead factory, and machinery for manufacturing bed-steads: also a veneer saw, saw mill, with a 20 feet over-shot wheel; also four other water powers on the proper-ty. Must be sold by the first of April to close a partner-ship concern. For particulars address YOTHERS & HOUCK, Spruce Grove, Monroe Co., Pa. 1*

W ADUGHT IRON DIRECT FROM THE Ore —The owners of James Renton's Patent are now prepared to sell rights for this most valuable invention. Apply to JAMES RENTON, Cleveland, Ohio, or to A. H. BROWN, 107 Market st., Newark, N. J. 27 10*

CREW CUTTING MACHINES. with P. W. Gates' Patent Dies—The subscribers keep constant-ly on hand three sizes of the above-named machines, to wit—No. Imachine, 10 sets dies and taps from one-half to two inches, 4350 : No. 3, 6 sets dies and taps, three-eighths to one inch, \$150. Cash on delivery at shop. P. W. GATES & CO. Chicago, III. 27 13

IDENTIFY and SET UP: The set of the set of

FREDERIC COOK & CO. F. COOK, H. McCLELLAND. 27tf

DIANOFORTE MANUFACTURERS—Are invi-ted to examine the new and various patterns of carv-ed legs now in store, also glue warranted to stand in all climates, and therefore particularly adapted to Piano-forte work: "Excelsior" Sand Paper, Pumice Stone, ground and in lump, Rotton Stone, &c. &c. WM. B. PARSON S& CO., 290 Pearl street, (near Beckman) New York. 22 *

UNITED STATES PATENT OFFICE. Washington, Feb. 16, 1854.

Washington, Feb. 16, 1854. ON THE PETITION of Samuel F. B. Morse, of Poughkeepsie, New York, praying for the extension of a patent granted to him on the 20th of June, 1840, for an improvement in the mode of communicating informa-tion by signals, by the application of said patent, which takes place on the 20th day of June, 1854-It is ordered that the said petition be heard at the Patent Office, on Monday, 22nd day of May next, at 12 o'clock, M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted. Persons opposing the extension are required to file in

Schw cause, if any they have, why said petition, ought not to be granited. Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hear-ing. All testimony filed by either party, to be used at the said hearing, must be taken and transmitted in ac-cordance with the rules of the office, which will be fur-nished on application. The testimony in the case will be closed on the 12th of May: depositions, and other papers relied upon as tes-timony must be filed in the office on or before the morn-ing of the 18th May: the arguments, if any, within ten days thereafter. Ordered, also, that this notice be published in the Union, Intelligencer and Evening Star, Washington, D. C.: Pensylvanian, Philadelphia, Pa.; Scientific Ameri-can, New York; and Inquirer, Cincinnati, Ohio, once a week for three successive weeks previous to the 22d of April next, the day of hearing. Charles MASON, S.-Editors of the above papers will please copy, and send their bills to the Patent Office, with a paper containing this notice. 26 St

UNITED STATES PATENT OFFICE. Washington, February 13, 1854 ON THE PETITION of Samuel Blachford, admin-istrator of Orlando Jones desagand at the N THE PETITION of Samuel Blatchford, admin-istrator of Orlando Jones, deceased, of Auburn, N. Y. praying for the extension of a patent granted to the said Orlando Jones, on the 30th day of April, 1840, for an improvement in the manufacture of Starch, for seven years from the expiration of said patent, which takes place on the 30th day of April, eighteen hundred and fity-four-It is ordered that the said petition be heard at the Pa-tent Office on Monday, the 34th d y of April next, at 12 o'clock, M.; and all persons ar notified to appear and show cause, if any they have, why said petition ought not be granted.

12 ocilocs, M.; and an persons ar notified to appear and show cause, if any they have, why said petition ought not be granted. Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application. Ordered, also, that this notice be published in the Union, Intelligencer, and Evening Star, Washington, D. C.; Pennsylvanian, Philadelphia, Pa.; Scientific Amer-juer, Cincinnati, Ohio, once a week for three succes-sive weeks previous to the 24th day of April next, the day of hearing. CHARLES MASON.

uay of hearing. CHARLES MASON, Commissioner of Patents. P. S.—Editors of the above papers will please copy an send their bills to the Patent Office, with a paper con taining this notice. 25 3

THE HAND BOOK FOR THE ARTISAN, ME-CHANIC AND ENGINEER-By the well-known Mechanical author. OLIVER BYRNE, is this day pub-lished by T. K. Collins, Jr., No. 8 North Sixth Street. Philadelphia, Pa. 1t will maintain its place among among the other numerous and justly Valued works of this author. The work contains the arts of Polishing, Lackering, Grinding, Japanning, Maining, and Burnish-ing, as well as the arts of perfecting engine works and mechanical designs: the ornamen ting of wood, stone, marble, glass, diamonds, iron, steel, and works in all sorts of metals and alloys, and the various abrasive processes that effect what cannot be done by cutting tools. To which is added a dictionary of apparatus, ma-erials, and processes employed in the mechanical and useful arts, for Grinding, Polishing, and Orna menting This work contains 482 pages Sto., eleven large plates, and 185 wood engravings. Price \$5. It will be sent by mail free of postage on receipt of \$5. 255

BAKER'S IMPROVED BOILER FURNACE-BARGE'S INFROVED BUILDS FUELD AUDITAL FUELDAR UNDER Stationary, Marine, or Locomotive Furnaces on this plan, and also for the rights for towns, counties, or States: certificates can be shown of furnaces in use for stationary, marine, and locomotive furnaces, with sa-ving from 30 to 50 per cent, in fuel. J. AMORY, 25ti General Agent, 28 Statest, Boston, Mass.

J A. FAY & CO., Worcester, Mass., Builders of Daniel's Planers, with improvements, and Match-ing Machines with carriage, to joint and match parallel or taner.

NORCROSS' ROT'ARY PLANING MACHINE It has been affirmed by a decision of the Supreme Courtof the U.S. that the Norcross Patent does not in-fringe the Woodworth machine. Having obtained the above decision in my favor, I now offer to the public my machines and the right to use them. And I have no hesitation in saying that they are much superior to any other planing machine in use. I obtained medals at the Fair in Boston, and at the American Institute in New York, for the best planing in competition with the best Woodworth machines. And now that the question of infringement is settled by the highest authority, the public can have them at a fair price. They are not only the best machines ever invelted, but the safest-the life of the operator is not endangered as with other for the right to use them. N. G. NORCROSS. Lowell, Mass., Feb,111th, 1854. 24 6* TORCROSS' ROTARY PLANING MACHINE

Lowell, Mass., Feb. 11th, 1854.

GREAT IMPROVEMENT IN STEAMENGINES —Tremper's Patent Spherical Governor & Fuel Eco-nomiser. This Regulator and Economiser will do more work with a given amount of steam than other iknown mode without expensive cut-offs expansion valves or other complicated fixtures, no change of motion to in-terfere with the most delicate work in any case, and be-ing both a regulator and steam economiser at a nomi-nal expense : warranted to supersede by far all others, or the money returned. JOHN TREMPER. 235* Highland Iron Works, Newburgh, N. Y.

A TKINS' SELF-RAKING REAPER.-40 of these machines were used the last harvest in grass of

A machines were used the last harvest in grass or grain or both, with almost uniformly good success, in nine different States and Canada. Twenty-six premiums, in-cluding two at the Crystal Palace, (silver and bronze

S5000 REWARD-For an Invention to Pre-twint the Alteration of Bank Notes. To Openists and others. In order to prevent the loss and annoyance occasioned by the ALTERATION of Bank Notes either by changing the name of the Bank, or the denom-ination of the Bill, as practiced by counterfeiters, and to procure an effectual barrier to such practices, by en-couraging the invention of materials, such as ink and paper, of a nature to afford in either or in any combina-tion of them, the desired protection-the Executive Committee of the Association of Banks for the Suppres-sion of Counterfeiting, will pay the sum of Five Hun-dred Dollars to any person who shall invent the best mode, in the opinion of the Committee, of accomplish-ing the object named. All plans to be submitted to the undersigned on or before the 25th day of March next, and to be accompanied with such explanations of the materials and processes as the party applying may be willing to disclose. Each applicant to lodge with the reasurer of the Association, Henry M. Hobrook, Esq., for the term of three menths, the sum of one hundred dollars, which shall be paid to any person who shall, du-ring that time, alter, by removing and printing anew, any material portion of a bill or note prepared in accor-dance with the plan submitted, in such a manner that the alteration would, in the judgment of the Committee, be likely to pass unsuspected. And if, at the end of said three months, no one has been able to effect such altera-tion, and the committee, are satisfied that the materials proposed will stand all the' tests which the present nowledge of chemistry affords, then the hundred dol-ars will be returned, and the reward paid over to the uccessful applicant, and the bundred dollars deposited by each of the other applicants to be returned to them respectively. Per order of the Executive Committee, J. M GRDON, Secretary. Columbian Bank, Boston, Máss., Jan 24, 1854. 227

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NEW HAVEN MANUFACTURING COMPANY NEW HAVEN MANUFACTURING COMPANY -New Haven, Conn., (successors to Scranton & Farshley) have on hand Power Planers, to plane from 3 to 12 feet; slide lathes from 6 to 18 feet long; 3 sizes of hand lathes, with and without shears; and counter shafts: universal chucks; drill presses, index plates, bot cutters, and slide resis; The N. H. M. Company also have the right for Harrison's patent Flour and Grist Mill for the term of five years, and are prepared to furnish thesesuperior mills at short notice. They are unequalled by any other mill, and will grind from 20 to 30 bushels per hour, and will run without heating, be-ing self-cooling. They weigh about 1400 lis, are of the best French burr stone, 30 inches in diameter; are snugly packed in a cast-iron frame, price of mill \$200, packing \$5. For cuts, prices, and further particulars apply post-padi, as above, or to S. C. HILLS, agent N. H. M. Co., 12 Platt st., N. Y.

MERICAN RAILROAD JOURNAL—This Jour-nal, the oldest in the world devoted to the Rail-road interest, will hereafter centain, in addition to its usual contents, a full and comprehensive department of Railway and Mechanical Engineer and mechanic.— Im provements in Kailways, Railway Equipments, and especially in Locomotives, will be duy described and il-ustrated. Inventors and improvers will find the Journal the best advertising medium, as it is taken by nearly all Railroad Companies and Engineers in the country. Ful-lished every Saturday at No. 95 pruces to by JOINN H. SCHULTZ & Co., at \$5 a year in advance. 235

PORTABLE STEAM ENGINES—GEORGE VAIL & CO., Speedwell Iron Works, Morristown, N. J., LOGAN VAIL & CO., No. 9 Gold st, N. Y., are prepared to turnish Portable Steam Engine from four to eight horse power, with locomotive boilers. These engines are recommended for their simplicity, durability, and economy, being made from the best materials and de-signed for practical use. They are placed on wheels con-venient to be moved from place to place, and are ship-ped in working order: for plantation use, machinist, or others wanting small power, these engines will be found superfor to any others in use. A Silver Medal was awarded at the late Fair of the Maryland State Fair, held at Baltimore in October last. Persons writing us by mail will be particular to give their address in full.

JOHN PARSHLEY, No. 5 and 7 Howard st., New Haven, Ct., manufacturer of Machinists' Tools, and Steam Engines, has now finishing of 35 Engine Lathes, 6 feet shears, 4 feet between centers, 15 inches swing, and weighs about 1100 lbs. These Lathes have back and sorew gear, jib rest, with sorew feed, and the rest is so arranged that the tool can be adjusted to any point the work may require, without unfastening the tool, hence they possess all the good qualities of the jib and the weight lathe; they are of the best workman-ship. Price of Lathe with count shaft and pulleys, \$155 cash. Cuts, with full description of the lathe, can be had by addressing as above, post-paid. Also four 30 horse power vertical Steam Engines with two cylinders. For particulars address as above. 19tf

B. HUTCHINSON'S PATENT STAVE Cut-dike to thick and thin staves, for barrels, hogsheads, &c.; also his Head Cutting and Turning, and Stave Joint-ing and Crozing Machines. This machinery reduces the expense of manufacturing at least fifty per cent. For machines or territorial rights, apply to C. B. HUTCH-INSON & CO., Syracuse, N. Y.

Refine ERING.—The undersigned is prepared to furnish specifications, estimates, plans in general or detail of steamships, steamboats, propellers, high and low pressure engines, boilers and machinery of every de-scription. Broker in steam vessels, machinery, boilers, cc. General Agent for Ashcrott's Steam and Vacuum Gauges, Allen & Noyes' Metallic, Self-adjusting Conical Packing, Faber's Water Gauge, Sewell's Salinometers, Dudgeon's Hydraulic Lifting Press, Koebling's Patent Wire Rope for hoisting and steering purposes, etc., etc. CHARLES W. COPELAND, 20 tf Consulting Engineer, 64 Broadway.

DLANING: TONGUING. AND GROOVING — BEARDSLEE'S PATENT.—Practical operation of these Machines throughout every portion of the United States, in working all kinds of wood, has proved them to be superior to any and all others. The work they pro-duce cannot be equalled by the hand plane. They work from 100 to 200 feet, lin cal measure, per minute. One machine has planed over twenty millions of feet during the last two years, another more than twelve millions of of feet Spruce flooring in ten months... Working models can be seen at the Grystal Palace, where further informa-tion can be obtained, or of the patentee at Albany, N. Y 1 tf GEO. W. BEARDSLEE.

(iii) usesseemen a demoted to the issuel at the de	PIG IRON —The subscriber has always on handfa stock lot the best brands of American and Scotch Pig Iron, for sale at the lowest market price. G. O. RO- BERTSON, 135 Water st, cor. Pine, N. Y. 13 14eow	B. ELY, Counsellor at Law, 52 Washington street, A Boston, will give particular attention to Patent Cases. Refers to Messrs Munn & Co., Scientific American. 27 1y*	VORKIS WORKS, Norristown, Pa. The subsorbers build and send to any part of the United States, Pumping, Hoisting, Stamping, and Portable Engines, and Mining Machinery of every description. 41 ly.* THOMAS, CORSON & WEST.
J. M. R., of Mass.—No letter sent to this office will re- ceive attention unless the writer's name is furnished.— Your letter we have not preserved. F. B. A., of Ill.—Your bullet machine appears to be	ers. &c., they can be used with wood, bituminous, or hard coal; a 212 horse engine can be seen in store, it occupies a space 5 feet by 3 feet, weighs 1500 lbs. price \$240; other sizes in proportion. S. C. HULLS.	is a rare opportunity for a safe and prolitable invest- ment in a machine without a rival, for the purpose to	kc. Our illustrated and priced catalogue are furnish. ed on application, and will be sent by mail free of charge. 10tf
E. J. L., of Va.—There is not, in our opinion, any pa- tentable novelty in your described improvement in Corn Shellers; it does not, in our judgment, involve an in- vention in the sense in which it is understood.	is now prepared to supply excellent Portable En-	best ever offered to the public. The undersigned is now	1. Utgets in mathematical and poter instantiations. No. 48 Chesnut st., Philadelphia, Paat the old stand established in 1796 by John McAllister, Senr. Mathema- tical instruments separate and in cases, Tape Mea- sures, Spectacles, Spy Glasses, Microscopes, Thermome- ters, Salometers, Hydrometers, Magic Lanterns, &c.,
H. B., of IndWe do not discover any patentable fea- ture in your pump; neither can we discover that it con- tains any advantage not already possessed by the ordi- nary double action pumps.	D tent Agents, 74 Wall st, are prepared to aid Paten- tees, in introducing their inventions into use, or in the sale of rights or prosecution of violators. Address as above, post-paid.	widely scattered. Descriptive circulars with cuts, and giving impartially the difficulties as well as success of the reaper, mailed to post-paid applications. J. S. WRIGHT. 24 4* "Prairie Farmer" Warehouse, Ohicago, Ill.	Leather Belting. P. Å. LEONARD. Itf MCALLISTER & BROTHER Opticians and dealers in mathematical and optical instruments,
the 25th inst. We have furnished all the information we possess upon the subject. B.N. C., of N. Y.—A caveat does not secure an inven- tion from infringement; it affords the caveator a right to receive a notice of any interfering application for a patent made within one year after the caveatis filed.	CLINTON FOUNDBLY-502 and 504 Water street, N. Y. A large and valuable collection of pultey and machinery Patterns: also loam and dry sand Gastings, such as Printing and Steam Oylinders, Sugar Pans, Ket- tles, Vats, Ourbs, Rollers, Pipes, &c. A general assort ment of Pulleys always on hand. 266* REANEY & McKINLEY, TDARSTOW & WOODMAN, Attorneys and Pa-	Mr. Joseph Hall, Rochester, N. Y., will also build a few. Early orders necessary to insure a reaper. Price at Ohicago \$175-\$75 Cash with order, note for \$50, payable when reaper works successfully, and anoth- er for \$50, payable is becember next with interest. Or \$160 cash in advance. Warranted to be a good Self Ra- king Reaper. Agents properly recommended wanted throughout the country. Experienced agents prefer- red. It is important this year to have the machines	son Machine Works, Hudsón, N. Y. 15 6m ECONARD'S MACHINERY DEPOT , 109, Pearl Astrophysics State S
A. S. L., of Pa.— We do not know the name of the in- ventor of the ear instrument published in our paper of		medals,) were awarded it at the autumn exhibitions. I am building only 300, which are being rapidly ordered.	NINING MACHINERY-Of most approved con- struction, furnished by FRED'K COOK & CO, Hud

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Museum. Scientific

Photographs on Steel Plates.

The following are some statements which were made at a meeting of the Academy of Sciences, in Paris, on the processes of Mr. Talbot, and M. Niepce de St. Victor, respecting the invention of photographic images on steel plates :--- " The processes of these chemists are different. Mr. Talbot uses, for the substance impressible to light, a mixture of gelatine and bichromate of potash, which is modified and browned on the immediate contact of light, and only where the light acts, whilst the part cov ered by the object to be copied remains untouched, and may always be removed by water. M. Niepce has aimed to perfect the process which his uncle, the inventor of heliography, described in the year 1827. The sensitive substance is a solution of bitumen in essence of lavender, applied in a layer; this varnish changes its properties while under the action of light. The parts exposed to the sun become insoluble in a mixture of essence of lavender and oil of petroleum, so that they may be easily separated from the soluble part not impressed, which represents the image to be reproduced. The liquid employed by Mr. Talbot for biting in on steel, after his design, is bichloride of platinum, and that of M. Niepce, a mixture made of one part of nitric acid, eight parts of distilled water, and two of alcohol."

Lithographic Photography.

In a recent sitting of the "Societe d' Encouragement pour'l Industrie Nationale," the process of reproducing photographs by means of lithographs was thus described : An ordinary lithographic stone is taken, and a solution of pitch is placed on it. A negative photographic proof is then put on it and is pressed upon the stone for a period which may vary from ten minutes to four or five hours. The stone is then washed with pure ether. The figure is found properly marked with its lights and shades, and it may be inked and printed from as an ordinary lithograph.-[Exchange.

[This account is very unsatisfactory; as it does not describe the mode of placing the photographic image on the stone.

Price of Scents.

Piesse, in his annals of chemistry, says :-" The wealth of England is aptly illustrated by showing what Britannia spends, and the duty she pays to the Exchequer, for the mere pleasure of perfuming her handkerchief. Asflowers, for the sake of their perfumes, are on the continent principally cultivated for trade purposes, the odors derived from them, when imported into this country, in the form of essential oils, are taxed with a small duty of 1s. per pound, and is found to yield a revenue of just £12,000 per annum. The dufy upon Eau-de-Cologne, imported in the year 1852, was, in round numbers, £10,000, being 1s. per bottle upon 200,-000 flagons imported. The duty upon the spirits used in the manufacture of perfumery at home, is at least £20,000, making a total £42,000 per annum to the revenue, independent of the tax upon snuff, which some of the ancient Britons indulge their noses with. If £42,000 represents the small tax upon perfuming substances for one year, ten times that amount is the

Scientific American.

Improvement in Exhausting Steam.

The annexed engravings are views of an excellent improvement on steam ports in valve exhaust steam from one end of the cylinder seats and slide valves for steam engines of every description, for which a patent was granted at the other, all of which is accomplished by to Stephen D. Wilson, of Reading, Pa., on the the same motion with a single slide valve; this 10th of last January (1854.)

Fig. 1 is a top surface view of the valve; fig. and increases the power and speed of the en 2 is a transverse section of the valve and valve gine. The steam chest is constructed in any seat; and figure 3 is a surface view of the valve of the known forms, and is represented here by seat. The same letters refer to like parts. The D, in figs. 2 and 3. On it is placed a slide valve, nature of the invention consists in the enlarge- A. fig. 1. No change is made in the size or ment and peculiar construction of the steam form of the steam port, G, in common use,

Figure 1.



is altered, so as to adapt it to the form of the in the shortest possible time, so as to relieve ' or angular form, such as B in fig. 3, as narrow

leading from the cylinder to the seat of the the piston of the engine from all resistance to steam chest until it reaches the seat. The port, the action of the inlet steam. On the face of F, is there enlarged in the seat until it is equal in | the seat, D, fig. 3, that portion of the opening capacity to twice the steam port, G. It is con- of the steam port, E, used for induction, is tinued of this size to the surface of the seat of shaped as long, in the direction of the stroke the steam chest, B and E, in figs. 2 and 3. The of the engine, as the steam chest will admit of, valve, A, in fig. 1, is made in any of the known and as narrow as possible to admit sufficient forms, and it is moved by the common eccen- steam to work the engine at its full power. The tric motion, except that the shape of the valve aperture, E, is made either straight, angular, or semicircular, as may be preferred. The other opening in the seat. The valve motion is then half, B, on the face of the seat, D, fig. 3, is arranged, so that it will open only one half the shaped as long as the steam chest will admit of port, F, for induction E, and the other half for at right angles with the length of the cylinder, eduction, B. The object is to exhaust the steam or it may be varied by giving it a semicircular

in adapting the valve to these ports, so as to

with much greater rapidity than it is admitted

diminishes the resistance of the exhaust steam,

Figure 2.



as possible, just widening it enough to make of the cylinder, thereby dispensing with the the eduction opening, B, equal in capacity to necessity of giving lead to the exhaust, thus the induction opening, E. saving the full force of the steam to the finish-

By this arrangement of steam ports, the in- ing of the stroke, securing the greater benefits ventor is thereby enabled to exhaust the of expansion, and an increase of speed and steam from the cylinder, with an increased power. speed, just in the ratio the opening B, bears to

The exhaust port, C, figs. 2 and 3, is made the opening E, in a line parallel with the length in the common form, sufficiently large to con-

Figure 3.



very lowest estimate which can be put upon the duct off the steam as fast as it escapes through, without impairing its advantages. articles as their average retail cost. By these the eduction port, B, and it is of a shape to This improvement deserves general attention. calculations (and they are quite within the suit the other portions of the seat and the valve It comes to us, also, recommended by some of MACHINERY, TOOLS, &c. &c.

ports on the valve seats of steam engines, and | by corrosion after the soda had been used for some time. From his investigations all soda contains more or less cyanide of sodium; he is of the opinion that the cyanid is the cause of this corrosion.

> "Dr. R. Bottger cautions against the use of soda for the above purpose, saying that according to repeated tests, all soda, even from the most celebrated manufactories, contains cyanid of sodium."-[From Dr. R. Bottger's Polytech. Notezblatt.

The "Baltimore Patriot" says the amount of guano which will be imported into that city the present year, will probably reach 60,000 tons, costing three millions of dollars.

LITEBARY NOTICES.

LITERARY NOTICES. THE BRITISH QUARTERLIES AND BLACKWOOD'S MAGAZINE. —Leonard Scott & Co., 54 Gold street, this city, republish the London, Edinburgh, North Settiss, and Westminster Reviews, and Blackwood's Edinburgh Magazine. The fame of Blackwood's Edinburgh Magazine. The cauley speak through the Kinhurgh, and the Reviews are all distinguished for ability and originality. Carly lean at the Scotch Church, through the North British. Alison often speaks through Blackwood, and Bulwer is a regular contributor. Science, art, politic, his ory, eve-rything of interest, in fact, is discussed in their columns with ability. These works will be universally in teresting during the presenty ear, owing to the excited state of European politics. Early sheets from the British pub-lishers are furnished, so that the Reprints are placed in the hands of subscribers as soon as they can be pro-vided with foreign copies. They are furnished at very low prices:—for one of the four Reviews, ber an-num, 48: for any two of the four Reviews, 55: for any three of the four Reviews, 47; for Blackwood and three Reviews, 49; for Blackwood and the four Re-views, 80. These Reviews ends the Stritish pub-liakers are fornished, but at the caviliers, of Britain Blackwood; is Tory, but always rich and racy. Prof. Ayton, author of the "Lays of the Caviliers," is its Prof. Fraser, The old Edinburgh Review has done more two efforming the laws of Eritain than all the speeches made in Parliament. Those who would be in-telligent in foreign literature and politics must read these periodicals.

these periodicals. The Chemistray OF Common Life -D. Appleton & Co., of this city, are now publishing a series of pamphlets with the stille, the author of which is Prof. Johnston, who is also author of a number of excellent wirks of Agri-cultural Chemistry. The first of the series which is now before us contains two of the English tracts. treating of "The Air we Breathe," "The Water we Dinks." "The Soli we Cultivate," and "The Plants we Area." The price of each is only 25 cents. We are glad Messrs. Ap-pleton & Co. are publishing these useful tracts : they will do a great amount of good. and deserve, and will no doubt receive a very extensive circulation.

AMERICAN AGRICULTURIST—Published by Allen & Co., No. 189 Water street, New York, is a valuable and prac-tical weekly, designed to improve the Farmer, the Flant-er, and the Gardener. It is one of the very best jour-nals of the kind now published. The Editor shows his good breeding by giving credit to the "Scientific Amer-ican" for notices of new inventions, and also for such of the claims of patents as are introduced into the cal-umns of his paper. We would remind our cotemporaries who copy the claims from our columns without credit, that we pay a large sum of money every year for an of-ficial report of them.



It is printed with new type on beautiful paper, and be

mark), we discover that Britannia spends £420, 000, (about \$2,000,000 a year in perfumery."

Increase in the Use of Gutta Percha.

In the year 1844, two hundred pounds of a new species of gum were shipped from Singapore, India. It was considered doubtful at the time whether the gum could ever be rendered sufficiently useful to mankind to become an article of commerce. The experiment, however, succeeded. More than twenty thousand the brains of several persons who had for many pounds were exported in the succeeding year. The fame of the article spread North, South, East and West; men, women and children were has increased in magnitude and extent with every successive vear.

and its action. If deemed expedient, however, the best practical engineers in our country. ing adapted to binding, the subscriber is possessed, at the end of the year. of a LARGE VOLUME of 416 PAGES in the working of an engine, any amount of For further particulars respecting it, address illustrated with upwards of 500 MECH NIC LENGRAlead and lap may also be given to this valve, Joel B. Warner, Esq., Reading, Pa. VINGS.

The Scientific American is the Repertory of Patent In-Softening of the Brain. latter period of life. He believes, therefore, ventions: a volume, each complete in itself, forms an Enthat to produce a softened condition, some ad cyclopedia of the useful and entertaining. The Patent The cases of softening of the brain, which Claims alone are worth ten times the subscription price ditional influence beyond mere over-exertion is have of late years become so frequent, render to every inventor. required. that disease one of important and interesting TERMS! TERMS!! TERMS!!! medical study. Dr. Albers, a European physi-One Copy, for One Year Effects of Soda in Steam Boilers. Six Months \$1 cian, of celebrity, states that he has dissected Five copies, for Six Months \$4 Some time ago you published Dr. R. Fresen Ten Copies, for Six Months 28 years undergone great mental labor, and that ius' discovery of the use of carbonate of soda Ten Copies, for Twelve Months Fifteen Copies for Twelve Months \$22 in all these he found the cerebral substance unto prevent the incrustations in steam boilers Twenty Copies for Twelve Months \$28 usually firm, the gray substance as well as the in which water is used that contains sulphate Southern and Western Money taken at par for Sub scriptions, or Post Office Stamps taken at their par value employed in its collection, and the new trade convolution being remarkably developed. In of lime. Dr. Zimmer, of Frankfort, in whose Letters should be directed (post-paid) to several of these instances a settled melancholy chemical works the soda for this purpose was MUNN & CO.. had taken possession of the mind during the first used, found that his boilers were destroyed 128 Fulton street, New York.