# Scientific

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TERMS-82 a year, -81 in advance and the remain der in six months

### Another Explosion.

On the 26th ult. a steam boiler employed at the balance dock, E. R., this city, exploded and by a most merciful providence no person was killed, although the explosion was terrific, and many persons were in the neighborhood at the time. A large piece of the boiler, weighing 1,200 lbs. was thrown several hundred feet from the place of explosion. There should be Inspectors appointed for stationary engine boilers as well as for those on steamhoats. The great number of such explosions continually taking place, demand laws to prevent the murders-for we can call them nothing less-committed by reckless engineers and owners of boilers. The explosion of this boiler has been attributed to an insufficient supply of water.

STILL ANOTHER .- On the 28th ult., the boiler of the propellor Union exploded at New Castle, Md., the vessel rendered a wreck, the engineer and a fireman killed, and a number of others on board severely injured.

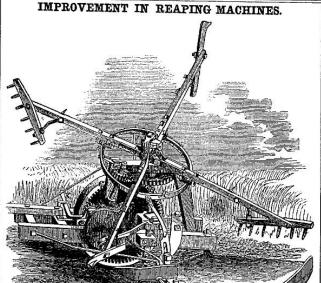
### Cattle and Whitewash.

A correspondent writing to us from Highland, Ill., states that a recipe published in our columns describing a good whitewash for fences, lasted only half a day with him. The whitewash was composed of lime and salt, and when his cattle came home, he says, " in the evening, from the prairie, they licked the fence-boards as clean as if whitewash had never been put on." This is a pretty good joke. Well, we did not give the whitewash receipe for the purpose of salting his cattle; the salt was recommended to be mixed with the lime for the purpose of keeping the latter from scaling off by dry winds. The recipe, however, must be a most excellent one, when the very cattle of the prairies are led by instinct to swallow it.

Improved Harvester.
The invention illustrated in our engraving consists chiefly of an improved raking attachment, whereby the grain, as fast as it is cut, is swept from the platform of the machine and deposited in bundles on the ground, ready for binding.

Many of the raking apparatuses heretofore brought before the public have proved too frail, complicated, or otherwise inefficient, It is believed by the inventor that the present improvement is free from all impractica-

The raking apparatus consists of four long arms, A, connected, by means of swivel joints, with the end of an upright shaft, B. Motion is given to this shaft by means of its cog wheel, C, which gears with pinion D, whose shaft has, at its lower end, another pinion, E, receiving its motion from driving pinion, F, which latter connects with the cogs on the inside of the driving wheel, G. H is a cam ring, on which the arms, A, rest as they roll, the friction rollers, I, bearing on the face of the ring. The latter is placed at an angle, and its edge is so arranged that the rakes, as they come around, sweep evenly across the top of the platform; the swivel joints of the raker arms, A, before mentioned, enable them to fol-



My war of the ring to any desired angle. Kis a clutch | It is arranged on good principles, and is not of the ring to any desired angle.

Reachine is likely to get out of order.

Shown out of gear. The cutting arrangements are much the same as in ordinary harvesters.

This raking attachment is comparatively tained. Application has been made for a simple, and looks as if it would work well. patent.

Triadelphia, Howard Co., Md., is the inventor, of whom further information may be ob-

the saws cut is peculiar, but simple, accurate, and highly convenient.

The saws, A, are hung in frames, B, the upper ends of which swing on bearings at B', which rest in the slots of the arms, C; these arms project laterally from the central cross beam, D. Beam D is swung in ropes like all marble saw frames, and power is applied to D to give it a reciprocating motion in direction of the arrows, and cause the saws to cut. The lower ends of the saw frames, B, are jointed to the saw holders, E; guide pins, F, project laterally from these holders, the pins passing through the slides, G; the pins are for the purpose of guiding and steadying the saws. Slides G move up and down in the slotted arms, H. When the position of these arms is changed, the saw holders, E, will be turned on their joints to the same angle, and the saws will cut accordingly. The arms, H H, are attached at their base to rock shafts, I, which extend across the bottom of the machine, beneath its floor; the rock shafts are moved by the hand levers, J J. When it is desired to change the angle at which the saws cut, it is only necessary, therefore, to move the hand levers J J.

The distance apart at which the saws cut is changed by moving the arms, H H; for this purpose, the base of the arms, together with the ends of the rock shafts before mentioned are attached to racks, K K; there is a pair of racks for each pair of arms, H H; if the racks are moved, the arms, H H, will be also moved; slots, L L, are made in the floor, so as to permit the movement of the arms, H H. The racks are moved by means of pinions on the shafts of the hand wheels, M M. In order to change the distance apart at which the saws cut it is only necessary to turn the hand wheels, M M.

These methods of adjusting the saw are both simple and accurate; they are also exceedingly convenient, enabling one person to tend several machines at once, without difficulty. The saws can be made to cut both on the same angle or at different angles, as desired; the various changes can be made at any moment, and even without stopping the machine

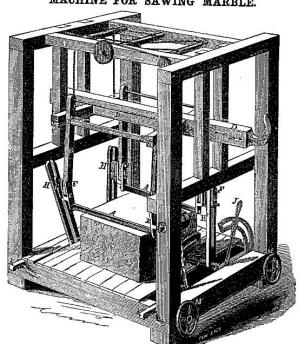
Mr. John A. Cole, Washington, D. C., is the inventor. He will be happy to give further information. Patented Dec. 4th, 1855.

### American Alaminum.

Mr. Alfred Monnier, a metallurgist of Camden, N. J., has made some valuable discoveries in improving the processes for obtaining the metal aluminum. At a recent meeting of the Franklin, Institute, Philadelphia, he exhibited large masses of chloride of aluminum large bars of sodium and a quantity of the metal aluminum, thus giving practical proof, of his ability to manufacture the last metal, and the materials immediately used to pro-

Prof. Jas. C. Booth, has written an article on the subject to the Philadelphia Ledger, in which he expresses hopes of this metal being obtained at a greatly reduced cost by Mr. Monnier's processes. At present it is very dear, being about ten dollars per ounce. Mr. Monnier has written us a letter on the subject, in which he states he has made sufficient experiments on aluminum, to assure him it can be produced at a very low price. He says it is not such a bright metal as silver, as has been generally represented, but in some respects it is superior, and will be used in preference to it, and [that it will supersede German silver, and copper, in the manufacture of articles for which those metals are now used. As the materials from which this metal is obtaine are very abundant, we hope the processes of Mr. Monnier to obtain it cheap, will prove as

MACHINE FOR SAWING MARBLE.



Marble Saw The machine illustrated by our engraving justable braces, which permit the alteration of marble into angular shapes, such as monu-

ments, but it may be used with equal advanlow the contour of the ring, H. J J are adissipation is principally intended for sawing up blocks ing having straight edges. The method of adjusting and changing the angle at which successful, as he anticipates.



[Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS Issued from the United States Patent Office FOR THE WEEK ENDING MAY 27, 1856.

HEAD BLOCKS OF SAW MILLS—Lucius B. Adams, of Smithfield, Pa.: I do not claim operating the slide by means of the ratchet and rack and pinion, for these have been treviously used.

Let a be the result of the result of the result of the result of the let of the result o

STEAM STANUS—Win Ball, of Chicopee, Mass. I claim stopping the operation of the stamps whenever the piston is allowed to descend to a certain point by the neglect to feed the material to the mortar in time, as set

forth. CAR WINDOW—James Beetle, of New Bedford, Mass.; I Calim combining with the movable window frame, A, and its socket frame or opening, B, four bolts, B F G H, and its socket frame or opening, B, round by the socket frame or opening, B, sour bolts, B F G H, and its socket frame or opening, B, made in the side of the cartiage, two second of the combining with the window frame, A, and its socket frame or opening, B, made in the side of the cartiage, two select of hunged arms. I K and L M, applied to opposite sides of the frame, and operating easentially in the manner and for the purpose specified.

PHOTOGRAPHIC PICTURES ON GLASS—Albert Bibbe, of Columbus, Ohio, and Y. Day, of Nashville, Tenn.: We claim making the border of the picture transparent, and placing the mat back of the picture as described, and for the purpose set forth.

The purpose set forth.

BRICK MACHINES—MARTIN Buck, James H. Buck, and
Francis A. Gushman, of Lebanon, N. H.: We claim
connecting the plunger, U, with the block or mold clearcr, W. by means of the rods, D" having the racks, I, on
thir lower parts, gear with part pinions, C'C, on the
shaft, B', whereby the plunger is allowed to rise more
rapidly than the mold clearer, as described.

ATTAGIMENTS FOR PLANG LEGS-Wm. Clark, of New York City: I do not claim metallic connections attached together by the key passing through morties in the tongue and jaws, as these themselves have before been used.

BREKCH-LOADING FRE-AMS-MAHAIN S. Clement, of Worcoter, Mass. I claim rubber packing, or that material which is substantially the same, in connection with breech-loading fire-arms for the purpose specified.

part of the leg of the tree being rendered unnecessary.

PORTABLE HOVESE—Balle Flizgerald, of New York

City. I claim the constructing houses of staves held together by hoops, as described.

Second, combining the staves in sogments or parts of
the periphery, some of which shall contain the doors and
windows, to facilitate the putting up and taking down.

Third, constructing the floors in segments, as shown.

Fourth, asstaling the thrust of the roof by a hoop
which also confines the staves.

which also confines the staves.

Securing Nurs or O Carriagra Alles-Kingdon Goddard, of Philadelphia, Pa.: I claim the method of securing screen winst on acles, by combining with the nut, in the manner substantially as specified, a spring friction security screen with the tension of the period, and the state of the security security and security sead of the security sead of the nut. substantially sea described, that the brake may be withdrawn from the thread of the screw by the act of putting on the series we not the security sead of the security security security search of the security security security search of the security securit

gether and operating in the manner substantially as set forth.

Second, the pseuliar construction and arrangement of the coupler, consisting essentially of the tongue, B, inche coupler, consisting essentially of the tongue, B, inche coupler, consisting essentially of the tongue, B, inche coupler, consisting in the manner substantially as set forth.

SEVING MAGNIMESS—Wim. O. Grover, of Boston-Man. I claim arranging a box or case for a sewing machine to the couple of the coup

through it.

CALIFERS—Ellict T. Miller, of Charlestown, Mass.: I
claim the calipers constructed in the manner substantially as described, and consisting essentially of the fingers,
C. plates, F, and clastic blocks, g, as set forth.

knows as the night latch.
But I claim, first, the construction and use of the key described, which spontaneously projects lender arms, F. summers, and the spontaneously projects lender arms, F. suminaneously detaching catches from the bolis.
Second, the combination of the key described, or the mechanical equivalent thereof, with the revolving cylinder, L. the check levers. N, the locking lever, F. and the pyrings, S.S., substantially as described and for the purpose set forth.

SIRING HAT BODIES—S. C. Ketchum, of Brooklyn, N. L. I claim the use of the combination of the elastic shell, b. upon the revolving drum or cylinder, C. with the viratory rubber case, L. surrounding the same, when made arranged for the purposes subtantially as set forth.

MOWING MONIFERS—WITE F. Ketchum, of Buffalo, V. V. I am aware that Horace L, Emery, of Albany, has heretolore used an adjustable arm with a wheel thereon, heretolore used an adjustable arm with a wheel thereon, and the same with a wheel thereon the same with the same and the same are and wheel, for a similar purpose, have been lar arm and wheel, for a similar purpose, have been these feel on totalism.

But I claim attaching any where between the shoes to the back part of the cutter bar they did not the back part of the cutter bar they do not same and purposes described.

OPERATION OF HER GREEN PROPERS OF THE ANALYSIS OF THE ACT OF THE A

SAFETY VALVES FOR STEAM ENGINES—A. B. Latts of Cincinnati, Ohio, I claim the mechanical means described for the purposes set forth, or any equivalent ar

the plow attachment, c, as set forth.

Governoors you Sursan Excurrer, &c.—Wm, W. H.

Mead, of Chestertown, N. Y., I claim combining the dy
governor with the throttle valve, by fitting it loosely to
the spindle, D, and driving it by friction from a wheel, F,
which is loose on the same spindle, and which derives it
motion from the said spindle through a spring, a, the said
with the throttle valve or cut-off, so that it may be caused
by the retarding or advancing effect of the movement of in
critic of the governor or fit, as the speed of the engine is
suddenly increased or diminished, to diminish or increase
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the supply of steam to the engine, successional services escribed.

Boung Huss-H. L. Mooney, and W. B. Carter, of Astoria, III.: We make no claim to the recoding of the cutter from the center of the hub during the progress of the excavation.

But we claim the construction of the tool with the excavation of hundred cutters in separate side bars, and the succession of the supplies of the succession of the s

WINDING THERAD FROM SKEIRS-Marcus Ormsbee of Boston, Mass., I claim the arrangement of the hooks a, the spools, C, and the clastic grap, B, operating in the manner substantially as set forth.

BILLIARD CUES—Conrad Leicht, of New York City I claim my mode of providing said one tops with screws and adjusting them to the cues in the manner as described

Musical Notation—Philetus Phillips, of Middletow Point, N.J.: I claim the use of a line of a distinct char-acter on which to write each elementary note, and the transpoint of such lines in the manner described, to see fect and denote the different transpositions of the seal

ALBO FOR the purpose described.

CLEANING GUTTA PERGRA—James Reynolds, of New York City: I do not confine myself to the employment of the particular machinery described.

An experiment of the particular machinery described with the blocks of the raw material into extremely thin silices or sheets, and submitting the said silices or sheets and screening operation, substantially as described.

HAND PROPELLERS—J. G. Ross, of New York City: llaim the plate and lance points, f, in connection with the propelling bucket, constructed, and operated as speci-fied.

SALE SALE OF PREFET VESTILES—Win J. Sixvenoff New York City: I do not claim the scaling of vesscale by a pre-king rin and a cap, which is held down by
atmospheric pressure.
But in combination with the mouth, a, of the ressel,
But in combination with the mouth, a, of the ressel,
constructed with a shoulder, b, at some distance from ite
shoulder, I claim the cap mg, or resting on the said
shoulder, I claim the cap mg, or resting on the said
smaller than the exterior of the ring, and with raised
guide pieces, d d, which keep it in place in the mouth
so as to cause it to get an equal width of bearing all around
the edge of the bearing part of the cap in the packing,
substantially as described.

the stage of the not prevent the necessary monodating of the capture of the cap in the packing, substantially as described.

Valve Gran von Stram Evolutza—Herman Winter, of New York City. I claim, first an executatio on the main shaft, a lever properly governed and connected there with and scrank upon a secondary shaft, the whole in combination and connected shart to each, substantially in the main stage of the stage

off may be varied at the pleasure of the attendant.

SHIPE' CAPATAR—SAMDE Glady, of SI. Louis, Mo.,
I am aware that captians have been previously constructed, for effecting the same purpose, but they have been
arranged in a complicated way, were liable to get out of
I. claim the arrangement of the ratchest and pawls and
spur wheels and prinons in captians or windlasses, so that
simply reversing the prime mover will change it from a
liable to a compound captian, without shifting any of the
the compound captian, without shifting any of the
lone may only rotate when used as a compound captian
and be self-ungearing when changed to a simple one, as
set forth.

enumerated, as others, unusured over the carrying out of the unusured converges as required for the carrying out of the unusured raine process.

Buil I claim the conversion of pig iron into steel by subjecting the same, when reduced to a granulated sate, to the combined action of caydiling agents, and the required the combined action of caydiling agents and the required set of determinate quality, and obtain it are one melting, as described.

ROTARY KNITTING MACHINES—Clark Tompkins and

AGO ANY ANYTETING MACHINES—Clark Tompkins and John Johnson, of Troy, N. Y. We do not claim any at-dohn Johnson, of Troy, N. Y. We do not claim any at-dohn Johnson and the produced and taken up.

Nor do we claim any mode of causing the tension rod more machines at the same time such fabrics are produced and taken up.

Nor do we claim any mode of causing the tension rod motion of the beam that it shall take up the fabric as the state produced.

But we claim the combination of the tension roller, A, arranged substantially in the manner described, with the arranged substantially in the manner described, with the profuse of the purpose set in the purpose and the purpose of the purpose and the purpose and the purpose of the purpose and the purpose and the purpose and the purpose are purposed.

tially as described.

GRAIM AND GRASS HARVESTERS—JRS. T. Youngt of Troy, N. Y., I do not claim separately the reciprocating frame, B., with sickle, O., attached; not of a I claim any form of vibrating cutters separately. If the reciprocating frame, B. with the straight degen acide, C., attached in combination with the square edged collectors, D. connected with the frame, B. with crame, b. and having a vibrating movement of the combination with the square edged collectors, D. connected with the frame, B. and having a vibrating movement of the combination with the square edged collectors, D. connected with the frame, B. and having a vibrating movement of the collection of

operating as shown, for the purpose specified.

REFLACEABLE AXLE BOX FOR R.R. CARS—Win. D.

Arnett, of Cincinnail, Ohio: I am aware that boxes have
been made so that the bearings and other parts can be tabear made so that the perings and other parts can be tado not claim.

But I claim the arrangement, as described, by which
the online case can be removed with the enclosed oil box
statched to the piece upon which the spring rest, by
means of the lugs, 4, and recess, 11, substantially as described.

Drawing Fluids from Bottles—J.W. Fox, of Dur-hamville, N. Y.: I am aware that the pluss of fauces have been surrounded with leather, gutta percha, and some other similar substances to pack them, therefore I also not claim, broadly, surrounding them with such sub-

do not calm, broamy autonoming mean was not and success, substantially as described, with india rubber, guita percha, leafther, or as described, with india rubber, guita percha, leafther, or as described, with india rubber, substantially as described as a mention of the bot which packs the plug, it can define the nest, tube, pipe or other article to which the fauest is applied, substantially as described.

applied, itherjanuary as described.

Suingus Machine—Henry White, of Oncida Castle, N. Y.: I claim the plates, b b, so arranged as to bring the but of the shingle into the center between the knives and hold it there while it is being shaved.

Lelaim, the spring forceps, so arranged as to selze and remove the shingle after it is shaved, substantially as de

COPPLIED FOR VEHICLES—Harvey Miner and H. M. Stowner, of the M. S. Copplied For M. S. Copplied For M. H. Saunder, of M. H. Saunder, of the M. S. Copplied For M. H. Saunder, of the M. S. Copplied When M. M. S. Copplied When M. S. Copplied M. Copplied M. Copplied M. Copplied M. Copplied M. S. Copplied M. S.

Prilies—A.B. Bichmond, of Meadville, Pennsylvania first, I claim the saws constructed as described, so that they may be adjusted at any required circle by means of the set series. I and also constructed as described, with the saw hand, fingers, slots, and set screws combined as described, or any other construction substantially the

essented, or any other construction substantially the same late one claim the saws alone, but constructed and with the aforesaid combination, as described.

Second, I claim the convinvance and construction of the platform, with the combination of gauges and set secrews, as described, for cutting the felly the proper secrews, as described, for cutting the felly the proper. Third, I do not claim the bits driven by a band alone. But I claim the combination described, by which the bits for the spokes and dowel pins are made to move towards the felly at the same time or different times, as may be desired, by means of the combination and construction described, or any other substantially the same.

specified.

We also claim the combination and arrangement of the levers, G and II, and latch, f, substantially as described, for the purpose specified.

for the purpose specified.

P.cows.—George W. Zeigler, of Tiffin City, Ohio.

aware that Harrison Norton obtained a patent date
tober thi, 1855, by which he regulated the depth
furrow by a morable plow point acting upon the
principle as shown. I do not claim, therefore, to
bean the first to invent that method of accomplishin

bject.

But I claim, simply, an improvement upon the invenfon of Norton, such as set forth, that is to say, combining
with land side and mold board, a coulter. F. jointed to the
and side, as described, and movable between land side
and side, as described, and movable between land side
and mold board, independently of the mold board and
hove.

share.

CONN SHELLERS—C. S. C. Crane, (assignor to S. M.

Thikham.) of Taunton, Mass.: I claim the shelling wheeler

C. toothed or corrugated on both sides, the pressure bars,

R. B., provided with plates, e, on their upper ends, and

the feeding device composed of the uprish, b, b, and the

properties of the property of the properties of the propertie

Signer Valves—J. F. Allen, of New York City (as-signor to N. L. Cole, of Norwich, Conn.), i do not confine myself to the particular nechanism described for slying may be done by various mechanical contrata, as this result of the confine the contrata of the contrata I claim the movable valve seat, E. arranged and oper-ating substantially as described, between the valve and the usual value seat.

aung auostanuany as described, between the "raive and the usual varies eat."

PAROR ORGARS—Thomas Sandt, of Chelsea, Mass, classingor to himself and J. P. Lindsay, of Robury, Mass, I claim arranging the pipes horizontally in compact tier, one above the other, when each succeeding tier is placed to the compact of the pipes are proposed to the pipes, all the pipes except those of the lower tier being connected with the wind chest by means of the conduction of the conduction of the pipes are proposed to the conduction of the conduc

hawing reference to a particular article as patented by me, and to extrain arrangements of parts connected therewith the particular article as the particular article as the particular article as the part of the repeat to the part of a carriage, as specified, aging in the threaded bolt, and so as to pass up through it and lis rest, a socket or passage for the reception of accrew bolt, severing not only to confine a spring or bar down upon the seat, but for the specific purpose of preventing accident in case of breakage of the intended boit at its neck, as the passage for the reached boit at its neck, as the passage of the passage for the reached boit at its neck, as the passage of the pas Planofortz Legs.—Albert Bosworth, of Westfield. Mass. (assignor to himself and T. H. Loomis.)

### Mammoth Suzar Mill.

One of the largest sugar mill engines which has ever been made in the United States has just been completed at the Novelty Iron Works, this city. The designs were furnished by the Cuban agent, Mr. Charles Edmondstone. We understand that this gentleman has for many years been employed in the manufacture of sugar machinery at the West Point Foundry, the Morgan Iron Works, and at the Novelty Iron Works. The engine is of the beam or vertical plan, and the architecture decidedly Gothic. The beam is handsomely and substantially supported by a framing of six gothic grouped columns, the tops of which agree with an angular line drawn from the center of the beam to the center of the fly wheel shaft on one side, and extending to the center of the base of the cylinder on the other side, so that on the descent of the arms of the beam the strain presses on the tops of the columns, and the pull upward of the other arm is equally felt on the three remaining columns on the other side of the center.

The three columns on each side diminish in diameter and hight as they recede from the center, the intervening spaces being filled in with gothic arches and moldings. The piston rod being guided by a Watts' parallel motion, is supported by an entablature, sprung from main columns and carried out on both sides beyond the cylinder and crank shaft, ultimately resting at each termination on two light appropriate columns, giving an open view to the engine and a full view of the motion as it forms its several angles. The valves are of the conical or puppet form, from Allen & Wells' patent, being likewise balanced valves.

The steam cylinder is 22 inches in diameter, and 5 feet stroke, intended to work up to eighty pounds pressure per square inch .-The fly wheel is 20 ft. in diameter, having a rim of 12×6, and weighing about 10 tuns, the whole being supported by a massive bed plate of 5 tuns weight. The front of the cylinder has a register and steam gauge, the former to mark the number of revolutions, the latter to indicate the working pressure. On the end of the fly wheel shaft is a pinion of 22 inches diameter, gearing into a spur wheel of 22 ft. in diameter, having 12 immense arms and segments, all made to come apart in pieces for the convenience of shipment. This wheel is supported by two massive iron stands, and its shaft couples to the top roll of the mill, which consists of three rolls, 30 inches diameter and 7 ft. long-the top one weighing 9 tuns, and the two lower 8 tuns each. The front and top rolls break the cane, which pass to the back, where they are ground. These rolls are supported on two strong and massive frames weighing 5 tuns each, which rest on a bed, weighing, including juice pan, about 4 tuns. The mill is calculated to make only 2 1-4 turns per minute, to run a stream of juice capable of making 20 hogsheads of sugar per diem.

The boiler has a diameter of 68 inches, and is 35 feet long, with five 12-inch. flues. The gothic order has been thoroughly carried out in every part of the machinery, and the finish of the wrought-iron is of the highest order. It is made on purpose to come in competition with the best machinery of England, which has for some time controlled the Cuban

[From the New York Herald.] James' New Patent Law.-A New Political Machine.

Senator James, the Chairman of the Committee on Patents, has reported to the Senate and recommended the passage by that body of an act entirely remodeling the whole system of patents in this country. We have carefully examined this new project, and find it impossible to approve even a single suggestion it contains.

It is indeed impossible that the Senaic will not regard it as an attempt to organize another spoils department at Washington, with limitless means of making money, of buying up and selling out friends; in short, another land system-another Indian Department. It is only a bill-a project-but it was heralded to the world by the most singular unanimity of endorsement by the newspaper correspondents at Washington. It was so suddenly approved, and so earnestly approved by all the news reporters-the telegraph was so liberally employed to herald and proclaim its birth, that to suggest the possibility of its not being an excellent measure was a species of heresy.

Now, the bill before us is perhaps the most cunningly devised scheme by which great power was to be concentrated in the Patent Office, and vast means of corruption secured to the Patent Commissioner, which has ever been devised in our country. It starts off in the first section by giving the Commissioner judicial functions. The second makes an inventor of a man who steals a work not discovered or published in this country. The sixth gives to patentees and assignees extension from five to twenty years, at the option of the Commissioner. By the present laws, the patentees alone have the right of extension after fourteen years to twenty-one years, on proof that the inventor has derived no ad vantage from his patent. The sixth section cuts off the inventor entirely, and confers the right of extension upon the assignce. The seventh section exempts patents from attachment for debt. This is evidently intended to cover the operations of the speculators, and even to shield them against the obligations they may have incurred to the inventor himself. The Spaniards have a maxim that it is better to be an executor than an heir; so with Mr. James, it is by far better to be an assignee than an inventor. By the ninth section the Commissioner of Patents is authorized to appoint limitless agents. The power to appoint draws with it a reasonable compensation.

Then comes the organic powers of the scheme. The eleventh section takes away appeals to the Chief Justice and the Judges of the Circuit Courts, and concentrates upon the Commissioner the final decision of all questions relating to the granting and extending of patents. It is followed in the succeeding section by an elaborate system of fees on the hearing of all questions before the Commissioner-and these may be enlarged from the sum of about thirty dollars under existing laws, to near three hundred and fifty dollars. It is easy to see that patent differences would be wonderfully multiplied under such an arrangement, and that the Commissioner would be exposed to terrible temptations to prolong disputes. The thirteenth section takes from the courts the power of determining the validity of patents, and confers it upon the Commissioner; and the eighteenth section gives to that functionary a million a year of printing patronage, which, if we consider the immense power proposed to be conferred upon him otherwise in the bill we cannot regard as too much.

Now, here is a scheme of magnificent proportions. Under it the office of Commissioner of Patents will be worth, in the hands of any first rate politician, five hundred thousand dollars a year. An honest man could not fail to get rich out of it-that is, if honesty was conventional only, and he was willing to take "all the law allows." The literal of the bill is this, that it proposes to set up a patent fraud machine, by which fortunes are to be ground out of any conceivable hight, depth, and breadth. Pass it, and Colt and Goodyear, and all the patent men at Washington-the whole "five thousand assignees"-will be at once the friends of the Commissioner. Five

thousand assignees, with millions of value ex- | been realized I believe to be established beempt from execution! They can afford to be liberal-they will be liberal. Ten to one they are liberal now even, in anticipation of the passage of Mr. James' bill.

The Committee on Patents, then, think it well enough to enlarge the number of inventors-to increase the sum total of American geniuses-by special enactments. They make a man a discoverer of everything not invented or published in this country! That is certainly an original way of rewarding meritthe most expert thief is not only protected by the law, but all the people are to be required to pay him a tax for twenty years, as a re ward for the enterprise he manifested in importing an invention before somebody else.

If we refer to the simple fact that the city of Washington maintains thousands of agents -land agents, claim agents, patent agents, pension agents, corporation and railroad agents-an army of mercenary leeches, sucking at the treasury, besieging Congress for the passage of laws by which the treasury is to be tapped-bribing, corrupting, and demoralising members—we shall be able better to understand the object and scope of the new patent bill. It is a species of passport to commit legal fraud upon the people. It is a rival effort to make the Patent Office what the Land and Indian offices have ever been—a sink of iniquity, a scene of plunder, a disgrace to the

But is it necessary thus to put up the inventive genius of the country at auction What else is the purpose of the Senate hill The rights of every inventor by it are lodged in the hands of a Commissioner, without appeal; and that functionary, besides possess ing the exclusive power of assigning rewards is backed by a printing disbursement fund of a million a year.

### [From the Savannah (Ga.) News.] The New Patent Bill.

We have already noticed the bill now before the Senate, designed to amend the acts now in force in relation to the Patent Office. The publication of the bill has brought out many strong arguments against its expediency and its justice. It is said, indeed, that the only supporters of the bill are the assignees of certain profitable monopolies now about to expire, and who have repeatedly been defeated in their efforts to get their patents extended.

The principal objections to the proposed bill are that it greatly increases the expenses of applying for patents and renewals; that it makes the Commissioner of Patents the judge and jury in deciding the question of the validity of a patent, taking this power from the Courts, where it now belongs; and that it largely increases the amount to be expended by the Patent Office, for printing, binding, salaries, &c.

Perhaps the strongest argument against any adical change may be found in the fact that hitherto our patent system has been considered the most simple and perfect in the world, and has been a model for England and other nations who have adopted some of its features

The SCIENTIFIC AMERICAN, the ablest mechanical journal in the country, thus speaks of the proposed bill:

[Copious extracts from our columns follow re, which we omit.]

The New Patent Bill.

The following communication is written by an inventor, who is the author of several very ingenious improvements, and the holder of quite a number of patents :-

Messas. Epirors.-Knowing well my inability to the task, it is extremely seldom I write; but when I behold so much of insult apon common sense as is contained in the proposed improvement, (?) as published in the Scientific American, upon our patent aws, I cannot hold my peace

The extant patent law was based upon the quitable platform of reciprocal benefit to the inventor and the public, by the establishment of a relation in which genius should be rewarded by an exclusive right to its productions for a definite period, and for the consideration of exclusiveness, the public became the proprietors of it at the defined time.

That the contemplations of the law have

yond controversy, and I cannot conceive any apology for not "letting well enough alone."

The proposed law, on the other hand, must fail in securing the salutary and equitable ends, which, as above alluded to, is the case with the present law. The latter provides for the issue of letters patent, granting genius a protection for securing its remuneration during a period of fourteen years, whereas the proposition under consideration is its reduction to the term of five years. Now, gentlemen, I venture the assertion that nineteen twentieths of all the patented inventions which are prosecuted as a business, yield no actual profit to any interested party for the first five years of its existence; and when remunera-tive profits do accrue, it is after the expiration of this term. Very many do not prove remunerative until even after the expiration of fourteen years, in consideration of which fact a provision now exists for an extension of seven years more, when it is evident that the fourteen years privilege has failed to remunerate the inventor for his talents and money expended in the developments of its productions. Promiment in the catalogue of this description of patented inventions stands Scott's revolving pestle, if my memory serves me correctly in reference to its history.

As you observe in your remarks upon this new Patent Bill, a very large number of patent rights are assigned by the inventors, who are generally poor, to those who are rich, and who cannot use the money invested in the purchase of such patent rights and its introduction for public use, equally profitable in any other direction. If now, the term of fourteen years exclusive right in an invention—the first five of which do not yield much, if any, profit-is the criterion by which the value of such invention and exclusive right to it is valued, how in the name of common sense is the inventor to be benefitted by reducing the time in which he is to be remunerated for his talents from a period which is proven by experience to be barely sufficient for the object, to one which is equally well known cannot remunerate him, either as proprietor or assignor of his letters patent?

On the other hand, we find that compara tively few of the letters patent granted for fourteen years, are asked to be extended beyoud that period, proving that period to be sufficient to satisfy the inventors in the majority of cases; and, at the same ratio, the public became proprietors of the inventions after the expiration of the fourteen years. How, then, is the public more benefitted by the proposed than the existing law, when, in connection with the last stated fact, is taken into consideration the necessity of asking an extension of fifteen years beyond the five years for which the patent, under the new bill is to be granted. in order to render the patent profitable or remunerative to the genius who secured it Does not this arrangement procrastinate the public proprietorship of an invention six years beyond the time assigned to it by the existing law? If, then, neither the inventor's nor the public's interests are enhanced by the provisions of the new bill, whose interests does it contemplate to promote?

Why, gentlemen, in your remarks upon the bill you have not half answered the question in naming the "assignee or assignees" of the patents to the inventions. I add lawyers and knaves.

The thousands of graduates from our law schools will, in this bill, find ample field for the exercise of their profession, and thus secure one of the means of increasing the demand for, equal to the supply of lawyers. A philanthropic object, truly.

Without pretending to detailed criticism of the proposed Bill, I might have prolonged my already long remarks; but having no doubt that abler pens than mine will address you upon this odious attempt at legislation, I dismiss the matter at present. Hoping every effort to diffuse correct views on this important subject will be crowned with deserving success,

### I am yours,

The McCormick Reaper Patent Extension Refused.

The Senate rejected a Bill before it, last week, for the further extension of the patent for McCormick's reaper. There is but very little fear of this patent ever being extended; its owners are but wasting money in such efforts.

### Hot Air Locomotive.

On page 181, this volume Scientific Amercan, we stated that a large hot air locomotive was being built at the Novelty Works, this city, to test the principle of hot air in locomotives on a large scale. That engine has been completed, and experiments have been made with it upon a branch of the New York and Erie Railroad, between Paterson & Hackensack Bridge, N. J., and these resulted in total failure.

So far as material and workmanship were concerned, it was perfectly adequate for its work. It was strongly built, and well put together, but complicated. The experiments, although every care was taken, and every effort used to insure success, resulted unsatisfactorily. The Vampire now stands at Paterson silent and breathless,-the air in that neighborhood being insufficient to put and maintain the machinery in motion. After so much expense has been incurred, and so much study and care has been expended, it is to be regretted that a complete failure has taken place. The inventor must have been very sanguine in his expectations, or so much money would not have been spent. A machine of a plainer and cheaper construction, we think, would have answered for what of necessity the first trips would be-experiments.

In some respects the Vampire resembles the common locomotive, having a boiler of the ordinary appearance-a 24 inch cylinder, 22 in. stroke, two pair of drivers, 6 feet diameter, a link motion, feed pumps, and a tank containing about 1000 gallons. The design of the invention was to use steam and expanded air. The process was as follows. An air pump, worked from the main cylinder, pumped air into a cylindrical air vessel; from there it issued through copper pipes as a blast, under and into a heater or fire box, which was selffeeding with coal; the consumption of twelve tuns being calculated for ten hours. A jet of water was thrown upon this fire, and upon a heated upper plate. The water vapor and gases, the expanded air, and likewise the steam from a water space around the heater, all combined, were then passed through a linked chamber 12 inches diameter, into the forward part of the boiler shell, and from thence through pipes round the cylinder, then into the cylinder-these gases and vapors being the motive power. The exhaust was returned into the cylindrical air chamber, thence into the chimney.

The results of the experiments were, that he Vampire did not go more than a mile and a half at a time, and that at the low rate of from 10 to 12 miles per hour; the steam was raised to 56 and 110 lbs., but could not be maintained; the cylinders were elevated to such a temperature as to discolor the iron, and they were so cut or grooved up, by the small ashes and dust entering them with the gases, as to demand their being twice bored out; and, lastly, the injection water on the fire nearly put it out.

The weight of the Vampire is 44 tuns; and since the experiments have proved so unsuccessful, the owners propose remodeling her into an ordinary steam locomotive.

What comment do these results suggest? Simply that the very vapor and gas which were to be the motive power, destroyed the materials employed to retain them. Under this arrangement, hot air is perfectly inadequate to the wants of locomotion, and will bear no comparison with the principles at present so successfully employed in steam locomotion.

The failure of this novel motor is both remarkable and droll. The performances of the engine were such that it actually roasted and extinguished itself. It over-heated its air box and damaged its cylinders, and the water designed to be vaporized extinguished the vaporizer. We understand that the funds for building it were furnished by a party of capitalists who, though wise and well informed regarding stocks and coupons, lost their money in this case, for want of being posted up in the Hot Air controversy.

# Aew Inbentions.

### Recent Foreign Inventions

New Composition for Picture Frame A patent has been taken out by E. Gibbs London, for manufacturing molded articles from a composition made of the asphaltum of tar and fine brick dust. This asphaltum is the residue left in the retorts in distilling gas tar to obtain naphtha. It is kneaded with one part of brick dust, and then molded into the desired form for picture frames, or any other article desired. From such cheap materials, it appears to us that a composition may be made which can be vulcanized, and from which many articles like canes and combs, might be manufactured.

India Rubber Varnish .-- A. Ford, of London has obtained a patent for making solutions of india rubber and gutta percha, which solutions can be used for water-proofing as a varnish. The india rubber or gutta percha, is dissolved in warm turpentine or naphtha. The turpentine, or naphtha, is prepared by mixing a caustic alkali, such as potash, in it-one pound to the gallon-then agitating them in a suitable vessel, and allowing them to stand for about three days, when a dark colored residuum is found at the bottom. The clear liquor is then poured off and used for dissolving the india rubber. It is stated that this makes a very beautiful varnish.

Preserving Meat .- Francois M. Demait, of Paris, has patented a peculiar method of treating meat to preserve it for use, like our common smoked beef. The meat to be preserved is cut into pieces and strung on a cord at a suitable distance apart from one another. These are then hung on rods and suspended in an air-tight chamber, which has a furnace at its bottom. The chamber is then heated up to about 100° Fah., and a preparation of 4 ounces of the flour of sulphur, 2 1-2 of lime, and a handful of green mint leaves are thrown upon the fire, and the doors closed. An opening in the bottom of the chamber admits the gas from the furnace, to the action of which the meat is submitted for 18 honrs. At the end of this time the meat is withdrawn, and suspended in a moderately warm room, where it is dried. This process is stated to make finely flavored dry meat, capable of keeping a long period. The pieces of meat are pressed to remove the blood before being strung on

Composition substitute for Wood, Bone, &c. -F. C. Lepage, of Paris, has secured a patent for a new and apparently very useful compound of albumen and saw dust, from which various molded articles can be manufactured. Pure albumen, obtained either from eggs or blood, is slightly diluted with water, and in this, fine sawdust is soaked. It is then submitted to severe pressure in a press. After this it is forced into metal molds, being pressed into the mold, which should be kept heated. As soon as the molding is completed, the mold should be plunged into cold water to cool the articles which may then be taken out. It is stated that this makes very beautiful and useful ornaments for picture frames, cornices, combs, brooches, &c

### New Method of Rolling Railroad Rails,

In the engraving, rollers, A B, are provided with five grooves, numbered respectively in fig. 1 from 1 to 5, in the order of succession, in which they receive the bar to roll it, the bar being taken from the roughing or billeting rollers, and passed through groove 1, and afterwards through 2, 3, 4, and 5, the latter of which finishes it.

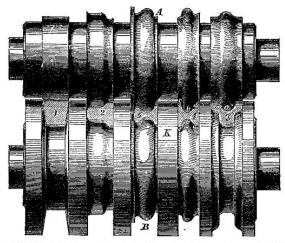
The improvement consists in the form of the groove 3, by which a depression or cavity is formed all along the center of the base of the rail after the reduction, to form the head, has been, to a certain extent, effected by the grooves, 1 and 2, but before the further reduction to form the neck is commenced, so that by the subsequent operation of the groove 4, which reduces the middle of the bar to form he neck, and bring it nearly to the proper The metal is easily displaced from the middle of the bar, and driven towards the base, to fill the depression or cavity which

has been made by the upper roller, A, in the the base, the diagram, fig. 3, represents the know is very detrimental to steam boilers. middle of the base, during the passage of the two forms of the bar after leaving the groove, They become thickly crusted over with calcaearly stages of the process.

bar through the groove, 3. The inventor also 3, and after leaving the groove, 4, the former proposes to employ a groove similar to 3, in being shown in light outline, and the latter in place of 1, so as to produce a cavity along dark, the depression or cavity in the base prothe center of the base of the rail during the duced in groove 3, being indicated by the letter a. The effect which the previous forma-To show the direction in which the metal is tion of the depression or cavity, a, has in the displaced from the center of the bar towards rolling of the bar in the groove, 4, is illustra-

### IMPROVED METHOD OF ROLLING IRON RAILS.

Fig.1



ted in fig. 2, where the three pairs or circles, | line, i, and the parts, cc, not till the bar b c d, represent severally those parts of the groove, 4, of the roller, which respectively roll the flanges of the base, the neck, and the head, C, in the same figure represents that portion of the bar which has not yet entered the groove, 4, and D, that portion which has passed through the said groove. The lines, e e, represent the base of the rail, ff the head. and the dotted lines, g g, the neck. In this

Fig. 2 A B

figure it is shown that the largest parts, d d, of the rollers come into action on the bar as the latter arrives at the position of the line, h. but the parts, b b. do not come into opera-

has reached the position of the line, i, by which means the iron is forced by the parts, d d, from the middle of the bar towards the collar, k, of the roller, B, against which the base of the rail is formed (see fig. 2) before any of the parts that roll the head and flanges come into action. The middle of the bar is in this way reduced to two-thirds of the thickness it was at the time of entering the rollers before the flanges are operated upon, and by the time the operation on the head of the rail commences, it is reduced nearly to the proper thickness for the neck of the rail, and the depression or cavity in the base is quite filled up; and the several parts of the roller being properly proportioned, there will be no more thickness left in the middle of the bar to extend it lengthwise than there is in the base and head, and consequently all parts of the rail will be drawn or extended in a like degree, and be of equal density.

Those of the grooves of the rollers which are not particularly described, are assumed to be similar to those in the rollers of other rolling mills for the same purpose.

By this process of rolling rails there are three very important and valuable advantages gained: 1st, the making of a greater number of perfect rails from the same amount of iron heated. 2d, the greater density and durability of the rail. 3d, the making of the rail perfectly sound with crystaline iron in the head.

We are informed that this process has been in use for more than a year past at the Mount Savage Iron Works, Md., in the manufacture of rails for the Baltimore and Ohio R. R. Co We are told that the results demonstrate beyond all peradventure that the invention is one of great value. The rails produced are said to be of a superior quality, far more durable and worth more in market. The subject is well worthy of the careful attention of engineers and those interested in railroads.

Mr. John W. Brown, Mount Savage Iron Works, Md., is the inventor, and will be happy to give any further information. Patented April 1, 1856.

### Preventing Boller Incrustations

At the Brooklyn (N. Y.) City Mills, where large quantities of flour are made, the motive power being steam, they are using with great success one of Mr. G. Weissenborn's patent apparatus for preventing incrustations in the boiler. The water found in Brooklyn contains tion till the bar arrives at the position of the a large percentage of lime, which engineers

reous matter in a very short time.

The invention of Mr. Weissenborn proves to be an effectual preventive of incrustation. The water is partially warmed before entering the boiler, and then submitted to certain chemical and mechanical actions, which cause the lime to separate. We have seen specimens of the lime taken from the separator used at Brooklyn. The quantity which is extracted from the water is surprising; and the boiler is kept perfectly clean by its use. The apparatus and process are both simple and economical. It is applicable to steamboats running on the Mississip; i and other Western rivers.

### Improvement in Carriage Springs.

We lately had the pleasure of riding in a vehicle fitted with the patent suspension springs of Thomas Murgatroyd, Jr., Smithville, Canada West. The improvement strikes us as a real triumph of ingenuity. The springs are so made as to require less metal in their construction than ordinary springs: they impart an ease and agreeability of motion to the body unknown to ordinary elliptical spring carriages; indeed, the latter seem rough in their action compared with this improvement.

Externally, Mr. Murgatroyd's springs are light and elegant; the mode of fastening is peculiar, such, we should think, as would ensure greater durability than most vehicles

### Mechanic's Fairs.

On another page will be found the advertisement of the Massachusetts Charitable Mechanic Association, relating to its next and Eighth Annual Exhibition of American Manufactures and the mechanic arts, to be held in Faneuil and Quincy Halls, Boston, on the 10th, and to continue to the 27th of September next. This Association has done a great deal of good; its exhibitions have been managed with ability, and they have always been an honor to the mechanics of old Massachu-

The Eighth Annual Fair of the Chicago (III.) Institute will be held in that city from the 7th to the 15th of October next. fair, for the display of implements and all kinds of machinery connected with and relating to agriculture, will be particularly inviting to Western farmers.

### How to Feed Bituminous Coal.

Where there are two furnaces to a boiler, fire alternately, at regular intervals of time. In throwing on fresh coals, spread them evenly over the bars, commencing at the bridge end. Large coals should be broken into pieces not bigger than a man's fist. Never allow any part of the grate surface to be uncovered, nor allow the fire to burn too low. There should not be less than four inches thickness of bright fuel on the bars when a fresh charge it put on. Keep the bars free from clinkers.

The Camels have Arrived.

The Arabian camels for which a government expedition was sent out to the Mediterranean arrived in the Bay of Matagorda, Texas, on the 12th ult. Arab keepers accompany them. They came on shore dressed in their native costume, and were as much objects of curiosity as the camels. An attempt is to be made to acclimate these animals, to employ them as transports on the western deserts of our country, between the Mississippi valley and the Rocky Mountains.

Cents, not Pence.

A number of large firms in the flour trade, in this city, have just commenced to reckon exclusively in the decimal currency, and abolished the shilling and pence business. This was done by a united agreement. It is a strange thing, showing the hold which custom has upon business, that our centesimal currency should be so long in completely overthrowing the old pence and shilling currency

Senator James, of Rhode Island is, I learn to file a caveat with the Commissioner preparatory to taking out a patent for the manufacture of laws, to enable the lobby to get all they want and more than they ever asked for. -[Correspondence of the N. Y. Herald.

# Scientific American.

NEW-YORK, JUNE 7, 1856.

James Patent Hill.

On another column we publish a keen and able review from the New York Herald, of the new Patent Bill. The author of that article gives evidence of having studied the Bill carefully; he sketches its grizzly features and fills in its dark shades with a skillful hand. In no exaggerated language, we think he de-picts the enormous evils that would result from its passage. It would raise the Patent Office into a huge centralizing institution for squeezing the money out of inventors, and for obtaining huge bonuses from monopolizing combinations.

The members of the Press who have read this Bill, and all sound thinking men with whom we have conversed, and who have written to us on the subject, look upon it as as an outrage on the good sense of our people, and as being opposed to the spirit of our institu-Laws made in harmony with the spirit of the people for whom they are intended, cannot fail to be respected. Such would not be the case with the new Patent Bill were it to pass. It would operate injuriously on the progress of improvement, because it provides for raising the Patent Office into an expensive aristocratic institution, to be sustained by enormous and unnecessary exact-Instead of encouraging inventors to invent and improve, which should be the object and aim of all patent laws, it appears to be imbued with a spirit of opposition to their interests, and consequently, that of the public welfare.

It is universally scouted and derided by inventors and all interested in patents and improvements in the arts. No Bill ever introduced into a legislative body has received such a unanimous public condemnation. We are confident it never can pass, for it scarcely contains one feature worthy of commending it to the favorable consideration of Congress or the people.

Sickles' Cut-off Patent Expired, and an Exten-sion Refused.

On the 20th of May, 1842 a patent was

granted to F. E. Sickles, of New York, for improvements in the manner of constructing the apparatus for lifting, tripping, and regulating the closing of the valves of steam engines. This improvement was known among engineers by the name of "Sickles' cut-off." and the "drop valve cut-off." It covered a pair of springs lying on either side of a horizontal arm attached to the lifter, which, at certain points of the movements, are brought in contact with adjustable studs upon a standard, whereby the valve stem is liberated, and the puppet valve dropped in its seat. The force of the fall of the valve is broken by means of a plunger attached to its stem, and moving within a dash pot containing water, oil, or other fluid, having a supplemental adjustable bottom

The original application by Sickles for a patent on this improvement was rejected upon the ground that the invention claimed was in use on the steamboat South America, and others running in and about the harber of New York. After this, however, an affidavit madby Trueman Cook was filed in the Patent Office, wherein it was stated that the invention claimed was placed on the engine of the above named steamer after an anonymous letter de scribing it had been sent to J. Cunningham the builder of her engine, which letter had been written to him by Sickles, who, how ever did not sign his name to it. This affida vit caused the examiner who had previously refused to grant the patent to reverse his decision. This is the way the patent for Sickles cut-off came to be granted; and since it has been in existence it has led to quite a number of expensive law suits, in which the most eminent counsel have been employed .-Great issues were involved in the legality or illegality of this patent, because nearly all the river steamboats running to and from New

ment claimed. On the 20th ult. the term of this patent expired, and on that day an application previously filed for its further extension for seven years was refused by the Commissioner. It is now public property; and it seems by the decision that it should always have been so, as the extension was refused on the ground that when the patent was granted the improvement claimed was not new, and the patentee was not the original inventor. A number of suits for infringement had been instituted by the owners of this patent against persons using the steam engines manufactured at Providence, R. I., by Messrs Corliss & Nightingale; we presume this decision will et all these free.

By the patent act of May, 1848, each applieation for extension is referred to the Chief Examiner having charge of the class of inventions to which the case belongs. The examiner is bound to make "a full report to the Commissioner whether the invention secured in the patent was new and patentable when granted, and thereupon the Commissioner shall grant or refuse the extension." The Commissioner bases his decision on the report of the Examiner, and upon evidence furnished under oath relating to the efforts made by the patentee to introduce his invention, and the amount of compensation received by him, according to its value.

The testimony presented for and against this extension was very voluminous. Regarding it, the Examiner says, in his decision "From the full reading of the testimony, it appears that Mr. Sickles is not the original and first inventor of the drop valve cut-off and dash pot, as covered by the claims allowed him in the patent which is the subject of application for this extension."

We will now state clearly why the Examiner came to this conclusion. We have already stated the patent was granted (after a refusal) upon the affidavit of Trueman Cook, setting forth that the improvement claimed was put on the engine of the steamboat South America after Mr. Sickles had sent an anonymous letter to James Cunningham, which affidavit, instead of leading kim to be more suspicious of something wrong, led the Examiner to infer that Mr. Sickles had suggested the improvement to the builder of the South America's en gine. But it is stated in the recent decision on the extension, that so far from the abovenamed steamboat having the improvement put on her engine subsequent to the sending of the anonymous letter referred to this steamboat entered upon her regular trips on the 15th of April, 1841, with the drop valve cut-off on, and in fair working order, while the anony mous letter bears the date of the succeeding month, May 4th, 1841.

This anonymous letter is one of the most idiculous things possible to imagine. If Mr. Sickles was afraid of his invention being stolen, why did he send the letter at all And if he was the inventor of it, why did he not sign his name to the letter. There is something so inexplicable connected with this anonymous letter, that we cannot but look upon it as an immensely foolish and absurd production; and yet it was the means of bamboozling an Examiner of the Patent Of-

The drop valve cut-off was in public use nearly a year before Mr. Sickles filed his caveat on the 11th of Jan. 1842.

By this decision it appears that an illegal patent has been in existence for fourteen years, engendering law suits, costing litigants thous ands of dollars of expense, worrying manufacturers and users of steam engines, thereby operating to check improvements and business; and all for want of a simple amendment which we have often recommended to our patent laws, viz., a writ of scire facias to try the legality of a patent.

### The New Patent Law.

We continue to receive from all quarters letters and newspapers remonstrating against the proposed change in our patent system Nearly every editor who discusses the subject takes strong ground against the Bill; while inventors, patentees, and all whose attention is called to the matter are opposed to its adoption, and indignant at its very suggestion. York city, we understand, use the improve- In other parts of our paper we publish as many

extracts from cotemporaries and correspondents as our limited space permits.

Votes on Ancient and Curious Inventio Preservation of Timber.-Although we have presented and will yet present some curious matter in these articles relating to certain things for which patents have been obtained, our main object is the dissemination of useful information. The preservation of timber has long occupied a prominent place in every department of art, because timber is the most common material that is employed in the arts. It is used in the stately temple and the humble chapel; in the splendid palace and the lowly cabin; in the noble ship and the rude canoe, and for ten thousand other purposes. There is a great variety of timber. differing in strength and endurance, but all kinds are subject to rapid decay when placed in certain situations, and exposed to certain influences

In such expensive structures as ships alone, millions of dollars have been lost by the dry rot. The cost to our railroads annually, by rot in rail sleepers simply, amounts to hundreds of thousands of dollars. Rot in the sills of timber bridges and houses, taking the length and breadth of our country into account, involves an incalculable amount of loss annually. It is no wonder that so many inventors and men of science have devoted so much time, and made so many experiments to discover a remedy for the evil; the wonder is, that more experiments have not been made. Some proesses which have been tried to preserve timber we will now describe.

On June 14th, 1837, A. Gotthilff, of New York, obtained a patent for protecting timber from dry rot. The tar of gas works and pitch in equal quantities, were placed in metal troughs, and heated up to 400° Fah., and the timber was immersed in this until all its pores were filled. A quantity of salt was also added to the mixture. It is our opinion that this is a very good method of treating timber to be laid on the ground; but for spiles to be used for docks, subject to the attacks of the sea worm, some corrosive sublimate should be added to the tar.

It is rather remarkable that a patent was granted to the same gentleman for the same invention on the 21st of September following the above, as the attorney for J. Knowles and Robert Gilbert, of England.

On April 12th, 1833, C. Morgan, of Louisina, obtained a patent for preserving wood by saturating it with lime. The timber to be treated was steeped in tanks of lime water for some months, until all its pores were filled with a carbonate of lime. The liquor was renewed in strength from time to time, by adding fresh lime.

On January 16th, 1834, F. Kenshaw, of Brookville, Mass., secured a patent for preserving shingles from decay, by dipping them in scalding hot turpentine and tar, then sifting hot sand upon them.

A wash of lime, wood ashes, salt, and molasses, applied to shingle roofs, in three successive coats, is said to preserve them better than oil paint.

On June 6th, 1846, Peter Van Schmidt, of Washington, D. C., was granted a patent for charring the surface of timber impregnated with any salt, by immersing the wood in hot oil. The impregnating of the timber with a salt, such as corrosive sublimate, or any other preservative, was done in the same vessel in which the timber was charred by the hot oil. It is well known that timber slightly charred will endure for a long time when set in the ground, hence it has been a common practice in some places to char the feet of fence posts. Whale oil boils at 630° Fah.—a heat sufficient to char wood.

It appears to us that some good and cheap process for impregnating timber with certain preservative salts ought to be successful, and come into very general use. Yet although so many patents have been taken out, and although many establishments have been erected for preserving timber, no plan has come into general use among us. A factory established to preserve timber, at Williamsburgh,

was burned down about three years ago, since which time we have not heard any more regarding it.

The same subject, describing other processes, will be continued next week.

### Recent American Patents.

Machine for Cutting Barrel Heads .- By N. W. Robinson, Keeseville, N. Y .- In relation to this invention, noticed in No. 36, the inventor desires us to say, that the heads are cut and finished without turning or touching the stuff, after it has been once placed in the machine. An engraving will appear in our columns in a few weeks.

Spheriotype.-This is the name given by the inventors, A. Bisbee, of Columbus, Ohio, and Y. Day, of Nashville, Tenn., for an improvement in ambrotype pictures (photographs on glass.) The edges of the glass are left transparent, and the mat is placed behind the picture, not on a level with it, which is the common way. The effect of this improvement is to make the picture stand out in relief some thing like the solid appearing picture of the

Manufacturing Cast Steel .- The improvenent for which the patent is granted this week to F. Uchaticus, of Vienna, Austria, is of a peculiar character. Pig iron of the best quality is first melted in a suitable furnace, and while it is in a molten condition it is poured into cold water, thereby reducing it to a granulated state. It is then ready to undergo the process which will convert it into steel. This process is founded on the fact that cast iron surrounded by any oxygenized materials, and subjected to a cementing heat for a given time, will yield up a portion of its carbon, which will combine with the oxygen of the surrounding materials, and pass off as carbonic acid gas, and thus convert the pig iron into cast steel. By granulating the iron, an imprense amount of surface is brought into contact with the oxydizing materials, and thus the process is greatly facilitated. The granulated iron is mixed with 20 per cent. of roasted pulverized sparry ore, and 4 per cent. of fire clay placed in crucibles, and subjected to heat in a blast steel furnace, By thus subjecting the granulated iron in presence of the sparry iron ore to a melting heat, the enwrapping oxyds effect the desired decarbonization of the pig iron. The novelty of the invention consists in the conversion of pig iron into steel at one melting, by granulating the iron and treating it as has been described.

Machine for Molding Hollow Brick .- By Messrs. Buck and Cushman, of Lebanon, N. H .- The invention for which a patent was granted to the above parties last week, will be found fully illustrated and described in No. 34, present volume of our paper.

Improved Grain and Grass Harvesters .-- By James T. Youart, of Troy, Ohio .- In this improvement the cutter consists of a straightedged continuous knife. Above the knife there arranged a series of movable V-shaped plates, called by the inventor "collectors." These serve to catch the grain or grass, and pull it in against the knife, as the machine advances. Another feature of the invention consists in a method of preventing the side draft.

Governor for Marine Steam Engines .- By Wm. B. Godfrey, of Auburn, Iown.—This governor consists of a wheel with small paddles fitted to the paddle wheel shaft of the ordinary steamers. The small paddles are so controlled by springs and connected with the throttle valve or cut-off gear, that when the propelling paddle wheel is out of the water, the governor wheel will be held by the springs in such a position as to close the throttle valve or cut-off. But when the propelling paddles are submerged, the paddles of the governor wheel will be so acted upon by the resistance of the water, as to give the throttle valve or cut-off the requisite opening.

Preserve or Fruit Can .- By Wm. J. Stevenon, of New York City.-This invention consists in an improvement for the purpose of effecting the hermetical scaling of the can by the action of atmospheric pressure on the cap or stopper. Inside the mouth of N. Y., some years since, was soon given up; the vessel there is a shoulder on which is and another erected at Rochester, N. Y., paced a ring of rubber. The cover is simply



flat disk of tin, with cross wires soldered on its top, so as to guide and keep it in the con-When the preserved fruit or other article has been sufficiently heated, the cover is laid on, and the subsequent cooling produces a partial vacuum within the vessel. The consequent atmospheric pressure on the disk imbeds it into the rubber, and thus forms a perfectly air-tight joint, without screw or wax.

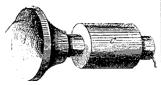
Self-Acting Head Block for Saw Mills .-By Lucius B. Adams, of Smithfield, Ulster P. O., Pa .- Consists in operating the sliding head to which the dogs are attached, by means of a lever passing over inclined planes attached to the flooring. Said lever is connected to another lever having a pawl secured to it, which pawl acts upon a ratchet, and turns a pinion. The latter gears into a rack, and moves the sliding head to which the log is secured at the proper moment.

Governor for Marine Steam Engines .- By W. W. H. Mead, of Chestertown, N. Y .- This invention consists in a novel mode of combining a centrifugal governor or fly, with a throttle valve or cut-off, whereby the moment of inertia of the said governor or fly will act upon the valve in such a way that any tendency towards increased speed of the engine will cause the supply of them to be diminished, and vice versa. This invention may be applied either to marine or stationary engines but is particularly designed for marine engines.

Improvement in Slide Valves .- By John F. Allen, of New York City .- This invention consists in a movable valve seat arranged to operate as between the face of the slide valve and the usual stationary seat. Its object is to obtain a free exhaust of steam until the termination of the stroke of the piston or till the lead of the valve for the induction of steam commences. The resistance which is caused by what is known to engineers as the cushioning of the steam, in the cylinders, is thus obviated. The invention is applicable with especial advantage when a lap valve is employed as with that kind of valve the exhaust port is generally entirely closed some time before the stroke of the piston commences.

Improvement in Roving Tubes .- By Moses Sargent, Lake Village, N. H.—The roving tube is that portion of the machine used in manufacturing cloth and other fabrics, by which the loose roving or sliver receives its first twist. It is simply a flaring mouthed pipe, to which rapid revolution is given while the sliver passes though its center; a bailextends across the mouth of the tube, which causes the sliver to twist. The bail is objectionable, because it is apt to press against the sliver and rub off the waste, which catches on some other part, and causes bad work; again, the bail is apt to break the roving, and when broken, the machine must be stopped.

The present improvement consists of the employment of a hook instead of a bail. In the cut, A is the flaring mouth of the tube, B



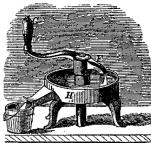
the hook, and C belt pulley on the tube, by which motion is communicated.

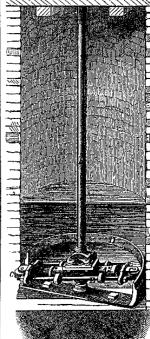
The use of the hook obviates the objections named, permits the mending of the roving in case of breakage, without stopping the machinery, or even a single tube, and thus saves much time. The hook is also very cheap, easily applied, does not get out of order, &c.

The invention has been extensively tested in several mills, and is said to work admirably. Address the inventor for further information

Improved Capstan .- By Samuel Gaty, of St. Louis, Mo .- Consists in attaching the body of the capstan to the head, in two different ways one being a direct connection, and the other an indirect connection, by means of gearing. The parts are so arranged that when the head is turned in one direction, the body will turn with equal speed; but when the head is turned in the opposite direction, the speed of creased. This is a capital improve

New Rotary Pump .- Mr. Hosea Lindsey, or Ashville, N. C., is the inventor of a new life and force pump which presents several novel and useful features; herewith we present an engraving of the invention.





The pump barrel, A, is placed horizontally at the bottom of the well, and is made to re volve by means of hollow shaft, B. Each end of the pump barrel is furnished with a piston, the outer extremity of whose rods are provided with friction wheels, C. As the pump barrel revolves, these wheels, C, come in contact with the cam-shaped half circle, D, and the pistons are thus alternately moved in and out; the pistons are connected together by rods, E, so that when one is pushed in the other goes out.

The action of the pistons forces the water up the hollow shaft, B, and it escapes through the crank, F, one end of which is hollow for that purpose. Motion is given by turning the handle, G. The circular basin, H, is large enough in diameter to receive the water from F, as it turns around.

Water may be raised to an indefinite hight by the use of this pump, at a comparatively small expense. The common force pump must be placed within thirty feet of the water, and in addition to the induction and eduction pipes and air chamber, requires to have a piston rod, extending from the top of the well down to the piston. In the present improvement no such air chamber or rod is required; the hollow shaft, B, serves the, double purpose of communicating motion and conducting the

This pump is very simple in construction not liable to get out of order, durable, easily operated, economical for manufacture. We regard it as an excellent improvement. Jas. M. Edney, 56 John street, is the agent for the sale of these pumps for all parts of the world turned in the opposite direction, the speed of and the exclusive agent for New York. Cirthe body will be considerably slower than that culars, with full description and prices, sent

f the head, but the power will be greatly in- | free of charge on application. They are for | can be no difficulty on the score of the patent, sale also by the inventor, Asheville, N. C. Patented Dec. 4, 1855.

Purification of Gutta Percha.—By James Reynolds, of New York City.—Gutta percha, in the raw state in which it is imported, contains large quantities of bark, dirt, and foreign substances. In the common processes of manufacture these cannot be extract ed, and bad results often ensue. For example, in the covering of telegraph wires, holes are often left wherever foreign substances are present, and thus the insulation is impaired. The only method heretofore employed, for preventing the quality of the manufactured article from being too much injured by the presence of these impurities, has been to reduce the bark and dirt into fine particles, by longcontinued and tedious grinding, and then incorporating them with the gum.

The object of the present improvement is to ffect the entire extraction of the bark and other foreign particles, and thus improve to a very great degree the quality of the manufactured article. The invention consists in first cutting the gutta percha into extremely thin slices or sheets, and then submitting it to heating, rubbing, and screening operations. Under this treatment the foreign natters are almost entirely extracted, and the gutta percha left pure. This is a valuable invention.

Improved Cotton Gin .- By W. B. Lindsay, of New Orleans, La.—Consists in the employment of a reciprocating card, and two vibrating stripping cards, in combination with breasts. The invention has been practically tested and operates well. Long as well as short staple cotton may be perfectly ginned by it. It operates rapidly, and is peculiarly adapted for ginning Sea Island cotton.

Improved Corn Sheller .- By C. S. C. Crane (assigned to S. M. Tinkham of Taunton Massachusetts.—Consists in the employnent of a shelling wheel, toothed or corrugated on both sides, two elastic pressure bars and stops, and a feeding device, so arranged and operated that the bars are fed in by a hopper, but cannot clog up the machine. It is a very good improvement.

Improved Printing Telegraph.—By David E. Hughes, of Louisville, Ky .- This invention has already become quite celebrated, owing to the numerous reports respecting its marvellous capabilities that have been circulated in the public papers for more than a year past. The patent, which has been reported as pending for a long time, has just been granted. The inventors claims were published last

As a specimen of the notices, which this improvement has enjoyed, we copy the following from a late number of the New York Tribune.

" [1.] This invention may be called a printing press and telegraph instrument combined, for it prints all messages in plain Roman capitals, with unerring correctness, and at an almost incredible rate of speed, averaging, in the ordinary dispatch of business, from 20,000 to 25,000 letters per hour. [2,] The Hughes instrument clearly demonstrates the practicability of sending and receiving messages in opposite directions over the same wire at the same instant of time, and with the utmost ease, regularity, and certainty. It will consequently require but one wire and one operator, at any given point, to send and receive as much business as can be transmitted by the aid of four or five operators and an equal number of wires under the Morse system. [3.] Another equally important peculiarity connected with the Hughes invention, is the undoubted fact that it will work perfectly in very long circuits, and with unerring accuracy in all states of the atmosphere-neither mist, rain, nor snow having any perceptible effect. Therefore, at seasons when the Morse and House instruments are utterly powerless even in circuits of fifty miles, there is every reason to believe that the Hughes instrument will work reliably in circuits of 1,000 or 2,000 miles. The simplicity and durability of the new machine will compare favorably with the Morse, and is vastly superior in these respects to the House instrument. The governing principle of this invention is wholly dissimilar to that of the Morse, House, and all other tolegraph instruments, and, consequently, there

which, we understand, has been sold for about \$125,000 or \$150,000 to the American Telegraph Company, a new Association having its headquarters in this city, but composed of gentlemen of the highest respectability residing in different sections of the United States and the British North American Provinces, and of which it is sufficient to say that Peter Cooper is the President, and Wilson G. Hunt Treasurer."

[By Telegraph to the Tribune.]

Washington, May 20, 1856.
Letters patent were issued to-day from the
Patent Office to David E. Hughes, covering all
his claims for his new Printing Telegraph Machine. [4.] More than ordinary care has been
bestowed by the Commissioner and his assistants of the Patent Office in their examination ants of the Patent Office in their examination of the claims of Mr. Hughes, to guard against the possibility of conflict with prior patents to Morse, House, and others, and we are assured, on the very best authority, that the rumors set afloat by interested parties, to the effect that the Hughes machine infringes upon the rights of other patentees, are wholly destitute of foundation.

[1] Alexander Bain exhibited, in operation in this city, eight years ago, a telegraphic in-strument capable of sending from 25,000 to 50,000 letters per hour. The message was first prepared by slotting the telegraph paper. It could then be run through the machine by clock-work, without being touched by the attendant. This method possessed no advantage except that several persons could be employed in preparing parts of the message, and thus its delivery would be hastened. But the expense, owing to increased labor, was augmented, and so the plan is not now used. It may be very easily applied to the Morse, the House, or the Bain Telegraphs.

The common method of telegraphing is by touching a key or keys, with the finger, and the ordinary speed is 100 letters per minute, or 6000 per hour. This is about as fast as a good penman can write. We are told that some of the Morse operators have been known to send 250 letters per minute; but this speed was on a wager and could not long be main-

The Tribune intimates that by Hughes' Telegraph the ordinary dispatch of business will be 20,000 to 25,000 letters per hour. This cannot be done without some such previous preparation of the message as we have indicated. The statement that one person will be enabled to do four or five times as much business as one operator on the Morse telegraph we regard as crroneous. We think that Morse's simple instrument will very nearly, if it does not quite equal, in expedition, the somewhat complicated machine of Mr. Hughes, the conditions being equal. It would be an easy matter to connect a printing apparatus with the Morse Telegraph, but it is not wanted, and is of no dvantage.

[2.] Sending two messages, in different directions, over the same wire, is quite old. Mr. Hughes very properly disclaims it as new. It is just as applicable to Morses telegraph as to Hughes'.

[3.] Will somebody be good enough to tell us how the fact that Hughes Telegraph will work so much better than Morse and House's, on long circuits, in bad weather, has been established? We are told that Mr. Hughes' instrument has never been tried at all, except on a short circuit. Perhaps our information

[4.] It may be that the Commissioner of Patents and his assistants bestowed more than ordinary care upon the claims of Mr. Hughes, out no such care can, by any possibility, preent infringement, where there is similarity between two inventions. We are assured "on the very best authority," that Hughes' Telegraph is an infringement both on Morse's and House's patents. We trust, however, that such will not prove to be the fact.

Our comments are occasioned not through ny hostility to Hughes' Telegraph, or Mr. Hughes, for we have not the pleasure of the gentleman's acquaintance, but simply to correct false impressions that have been industriously circulated for some time past, It is not fair that noble and important inventions like those of Morse and House should be disparaged, and the interests of stockholder injured, in order to boost up a new joint-stock

TO CORRESPONDENTS.

T. M., of N. Y.—It has been found very difficult to obtain any reliable information respecting the steamer Marrimac.

Merrimac.

S. F., of Me.—We saw a conical spiral wheel years ago which resembled yours in most respects, but if you would invert your wheel to allow the water to strike when at the greatest velocity, the floats moving with the greatest speed, you would obtain more power. You would then have the Rouse Poire Prench wheel.

M. L., of Texas.—Your object to obtain a very available power from water dispute to the control of the

M. L., of Texas.—Your object to obtain a very availa-ble power from water flowing at the rate of two miles per hour, by a current wheel 16 feet wide and 8 feet deep. It should pump a great quantity of water to a hight of 70 feet. The floats should be placed about 18 inches apart, and curved slightly outwards. The power given out for loss.

would be about 6 1-2 horses—that is, deducting one half for loss.

J. C. of Maxs.—If your saw is connected with a crank on the shart which gives the saw two strokes—one up an one down—every revolution, how can you give it a mor rapid motion with a long than a short stroke of piston Mr. Garey did mention, in a letter to us, about the condensed water in the side steam chest being prevented passing into the cylinder.

J. S., of Ind.—If you throw into hard water some lye of wood ashes, or some ly made by dissolving sal toda in a little water it will render it soft. A little fresh stacked lime, strange as it may seem, thrown late hard lime water, also renders is soft for eaching. You can dye fast blue on wool by steeping ground indigo in urine, for fi e days. This is a simple method of dyeing blue without a wat, but not a pleasant one.

S. H., of Ind.—Your application has not been acted upon yet, and we have written to the Office instituting an inquiry, the reply to which we will communicate to you.

D. P., of Pa.—Your application on the New Zuent

inquiry, the reply to which we will communicate to you D. P., of Pa.—Your communication on the New Fatent Bill is good, but we cannot find room for its insertion in our columns. Some bushels of letters we have upon this subject; and while we are glad to receive them, and are thus enabled to get the public opinion upon the subject, we cannot produce the letters in isstimony, for want of space. They strengthen our confidence that the pesition we have taken in exposing this nefarious system is righter our position would not be so universally approved. We wish the members of Congress could each raceive as many letters upon this subject, and of the same tetor as we have. Write to your members of Congress, ceutlemen; tell them what the consequences of such a bill would be if enacted. Public and private expesition of this scheme, in the right direction, is all that is wanted to defeat it.

offectit.

II. W. B., of Mass —Plumbago will answer in place of platinum in galvanic batteries; but we do not think it would be practically advantageous. Bellows engines, such as you propose, are old. M. Millen & Co., Dayton, O., wish to purchase a machine for turning bobbins for wool spinning.

J. B. E., of Ind.—We do not engage in the sale of patent rights. We have studiously avoided this branch of business, as it would seriously affect our standing as Fatent Agents.

J. F. R., of Ohio—We did not notice the article you re-creed to in the ligrald; and as we have not a file of that paper we cannot conveniently examine it.

E. T. S., of Cal.—issae Babbitt's patent for boxes for a slatrees and gudgoons was renewed by the Commissi nee of Patents for seven years from 1833. It expires in 1830.

O.T., of Wis.—Your remarks are pertinent and just: the you know how utterfy out of the question it is to get political influence removed from federal offices. This is the vole dependence of parties.

J. L., of Ohio—We will give a notice of your article

next week.

A. L., of Pa.—We do not know whether Mr. Johnson's treatise on windmills contains the information desired by you. The power of the windmill is just in proportion to the size of the sails and their angle. A breeze of fifteen miles per hour, exerts a pressure of 1125 lbs., on every square foot of sail exposed direct to the wind.

F. H., of N. Y.—We have carefully read your communication, and must, in candor, tate that we do not understand it. It is either too obstructly or too confusedly written for us all the conclusions that we are able to draw from it is, that water may be conomically decomposed by electricity by a certain machine, and cheap hydrogen gas thereby produced. Just do this and you will not reast the produced. gas thereby produced. Just do this and you will not require words to argue your case.

quire words to argue your case.

A. H. T., of N. Y.—Write to the Actuary of the Franklin Institute about the expariments with Parker's wheels.

The Parker wheel is undoubledly a first rate one.

W. G., of Com.—What do you want with a solution of
in for galvanic batteries; it is not required for plating,
because you can plate without a battery, and its solution
is not used. You can make a strong solution by dissolving
it in muriatic acid.

E. H., of Cal.—A current of electri-ity has been sent
some nulles through salt water without a wire. The way
to do this; well known, and perhaps your plan is known
o us already.

Moneyreceived at the Scienvipic American Office on account of Patent Office business for the week ending Saturday, May 31, 1856.

account of Patent Office business for the week ending Saturday, May 31, 1856—
W. & N., of Coun., \$50; J. K., Jr., of N. J., \$50; W. M. B., of Ind., \$25; J. & A. W. & 6thers, of Mass., \$41; J. H. Y., of Mo., \$22; T. & A. P., of L. I., \$10); W. S., of Ga., \$50; H. L. & Co., of Pa., \$39; R. E., of N. Y., \$31; W. D., Jr., of Pa., \$35; T. P. Y., of Ga., \$35; O. A. D., of Y., \$25; W. B., Jr., of M. Y., \$40; B. & D., of Mich., \$55; C. H., of N. H., \$25; W. M., of O., \$35; J. G. P., of N. Y., \$239; A. M., of Mass., \$50; J. M., of Pa., \$170; W. F. of Mass., \$50; J. E. C., of M., \$31; R. K., of Mass., \$250; J. J. U., of Pa., \$25; K. C., of Pa., \$25; G. A., of Pa., \$25; C. H., of Pa., \$25; C. H., of Pa., \$25; C. W. G., of N. Y., \$25; J. C. T., of Ill., \$30; H. McC. & Co., of Conn., \$57; G. A. L., def N. Y., \$20; G. N. B., of Col., \$25; T. L. A. D., of Pa., \$20; C. W. G., of Conn., \$27; J. L. B., of N. Y., \$25; D. E. T., H., of Pa., \$30; J. B., of Ill. \$30; H. B., of Conn., \$20; J. L. B., of N. Y., \$25; D. B., of D., S. D., of Pa., \$25; N. L., of N. J., \$27; L. A. D., of Pa., \$20; C. D. C., D., D. & B., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of L. I., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of D. R., of N. J., \$25; J. McC., of N. J., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of N. J., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of N. J., \$25; N. L., of N. J., \$25; S. B., of N. Y., \$25; J. McC., of N. J., \$25; N. L., of N. J., \$25; S. B., of N. J., \$25; J. McC., of N. J., \$25; N. L., of N. J., \$25; J. S. B., of N. J., \$25; N. L., of N. J., \$25; J. S. B., of N. J., \$25;

H. W., of N. Y., S20; D. & B., of N. J., S25.
Specification and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, May 31; —
S. & B., of Mich., J. H., Y., of Mo., t. O., A. D., of Vt.;
J. L. B., of N. Y.; C. H., of N. H.; H. H., of Mass., three cance); J. McC., of L. I., J. J. U., of Pa., J. N., of N. J.;
C. R. S., of Vt.; J. & A. W., and others Mass.; H. W., of N. Y., D. & B., of N. J.;
G. A. J., D. & B., of N. J.;
G. A. O., of Pa.;
C. W. G., of Ct.;
G. N. B., of Ct.;

HE UNFORTUNATE-We are no longer able to sup TO THE UNFORTUMATE—WE ARE NO longer able to sup-ply the following back numbers of the present volume Nos. 6, 12, 14, 19, 17, 13, 19, 21, 22, 23, 24, 25, 27, 23, 29, 30, 34, 35, and 37. Such numbers as we have to furnish, are gratuitously supplied to such sub-scribers as falled to receive tham, and we would take occasion to state, that any person failing to receive their paper regularly, will confer a favor by notifying us of the fact. Missing numbers should be ordered early, to insure their receipt, as an entire edition is often exhausted within ten days after the date of pub-lication.

MODELS—We shall esteem it a great favor if inventors will always attach their names to such models as they send us. It will save us much trouble, and prevent the liability of their being mislaid.

PARENT CLAIMS—Dersons desiring the claim of any in-vention which has been patented within fourteen years can obtain a copy by addressing a latter to this office stating the name of the patentee, and date of patent when known, and enclosing \$1 as fees for copying.

when knows, and enclosing at as less not copying.

Receipts—Wen immost is paid at the office for subscription, a receipt for it will always be given, but when subscribers remit their money by mail, they may consider the arrival of the first paper a bona fide acknowledgment of the receipt of their funds.

### Literary Notices.

APPLIED CHEMISTAY OF SOAPS AND CANDING—And we edition of this work, by Campbell Morbit has instead in the been issued by Parry and McMillan, Philadelphia, and is fully written up on the subject to the present day. It is considerably enlarged, and contains some new chapters on paratine andles—a product obtained direct from more wince the first soldier. This subject is entirely new since the first voltage. This subject is entirely new since the first voltage of the present of the manufacture of soaps and candles must welcome a new edition, especially sait is the only work that relates to these arts, as pracified in the month work of the production of the product. We welcome this you may and other products. We welcome this you may as a valuable addition to American scientific literature.

Present on the Any of Perfugery—Mostry Lind-say & Blackistone, of Philadelphia, have just repub-lished the above very useful and ably written work by Soptimus Piesse, of London. Much in this volume con-tributed by Mr. Piesse himself has been published in our columns; and recently he has forwarded more very use-ful information on various subjects, which will appear from work to week. It is the best work on perfumery you published.

yet published.

THE GITY ARCHITECT—No. 2 of this beautifully executed work, adited by W. H. Ranlett and published by Dewit and Davenport, Nassas st, this city, contains five Dewit and Davenport, Nassas st, this city, contains five The editor is well known as an able the and villages. The editor is well known as an able the publish present work is issued in monthly numbers. He object is to present a sories of original designs of dwellings, stores, and public buildings, illustrating these with suitable and minute engravings, and full specifications. Such able and minute engravings, and full specifications for the content of the co

extensive circulation.

THE EDINBURCH REVIEW—The number for the preent quarter of this old, yet young and able Review, it replete with profund criticisms on history, philosophy and
art. The first article is on the Modern History of England, and is deen, yet dignified and learned. An article
land, and is deen, yet dignified and learned. An article
leaf knowledge. Another article philosophy and medleaf knowledge. Another article philosophy—is rich with information relating to this
great man. Eight enzy are embraced in this number.

Go., No. 54 Gold St., this clip.

Co., No. 58 Good St., fine cty.

American Journal of Photography and Kir.

Berd Arts—This mouthly commences its third volume
with the number for this month. It is edited by Charles

A. Seely, A. M. and contains much accurate and useful

A. Seely, A. M. and contains much accurate and useful

complished. The terms are SI per summ. It is published monthly at 94 Junua 81, this city. Those pursuing this art as a profession or as annaturs, will find it to

be a mont instructive periodical.

The New York Teachers—This is a monthly magazine, sdiled by the leading Superintendents of the Public James Crults—Subard Superintendents of the Public State, Albard, 2018—19 and Crults—Subard, Albard, 19 and Subard, 2018—19 and 19 a

use of too many books by the scholars.

The Westminster Review—This quarterly, pink lished by Leonard Scott & Co., contains eight able with the articles, besides the usual appendix of reviews of comporaneous literature. The leading article is a fine critic-tim of Modey? Rise and Fall of the Dutch Republic—Another on the famous Congress at Vienna in 161s, which deeply interesting. The great actor is not assume that the control of the cont

in pomies.

KNICKERROCKER MAGAZINE—Old Knick for June is exuberant with summer gleams of sunshine, wit, and humor; and contains quite a number of tender touching sketches, and some swest poetry. The Knickerbock or is a peculiar magazine, decidedly original in every particular; there is nothing like it in the whole range operational interacture. Published by Hueston, No. 33

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THE INVENTORS AND PATENTERS GUIDE and Literary Record, containing the U. S. Patent Law, all ones of numerous decisions of the United States the nation of numerous decisions of the United States the Patent Office of the U. S., with rules and instructions for patentees, Sc., by Franklin Relegant. 189 pages, Yamp, Price 31. JOHN BAER & SONS, Publishers, B. North Queen st., Lancastic, Fa.

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# Science and Art.

By this name we introduce the reader to the king of the elements, whose power is univer-The sea, the air, and the dry land would cease to exist without it. It is our friendly ally and inveterate foe. We cannot exist with out oxygen, yet it is the ultimate cause of death and decay. It is the giver of light and heat, for no combustible material can burn without it. In fact, were it not for oxygen there would be a universal chaos of matter; there would be no living thing creeping or growing upon the face of the globe; and the sun would shine only upon a metallic spheroid. such as is, probably, the moon and the stars. The air, containing one-fifth of oxygen, is the natural source for obtaining it; but to separate it by any direct process, to sift it out, as it were, is a problem as yet to be solved by chemical genius. When we want oxygen for experiments we separate it from some material that has already drawn it from the atmosphere, such as the oxyd of mercury or mangamese. The novice may also obtain oxygen from chlorate of potass. It is a very simple experiment. Mix a little chlorate of potass with a equal weight of washed silver sand : put the mixture into a clean oil flask, and set it over a clear fire. The chlorate will soon melt, and then boil; every bubble is a bladder of oxygen gas, which now invisibly fills the To prove its presence, take half an inch of the sulphur end of a match, stick it on the end of a piece of fine wire, light the match, and then quickly pass it into the interior of your oxygen chamber; you will then see the intense vivifying effects of the king of the elements; and if you are expert, the wire will take fire when the last of the match is consumed. All the rest you will learn with-

### Plaster of Paris.

In its natural state this is a salt of lime known by the name of gypsum, and is largely diffused throughout the world. Its constituent parts are lime and sulphuric acid. When calcined it is converted into plaster of paris. In fine powder, when mixed with water, it becomes heated, and will harden to a solid mass; it is, therefore, much used for potters' molds, images, and medalions. Its combining proportion of water is 27 per cent., and it is its property of suddenly hardening when mixed with water, which makes it so valuable for casting. It is a good non-conductor, hence it makes a good plaster for the interior of buildings, and for the filling of fire-proof safes. It is applied in large quantities to meadow and grass lands in a state of powder. The gypsum is simply ground up in mills, and sold to the farmers in this state. Placed in sinks it absorbs ammoniacal vapors, and is thus a deodizer; therefore it is very useful in many places in cities during hot weather, thus to apply it. Common slacked lime is cheaper and much used for this purpose, but it is not so good.

### Oil from Coal.

Messrs. Cairns, of Cloverport, Ky., inform us that they have commenced to manufacture oil on a large scale from the Breckenridge coal. They have erected twelve retorts, from which they have been running off a great quantity of very rich crude oil, and they were to commence this week to purify it. It is very evident that the earth was prepared with the special end in view of being man's abode, and the Great Architect of it has laid up stores in the bowels of the earth, from which man is to be supplied with light and heat, when our forests shall fail, and the whale cease to be chased by the daring mariners of Nantucket.

### Domestic Ginger Beer.

Two gallons of ginger beer may be made as follows :- Put two gallons of cold water into a pot upon the fire; add to it two ounces of good ginger, and two pounds of white or brown sugar. Let all this come to the boil, and continue boiling for half an hour. Then skim the liquor, and pour it into a jar or tub,

of cream of tartar. When nearly cold, put | was entirely subscribed in three days by the in a teacupful of yeast, to cause the liquor to work. The beer is now made; and after it has worked for two days, strain it and bottle it for use. Tie the corks down firmly.

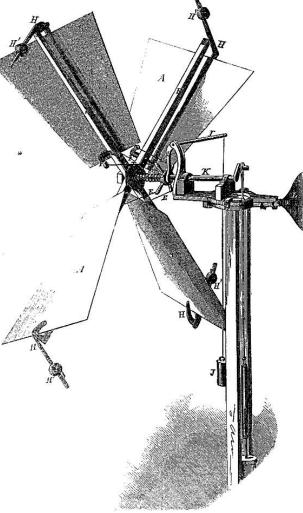
### Internal Improvement in Egypt.

Of the capital stock of the Suez canal forty-five millions of francs worth was reserved to be subscribed in Egypt, and of that the may y viceroy took fifteen millions. The remainder ness?

public, and one million nine hundred the of the amount was taken by fifty native Egyptians of the ancient race-being the first known instance of the participation of that

people in an industrial enterprise of a national or corporate character. A new light is certainly breaking in upon ancient Egypt, the mother of the arts. Who knows, but it may yet arise to more than its ancient great-

### IMPROVED SELF-REGULATING WINDMILL.



Improvement in Windmills.

In this improvement the wings, A, are hinged to arms, B. The wings are constantly held in position by means of spring, C, with which they are connected through nut D, rods E, and studs F.

The regulation of the position of the sails is effected by the hook-shaped weighted levers, H, which are pivoted on the outer ends of the arms, B, in the manner shown. When the speed of the sails increases beyond a certain gauge, the weighted ends of the levers being placed in advance or ahead of the sails, fly out, like the balls of a governor, and cause the inner or hook part of the levers to press on the wings, A, and open them so that they will offer much less resistance to the wind thus the speed is instantly diminished. The weights, H', slide on the levers, being fas tened in a given position by a thumb screw or

I is a crooked pivoted lever, one end of which terminates behind the nut, D; a cord is attached at the other end, and supports weight J, which is hung on whenever it is desired to stop the machine. The weight acts through lever I, and presses nut D up against spring C, thus operating on the wings and causing them to open so as to present only their edges to the wind. K is the main shaft, along with one sliced lemon, and half an ounce terminating in a crank, which is represented being simple, strong, and well finished. A

in our cut as attached to a pump. L is the

We are informed that large windmills, con structed on the plan here shown, operate with an extremely uniform velocity, no matter how hard, or how irregular and squally the wind may blow. The regulation is perfect, entirely self-acting, requires no attention, and cannot well get out of order. The parts are simple, and the original expense of manufacture is comparatively small.

This windmill is an alleged improvement over the one patented by Mr. Lempecke or the 8th May, 1855, and illustrated in No. 2 present volume Scientific American.

Mr. A. Lempcke, of Pleasant Mount, Wayne Co., Pa., is the inventor, of whom, or of Mr. H. W. Brown, same place, further information may be obtained. Patented March, 1856.

### Improved System in Mill Work.

The adaptation of the oscillating cylinder is becoming more and more general. Two pair of engines, upon the oscillating principle, are now in course of completion, and being erected in the "Metropolitan Flour Mills," of this city. They are built by Henry Waterman, of the "Clinton Foundry." The engines themselves are an excellent piece of mechanism

few details of them, and their arrangement, may interest our readers.

The usual system followed in the mill work of a flour mill has many evils and annoyances. Gearing of the heaviest description has been applied for obtaining the necessary motion of the stones, but owners complain of the jarring noise, and breakages of the teeth. Any sudden check or sudden impetus is decidedly hurtful to gearing, and in a flour mill it is subject to this. The motion required for the stones is an horizontal and circular one; to obtain this a pair of miter gears have to be used, with an addition of a heavy shaft and a fly wheel. The gears soon get out of truth and become troublesome, and if the teeth happen to break, the whole of the machinery is stopped for repairs. By means of these oscillating engines, the

horizontal motion is at once communicated and discards all complication and gearing. The cylinders are 14 inches diameter, and 3 feet stroke. They are fixed to the beams of the upper story, and stayed by a strong diagonal cast iron framing. The principal novelties about them are their nice arrangement in position, and also the manner in which the valves obtain their motion. Upon the crank pin of the crank which turns the shafts, is another lighter crank, with 18 inch centers, nearly. Upon the crank pin of this second crank, is an eccentric, which drives the main valves of both engines; above this eccentric is a small crank for the cut-off which is adjustable. There is a square brass slide upon the main valve rod, to which the rods of the cut-off are annexed. When in motion, therefore, this cut-off slide moves upon the main valve rod, thus giving an easy, simple, and steady motion.

### Cold Weather.

The past week has been the coldest at this period of the season, which has been experienced for 60 years. On the 30th the snow fell in Pittsburg, Pa., and on the 31st there was frost in New York City.



### Inventors, and Manufacturers

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