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Clarifying Sugar by Soap.

M. Basset lately introduced to the notice of the Academy of Sciences at Paris, the process of clarifying sugar invented by Mr. Garcia, formerly a sugar refiner of Louisiana. It is founded on the well-known property of lime to combine with fatty substances, and produce alkaline soap. When the saccharate of lime is brought into contact with a solution of soda soap, the sugar is set at liberty, the lime combines with the fat of the soap, and the soda remains in solution in the liquid. When the clarification has been effected with an excess of lime, and the liquid has been skimmed a first time, it must be allowed to cool to below 104° Fah., and the solution of soap is then poured in while the liquid is being stirred. When the whole has been incorporated, it is again brought to the boiling point, after which the temperature is suddenly lowered again, by the suppression of the steam current, and the new scum is removed. The latter consists of a calcareous soap, which on rising to the surface has carried with it all the impurities and extraneous substances contained in the liquid. The process requires no new apparatus, and is stated to produce better sugar.

Milk Sickness-Its Cause and Cure. As this disease is oftentimes fatal and wide spread in some sections of our country, any effectual remedy for it must be a great boon to suffering humanity. A correspondent of the *Prairie Farmer* asserts that its cause is the presence of cobalt in the soil of the pastures on which the cattle feed whose milk is said to produce the sickness. The remedy which he stateshas been successfully employed for it, is sulphuric acid, but he gives no directions as to its uses. We believe he is mistaken regarding cobalt in the soil, but he may be correct as to the remedy.

About five drops of sulphuric acid in a pint of water sweetened with a little white sugar, makes a pleasant and tart drink, which has been found very effective in curing dysentery, and it may be equally good for milk sickness. Very dilute sulphuric acid is no more dangerous than lemon juice in a beverage, therefore it may be safely tried for the above disease.

If there is cobalt in the soil of the meadows where the above sickness prevails, it can be easily detected by stirring some of the soil in clear soft hot water, allowing the sediment to settle, pouring off the clear solution and using a re-agent, such as ammonia, which will form a blue precipitate (if not used in excess) with the cobalt.

Philadelphia Iron Manufactures.

The Philadelphia North American states that in that city and neighborhood there are over ten thousand persons engaged in iron manufactures, whose products of industry amount to \$12,857,000 annually. The manufacture of cut nails has become an important item of national industry, and the machinery which makes the dies and operates them has attained in consequence great perfection, but the feeder or the portion which present the plate of metal to the dies, is usually that perfect but uncertain piece of mechanism called—a boy. The feeder which is represented in our engraving, and which can be attached to any nail machine, is the invention of John P. Sherwood, of Fort Edwards, N. Y., and was patented by him March 18, 1856. Thefollowing description will render the machine intelligible :—

A is the frame, which is of great strength, and mounted on four rollers, so that it can be moved from place to place, or to different positions in the workshop; B is the driving belt, communicating power from the main shaft to the band and fly-wheel, C; D is an ordinary nail machine, having on its shaft an eccentric, grooved, which receives a pin or roller projecting at right angles from a bar, G, and by the motion of this pin in the eccentric, it

causes the bar to move up and down while the pin slides in the guides, F. The bar, G, is connected by a screw with the piece, H, which is free to move in guides on the plate, I, that can be adjusted to any position on the table, J, screwed or otherwise attached at any suitable angle to the standards, K, which rise from the frame of the nail machine, A, at suitable distance from the dies. To H. two bars, O, are attached, bearing or holding at their extremity a hollow guard, P, through which the iron to be cut projects. This piece of plate iron is seen at R, held by the pincers or teeth, Q, which are attached to a rod that is rigidly connected with the cam, L, in H, and also connected with the screw, M.

The operation and working of the machine is as follows: —When the dies are put in motion by means of the belt, B, the eccentric, E, is also rotated, and so moves the bar, G, and frame, H. The motion of this up and down, causes the cam, L, to revolve, by means of a fixed pin, and its own inclined slot, half a turn, so as to present the opposite face of

the metal, R, to the dies, so that all that can shall be cut into nails, and no metal lost. When the handle, N, is up, this is all the motion that takes place, but when it is down upon the feed screw, M, this up and down motion also gives the screw a turn which feeds the plate, R, just the length of one nail under the dies. The operation which this feeder performs are, first, the turning of the plate accurately during the raising of the die, so that no time is lost, and it also feeds the plate at the same time to tho dies exactly the proper amount, this, of course, being regulated by the pitch of thescrew, and the eccentric is so placed on the shaft that the plate and feeder are quite rigid during the process of cutting. It is a most valuable improvement in nail machinery, and will save much time and labor.

One of these machines is on exhibition at the Crystal Palace, New York, and any further information can be obtained by addressing D. W. Seeley, New York, who acts as agent for the patentee.

The Rectification of Spirits and a Cure for Drunkenness.

A correspondent asks us in the same letter for "a cure for drunkenness, and the best nodern work on the rectification of spirits and the rectifying still." We have two theories in regard to the motives which prompted the above questions, so apparently antagonistic in their character. One is, that our correspondent is a manufacturer of spirits and is anxious to adopt the best means to cheapen and improve their qualities, and only asks for the first information to gratify an idle curiosity; and the other, that he is a whole-souled philanthropist whose first endeavor is to cure his unfortunate fellow creatures of a most abominable vice. and in the event of failing in this to devote his efforts toward the removal

of some of the many poisons contained in liquors, and thus in a great measure qualify their evil effects. We know of no modern work published in this country, exclusively devoted to the rectification of spirits and the rectifying still. Many works on chemistry treat of these subjects, but the latest and best information can probably be obtained from the last issue of Ure's Dictionary, under the respective heads of Distillation, Fermentation and Spirits.

The best cure for drunkenness that we can recommend is total abstinence from all intoxicating drinks. Where the unfortunate victim does not possess the necessary firmness to resist the temptation of the intoxicating draught, we would recommend those interested in his fate to first employ those delicate means

which are dictated by the spirit of Christianity, to bring him to a proper sense of his condition before resorting to the forcible ones too often attempted. Instead of trampling upon him, strive to nurse into life the still glimmering embers of a nearly exhausted virtue. Think of him as a being whose frame is still capable of being agitated by feelings the most refined, delicate and intellectual, and endeavor to inspire in him a desire for those virtuous joys which he experienced before he became a victim to this terrible habit.

Six barks are now preparing at Chicago to make voyages to Liverpool. Last year one and the first—made this voyage, and seemingly with success, or others would not be induced to follow the example this year.



NO. 32.





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Issued from the United States Patent Office FOR THE WEEK ENDING APRIL 6, 1858

[Reported officially for the Scientific American.]

CORN HARVESTERS—Isace V. Adair, of Varick, N. Y. : I do not claim the cutters, F, operating as shown, so as to effect, in connection with the stationary cutters, E, the desired result, irrespective of. the peculiar arrange-ment and means employed for operating the cutters, F, for such cutting device has been previously used. But I claim attaching the cutters, F, to the rods, a h, the rods, b, being provided with arms, K, and the rods and arms operated from the wheels, B, through the me-dium of the gearing, G i f g, and arms, c, when the above parts are used in combination with the stationary cutters, E, at the inner parts of the recesses, D, for the purpose set forth. I further claim the bar, H, provided with the arms, q, in combination with the gate, I, the above parts being with a railing or guard, so as to operate as and for the purpose set forth. I also claim the cutting device formed of the cutters, F c, connected with rakes or teeth, k, arranged to op-rate as shown, in combination with the discharging device formed of the gate, I, and bar, H, the whole op-erating as and for the purpose specified. [This invention consists in the employment of two CORN HARVESTERS-Isaac V. Adair, of Varick, N. Y.

[This invention consists in the employment of two scythe shaped cutters, operated in a peculiar way, and working over stationary cutters, and used in connection with a discharging device, whereby the standing stalks. as the machine is drawn along, are cut at a proper distance from the surface of the ground, gathered or thrown on a platform, collected into compact form, and after being bound by an attendant, discharged from said platform upon the ground.]

SEWING MACHINES.—Abraham Bartholf, of New York City: I claim the construction of the taper portions of the shuttle, and the forked portion of the shuttle driver, which acts upon it to drive it back, in a man-ner substantially as described, so that the said portion of the driver bears upon the top and bottom of the shut-tle with a tendency to draw it away from, or prevent it from hugging, the side of the race way.

And I also claim giving the two claws, i', which pro-duce the backward motion of the shutle, a relative form, substantially as described, by which the shutle is prevented hugging the bottom of the race-way, as set forth.

[This invention relates only to sewing machines in which a shuttle is used. Its object is to reduce the friction of the shuttle in the race-way without the use of oil, and thereby to avoid the dirtying of the shuttle thread, which is the source of great trouble in sewing delicate or light-colored work, wi en oil is used in the race-way. The invention consists in a certain construction of the shuttle and driver, which tends to prevent the shuttle lugging the race-way in its retreat, which it should be observed is the part of its movement in which, under the most common construction of the shuttle and driver, it is caused to hug the race-way most closely.]

SIRUP CASTERS-Edmund Bigelow, of Springfield, Mass.: 1 claim the described measuring faucet or res-ister, in combination with the revolving sirup fountain or reservoir.

TRAPS FOR ANIMALE_John L. Brabyn, of New York City: I do not claim the straight platform in any po-City : 1 do not claim the stranger interaction with sition. But I claim a tilting platform in combination with the enclosed recess, C or when the platform is comprised of the inclined plane and horizontal floor, A A, as de-scribed, and for the purpose specified.

GRINDING MILLS-D. E. Breinig, of Philadelphia, Pa.: I claim, first, The upper portion of the grinding surface of the shell and buhr cone-shaped, with inclined sides terminating in a horizontal or curved grinding surface, in combination with the deflecting arms, n and p, or their equivalents. Second, The shell and buhr formed as above de-scribed, in combination with the scraper, W, sliding substantially as described.

APPARATUS FOR ROASTING COFFEE—Robert Brown, of Ashtabula, Ohio: I do not claim separately any of the parts described. But I claim the vessel, A, provided with the adjusta-ble rotating scrapers or blades, D, attached to rods, i, of varying lengths, which rods are pivoted to the shatt, C, and the whole arranged to operate as and for the pur-pose described.

[The object of this invention is to obtain a portable parching or roasting device for domestic use : one that can be readily operated, and not at all affected by the "buckling" of its bottom, from the action of the fire upon it.]

CHURNS—Harvey Brown, of New York City: I claim the arrangement of the trailing paddles, wheels, and gearing, operated substantially in the manner and for the purpose set forth.

METHOD OF ATTACHING EXPANSIBLE CUTTING LIPT TO AUGERS, &C...-Nicholas Clare and John Quigly, o Malden, N. Y.: We claim the detachable and adjusta ble reamer or plug-borer, constructed and capable of being operated as set forth.

CLASPS FOR FASTENING BAGS-W. H. Cloud, A. L. Hatfield, and C. H. Burdick, of Fremont, Ohio: We natheld, and C. H. Burdick, of Fremont, Ohio: We claim the peculiar construction of semi-direles, a a with thin edge to prevent slipping, and hinge, **B**, at one side, clasp, c, and catch, d, on the other side, the pecu-liar construction of lever, f, so as to be operated upon by the pressure of the bag when fastening, and thumb piece, h, by which it is easily opened, the whole being arranged and combined in the manner and for the pur-poses set forth, or in any other manner substantially the same.

PEN AND PENCIL CASES—John Cockburn, of New York City : I do not claim, separately, operating the pencil tube, C, by means of the spirally slotted tube, D, for this has been previously done. But I claim the arrangement and combination, as shown and described, of a pen slide, H, which girdles its tube, G, with a boss, b, which latter girdles its tube, B, for the purposes set forth.

[This invention consists in a peculiar arrangement of 家 means for operating the pen and pencil, whereby the pen and pencil are pushed in and out of the case at the same end ; the construction of the case is rendered extremely simple, and the usual exterior appearance can be obtained.]

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METHOD OF SEQUEING POCKET-BOOKE, &c.—Oliver Cox, of Alexandriacounty, Va. : I claim the lock con-structed as described, and attached to the pocket-book, &c. in combination with the button constructed as de-scribed, the whole operating as set forth, for the purpose of attaching pocket-books, porte-monnaies and purses to the pocket of the wearer, as set forth and described. HAND CORN FLANTERS—Daniel G. Coppin, of Cin-cinnati, Ohio: I claim the combined arrangement of the concave plate, K. lever, h. and seed roa, f. ar-ranged with the pipes, d and g, and spring, J, all con-structed and operated as represented, for purposes men-tioned in the specification.

PORTABLE PUMP-William and Benjamin Douglas, of Middletown, Conn. : We do not claim an elastic cover, d, placed over a chamber, E, in order to form a pump, for such device has been previously used, and pumps thus constructed are generally known as bellows numps.

thus constructed are generaty along as being numps. Nor do we claim any of the parts separately. But we claim the pipes, A F B, and the chamber, E, provided with the flexible cover, d, and lever, L, or their equivalents, and the cup, M, the parts being con-structed and arranged relatively with each other, so as to operate as and for the purpose specified.

[By a peculiar arrangement of pipes, air vessel, and a suction and force chamber, a very portable and efficient pump is obtained, and one that is especially applicable to watering gardens, syringing plants, washing win dows, and similar purposes.]

SAW GUMMER-M. Ernsberger, of Bremen, Ohio: I do not claim, separately, the burr or cutter, e, for that has been previously used for analogous purposes. But I claim the stock, A, provided with the screws, d, or their equivalents, and also provided with the tube B, collar, C, pin, g, and shaft, D, with cutter, e, formed on it, the whole being combined and arranged substan-tially as and for the purpose set forth.

[Full particulars of this invention will be found on another page.]

another page.] HARDENING IRON AND STEEL.—George James Far-mer, of Birmingham, England. Patented in England, August 23, 1866 : I wish it to be understood that I do not confine myself to these, precise details, nor to the exact propertions of the several chemical compounds stated, as I have merely specified those details and propor-tions which I have hitherto found the best suited to ef-fect the intended purpose, and they may probably ad-mit of some slight variation when operating upon dif-ferent qualities of metal. I claim the hardening of articles formed of iron or steel, by plunging them into a solution of prussiate of potash, as I anmoniac and saltpeter after they have been heated red-hot and rolled in a powdered mixture of the same materials as set forth.

REVRIGERATORS-William Ferris, Philip Garrett and James Megratten, of Wilmington, Del. : We do not claim the outer and inner boxes or cases, nor their com-

Chains the other and timber boxes or cases, not their com-bination Neither do we claim filling the space between the inner and outer box with any composition or matter which may be a non-conductor of heat. But we claim the combining the third or timer box or frame, $o \circ o \circ$, with the interior of a refrigerator, as shown, so that a perfect circulation of cold air may be kept up in the interior of the box or case, $o \circ o \circ$, and also around it, as shown and set forth.

Also around it, as shown and set forth. COTTON PRESSES—William Field, of Providence, R. 1. : I claim, first, The arrangement of the chains, or their equivalent, connecting the followers, so that by applying power and motion to one follower, it is trans-mitted to the other, and also the followers retain their parallelism to each other, however unequal the resist-ance at either ends. Second, The combination of the screw for raising the follower with the chains, or their equivalent, for rais-ing the followers when arranged as described, for the purpose set forth. -Third, The guard plate, in combination with the fol-lowers, for the purpose described. SEEDING MACHINES.

SEEDING MACHINES-Joseph Fray, of Battle Creek, Mich. : I claim the device of using a screw with double thread, coarse and fine alternately, in the bottom of the seed hopper, in combination with the oscillating hand lever and the eccentric pivot, to force the seed through the holes in the perforated bottom of said seed hopper, by means of the compound oscillating motion of the screw.

BOX CASES AND LUBRICATORS FOR RAILEOAD CAE AXLES—George W. and Jacob C. Geisendorff, of Cin-cinnat, Ohio: We claim the employment of the di-vided packing, at in combination with the springs, c c, and d d, constructed substantially in the manner and for the purposes set forth.

MEANS OF PROFECTING TILLER ROPES OF VESSELS FROM FREE-W. Y. Gill, of Henderson, Ky. : I do not claim, broadly, the protecting of articles from fire by enclosing the same within a double case, the space be-tween its sides being filled with a non-conducting ma-terial, for this is a well-known means of protecting ar-ticles from heat, and may be seen in the various fire-proof safes, refrigerators, water coolers, &c., in common use.

Proof saves, remeasured, and a set of the se

[We have noticed this invention in another portion of this journal.]

PIPE TONGS-Henry H. Gilmore, of Boston, Mass.: I claim the combination of an inclined plane or planes, or the equivalent thereof, with the slotted jaw, for the purpose described.

PUDDLING FURNACES—John P. and John Grove, of Montour county, Pa., We do not claim the invention of revolving bottoms for puddling furnaces. But we do claim, first, the employment of a revolving bottom for a puddling furnace, arranged with water tubes for cooling it, and with the peculiar air tight joint described, the whole arranged and operating substan-tiallysa described. Second, The employment in a puddling furnace of a revolving tool, arranged and operating in the maner and for the purpose substantially as described.

BOOT-JACK AND BURGLAR'S ALARM COMENNED-F. C. Goffin, of Newark, N. J.: I do not claim, broadly, the employment of movable jaws to clamp and hold the heel of the boot. Nor do I claim, broadly the employment of spring door alarms, to give them a signal when attempt is mode to force an entrance

made to force an entrance. But I claim as an improved article of manufacture, a boot-jack alarm, made substantially as described, to wit: the bed, A, jaws, B, treadle, C, pendant, E, slide, F, and spring, D, arranged substantially as described, whereby the article serves the double purpose of a boot-jack and door alarm. e, a to

[We give a notice of this in another column.]

[We give a notice of this in another column.] REFING SALLS-Lewis Higgins, of Jersey City, and Alexander Brown, of New York City: We do not claim the rolling of the sail on the yard itself. But we claim, first, The truss frame, D E, constructed And fitted with a series of rollers, a a, which embrace the yard and rolled up portion of the sail, substantially as described, to hold the yard to the mast, but to permit the rolling of the sail thereon without the necessity of dividing the sail down the center. Second, The combination of the rings, H H, which the truss, by means of the collared bands, d d, and the rolling stays, h h, in the manner substantially as de-scribed, to prevent longitudinal movement of the yard, and the rolling of the traveling leads with the yard. TSee another page.]

[See another page.]

LANTERNS-A. H. Golden, of LaFayette, Ind. : I claim the bow or hail, B, pivoted to the upper part of the lan-tern, A, and provided with the plate or shield, C, and clamp constructed as shown, whereby the lantern may be readily secured to the arm of the person desiringits use, and the person have the control of both arms and hands, and at the same time have the full benefit of the light.

[This lantern is so attached to the arm of the person carrying it that he has perfect control of both arms and hands, and at the same time have full benefit of the light. The invention is designed more particularly for the use of railroad conductors while collecting fares and tickets, but it may be advantageously used by others in performing any work at which a light is required, and both hands have to be used.]

quired, and both nands have to be used.] Horse Collar BLOOKS-E. D. Gould, of Darien, N. Y. : I do not claima collar block with a base to mold the rear or belily of the collar. But I claim a collar block so constructed as to shape the interior of the front of the collar, and the interior of the rear of the collar next to the front, and the in-terior only, and stretch them at the same time, and hold them firmly in the form required, while the rear or belly of the collar is manipulated by hand, and work-ed and beat into the form required with a mallet, and other suitable tools, substantially as described.

other suitable tools, substantially as described. RAILEOAD STATION INDICATOR—John M. Harvey, of Amsterdam, N. Y., and N. J. Becker, of Florida, N. Y.: We claim, First, The arrangement of a series of separa-ted printed indicating cards, plates, or boards on a flexi-ble endless bolt or chain, and having the same revolve over a flat square or many-sided revolving shaft within a case which has a transparent front, substantially as set forth. Second. The employment of a self-adjusting forked rod leading down to the railroad rails, and furnished with a catch on each prong, in combination with pro-jections on the corners of the square, or many-sided shaft, a reversing cam, and double inclines or bevel stops, arranged along the track at the different stations or streets, substantially as and for the purposes set forth. Third, The combination of a spring self-adjusting bell hammer and bell with the square or many-sided shaft, and its projections, substantially as and for the purposes set forth. [An engraving and description of this invention will

[An engraving and description of this invention will be found on another page.]

Converting Reciprocating into an intermediate with befound on another page.] CONVERTING RECIPROCATING INTO ROTARY MOTION-Forest H. Harwood, of Rushville, N. Y. : I claim the arrangement, substantially as shown and described, of a revolving eccentric ring or band, B, with edge clips, a , of a reciprocating rod, or its equivalent, for operation together, to produce a revolving motion from a recipro-cating one, and the reverse, as specified. And I further claim the 'ombination with the recipro-cating clips, a b, of the rod, D, having a radial action to the ring shaft, A, of the endless band, B, arranged ec-centrically to its shaft, when said band is made of di-minishing thickness in opposite directions from its dead points or portions for operation with the clips, in the manner and for the purposes set forth. And lastly, I claim connecting the revolving eccen-tric ring or band, B, that reciprocates the clips, a b, of is revolved by them, with its shaft by or through the fly wheel, which aids the ring in passing its dead soints or centers, whereby the fly wheel is braced by the ring, and more immediate relief is given to, and generally diffused over the latter. [See a description in another portion of this paper.]

[See a description in another portion of this paper.]

Fortaro DicGERS-Lewis W. Harris, of Waterville, N. Y.: I claim the employment or use of a share, E, and drag, G, so constructed and arranged to operate as and for the purposes shown and described. I further claim, in combination with the share, E, and drag, G, the supplementary shares, F F, arranged to operate conjointly with the drag and opening share, as and for the purpose specified.

[A drag is employed in connection with a share, so arranged that the hills or drills containing the potatoes or other roots, will be opened by the share, and the roots subjected to the action of the drag, whereby the earth will be leveled and the potatoes brought to the surface of the ground. The invention also consists in the use of supplementary shares, in connection with the drag, and opening share above-mentioned, whereby the sides of the hills or drills are removed or pared off, preparatory to the action of the central opening share and drag, and the operation of the last-named parts is in somedegree facilitated.]

Row Look—James H. Hills, of Burlington, Vt.: I claim the arrangement and combination of half rings, H, and set or adjusting screws, F and J, and the sus pension and operating of the oar at point e, substan-tially in the mode and manner described.

Corpting Press-W. Hudgin, of Washington, D. C. : I claim effecting the combination of the main and branch pipes, A B, by means of an open coupling, B', which is furnished with an eniarged passage, a, to re-ceive the main pipe, A, a passage to receive or commu-nicate with the branch pipe, B, and a set screw, c, or wedge and key, and suitable packing to make a tight joint, and always maintain the same, substantially as and for the purposes set forth.

[We have given a notice of this machine in another column.]

METHOD OF HOLDING AND FEEDING THE BOLT IN STATE MACHINES—Abraham Hupp, of Lancaster, Ohio: I claim the combined arrangement of the levers, 14 and 15, catch rod, 21, and slides, 55, arranged with levers, n, and m, pawl, 12, ratchet wheel, 8, cord, 7, 7, and plate, 6, 6, all for holding and feeding the timber, R, to the cutter as represented, and for the purpose mentioned in the specification.

in the specification. MACHINE FOR CUTTING FILES—J. N. Jacobs, of Wor-cester, Mass. : I claim, first, the wedge, I, at the top of the toggle by which the cutter is operated, combined with a foot piece, r, with its shoe, r', resting upon the file blank or file, by means of mechanism substantially such as described, and with a loaded lever, O, or its equivalent to operate as set forth, for the purpose of controlling the depth of cut throughout the whole length of the file. Second, Supporting the file blank or file upon a roll-ing bed fitted to a carriage with rollers interposed in the manner substantially as set forth, for the purpose of insuring an uniform depth of cut all across the file. Third, The combination of therocking shee, r', of the foot piece, r, with the rolling bed, E, substantially as and for the purpose set forth.

foot piece, r, with the foiling bea, L, substantially as and for the purpose set forth. Fourth, The cam, W, combined with the wedge, I, foot piece, r, and shoe, r', by mechanism substantially as herein described, for the purpose of raising the cutter and shoe, r', of the foot piece, r, from the file or blank to prevent injury during its return.

[A notice of this invention will be found on another

Ior PTCHER-Ernest Kauffman, of Philadelphia, Pa.: I claim the ice pitcher having the inner portion or lin-ing, B, fitted to the outer portion or casing, A, with screw threads or their equivalents, which make a tight joint, but provide for its ready removal and replace-ment or renewal, as set forth.

An engraving and description of this invention will be found on another page.]

CRIMPING TOBACCO-Rhodolphus Kinsley, of Spring-field, Mass. : I claim the employment of one or more pairs of rollers constructed and arranged substantially as above set forth, for equalizing and crimping rolls in the manufasture of lump tobacco.

PIANOFORTE ACTION—Henry A. Leaman, of New York City: I claim, first, the attachment of the ham-mer of an upright pianoforte action to the rear extremi-ty of the key, and the arrangement of the notch, d, in the back side of the butt, B, of such hammer, so that the working face of the notch will operate substantially as described, in contact with the edge of a stationary bar, f, and by such operation cause the hammer to move back to strike the string, when the front end of the key is depressed.

back to strike the string, when the front end of the key is depressed. Second, In comhination with the attachment of the hammer to the rear extremity of the key, I claim the attachment of the damper to the hammer but below the pivot, b, which attaches the hammer to the key substantially as herein specified, whereby it is made to serve as a stop to the hammer, and depth or level of the key, substantially as described. Third, I claim the application of the regulating screw, c, in the rear end of the key to operate in combination with a portion, B', of the hammer but extended below the pivot, which attaches the but to the key, substan-tially as described. Fourth, I claim the arrangement of the damper lever, c, behind the downardly extended periton, B', of the hammer but, substantially as and for the purpose speci-fied. [This improvement consists mainly in a certain ar-

[This improvement consists mainly in a certain ar-

rangement of the several parts of the action for upright pianofortes, by which any one of the keys can be taken out, with all the moving parts of the action that belong to that key, without disturbing any other part of the action.]

ATMOSPHERIC PRESSURE DENTAL PLATES-Morris Levett, of New York City: I do not claim retaining the plates of artificial teeth in place by means of at-mospheric pressure, as the same has been applied both to the roof of the mouth, and also at the alveolarridge. But I claim the manner herein described of attaching the plates of artificial teeth by means of separate cells or cavities acting upon the alveolar ridge substantially in the manner and for the purpose specified.

SEEDING MACHINES—Isaac B. Lutz, of La Fayette, Ind. : I do not claim the adjustable bars, D, separate-ly, nor do I claim broadly the employment of screw rods for discharging the seed from the seed boxes. But I claim the rotating rods, K, provided with two screw threads placed in reverse positions, and so ar-ranged as to discharge the seed at both ends of their seed boxes, G, substantially as and for the purpose set forth.

Been lookes, G, eusemannen, a service and a service of the seed boxes, G G H, attached re-spectively to the adjustable bars, D, and beam, A, and provided with seed distributing screw rods, operated from the driving wheel, B, through the medium of the gearing m n q j j, substantially as set forth.

This invention is chiefly designed for sowing seed broadcast among standing corn, and consists in the means employed for distributing the seed, and in a eculiar arrangement of the seed boxes and shares, so that they are rendered capable of adjustment, to enable the implement to be expanded or contracted while in motion, to conform to the varying widths of the rows of eed.]

SMUT MACHINES-Samuel B. Manning, of Alleghany, Pa.: I claim the use of a cone, l, placed above the dis-tributing cup, to prevent any eddy or interruption of the draft of air, which would cause the deposit of the screenings and dirt in the cup.

Vise ANVIL FOR REPAIRING T.RAILS—Sanford Ma-ford Mason and E. M. Davis, of Michigan City, Ind. : We claim, first, the combination of the guard, c, on the lever jaw, and the groove, a, in the bed piece with a rasing mechanism for raising up said lever jaw, sub-stantially as described. We also claim in combination the projection, d, on the lover jaw and the groove, g, on the locking jaw, so that when the jaws are raised up, they will open to re-ceive the rail, and when released will catch and firmly hold themselves and the rails to the bed piece, sub-stantially as described.

CORN SHELLERS-Thomas W. McFarlan, of Salem, Ohio, and L. H. Davis, of West Chester, Pa. : I claim the gutter-shaped guard, I, arranged between and underneath the bevel picker wheels, and over-lapping the head of the vibrating riddle, substantially as and for the purposes set forth. Second, Having the head end of the riddle rest upon a horizontal projection of an inclined board, substan-tally as and for the purpose set forth. Third, Lining the spouts or shutes of the head, E, with a thin pivoted or yielding metal lining in the manner and for the purpose set forth. FENCE POST-E Rewrill, of Elmira, N. Y.: I claim

FENCE POST-ER. Merrill, of Elmira, N. Y.: I claim the shoe or foot plate, H. constructed as described with deflected plates, I, and slotted openings, g. in combina-tion with the skeleton post, a, and fianges, e, substantial-ly as and for the purpose set forth.

ly as and for the purpose set forth. HARVESTERS-W. K. Miller, of Canton, Ohio: I do not claim to have invented the separate features of balancing the cutter bar and its appendages upon a supporting shoe or roller, nor of hinging the same to the central axis around which the tongue or hounds of the machine turn, nor of arranging the central line of the machine turn, nor of arranging the central line of the machine turn, nor of a stranging the central such in different connections arenot new. But I claim the combination of the draw bar, F F, and cutter bar, F, when the same are balanced upon the sustaining shoe, R, and hinged to the axle of the driving wheel, A, distinct from the hounds of the draft tongue as described with the tongue, H, so attached that the line of its draft will be equi-distant from the central longitudinal lines of the driving wheel, A, and sustaining shoe, R, he several parts being constructed and arranged with respect to each other as set forth for the purpose specified. THESENING MACHINES-John R. Moffitt, of St. Louis.

THRESHING MACHINES-John R. Moffitt, of St. Louis Mo.: I claim the construction and arrangement of the metallic gearing frame, H, provided with arms, h h, and attached to the machine substantially as explained.

and attached to the machine substantially as explained. COATED METAL PLATES-Edmund Morewood and Geo. Rogers, of Enfield, Eng. Patented in England July 21, 1855: We claimthe new article of manufacture herein described, termed coated metal plates, consist-ing of sheet metal prepared and coated with a mixture of repellant and preservative coating substantially as herein set forth, the said coated sheet metal being in-tended as a substitute for many purposes for tin plates, galvanized iron, or other articles of that description produced by dipping sheets of metalinto melted metals.

MACHINE FOR SPLITTING WOOD-Franz Noette, of Brooklyn, N. Y.: I claim the intermittingly rotating table or bed, D, in combination with the vertical reci-procating cutter shaft, F, arranged to operate sub-stantially as and for the purpose set forth.

[A notice of this invention will be found on another page.]

REMOVABLE RAMMEE OF REVOLVING FIRE ARMS-Henry S. North, of Middletown, Conn. : I claim hav-ing the rack, d, and passage or chamber, b, made in the head of the base pin. B, substantially as described, thus rendering the rammer independent of every other part, and facilitating its removal and construction as set forth. forth.

[A description will be found on another page.]

MACHINES FOR PLANTING POTATOES—Jesse W. Pelle-treau, of East Moriches, N. Y.: I claim the general arrangement of the hopper, K, and automatic dropping apparatus, consisting of the spouts, 1 clappers, m, wheel n, and blocks, 9, in connection with the opening and covering plows, substantially as specified, whereby the potatoes or pieces of potato being fed into the machine by hand are not injured, and all the advantages of hand planting are attained without the laborious work connected therewith as specified.

SEEDING MACHINES.—Thomas A. Risher, of Circleville, Olio: I do not claim the combination of the bar and plates with the double-holed bottom and the recipro-cating slides, as this I have patented. Bit I claim the poculiar arrangement of the bars, B B1 B2 B3, with the right and left screws, E E', slides, at and a2, with its stirrer, O, for the purpose of regulating the quantity of grain with uneven slides, as described.

SEDING MACHINES—Thomas A. Risher. of Circleville, Ohio: I claim the peculiar arrangement of the bottom, B, as sonstructed, with the rock slides, c c c, handles d and e e, rods, h, set screw, a, and bottom, x, all operated in the manner set forth and for the purpose described

FIELD FENCE—Benning Rowells, of Ossian, N. Y.: I claim the method of connecting the panels and the braces with each other, by interlocking the upper and lower rails with the brace post, in the manner as de-scribed, whereby the panels are firmly connected with each other, and interlock with the posts without the aid of independent connecting devices.

CONTON SEED PLANTERS—James Ross, of Midway, Ala.: I claim the combination of the hollow shaft and arms, flances, 11, shaft, c discharge plate, a, and me-chanism vibrating the same, arranged and operating substantially as and for the purpose set forth.

WALLET FASTENER—Jacob T. Sargent, of Carlinville, III.: I claim the combination of the spring catch, and the attachment plate, the same constituting a safety apparatus for the purpose described. I also claim arranging the spring catch and attach-ment plate tegether as specified, and making the said catch with a bend or recess, d, disposed with respect to the attachment plate in manner and for the purpose set forth.

set forth. SEWING MACHUNES—Elliot Savage, of Berlin, Conn. I claim forming a chain stitch seam by the looper, con-structed and arranged in the manner described, when operated in combination with an eye-pointed needle, so that the looper shall enter the open loop as the needle rises, and, while resting on the bed plate, securely hold the first loop open in the path of the needle and release the loop, when the needle shall have entered to form a new stitch as set forth. I also claim the specific device herein described for regulating the tension of the thread mewing machines, consisting in a spool-supporting bracket constructed as specified, and arranged in relation to and operating in connection with a screw-threaded standard in such a manner as to ascend or descend when rotated around and upon wild standard for the purpose of causing the thread to be wound anound said screw until the requi-lite degree of tension is obtained. GRAIN SEVARATOLG—Francis Schunko, of York, Pa.:

GRAIN SEPARATOIGS—Francis Schunko, of York, Pa. : I do not claim separately any of the parts shown and described for said parts or their equivalents have been proviously used, but I am not aware that the parts have been arranged as herein shown, so that the screens could be inclined more or less as desired, the screens subjected to a jarring shake motion, and the grain sub-jected to the action of the blast during the principal part of the time occupied in its passage through the ma-chine. GRAIN SEPARATORS-Francis Schunko, of York, Pa.

chine. I claim the screens, E I J, placed in adjustable frames, F H, operated by the cam, I, levers, J K', and springs, q t, arranged relatively with each other, and the fan, C, spout or passage, I, and board, G', substantially as shown and described for the purpose set forth.

[A series of seives or screens are employed and a blast fan arranged relatively with each other, whereby the grain is not only seived or screened in a perfect manner, but in its passage from one seive or screen to the other, presented in the most favorable manner to the action of the blast from the fan, so that all light substances will be blown away. In order to render the operation of the seives and fan as perfect as possible. provision is made for the adjustment of the latter, whereby the passage of the grain through the machine may be accelerated or retarded as occasion may require.]

PLOWS-T. S. Scoville, of Elmira, N. Y.: I do not taim making the eyes of the spur wheels larger than claim making the eyes of the spur wheels larger than the journals on which they turn. Nor do I claim the simple use of washers or of clear-ion toth

Nor do I claim the sumple use of washeded insteeth. But I claim the combined arrangement of the loosely turning spur wheels, Di, the separating washers, f f, and the clearing teeth, i, acting upon or close to said washers, substantially as specified, so that the eccentric movement of the said spur wheels, together with the said closely fitting washers and clearing teeth, will ef-fectually keep the implement free from impediment.

Loox-E. M. Shaw, of Baltimore, Md.: I claim the plate, r. spring plates, p p, pins, x, and hollow stem, q, combined as described.

comuned as described. RAILROAD STATION INDICATOR—Charles J. Smith, of North Prairie, Wis: I claim neither the cylinders nor the scroll, but I claim the shifting lever or bar, B, and the mode of adjusting it by means of the index fincer at the end of the crank shaft, F, in such manner as to cause the rollers or cylinders to revolve in oppo-site directions by means of thesame application of power in combination with the pin or stops upon the lever, A, and the slots or openings in the aforesaid shifting lever or bar, B, arranged specifically as shown and described, for the purposes set forth.

for the purposes set forth. HAND PRINTING STAMP-Benjamin B. Stanton, of New York City: I am aware that hand stamps for printing have long been made with a movable die for the purpose of first being brought in contact with the initing pad, and then with the printing pad. I do not claim such movable die. But I do claim muoving the die from the inking pad to the printing pad and backwards by means of the spool, A, through which the stamping rod passes, operating in a straight line between parallel guides, arranged for that purpose upon a stationary arm over the inking and printing pads. I also claim in combination with the sliding spool, A A, the cacit, F, when arranged and operated in the manner and for the purpose specified.

CARPET-HOLDER-Horace Thayer, of Warsaw, N. Y .: I do not claim as new the parts composing my device. But I claim the arrangement of the springtube clasp and slide forming a carpet holder, constructed and op-erated substantially as described.

IRENING TABLE-WM. Vandenburg, Jr., of New York City : I claim the ironing table composed of a board rigidly attached at one end to a stand, which is pro-vided with a movable support for the other end of the board, to operate in the manner and for the purpose specified.

(We will publish an engraving and a full description of this table in a week or two.]

If at which is a week of two.] HARVERTERS-Lisac Van Doren, of Somerville, N. J.: I do not claim elevating the sickle by means of a plate or part, swinging on a center, and moving in a circle, and carrying the sickle with it, this having been done by W. A. Karby in his invention, patented 1856. But I claim : a crangement and connection of the movable part, k, with the fixed part, B, by means of the two connecting curves, 3 and 4, or their equivalent, to secure proper motion to the part, E, without any ne-cessary support or connection from the center, G. I also claim, in combination with the parts, B and E, J

E'S

4

Ś

the secondary movable part, K, substantially as described to bring the sickle, whatever its position on the curve, B, level with the cutting surface. I also claim, in combination with the parts, B E and K, the use and application of the universal joint, C, in connecting the sickle lever to the machine, substantially as described, to allow of the change in the position of the sickle, in the manner described.

LAMP ATAGEMENT-William W. Wade, of Long Meadow, Mass., and Charles Burnham, of Springfield, Mass. : We are aware that deflectors or chimney bands have been used, also that chimney bands have been used as tached to the top of the shell by hinges projecting out-ward, and also that openings have been used as fasten-ers for various other and different purposes than de-scribed; such we do not claim. But we claim securing the deflector, G, into the groove, of the chimney brink, J, the said band being hinged to the lamp cap, the whole constructed and oper-ating in the manner set forth.

PLOWS-J. C. Williamson, of Washington, Ga.: I claim the combination of the plow iron, E, brace, F, and cutter or share, G, when formed and united to-gether, and to the beam, in the manner and for the purpose set forth.

Coupling set for the set of the s

PISTONS FOR STEAM ENGINES—Ross Winans, of Balti-more, Md. : I claim the combination substantially as set forth, of self-setting packing, that, unaided by the skill of the engineer, will adjust itself in to close contact with the eylinder, and bear against. the same with the proper force; of means for binding this packing firmly in place when it has set itself out, and for slackening it again when necessary to allow it to rest itself; and of means by which the packing can be easily loosened and tightened without removing the cylinder head, whereby the packing of the piston of a locomotive can be adjust-ed better, and in less time than by any combination previously invented.

previously invented. LOCOMOTIVE ENGINES—Ross Winans, of Baltimore, Md. : I claim the combination of a foot-board, located below the usual level of the platform of the tender, and the surface of the grate, with a fire-box and grate adapted to the burning of coal as fuel, whereby the in-terior of such a fire-box and the grate thereof, can be more readily reached by the fireman, and his duties be performed with greater expedition, convenience and efforts. Take alar the surface the

effect. I also claim the combination of an ash-pan, open at its hinder end, with a foot-board located below the grate and the usual level of the platform of the ten-der, whereby the lower side of the grate and the space beneath can be inspected and reached by the fireman while the engine is in motion.

while the engine is in motion. GRATES FOR STEAM ENGINES—Ross Winans, ef Balti-more, Ma. I claim the grate of a locomotive engine, composed of a series of narrow sections each containing two or more bars and supports therefor, the sections and their supports being constructed and arranged sub-stantially as set forth, to permit each section to be rocked independently of the other by means of a hand lever applied outside efthe fire-box, as set forth. I also claim the construction of the series of bars of the grate and the bearer for supporting the same as described, so that any member of the series may be rocked upon two axes, without contracting the narrow-est part of the space between it and the adjacent sta-tionary members of the series, as described.

DOOR BOLTS-John Woolman, of Philadelphia, Pa. : I claim the arrangement of the flat or elliptical bolt, A, contained and moving within suitable straps or casings, with an eccentric motion, when operated and moved by means of the handle or lever, R substantially as de-scribed.

scribed. MACHINERY FOR BOLTING, DUSTING AND SEPARATING THE GROUND MATERIAL—Joel Woodward, of Philadel-phia, Pa.: I claim, first, The stationary brush or dis-tributor shown by letter, a, for the purpose as set forth. Second, The brushes, E E, so arranged as to carry the meal or bran to or from the center, whereby the substance can be scoured or brushed as much as desired, in the manner and far the purposes set forth. Third, The manner of making any number of separa-tions in the duster or separator, in the manner and for the purpose set forth. Fourth, The manner of providing the corresponding bottom or platform below E E, with sweeps or scrapers to carry the flour to spouts, as set forth.

boccom of platform below E. 2. With sweeps of scrapters to carry the flour to spouls, as set forth. Fifth, And the mode of regulating the brushes on the wire or cloth by the bolts or set screws, and the screw, b, at the bottom of the shaft, I, in the manner and for the purpose substantially as described, and to be used in connectiou with the specification.

METHOD OF GUIDING REGIFEOGATING SCHOLL SAWS-John C. Cline (assignor to himself and Samuel Rhodes) of Philadelphia, Pa.: I claim the employment of a cap, 3, in combination with a tubular guide, z, in the manner and for the purpose substantially as set forth.

CUTTING DEVICE FOR REAFING AND MOWING MA-OHINES—Thomas Harding (assignor to Warden, Bro-kaw & Child), of Springfield, Ohio: I claim the ar-rangement of the end of the sickle bar, A, next the di-vider, of a cutting and clearing section b, as constructed and for the purposes set forth.

STRAW CUTTER-J. B. Okey, of Indianapolis, Ind., assignor to himself and W. Y. Wiley, of Marion county, Ind. : I claim the combination and arrangement of the box, a, gage, G. knives, F. for their equivalents, upon the drum or wheel, B, when constructed and arranged substantially as set forth.

LAMPS-Pascal Plant (assignor to himself and Peter Hannay), of Washington, D. C.: I claim forcing a cur-rent of air through the lower or blue part of the flame by means of a cap-piece, constructed and arranged in relation to the wick tube, in the manner and for the purposes substantially as set forth.

LANTERNS-J. H. Reighard (assignor to himself, John Bird, and David Challener), of Birmingham, Pa. : I do not claim the coating of the external surface of a por-tion of the glass globe of lanterns with silver or other metallic substances, for the purpose of giving a reflect-ingsurface.

It canno subsequences to the part of the side of the globe of lantern cast or modded in one piece with the globe (which is to be silvered externally as a reflector), the edge of which circular projection is slightly raised from the surrounding surface of the globe, so as to permit of the convenient attachment of a cap or covering to protect the silvered surface of the reflector from in jury.

LANPS-Robert Steinmann (assignor to himself and N.S. Wax), of Boston, Mass. : I claim, first, The ar-rangement of the elevated reservoir, I, with its filter, K, and passages of communication, G and H, operating K, and passages of communication, G and H, operating in the manner substantially as set forth. Second, In combination with the reservoir, I, the pas-sages, G and H, and the oil chamber, D, I claim the bent tube, n, operating in the manner substantially as described.

bent tube, n, operating in the manner substantiary ac described. Third, And in combination with the elevated hot oil reservoir, I, I claim the plate, L, for the purpose of reg-ulating the temperature of the fat or oil, as specified.

GRAIN SEPARATORS — Josiah Turner, of Sunapee, N. H., assignor to himself and Edmund Burke, of Newport, N. H. : I do not claim the toothed cylinder, A, or its accompanying toothed concave, nor do I claim any of the described devices separately. But I claim the upward inclined revolving straw car-rier, S, in combination with the vibratory lattice, S'', and the adjustable lattice, S', constructed[and operat-

ing substantially in the manner as set forth and described.

PORTABLE GAS RETORTS-D. L. Weatherhead and J. T. Henry (assignors to themselves, John M. Smith and Wm. P. Campbell), of Philadelphia, Pa. : We claim the exterior horizontal cylinder, B, in combination with the interior horizontal cylinder. the exterior horizontal cylinder, B, in combination with the interior horizontal perforated cylinder, C, charged with pumice stone, when the cylinders are so con-structed and arranged that the material from which the gas is to be made shall flow into the annular space be-tween the two cylinders, and the gas when generated shall pass through the body of purous material for the purpose of purification in the manner described.

RE-ISSUE.

RE-ISBUE. SAWING MILL-Wm. H. Ferry, Jr., of Ferrysburg, Mich. Patented July 21, 1857: I claim, first, The par-ticular means and their arrangement, as described, for accompanying that end. Second, Effecting by means of an eccentric, the com-bination of the log carriase and automatic reversing mechanism, thereby rend ering the saw mill capable of self-feeding and self-gigring, se set forth. Third, So adjusting the gaging incline, d 3, that its hinke or pivoted joint and its opposite end or terminus shall always be at the same and equal distances from the set shaft, F, as described. Fourth, The application in the manner described of the adjustable self-fastening trip, z, to a saw-mill which operates with a continuous rapid motion back and forth, in combination with the vibratory reversing stop, w 2, substantially as and for the purposes set forth. [We will publish a full description and engraving of

(We will publish a full description and engraving of this machine next week.

ADDITIONAL IMPROVEMENT.

HAND PRINTING PRESS-Samuel J. Smith, of New York City. Patented Nov 3, 1857—additional improve-ment dated April 6, 1858 : I do not claim an adjustable pressure block in itself. What I claim as an improvement on my aforesaid patent of Nov. 3, 1857, is— First, The fountain cup, o, combined with the inking table, g, in substantially the manner and for the pur-poses specified.

table, g, in substantially the manner and for the pur-poses specified. Second, I claim the joint, 16, formed by the half pieces attached to the pressure block, b, and bed, a, when connected by the horizontal screw, and used for adjusting the press block, b, to the printing surface, and securely retaining the same in place, substantially as and for the purposes specified. EXTENSION.

TRUSS FRAMES OF BRIDGES.—Thomas W. Pratt, of Norwich, Conn., and Caleb Pratt, of Boston, Mass. Letters Patent No. 2,528, dated April 4, 1844—extension dated April 4, 1808 : We claim the described method of constructing a truss, that is to say, the combination of two dlagonal tension braces and straining blocks in each panel of the truss frame of a bridge, by means of which the camber may be regulated so as to increase or diminish it, either in whole or in sectional part of the bridge, the whole being constructed and operating sub-stantially as set forth.

COOKING STOVES-G. W. Pittock, G. G. Richmond, and C. Phelps (assignor to themselves and J. Lown), of Troy, N. Y.

Performances of Steam Engines.

MESSRS. EDITORS-In the SCIENTIFIC AME-RICAN of March 6, page 208, Messrs. Hamblin & Heath asked for information regarding what "a low pressure condensing steam engine can do, or had done in grinding grain, with the amount of fuel consumed," a very

pertinent and important question. The late John Farey, Esq., used to say that a bushel of wheat had never been ground with less fuel than was consumed by Bolton & Watt's steam engines seventy years ago. "A bushel of wheat ground in one hour with eight pounds of coal is one horse power." The horse power may also be represented by grinding one pound of wheat, or raising 33,000 pounds one foot, or evaporating 1.158 pounds of water, or burning 1343 of a pound of coal in one minute. On pages 515-16 of Mr. Farey's work on the steam engine, it is stated that $8\frac{1}{8}$ pounds of coal sufficed to grind a bushel of wheat, and dress some flour, and that 8.06 pounds of coal evaporated 69.477 pounds of water or 8.62 times its own weight-time, one hour. The steam engine did not work with expansion, therefore allowance must be made for this. The whole mechanical power contained in one pound of water is represented by its pressure and expansion. In the case in question, the pressure was 12.572 pounds per square inch, or 29.05 pounds on a base of water one foot high and weighing one pound; and its expansion from water to steam of that elasticity, 1,955 times, the product of which is 56,778 pounds, from which, by deducting one-twelfth for back pressure, we have 52,047 pounds or 1.577 horse power (52047+33,000). Thus then, of the whole laboring force, only two-thirds of it was effective. Anything which can beat that, without expansion, is a clear gain. The power is in the steam, not in the engine, therefore when a pound of water evaporated into steam does not come up to the standard above, the engine or transmitter of power is at fault. One pound of water evaporated under a pressure of 90 pounds per square inch, or 208 pounds on a water base of one foot high to the pound, expands 321 times, and its mechanical power is equal to lifting 66,776 pounds one foot high, but from this we must deduct the back pressure of the atmosphere and the obstruction from the exhaust port and pipe, which if we call one-fourth, we

have a total working power of about $1\frac{3}{4}$ horse power as the utmost attainable. Yours respectfully,

THOMAS PROSSER. New York, April, 1858.

The following is another letter on the same subject :-

MESSRS. EDITORS-I have a "Corliss engine," four feet stroke, fourteen inches cylinder, and have kept a correct account of fuel for the last year ending Dec 31, which I consider the only correct way to get at the cost. Have run 292 days of ten hours each; used thirty-eight horse power per day, without allowing anything for shafting and small machinery, which would add three horse power certain per day-the cost of fuel per day is just \$5 77. That is a trifle over 15 cents per horse power per day. The work done was cutting and grinding dyewoods, and grinding corn with an "Old's mill." I have calculated the power of an "Old's mill" at about threequarters the power required to do the same work on the old-fashioned grist mill. The engine has run thirty-three months, and three dollars will pay all the expense of repairs, and that has been in broken bolts, done through the carelessness of the engineer. The two boilers used are the common cylinder kind, thirty feet long, thirty inches in diameter, and I am satisfied they are the cheapest boilers in use when properly made, and as for safety no one can dispute that point. I will state that the steam carried is from sixty to eighty pounds per square inch pressure by Ashcroft's steam gage. WM. B.RIDEN. Providence, R. I., April, 1858.

The Eyes and Spectacles.

MESSRS. EDITORS-On page 235, this volume, SCIENTIFIC AMERICAN, I observe that one of your correspondents has discovered that he is "long-sighted with his left eye, and short-sighted with his right eye, and asks if this is a common occurence ?" I would sav it is not a common occurrence, although I have met with some twenty or thirty instances of it. In the winter of 1831, a lady between forty and fifty years of age, came to my jewelry store in Burlington, Vt., where, after some hours' trial, I succeeded in suiting her eyes, by fitting a convex glass of twelve inches focal distance from one eye, and a concave glass. No. 12, from the other eye, when the lady declared she could see with both eyes alike. A gentleman in this city now wears his spectacles with a convex glass of some twelve to fifteen inches focal distance for one eye, but uses no glass for the other eye. These were all caused by nature, not by accident. To determine whether the eyes are "mates," take a pair of convex spectacles-if long-sighted-and look upon fine print, and observe whether each takes in the same number of lines, and if the same appear to be straight. If short-sighted, take a pair of concave glasses, and look at a brick wall across the street, and observe as above. The difference between the two eyes, if any, will at once be noticed. R. FITZGERALD. New Haven, Ct., April, 1858.

Feeding Horses.

MESSRS. EDITORS-In a recent number of the SCIENTIFIC AMERICAN, I noticed a brief article on the above subject, and as you well remarked "it is an important one." As facts are wanted on all such matters, I submit the following :-

The towing of boats on the Erie canal is done in part by horses that are taken along with the boats, and partly by towing com panies who keep their horses at stations about twelve miles apart along the whole length of the canal. There are three of these towing companies, and they employ about 1400 horses. They have found, after great experience, that the most economical and bestfeed for their horses is a mixture composed of equal parts, by measure, of corn meal and mill feed (bran or shorts weighing about twenty pounds to the bushel), mixed up wet with cut hay, and they accordinglyfeed this altogether. **R.** W

Buffalo, April, 1858.