CROSS-CUT SAWING MACHINE—Henry H. Potter, of Carthage, N. Y.: I do not claim separately any of the parts herein described.

But I claim operating the saw, E, by means of the bent lever, C arranged substantially as shown, in connection with the feeding device formed of the levers, F G, and guide, f, the whole being combined and arranged to operate conjointly, for the purpose set forth.

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

SEEDING MACHINES—Thomas A. Risher, of Circleville, Ohio: I do not claim the combination of the bar and plates with the double-holed bottom and the reciprocating slides, as this I have patented.

But I claim the peculiar arrangement of the bars, B B1 B2 B3, with the right and left screws, E E', slides, a1 and a2, with its stirrer, O, for the purpose of regulating the quantity of grain with uneven slides, as described.

SEEDING MACHINES—Thomas A. Risher. of Circleville, Ohio: I claim the peculiar arrangement of the bottom, B, as constructed, with the rock slides, c c c c, handles d d and e e, rods, h 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 described, whereby the panels are firmly connected with each other, and interlock with the posts without the aid of independent connecting devices.

COTTON SEED PLANTERS—James Ross, of Midway, Ala.: I claim the combination of the hollow shaft and arms, flanges, l l, shaft, c, discharge plate, a, and mechanism vibrating the same, arranged and operating substantially as and for the purpose set forth.

WALLET FASTENER—Jacob T. Sargent, of Carlinville, Ill.: 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 attachment plate together 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.

SEWING MACHINES—Elliot Savage, of Berlin, Conn. I claim forming a chain stitch seam by the looper, constructed 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 in sewing 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 said standard for the purpose of causing the thread to be wound around said screw until the requisite degree of tension is obtained.

GRAIN SEPARATORS—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 previously 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 subjected to the action of the blast during the principal part of the time occupied in its passage through the machine.

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 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 clearing teeth.

But I claim the combined arrangement of the loosely turning spur wheels, D D, the separating washers, f f, and the clearing teeth, i 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 effectually keep the implement free from impediment.

LOCK—E. M. Shaw, of Baltimore, Md.: I claim the plate, r, spring plates, p p, pins, x, and hollow stem, q, combined 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 finger at the end of the crank shaft, F, in such manner as to cause the rollers or cylinders to revolve in opposite directions by means of the same 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.

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 inking pad, and then with the printing pad. I do not claim such movable die.

But I do claim moving the die from the inking pad to the printing pad and backwards by means of the spool, A 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 catch, 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 operated substantially as described.

IRONING 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 provided 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.]

HARVESTERS—Isaac 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. Kerby in his invention, patented 1856.

But I claim the arrangement and connection of the movable part, E, 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 necessary support or connection from the center, G.

I also claim, in combination with the parts, B and E, 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 ATTACHMENT—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 attached to the top of the shell by hinges projecting outward, and also that openings have been used as fasteners for various other and different purposes than described; such we do not claim.

But we claim securing the deflector, G, into the groove, of the chimney band, J, the said band being hinged to the lamp cap, the whole constructed and operating 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 together, and to the beam, in the manner and for the purpose set forth.

COUPLING OF SHAFTING FOR PROPELLERS—Seth Wilmarth, of Charleston, Mass.; S. L. Hay, of Reading, Pa., and D. N. B. Coffin, Jr., of Newton, Mass.: We claim the combination of plate, d, or its equivalent, with the head plates of the shaft in any manner substantially as described, so that the coupling may accommodate itself to the angular and transverse variation between the driving and driven parts of the shaft, whether that variation be variable or permanent.

PISTONS FOR STEAM ENGINES—Ross Winans, of Baltimore, 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 cylinder, 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 adjusted better, and in less time than by any combination 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 interior 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 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 tender, 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.

GRATES FOR STEAM ENGINES—Ross Winans, of Baltimore, Md.: 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 substantially as set forth, to permit each section to be rocked independently of the other by means of a hand lever applied outside of the 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 narrowest part of the spaces between it and the adjacent stationary 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, B, substantially as described.

MACHINERY FOR BOLTING, DUSTING AND SEPARATING THE GROUND MATERIAL—Joel Woodward, of Philadelphia, Pa.: I claim, first, The stationary brush or distributor shown by letter, a, for the purpose as set forth.

Second, The brushes, E 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 for the purposes set forth.

Third, The manner of making any number of separations or any mode of combining more than two separations 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.

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 connection with the specification.

METHOD OF GUIDING RECIPROCATING SCROLL 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 REAPING AND MOWING MACHINES—Thomas Harding (assignor to Warden, Brokaw & Child), of Springfield, Ohio: I claim the arrangement of the end of the sickle bar, A, next the divider, 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 F, or 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 current 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 portion of the glass globe of lanterns with silver or other metallic substances, for the purpose of giving a reflecting surface.

But I claim making a circular convex projection in the side of the globe of lantern cast or molded 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 injury.

LAMPS—Robert Steinmann (assignor to himself and N. S. Wax), of Boston, Mass.: I claim, first, The arrangement of the elevated reservoir, I, with its filter, K, and passages of communication, G and H, operating in the manner substantially as set forth.

Second, In combination with the reservoir, I, the passages, G and H, and the oil chamber, D, I claim the bent tube, n, operating in the manner substantially as described.

Third, And in combination with the elevated hot oil reservoir, I, I claim the plate, L, for the purpose of regulating 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 carrier, S, in combination with the vibratory lattice, S'', and the adjustable lattice, S', constructed and operating 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 perforated cylinder, C, charged with pumice stone, when the cylinders are so constructed and arranged that the material from which the gas is to be made shall flow into the annular space between the two cylinders, and the gas when generated shall pass through the body of porous material for the purpose of purification in the manner described.

RE-ISSUE.

SAWING MILL—Wm. H. Ferry, Jr., of Ferrysburg, Mich. Patented July 21, 1857: I claim, first, The particular means and their arrangement, as described, for accompanying that end.

Second, Effecting by means of an eccentric, the combination of the log carriage and automatic reversing mechanism, thereby rendering the saw mill capable of self-feeding and self-gigging, as set forth.

Third, So adjusting the gaging incline, d 3, that its hinge 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 this machine next week.

ADDITIONAL IMPROVEMENT.

HAND PRINTING PRESS—Samuel J. Smith, of New York City. Patented Nov 3, 1857—additional improvement 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 purposes 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. 3,523, dated April 4, 1844—extension dated April 4, 1858: We claim the described method of constructing a truss, that is to say, the combination of two diagonal 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 substantially as set forth.

DESIGN.

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 AMERICAN 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 8¼ 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 1¾ 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 three-quarters 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 "longer-sighted with his left eye, and short-sighted with his right eye, and asks if this is a common occurence?" I would say 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 companies 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 best feed 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 accordingly feed this altogether.

R. W.

Buffalo, April, 1858.