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Weather Prediction.

Although we have no faith in the predictions of Thomas, the almanac maker, or any of the weather prophet fraternity, we will publish the information of a correspondent —J. Royal, of White Rock, Ill.—who professes to be able to foretell the weather one year in advance for any locality where there is an almanac calculated. Here is the prophesy:— "The first half of April will be wet, the last half fair; the first week in May will be wet, the balance, fair; the first half of June will be fair, the last half changeable; July will begin and end with a few days of changeable weather leaving the middle of the month dry; August will have a great many wet days; September will set in fair, but the balance of the month will be changeable, the last part being wettest; October, changeable, gradually increasing to wetness; November, like the preceding, only commencing fairer and ending wetter; December, fair weather." On this, we are told we may rely, with the exception of September, where there has "to be added the extra stormy weather caused by the sun crossing the line." This truly depends on the prevailing winds at the time; if the winds be southerly, the month will be wet; if northerly it will be as dry as if the sun were at his extreme distance from the line.

To Waterproof Fabrics.

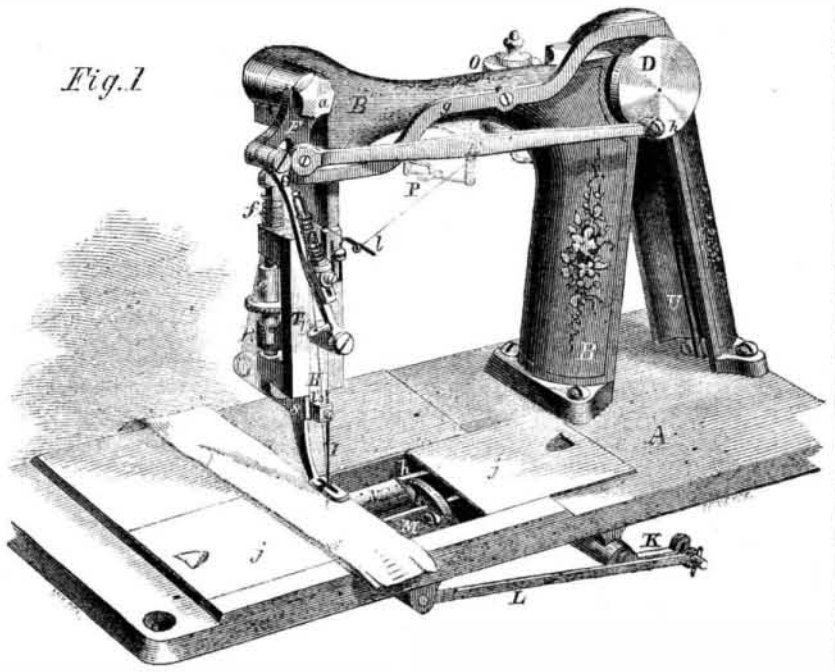
Take a pound of glue and one pound of tallow bar soap and dissolve them in five gallons of water. Now bring the water to the boiling point, and add carefully and slowly one and a half pounds of alum. When this is all dissolved, cool down the liquid to about 130° Fah. and plunge the articles to be prepared into it, then hang them up to dry. When they have become quite dry, they should be washed in soft water and dried a second time. Such articles should not be used for wearing apparel, excepting for loose tunics to be put on in rainy weather. Any person may thus prepare at little expense a coarse cloth water-proof fabric.

Breaks in Levees.

In a paper recently read before the New Orleans Academy of Science, by Dr. R. Cartwright, he attributes the breaks in the levees of that city to the burrowing of crawfish. He says these animals build their houses near the base of the levee and next the river, for the convenience of catching fish, shrimps, &c. When the water comes up against it, they burrow through the levee, and go on the other side, to prevent being drowned. The most effectual method to drive them away is to throw on the base of the levee the crushed stalks of the sugar cane, called *bagasse*.

BURNET AND BRODERICK'S SEWING MACHINE.

Fig. 1



The sewing machine is now a peice of mechanism of such extended utility and application, that every contribution to its improvement or simplification is to be regarded with due attention and respect, and each invention which has for its object the more perfect action and the production of better work deserves to be examined impartially and with care.

The illustrations of the present article show a perspective view, Fig. 1, and a front end view, Fig. 2, of a new sewing machine, invented by S. S. Burnet and W. Broderick, of Chicago, Ill., and patented November 30th, 1858, in following the description of which, we ask the reader to remember the above remark.

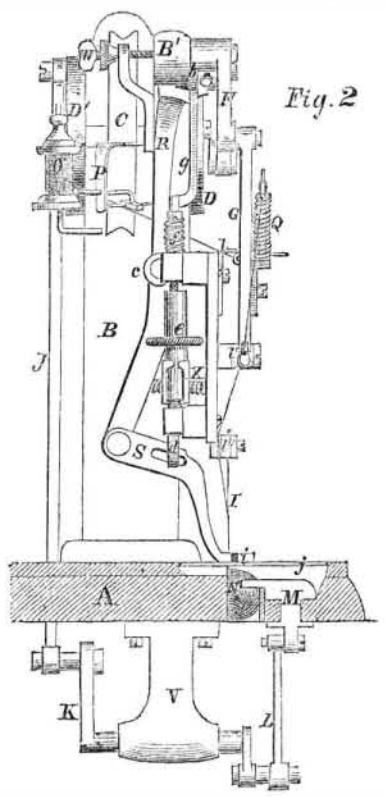
Upon the table or bed, A, a frame, B, and attached arm, B′, is secured. These carry the feed motion and needle and their operating parts. Through the top of B, a horizontal bar is placed carrying a belt wheel, C, and two crankwheels, D D′, the crank wheel, D, serving also as a cam by a small depression being formed at *h*. To D is attached an arm, E, which as D is rotated gives a back and forth motion to the rocker, F, that is attached to B′ by a pin, *a*, and F communicates its motion through a link, G, to the needle carrier, H, and needle, I. H moves in guides, T. The motion of the needle is thus obtained by means the most simple and effective.

To D′ is secured a link, J, that passing through a slot in A, operates the rocker, K, suspended by the bearing, V, under A, and K gives the proper motion to another link, L, that moves the slide, M, in which the shuttle, N, is placed; the shuttle moving in a race-way, *h*. By these means the shuttle motion is obtained.

The thread coming off the spool, O, passes between two thin flat metal plates in P, and a slide on them brings them closer together, or allows them to be further apart to regulate the tension; from P it passes through a small loop, *l*, thence through an eye or forked wire on G, where the tension is properly raised at different portions of the stitch by a spiral spring, after which it passes to the needle, being guided on the way by the eyes, *l′ l″*.

The feed motion is obtained in the following manner; the feed bar, R, is pivoted to the frame at *c*, and it is moved by a small cam, *b*, on F, which forces it forward, and by means of a feed plate, S, the serrated end of which, *i*, moves the cloth. The feed bar and plate are forced back by the spring, X. In S, is a slot that works over a pin in an arm,

Fig. 2



d, that can be lengthened or shortened by the double screw, *e*, a little nut on the bottom of which prevents its moving by the motion of the machine, and a spring, *f*, on the upper end of the device elevates the portion, *i*, from the cloth, as S is being drawn back, and at the same time the end of *g*, which passes over the indentation, *h*, on D, allows this to be done; when *i* is pushing the cloth forward or is at rest, the lever, *g*, keeps it in contact with the cloth, by being all the while on the largest diameter of D. The plates, *j*, serve to cover up the shuttle and race. The whole machine is operated by a band, U, passing over the pulley, C. A perfect loop is formed by this machine, and the shuttle is allowed time to pass through the loop before it is drawn tight, and thereby accomplishes the interlocking of the two threads, and the drawing of the stitch tight upon the cloth. Every part is under complete control, the length of feed being regulated by screw, W, and the machine operates quietly and with great precision and regularity.

Any further information can be obtained by addressing Burnet, Broderick & Co., Chicago, Ill.

Animal and Vegetable Life.

There is nothing short of revelation that more beautifully or satisfactorily proves the existence of an Almighty mind than the fewness and simplicity of the ultimate elements of animal and vegetable life. Thus, there are but four elementary principles essentially necessary, and but six generally employed, to form every variety of organic life; nitrogen, carbon, oxygen, and hydrogen are the bases, to which sulphur and phosphorus may be considered supplementary. With these, infinitely varied in their atomic proportions, are built up not only the whole animal kingdom, but also every variety of the vegetable world—from wheat, the "staff of life," to the poison of the deadly Upas tree. It is also worthy of remark that these four elemental principles are those also of which both air and water are composed, so that air and water may be considered in truth and fact as being the original elements of organic life.—*Dr. Toulmin.*

Gun Boats.

About three weeks since (page 237) we directed public attention to the above subject, in a brief review of Chief-Engineer Isherwood's work on the British gun-boats. Since that period much discussion has taken place in the daily papers in reference to the utility of such war vessels. The brave old Commodore Stewart, in a letter of the 27th ult. to the *National Intelligencer*, expresses a favorable opinion of their qualities for the siege of fortifications. He says:—"They will prove of great importance under the power of steam, in any future operations against ports and permanent batteries."

Peculiar Recording Thermometer.

The following is the description of a very simple recording thermometer, used by J. Gautlett—a farmer of Middlesborough-on-Trent, England—and which is stated to be very correct in operation. It consists of a long tube of thin sheet zinc, containing a loose, dry, wooden rod. The two are fixed at one end only. The relative greater expansion of the zinc, by an increase of temperature, causes it to protrude beyond the wooden rod, and *vice versa*. This varying motion of the zinc is communicated by a lever to a pencil which passes on a revolving cylinder, containing a strip of paper, which is wound off every minute by clockwork.

Measures have been taken to light the city of Honolulu with gas, and it is expected that the works will be completed for this purpose in the course of four or five months at farthest.

Issued from the United States Patent Office

FOR THE WEEK ENDING MARCH 29, 1859.

[*Reported officially for the Scientific American.*]

*** Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

RAILROAD CAR TRUCKS—T. F. Allen, of Dyersville, Iowa: I claim a car truck, sustaining the weight of the car body upon the centre, in a manner to balance or keep it in equilibrium, and free from contact with the side timbers of the truck frame, whatever be the motion imparted to it, and yet provide but the one common axis or bearing for it to turn upon, substantially as described and for the purposes set forth.

APPARATUS FOR DESTRUCTIVE DISTILLATION—Luther Atwood, of Brooklyn, N. Y.: I claim the combination of the vertical distilling tower, A, and appurtenances, with the condenser, h, and the adjustable draft passage, c, or their substantial equivalents in combination, when arranged and combined substantially as described, so as to use the current of heated products of combustion in its upward or natural direction.

HOP FRAMES—Thos. D. Aylsworth, of Ilion, N. Y.: I claim so hanging the main wire, B, upon the supports, F, as that said supports will prevent the wire from slipping through them, should it be accidentally become loose or broken, substantially as described.

And I also claim, in combination with the main wire, suspended as represented, the uniting thereto of the training wires, a', by spring hooks, substantially as described and shown.

FARM GATE—Geo. W. Baker, of Neponset, Ill.: I claim the slide, D, and levers, C C, in combination with the rods, f f, levers, l l, rods, c c, and bars, b b, arranged for joint operation, in connection with the gate sections, substantially as set forth.

CUSHION FOR BILLIARD TABLES—Abraham Bassford, of New York City: I claim constructing the cushion of a billiard table of a metal plate, B, the edge of which is protected by a thin strip of india-rubber, or other suitable substance, substantially as and for the purposes set forth.

[It is requisite that a billiard cushion should be as hard as the ball itself to reflect it at the same angle at which it struck, and yet not hard enough to injure the ball. The smaller the point of contact between the ball and cushion the more true the angle of reflection. This inventor uses a cushion formed of a metal strip, and covered with rubber to protect the ball.]

CUSHION RAIL FOR BILLIARD TABLES—Abraham Bassford, of New York City: I claim, first, The arrangement of the cushion rail of a billiard table, in such a manner that a space is left between the bed and the rail, by securing the same to the bed by means of studs, b, and bolts, a, substantially as and for the purpose specified.

Second, The arrangement of the pocket bows, D, which are made of one piece, with the rail, and secured together by a lap joint, f, and which are beveled down at their lower edge, substantially as and for the purpose set forth.

[The rail of this billiard table is supported by rhomb-shaped studs which have room enough in their centers for bolts to pass through, while they are beveled down towards both ends; so that an open space is left between the bed and the rail nearly all the way round, and a ball can be reached with the cue, when close to the cushion, just as easily as if it were in the centre of the table. The pocket bows are also formed of the same material as the rail.]

HINGE FOR THE REFLECTORS OF STEREOSCOPES, &c.—Alex. Becker, of New York City: I claim the arrangement of the cars, a a, one on each side of the reflector of a stereoscopic case, or attached in a corresponding manner and for the same purpose to any like part of another similar instrument, in combination with the screw, c, substantially as and for the purpose described.

[This is a very simple and efficient means of adjusting the reflectors of a stereoscope, and does away with any complicated devices.]

MODE OF PREPARING AND MOUNTING SLATES—Hubbard Beebe, of New Haven, Conn.: I do not claim the vulcanized india-rubber, or gutta-percha, or any right to use the same, without the license of the patentee thereof.

But I claim the combination of a metallic band or rim and vulcanized india-rubber frame or mounting, with or without a lining of cloth, to the school slate, whether of stone, slated paper or wood, substantially in the manner and for the purposes specified and set forth.

I also claim, as my invention, the application of the vulcanized india-rubber or gutta-percha frame or mounting, substantially in the manner described, without the metallic rim, to slates of stone or other material of sufficient strength and stiffness to warrant its disuse in any case; but I deem it preferable, in all cases, to combine the two, where durability as well as noiselessness are deemed important.

MODE OF FASTENING SKATES—Edward Behr, of New York City: I claim the arrangement of the screws, b, and the screws, i, or their equivalent, in combination with the toe-cap, B, and with the heel-strap, C, substantially as and for the purpose described.

[The common mode of fastening skates by straps, which are secured in buckles, is very objectionable, not only because the straps themselves, if properly tied, cause great pain to the foot, but also because it is almost impossible to buckle the straps properly, the holes being so far apart; and these holes, when put close together, weaken the strap, and tear out when any strain is put upon them. To overcome these difficulties is the object of this invention, which consists in fastening the skates by means of screws, which are attached to a toe-cap and to a heel-strap in such a manner that the strain of the cap and of the strap can be adjusted by turning the screws, and that the foot can be cramped in the toe-cap by means of the heel-strap without causing any pain.]

MOLE PLOW—Joel Carrington, of Avoca, N. Y.: I claim the combination and arrangement of a replaceable pointed colter, with a continuous plate or solid standard carrying the mole, and a brace in the rear, connecting the said mole to the beam, and also to the handles, in the manner substantially as described.

METHOD OF OPENING AND CLOSING GATES BY WEIGHT OF VEHICLE—Frederic B. Betts, of Brownhelm, Ohio: I claim the combination of the roller, B, and its appurtenances, with the levers, F F, and connecting rods, D, and with the gate, for the purpose specified and substantially as set forth.

CONSTRUCTION OF MALLETS—Lyman W. Blanchard, of Whitingham, Vt.: I claim the mode of constructing mallets with wooden head blocks and iron flanges, and a tapering screw, arranged substantially in the manner and for the purpose set forth.

CARRIAGE TOPS—Pardon Boyden, of Sandy Creek, N. Y.: I claim the arrangement and combination of the bows, E, bars, D D, bars, H H, and seat rail, a*, substantially as and for the purpose shown and described.

[The top of a calash, by this invention, is constructed without folding bows, the frame of the top being perfectly rigid and affixed to centers by means of a single radius bar at each side of the seat or vehicle. By this means the calash top is greatly simplified, and rendered more durable than those of ordinary construction.]

FASTENING SKATES—John Charlton, of Newark, N. J.: I claim the arrangement of the self-adjusting toe-cap, D, which is attached to the stock of a skate, substantially as and for the purpose specified.

[In the front part of this skate a cap is placed which can be adjusted, by means of slides, to the size of different feet. It is drawn up to the toes by the straps that serve to fasten the skates to the feet.]

BILLIARD TABLE CUSHIONS—Hugh W. Collender, of New York City: I claim making cushions for billiard tables of what is known as the soft compound of vulcanizable india-rubber, faced with what is known as the hard compound of vulcanizable india-rubber, or allied gum, united in the green or plastic state, and together subjected to the heating process for vulcanization, substantially as described.

SUBMARINE TELEGRAPH CABLE—James M. Connel, of Newark, Ohio: I claim the introduction of the smooth surfaced wrapping between the coil and the insulating covering, and the employment of this last covering as a core for other wires, substantially as described.

CHEESE-PRESSES—Samuel Cope, of Enterprise, Ill.: I do not claim a hydrostatic press as that has been used for many purposes.

But I claim graduating the force of a hydrostatic cheese-press by drawing the water slowly through the stop-cock, S, as described, for the purpose set forth.

APPARATUS FOR SOUNDING HOUSE BELLS, &c.—Joseph Corduan, of Brooklyn, N. Y.: I claim the arrangement of the three separate springs, in combination with the two tubes and escapement bolt, as described.

PILE-DRIVER—Waldo P. Craig, of Newport, Ky.: I claim, first, The described application and arrangement of the guides, K and K', attached to their upper ends by universal joints, to the frame, and at their lower ends, sliding in apertures, l and l', in a collar, L, adapted to fit over the end of a pile and follow the same in its descent,

Second, In combination with the above, the turn table, J, constructed and operating substantially as and for the purpose set forth.

SAWING MACHINE—Wm. H. Crittenden, of Grafton, Ohio: I claim the manner of arranging the compensating levers, K K, and rods, N N, in combination with the straining levers, H H, straining rod, I, adjustable slotted holder, P, saw, J, the whole being arranged and operating in the manner and for the purpose as set forth.

CHOPPING-BLOCK FOR STAVE MACHINES—A. H. Crozier and Cyrus Carrier, of Oswego, N. Y.: We claim the grooved metallic chopping-block, constructed and operating as described.

SEEDING-MACHINES—F. M. Davis, of Footville, Wis.: I am aware that reciprocating seed slides, J, have been previously used, and also that slides, k, with oblique slots, l, have been used for operating seed slides; I therefore do not claim the reciprocating seed slides, nor the slides, k.

But I claim the arrangement and combination of the caster-wheel, C, lever, D, spring rack bar, E, pinion bar, F, pinion, G, rod, H, slide, k, and share, L, as shown and described, so that when the bar, F, is thrown back, and lever, D, is depressed, the bar, F, will carry the pinion out of gear with wheel, M, and thus render the seed slides, k, inoperative, while the front part of the machine will be lifted on the caster-wheel, and the share, L, raised out of the ground, all as set forth.

[This machine is more especially intended for planting corn but may be used for other seeds, for the seed-distributing device can easily be thrown in and out of gear, and the front of the machine elevated or depressed to elevate the furrow shares from the ground when the distributer is not operating, or the reverse.]

PICK HANDLE—James E. Emerson, of Sacramento, Cal.: I claim the iron heading of a haudle fitted to the under side of a pick, or other instrument, by means of a pin and hole on corresponding plane surfaces, or a swelling and hollow, corresponding to each other, and securely fastened thereto by means of a stirrup extending over the pick, or other instrument, and secured to the handle by means of a key and wedge, which will, by such combination, form a durable and permanent mode of fastening handles on picks, or other instruments, without eyes therein.

BEDSTEAD FASTENING—Elisha E. Everett, of Philadelphia, Pa.: I claim a plug fastening, consisting of the two plug pieces, A and A', constructed as set forth and described, the same being applied and arranged, in combination with the post and rail of a bedstead, in the manner and for the purposes specified.

TANNING HIDES AND SKINS—Thos. Furgusson, of New York City. Patented in France, August 10, 1858: I claim the method described of impregnating hides or skins with the required liquid, by subjecting them to the action of a current of the liquid, under a sustained and regulated pressure, after they have been deprived of air by a preliminary exhaustion.

STOVES—Francis Gilliland, of Port Jackson, N. Y.: I claim, in combination with the lining, E, and sheet metal case, B, the cylinder, F, placed within the body of the stove, and provided at its top with the register or sliding band, h, and a register or slide, f, on its flanch, d, for the purpose set forth.

[Stoves which have sheet iron cases are, by this invention, lined, and the draft controlled in such a way that the case is protected from the fire and the heat well distributed through the apartment.]

TOOL FOR CUTTING METAL—L. F. Goodyear, of New Haven, Conn.: I claim the arrangement and combination of the adjustable wedges, D, cutters, C, and ring, A, substantially as and for the purpose shown and described.

[The finishing or trueing of turned articles is facilitated by this invention, and articles of medium length, such as the arms of axles for vehicles and the like, can be turned at one operation. The invention consists in placing within two or more rings or bands a series of cutters and wedges, which are adjusted by means of set screws that pass through the bands.]

GRIDIRONS—Wm. A. Greene and John G. Treadwell, of Albany, N. Y.: We claim the check-plate, I, attached to a stove gridiron, B, when the same is constructed and arranged in the manner and for the purpose set forth.

MACHINES FOR PEGGING BOOTS AND SHOES—Alpheus C. Gallahue, of North East Centre, N. Y.: I do not claim a rack block, E, arranged so as to feed the shoe with a continuous motion underneath the awl and peg driver, for such device has been previously used.

But I claim, first, Forming the rack bar, E, of two parts, e f, arranged as shown, so as to admit of being lengthened and shortened, to compensate for different length of shoes.

Second, The adjustable or swinging plate, G, in connection with the inclined planes, l i, or an equivalent device, for actuating the plate, G, for the purpose set forth.

Third, The inclined peg gage, y', in connection with the peg or feed box, S, so as to gage the pegs from their lower ends, as described.

Fourth, The vibrating socket, e', in connection with the plunger rods, u v, arranged in the same slide bar, t, to operate as set forth.

Fifth, The bar, R, provided with the shoulder or bearing, s', and rendered capable of being operated, when necessary, by the adjustable yoke, o', and cam, p', for the purpose of duplicating the row of pegs when required.

Sixth, The combination of the swinging bed-plate, D, with a rack, E, arranged to operate substantially as and for the purpose set forth.

[The object of this invention is to obtain a machine that will perform the whole work that relates to pegging of boots and shoes, to wit, the making of the holes in the soles to receive the pegs, and the driving of the pegs in the holes, and also the splitting of the pegs from the strip or block, as well as duplicating the row of pegs entirely around the sole or only at certain parts, each peg being driven at right angles to the surface of the sole at the point where driven. The invention consists in the means employed for effecting the above results, whereby an automatic machine is obtained—one that will act perfectly and do its work well.]

REVOLVING RETORTS FOR DISTILLING COAL OIL—James Gillespie, of Freeport, Pa.: I claim securing the hopper like cup, I, in position, by means of the pins, o o, or their equivalents, surrounding the exit journal, h, of each retort, the square-headed shaft, J, passing through a hollow journal at the opposite end of the retort, and the external plate, p, the whole applied and operating substantially as described.

[This invention is principally applicable to the manufacture of coal oil, but may also be applied to the distillation of coal or other substances to obtain other products. It consists in the construction of the bodies of revolving retorts in sections, whereby retorts of a much larger size than have ever before been practicable, owing to the difficulty of casting their bodies in one piece above a certain size and the great difficulty of transportation, can be made and used. There is also a new method of connecting the sections, so that longitudinal projections are formed within the retorts for the purpose of carrying up the coal by their revolution. It also consists in having the retort head so constructed that it will not radiate much heat. The charge is distributed equally from end to end when the the coal is supplied to one end of the retort. The necessity of any outside projections from the end of the retort in which the door is placed is obviated, and the plummer-blocks and their framing, in which the retorts are supported, are enabled to be brought close to the head. Such provision is made for the escape of the vapors from the retort through the hollow journal, that the dust and solid matter is more effectually confined within the retort, and a larger charge of coal is permitted in a retort of a certain size. And lastly, the inventor combines a system of effecting the revolution of two or more retorts, so that very little power is rendered necessary, and a system of revolution more effective than a continuous one is obtained.]

PROTRACTOR—Chas. Gordon, of Washington, D. C.: I do not claim any of the devices separately which are referred to, as they have been long known and used.

But I do claim my improved protractor, as described, consisting of the base, the meridian limb, the vernier, the arc and rulers, with the clamping screw, the whole arranged and operated as specified.

METALLIC PEN-HOLDER—Albert Granger, of New York City: I claim the holding of a pen on the outside of a metallic tube (commonly called a pen-holder) in such a manner, by reason of pierces, cracks, and indentations, as to leave the entire length of a pen, when inserted in proper writing position, uncovered.

HOSE-COUPLING—Smith Groom, of Troy, N. Y.: I do not claim as my invention, the arrangement of notched lugs and wedge-shaped flanges upon the collars of hose in the manner shown in No. 9,768 of United States Patents; nor the arrangement of wedge-shaped flanges upon the outside of the female part, and inside of the movable ring or nut, of the two halves of the coupling, as represented in the rejected application of E. F. Joslyn, May 14, 1857.

But I claim the arrangement of the notched lugs, h h, and wedge-shaped flanges, e e, for conjoint operation upon the outside of the fixed part, C, and movable ring, B, of the two halves of the coupling, as and for the purpose described.

And in combination with the lugs, h h, and flanges, e e, constructed and arranged upon the coupling for conjoint operation, as described, I also claim the ratchet teeth, j, and catch, k, when arranged upon the two halves of the coupling, as described for the purpose specified.

PLOWS—Wm. J. Griffies, of Marietta, Ga.: I claim the arrangement of the stock, A, forked and slotted foot, B B, screw, E, shovel, F, brace, G, wedge, C, beam, H, and handles, I I, the whole being constructed as and for the purposes set forth.

WATCHMAKERS' LATHES—Elijah Harris, of Princeton, Ill.: I do not claim the base bar, the fixed or slide head, with slide mandrels, nor the rest, as they have heretofore been known and used; nor do I claim, broadly, the extra slide head, E.

But I do claim the standard, F, with rimmer, b, the standard shown at Fig. 3 and the standard shown at Fig. 4, with dove-tail slide, d, the extra slide head. E, in combination with the standards, F, Figs. 3 and 4, and the slide tongs shown at Fig. 8, substantially as shown and described.

CORN-PLANTERS—Jacob Haynes, of Cameron, Ill.: I claim the hinged shoe, T, formed with a serrated plate, and with the wings, V and W, substantially in the manner and for the purpose described.

I also claim the combination of the movable seat, A', with and supported by the hinged radius bars, B', and by the sliding bars, C', for the purpose of enabling the driver to raise or lower the front end of the machine, substantially in the manner and for the purpose described.

ROCKER BOXES FOR SAW-SHAFTS—Rufus S. Lee and Wm. D. Leavitt, of Cincinnati, O.: We claim so connecting the inner to the outer box, through the medium of a spring, as that said inner box or bearing may have end motion in the outer one against the action of said spring, substantially as described and for the purpose set forth.

And we also claim, in combination with the elastic or spring connection between the inner and outer box, the rollers, h h, for the inner box to move on, substantially as set forth and described.

GRINDING-MILLS—Francis M. Hemphill, of Newport, Ky.: I claim, first, In the described combination with an adjustable bridge tree, the spindle, E, confined below to the tree and hinged above to the cup-formed driving and feeding ryne, N n n', having a hinged attachment to the runner, and enabling a discretionary increase of the stress of the runner on the grain by the lighter screw operating wholly from below, as set forth.

Second, The described arrangement of the cup-formed driving and feeding ryne, N n n', gudgeons, P P', bolts, Q Q, sleeves, q q', and metallic eye, R, having the described or equivalent connection with a runner and spindle respectively, for the purposes set forth.

Third, The cup-formed driving and feeding ryne, N n n', having the described or equivalent hinged attachments to the spindle and the runner respectively, and operating as set forth.

Fourth, The frame, A B C, constructed substantially as and for the purpose set forth.

INSULATOR FOR LIGHTNING-RODS—Russel Hickok, of Fort Edward, N. Y.: I claim a lightning-rod insulator, made in one piece, so as to support and insulate the rod, and also leave open spaces for water to pass through it, and for air, when suddenly expanded, to escape from within it, as set forth.

CHURN—Gardner P. Hopkins, of Cabot, Vt.: I claim the construction of the churn in the manner hereinbefore described, so as to combine the rotary motion of the barrel with the up-and-down and rotary motion of the dashers, and so to prevent the cream from acquiring a circular motion in the process of churning.

MAKING MOLDS FOR CASTING—Robt. Jobson, of Wordsley, England. Patented in England, May 3, 1856: I make no claim to the mechanical parts separately.

But I claim constructing the table platform or bed, b, so that it may turn on or about necks or axes, substantially as described.

HARVESTERS—Henry R. Keese, of Bridport, Vt.: I claim, first, The employment of a hinged supplemental frame, D, in combination with the main frame, A, and driving-wheel, B, when the said frame, D, is provided with an adjustable bearing wheel, E, or its equivalent, all substantially as and for the purpose shown and described.

Second, The combination of a driver's seat, G, with the supplemental frame, D, and driving-wheel, B, as set forth, so that, by lateral change of his position, the driver may elevate or depress the cutters, or diminish the traction and otherwise balance and govern the machine, as shown and described.

Third, Hinging the supplemental frame, D, to the main frame, A, substantially as and for the purpose set forth.

[The object of this invention is to obviate side draft, to facilitate the raising and lowering of the finger bar and the manipulations generally of the whole machine, so as to render the labor of the driver and team comparatively light.]

BREECH-LOADING FIRE-ARMS—Edw. Lindner, of New York City: I claim, first, The method described for operating or closing the breech, and forming a tight joint at the junction of the barrel with the breech by the employment of a screw ferule or sleeve, fitting an outer screw thread on the barrel, and provided with a projecting annular flange for grasping and releasing the breech, and for drawing the same backwards and forwards in the direction of the barrel, to or from the rear end thereof, upon said screw-threaded sleeve, being operated substantially as described.

Second, I claim, in combination with a movable box within the breech, constructed and operating as described, the packing thereof by means of asbestos, or its equivalent, substantially in the manner and for the purposes described.

Third, Locking the screw-threaded sleeve that operates the breech, by forming the pivoted lever which serves to turn said sleeve with an eccentric or cam, arranged to act upon a locking pin by pressing down said lever after the breech is drawn tight, as set forth.

PORTABLE WRITING-DESKS—Wm. H. Lochman, of York, Pa.: I claim the mode and manner of uniting the different parts of a writing-desk by hinges, or their equivalent, so as to admit of its being folded up into a comparatively small space, in the manner substantially as set forth.

LIFE-BOAT—Matthias Ludlum, of Fair Haven, Vt.: I claim providing the exterior of the boat with adjustable side-floats, constructed and hung, or arranged to operate in, or at different fixed positions or distances, to or from the sides of the boat, substantially as set forth.

Also, providing either float, arranged along the outsides of a boat, with an open or trellis-work railing, made to project below the float, essentially as specified.

EXPANDING AUGER—Chas. Meyer, of Fond du Lac, Wis.: I am well aware that expanding augers have been before constructed, in which the sections are moved in and out concentrically, but not in the same manner nor by the same means; and I also know that the dies of universal chucks have been operated heretofore in a manner similar to that in which I operate my cutters; but this is for an entirely different purpose, and I do not claim, therefore, the expanding cutters; neither do I claim, separately, the manner of expanding the sections.

But I claim, as a new article of manufacture, an expanding augur, constructed and operated substantially as described.

[The cutters of this auger are arranged on sections which slide in and out in slots made in the stock of the auger, so as to be all at an equal distance from the centre, leaving the bottom of the hole perfectly flat and even.]

CORN PLANTERS—John G. Mitchell, of Collington, Md.: I claim the combination of the swinging hopper, H, constructed and arranged as described, with the adjustable coverer and dropping tubes, the whole arranged for joint operation in the manner set forth.

HARVESTERS—J. A. Moore and A. H. Patch, of Louisville, Ky.: We claim, first, The enlargement, as at z, of the curved slots, f, of the standards, G, substantially as and for the purposes set forth.

Second, The arrangement, relatively to each other, of the vertically perforated curved stop bar, H, slide, d, constructed as described, and lever, F, for the purpose set forth.

PRESERVE CANS—Samuel Morrett, of West Pennsboro', Pa.: I claim the covering of fruit cans by means of the concave cover, B, when the same is constructed and applied as described, and retained in place solely by atmospheric pressure.

APPARATUS FOR CLEANSING BRISTLES—Henry W. Mosher and Joseph A. Conboie, of New York City: We do not confine ourselves to any particular number of clamps on the shaft, D, nor to any particular arrangement thereof, for various modifications of the same may be used.

But we claim the rotating bristle clamps, E, placed within a cylindrical box or case, A, provided with diagonal plates, c, and used with or without the brush, C, and soap bar or other cleansing substance, h', substantially as and for the purpose set forth.

[The bristles to be washed are secured in clamps attached to a rotating shaft, which is placed in a suitable box or case filled with suds, and having diagonal plates attached to its inner surface and also a pressure brush and soap bar, or other cleansing material, the whole being arranged to perform the work in a very rapid manner, and with much greater perfection than can be attained by the manual process.]

HAY MANGERS—John Packer, of Philadelphia, Pa.: I claim, combining with a hay manger, a falling rack, B, to prevent the horses from pulling out and unnecessarily wasting the hay therein, and as described and represented.

VENTILATING VAULT COVER—John Patrick, of New York City: I claim the perforated plate and gutter, in combination with the metallic roof, ceiling or walk, for forming a ventilating space and catching any water of condensation, in the manner and for the purposes specified.

And, in combination therewith, I claim the ventilating pipe, d, as and for the purposes specified.

MACHINE FOR BENDING TIRE—Wm. Patterson, of Constantine, Mich.: I do not claim the method of bending tire by means of the segment lever and clevis, neither the combination of these elements as they exist in the patent to Aaron Whitcomb.

But I claim connecting the clevis to the lever and segment in such a manner that the lever will cause the clevis to grasp and release its hold on the bar to be bent, independently of and before said segment commences to move, as illustrated by the red lines in the drawings.

Second, Providing the outer end of the clevis with an arm, L v, so arranged in relation to the circumference of the segment as to bear against the outer side of the tire, and support it (while being bent) above the end of the segment as represented, thereby preserving the circle of the tire by preventing it from springing back during the descent of the lever.

Third, Making the clevis adjustable for the purpose of adapting it to the use of different sized segments in the same machine, as described.

HOOP MACHINE—Henry C. Peirson, of Philadelphia, Pa.: I claim the arrangement of the series of bending rollers, D D' D'', or their equivalents, in rear of the cutter, B, or its equivalent, so as to operate upon the hoops, substantially in the manner and for the purpose specified, as the said hoops pass between them directly from the said cutter.

RAILROAD COUPLING CHAIR—R. S. Potter, of Chicago, Ill.: I do not claim as my invention, a chair with one key or wedge running its entire length; nor do I claim a chair with a cavity for one key or wedge only: nor do I claim, broadly, the use of two wedges or keys in combination with a railroad chair.

But I claim the use of two wedges or keys, in combination with a railroad chair, when the outer lip of said chair is overhung in the manner described and shown, and its inner surface is of a conoidal form, as specified.

SEED PLANTERS—D. R. Prindle, of Bethany, N. Y.: I claim, first, Hinging the frame that carries the seeding devices, and the beams that carry the furrow opener and coverer to the axle, substantially as and for the purpose set forth.

I also claim in combination with the axle and hinged frame and beams, the tongue and lever, for raising, lowering or controlling the planting and covering devices, substantially as described.

I also claim the adjustable hinged clevis irons, make, arranged and operating as set forth

I also claim the combination of the curved spring plates, g, and spring, s i', as applied to the seeding wheels, or cylinders, for the purpose explained.

CLOTH FRAMES—Daniel Read, of Hamilton, N. Y. I claim the combination and arrangement of the standard with the arms, A B C D, the standard i i, and braces, E F G, substantially as and for the purposes specified.

MACHINERY FOR FILLING LOOM HARNESS NEEDLES—L. L. Reynolds, of Manchester, N. H.: I do not claim the mere passing of the twine over the tongue of the needle, as it is old, having been done some twenty years since, by a Mr. Wilson, of Lowell, Mass.

But I claim the hooks, F, or the equivalent thereof, for depositing the twine or coad, upon the outer sides of the score of the needle, when combined with a device for delivering the twine or cord to said hooks.

Second, In combination of the intermittent rotating oval shaped pin, O, with the cam, N, or their equivalents, for depositing the twine or cord evenly around the end, P, of the needle.

FRICTION BELT FOR FLOUR MILLS—L. S. Reynolds, of Indianapolis, Ind.: I claim, first, The sliding knockers, D D D D D D, in combination with the shaft, K, ribs, H H H H H H, and rods, E E E E E E, when constructed and operated substantially as and for the purposes set forth.

Second, The springs, G G G G G G, in combination with the knockers, D &c., when operated substantially as and for the purpose set forth.

Third, The elastic bridge-tree, I, when used substantially as and for the purposes set forth.

CULTIVATORS—T. A. Robertson, of Washington, D. C.: I claim the wing, A, extended obliquely from the rear standard, E, to a point, d, from which point projects a straight portion, or divider, B, in combination with with the oblique cutting bar, G, as described.

STOVES—H. R. Robbins, of Baltimore, Md.: I claim the combination of the fire-chamber, A, with the inclined front encircling transparent face plate, E, heat pot, B, pedestal, F, with its doors, b b, upper back encircling chamber, H, with its doors, f, and divided horizontally as described; smoke and heat pipes, I, and g g i, and back case or reflecting bonnet, K, having a conduct, m, arranged to conduct air to the one perforated passage of the upper back encircling chamber, H, as described, the whole being arranged for operation, substantially as specified.

COTTON PRESS—J. G. Roux, of Raymond, Miss.: I am aware that cams and levers have been arranged in various ways, for operating the followers of cotton presses; and I do not claim, separately or irrespective of the arrangement shown, any of the parts described.

But I claim the rotating platform, B, provided with helical ledges, or rails, F F, in combination with the blocks, E E, placed on the ledges or rails, the levers, J J, attached to the follower, I, and the stationary press box, G, the whole being arranged to operate as and for the purpose set forth.

[The followers of this press is operated by means of a rotating platform having a helical ledge or flanch on its upper surface, and placed below the body of the press. The follower has two levers attached to its under side, the lower ends of the levers bearing against blocks which are placed on two helical ledges or rails, and we made to operate the follower when in the act of pressing with a progressive or gradually increasing power as the platform is rotated.]

RAILROAD CATTLE GUARD—J. L. Rowley, of Angola, Ind: I claim the springs, C C, and bar, D, in combination with the chain fedder, F E, and post, J, when constructed and operated in the manner and for the purposes described.

HARVESTERS—I. S. Russell and H. R. Russell, of New Market, Md.: We claim the peculiar arrangement of mechanism, consisting of two segment level wheels, G H, two spur wheels, K K, an independently turning hub, E, having a slotted plate, F, attached to it, and a crank arm, L, having a turning crank pin, J, for giving motion to the rake round the reel in the path of a vertical circle, and over the platform in the path of a horizontal circle, substantially as set forth.

FORGING MACHINE—Erhard Schlanker, of Buffalo, N. Y.: I am aware of the revolving forging machine of D. Noyes' of Abington, Mass., and of attaching the hammer or hammers, each by a pivot to a revolving disk or crank, so as to revolve therewith, and controlling the position thereof, by stops attached to the face of the disk, or crank, and of drawing the hammer or hammers, lengthwise of the anvil; which I disclaim, as being original in principle but defective in operation, by the use of the stops affixed to the disks, or imaginary crank.

I claim that portion of the hammer shaft, Q Q, from the center pins, v v, extending towards the driving shaft, W, to be used as a lever, in controlling the hammers, D D, the center pins, v v, being the fulcrums, in connection with the wrists and friction rollers, Y Y, and X X, the location and position of the spring cams, S S, upon the duplicate face plates, F a F b.

The sections, E E, and the independent operating crank cams, R R, guide plate, a, cranks, h h, levers, c and f, connecting rods, d d u, as described in the specfication.

COFFINS—I. C. Shuler, of Amsterdam, N. Y.: I claim, first, The manner of forming a recess in the sheet metal all around the base inside of a metal coffin, also the arrangement of placing an iron frame, or its equivalent into the recess described, fastening it firmly to the sheet metal, all around the body of the coffin, for the purpose of stiffening the lower edges of the same.

Second, I do not claim the ribs, X, separately, as I do not consider them pretentable, but the ribs being peculiarly arranged, by being placed under the flange which supports the rim, E, and fastened to the frame, D, in the recess at the bottom. I claim this peculiar arrangement for the purpose of stiffening the sides and end, so as to sustain a heavy weight of earth. Also for the purpose of preventing the sides from bilging out, when the handles are placed about an equal distance between the upper and lower edges of a sheet metal coffin, substantially as set forth.

Third, The arrangement of pressing or rolling around the outer edge of the cover of a sheet metal coffin, an inverted bead which forms a tongue on the bottom side of the cover, so arranged as to fill the groove in the upper surface of the rim, E, for the purposes of soldering, or cementing the joints, as described and set forth.

Fourth, The arrangement of placing a galvanized iron rim, or its equivalent on the outside, and over the upper edge of the walls of a sheet metal coffin, fastening the same permanently to a flange formed all around the upper edge of the walls, for the purpose of shaping and strengthening the upper part of the coffin, and at the same time furnishing a means of securing the coffin top at the joints.

Fifth, I am aware that I have claimed in a former patent an iron frame as a cover over the soldered joints on the top of a sheet metal coffin; I therefore disclaim it as an entire frame, but I claim the bisection of the frame, A, and its reconnection by means of spring catches at the widest part or break of the coffin, substantially as set forth.

CULTIVATOR—John Smally, of Bound Brook, N. J.: I do not claim, broadly, hanging the main wheels of a cultivator to cranked axles, for the purpose of declaring the depth to which the teeth shall penetrate the ground, as such a device has been heretofore used in cultivators.

Nor do I claim a central lever, for operating the cranked axle, or the plow-formed teeth, or any other part of the machine separately.

I claim the frame, its adjustable pole, its teeth, m m' n n', and detaching teeth, p p', the cranked shaft, C, its central lever, E, and driver's seat G, when the said seat is so situated as regards the handle, that the driver can operate the latter, without moving from the seat, and when all the parts are arranged in respect to each other, substantially as set forth.

SEEDING MACHINES—Michael Simmons, of Ira, Ill.: I claim, first, the use of the eccentrically cut gear wheel, D, so as to enable me to get my pinion, a, and pinion shaft, h on top of the frame, and above the center of the wheel that drives it, substantially as described.

I also claim the arrangement of the beams, H, with their skewed shovels and adjustable connects, so that they may be transposed from side to side of the machine, at pleasure, in the manner and for the purpose set forth and explained.

SPRING BEDSTEAD—C. F. Spencer, of Rochester, N. Y.: I am aware that wooden slats with metallic springs have been used, and that a patent was granted November 16th, 1858, in which the slats are permanently attached at one end with wooden springs attached at the middle of each resting against a transverse bar, but differing in arrangement and effect from mine; therefore, I do not claim, broadly, the use of spring slats.

But I claim the combination and arrangement of the spring slats, E F, with the bars, A A, and fulcra, B B, the latter arranged to increase or diminish the effect, and horizontal slats, G, resting at once on the free ends of each reverse series, substantially in the manner and for the purpose described.

SMUT MILL—G. H. Starbuck and D. D. Gilman, of Troy, N. Y.: We claim, first, The combination of the two scouring plates, a a a, placed one above the other, with their roughened or burred surfaces toward each other, in combination with the funneling plates, E, for depositing the grain at the centre of the scourers, between which it is passed, forming a double scourer, attached to, and revolving with the shaft, R, operated in the manner and for the purpose set forth. We do not confine ourselves to any number of scourers for a machine.

Second, The vertical cylindrical opening, as shown at I, in combination with the outer case, K, screen, f, and fans, h, for the purpose of giving free discharge to all tight impurities and foreign matter, and prevent the discharge of grain.

WATCHMAKER'S LATHE—R. H. St. John, of Bellefontaine, Ohio: I claim the combination and arrangement of the steel ring, D, spring, d d, set screws, a a and centering plate, E, substantially as described, and for the purpose set forth.

I also claim the employment of the screw cap, G, for clamping the article to be centered in the manner specified.

CULTIVATORS—J. C. Stoddard, of Worcester, Mass.: I do not claim, separately, the share, A, with adjustable or expanding wings or blades, C C, attached, for that has been previously used. Neither do I claim the shares, m, for they also have been previously used.

But I claim, first, The share, A, and wings or blades, C C, arranged relatively with the wheel or wheels, H H, that is to say, placing the wheel or wheel, behind the share, A, and between the wings or blades, C C, substantially as and for purpose set forth.

Second, The adjustable rotating scrapers, J, applied to the wings or blades C, and arranged to operate as and for the purpose set forth.

Third, The combination of the lateral adjustable hoes, m, share, A, adjustable wings or blades, C C, rotating scrapers, J, wheels, H, one or more, arranged for joint operation substantially as and for the purpose set forth.

[A share with adjustable wings or blades is employed in this invention, arranged relatively with a driving or support wheel, in order to facilitate the manipulation of the machine, and place it under the perfect control of the attendant. The invention also consists in the use of adjustable rotating scrapers attached to the wings or blades, and also in the use of weeding hoes.]

CRESSET FOR HEATING BARRELS—John S. Thompson and Marvin J. Seymour, of Glenn's Falls, N. Y.: We claim the arrangement of the annular bed, D, at the base of the apparatus, and above the escape flue, C, to receive and support the barrel, as and for the purpose shown and described.

[This invention consists in having an upright cylinder or drum attached to an ordinary box stove, the stove and drum being provided with a return flue, and the stove with an annular bed, the whole being arranged so that the barrel or cask may be properly heated, and the staves rendered sufficiently pliable to be bent in the proper or desired form.]

MACHINES FOR DIGGING POTATOES—J. C. Stoddard, of Worcester, Mass.: I do not claim an inclined screen with a share attached to its lower end, for the purpose of digging potatoes, for such device has been previously used. Nor do I claim a receptacle attached to the machine for the purpose of receiving the potatoes.

But I claim, first, The weed eradicator, formed of the vibrating plate, g', with serrated flanges, h', attached and arranged to operate as and for the purpose set forth.

Second, The inclined adjustable screen box, D, provided with a share, E, and spur, i', at its lower end, in combination with the endless chain of carriers, F, arranged to operate in grooves, o o, substantially as and for the purpose set forth.

Third, The combination of the weed eradicator, leveling share, N, inclined adjustable screen box, D, with share, E, attached, and endless chain of carriers, F, with or without the receptacle, C, arranged for joint operation, substantially as and for the purpose set forth.

Fourth, The adjustable or movable roller shaft, L, applied to the machine, and arranged to operate as and for the purpose set forth.

[This invention consists in the use of an endless carrier attached to an inclined screen, a weed eradicator, leveling and opening shares, and a receptacle provided with screens, the whole of these parts being mounted on wheels and used in connection with a peculiar guiding device, whereby potatoes may be dug from the hill or drill, thoroughly separated from dirt and also assorted, the large from the small, and placed in proper receptacles.]

MANUFACTURE OF WOOD SCREWS—N. G. Thom, of Cincinnati, Ohio: I do not confine myself to any particular form of construction as to size, shape, &c., as these may be varied indefinitely, and the same construction is applicable to coach or lag screws, or any other screw in which wood or other yielding substances constitute the material into which the screw is driven.

I am aware that a tapering screw point has been long used upon augers, gimblets, &c., and I therefore do not claim that feature as any part of my present invention.

But I claim, as a new manufacture, the described wood screw, the characteristic feature of which consists in its having two or more porallel threads that terminate at or near the point of a tapering core, substantially as described.

SADDLES—S. E. Tompkins, of Newark, N. J.: I am aware that cast metal saddle-trees have been previously used; and, also, that safety-guards or bridges have been attached to trees to keep the back band from the back of the horse. I therefore do not claim, broadly, the above.

But I claim the bow pieces, b e, connected with the sides, a a, and provided respectively with the head, c, and cantel, f, in connection with the central bow-piece or "safety guard," when the parts are placed relatively with each other, so as to admit of being cast in one piece to form a new and improved saddle-tree, as set forth.

I further claim, in connection with the saddle-tree, formed as above, the crupper loop, j, attached to the cantel bow-piece, e, by means of the plate, i, substantially as and for the purpose specified.

[This tree is formed all of metal, cast in one piece; it is light, much stronger than wood, and admits readily of the saddle materials being fastened to it. In fact it is in every respect as good as the wooden one, and in many much superior.]

STOVES—F. E. Tupper, of Nashua, N. H.: I claim the arrangement of the air-chamber, C, with its air-passages or rubes, G, and apertures, a, and openings, i i i, with the casing, A, supporting and deflecting collar, F, substantially in the manner and for the purposes set forth.

HARVESTERS—S. W. Tyler, of Greenwich, N. Y.: I claim giving such a shape to the portions, a and h, of the finger-bar, and to the flanged portions or heads of the fingers, d d, that the same set of rivets will unite all the said parts with each other into a fingered bar of unusual stiffness, strength and narrowness, and at the same time form a dovetail groove for the reception and guidance of the cutter bar, substantially as set forth.

MACHINE FOR ROLLING WHEEL TIRES—Nathan Washburn, of Worcester, Mass: I claim the combination of a set of reducing-rollers, A B, a series of adjustable carrying rollers, d d d, &c., or their equivalents, and a frame or holder, G, supported so as to be capable of rising upward within the wheel tire in proportion as the diameter of the inner periphery of the said tire may increase, during the process of rolling the tire, and having the said carrying rollers arranged and made adjustable with respect to it and the reducing rollers, in manner substantially as specified.

CLOD CRUSHERS—E. B. Way, of Jerseyville, Ill.: I claim the employment of the oblique-sided double tapered slats, f, in combination with the rims, d' d' e, so that the clods that wedge between the slats will be carried up, and then dropped, and then broken within the wheel, as shown and described.

[A rotating slatted cylinder constructed in a peculiar manner is employed by this inventor to accomplish the desired end, namely, the crushing of clods and the pulverization of the soil.]

SAUSAGE STUFFER—John Wagner, of Pittsburgh, Pa.; I do not claim the endless screw, or worm and wheel, this being a well known mechanical device, though the same has, to my knowledge, not been used before in sausage stuffers, nor do I claim any other part of wheel gear arrangement, when considered by itself.

But I claim the arrangement of using in addition to the operating crank, c, for the forward motion, another operating crank, s, or its equivalent, for the backward motion, when applied to the wheel gear arrangement of worm and wheel, in the manner as described, viz: when set on the spindle, a, of the screw wheel. F, substantially as and for the purpose set forth.

HARVESTING MACHINE—William Webber Jr., and John Webber, or Rockton, Ill.: We claim operating the rake of a harvester, by means of the horizontally oscillating arms, c, and h, the rod, g, and the latch, i, when the said parts are arranged relatively to each other, and to the other parts of the machine, in the manner set forth.

STOVES—J. Whitehead, of South Paris, Me.: I claim the combination with the fire-chamber described, and with an oven having hollow walls filled in with non-conducting material, of a removable fire chamber casing, which has hollow walls, filled in with a non-conducting material, and is in shape, externally, nearly the counterpart of the fire-chamber, and serves for encasing the whole of the exposed portion of the fire chamber, and at the same time allows access to the holes in the top of the fire chamber, and to the fuel door thereof, substantially as and for the purposes set forth.

FLY-TRAP—Elisha D. Blakeman, (assignor to Jacob J. Auchampaugh and Levi Auchampaugh,) of New Lebanon, N. Y.: I claim the combination and arrangement of the poison cups, m and n, with the conical chamber, B, and bed-plate, A, substantially as and for the purpose set forth.

MACHINE FOR ROLLING IRON—Henry B. Comer, (assignor to himself and Joseph S. Lewis,) of Temperanceville, Pa.: I wish it to be clearly understood that I do not claim the use of guides in general.

But I claim furnishing rolls which are placed in front of each other and on parallel lines with guides placed between each set of rolls, said guides being so constructed that they will guide and change the position of the iron as it passes from one set of rolls on to another set, as described and set forth.

FOOT-SCRAPER—W. L. Williams, of New York City: I am aware that brushes have been applied to and used in connection with scrapers, but not, so far as I am aware, arranged as described; therefore, I do not claim, irrespective of arrangement, the employment or use of brushes and a scraper.

But I claim the employment or use of the scraper, B, and the brushes, F G, either with or without the brush, J, combined and arranged to operate, substantially as and for the purpose set forth.

[A series of brushes are combined with a scraper plate and so arranged that the action of the foot or shoe on the scraper, in cleaning the dirt from the sole, will actuate the brushes in such a way that they will come in contact with, and clean or brush off the dirt from the sides of the shoe, and all around it.]

METHOD OF OPERATING THE KNIFE IN RIVING SHINGLES—John Wood, of Brooklyn, N. Y.: I do not claim the rhomboidal reciprocating gate, O, with knife, P, attached, for this has been previously used.

But I claim giving the frame, C, in which the reciprocating knife gate, O, is placed, an intermittingly vibrating movement simultaneously with the feed movement of the bolt, substantially as and for the purpose set forth.

[This invention relates to an improvement in that class of shingle machines in which the shingles are rived from the block by a knife placed in a reciprocating gate. The frame in which the gate works is given an intermittingly oscillating movement simultaneously with the forward feed movement of the bolt, in such a manner that the knife, as it descends, will have its cutting plane in an oblique position with the edge of the bolt and consecutively in reverse positions, so that the shingles will be cut in taper form and in a smooth and perfect manner.]

SELF-FEEDING PRESS FOR PRINTING CARDS AND BILL-HEADS—Nathan Ames, of Saugus, Mass., (assignor to himself and Nathaniel Evans, Junr., of Boston, Mass.): I claim, first, The little cams or projections, a b, arranged in reference to the ink rollers, and operating in connection with them and the vibrating type-bed, substantially as and for the objects described.

Second, The combination and arrangement of the spring, P, hinged piece, H, type-bed, E, and spring, L, substantially in the manner and for the purposes set forth.

Third, Attaching the type-bed, E, as shown, at one of its sides only, to the arm, D, so that the inking rollers, N N, may pass over and under it, substantially as described.

Fourth, The pitman, r', screw, r, top piece, X, slot, j, and slides, e e', when combined, arranged and operating substantially as set forth.

Fifth, Attaching the feeding-plate, f, as described, to the slide, e, and causing the latter to move in the groove, g, so that while the upper side of f, bears on the surface of X, the thickness of e, extending below it, prevents the card from ever getting between the surfaces of f and X.

Sixth, The adjustable guide, l, constructed and arranged substantially as and for the purpose described.

Seventh, The adjustable lateral guides, m m, arranged as set forth and for the purpose described.

Eighth, The card-pusher, Z', provided with the slots, P P and 8, substantially in the manner and for the purposes described.

CAR COUPLING—James W. Carrier, (assignor to himself and Able B. Howe,) of Springfield, Mass: I claim the sliding bunter, A, connection pin, d, pin, p, springs, r and l, straps, m, sliding pin, B, springs, k k, rack, f, pinion, g, ratchet, s, pawl t, and pin, v, when constructed and arranged substantially as described.

CORN SHELLERS—Chas. W. Carter, of Westville, Ind., (assignor to Lester L. Bond, and Geo. Coatsworth, of Chicago, Ill.): I claim the sectional truncated cone, P, constructed as described, with the pintle, s, guide spring, u, and hinge, R, and arranged to operate in combination with the outer cone, O, in the manner and for the purposes specified.

MACHINE FOR PREPARING MOLDINGS FOR PICTURE FRAMES—Eleazer Gardner, (assignor to Gardner & Decker,) of New York City: I claim the revolving rollers, arranged and operating substantially as described, in combination with the scraper, n, for the purpose specified.

RETORTS FOR DISTILLING COAL OIL—Joseph E. Holmes, of Newark, Ohio, (assignor to himself and Joseph Palmer, of New York City); I do not claim the invention of a revolving retort, that being specified in the French patent of Mr. Ajasse on de Grandsague, dated Oct. 9, 1839; neither do I claim the introduction of steam into the retort during the distilling process.

But I claim, first, The combination with the internal vapor pipe, E F, of a leg, E', so applied as to keep the mouth of the said pipe in the upper part of the retort, either by the direct action upon it of the force of gravitation, or by its dragging in the coal or other matter in the lower part of the retort.

Second, The arrangement of the steam-pipe, a, to communicate through the hollow journal with a passage in the leg, E', of the vapor pipe, E F, for the admission of steam directly into and among the charge, substantially as specified.

[These retorts are designed for coal oil. The invention consists, firstly, in certain means of protecting the hollow journal against the entrance of lumps of coal, and in a great measure against the entrance of dust caused by the agitation of the charges in the retort. Secondly, in a certain arrangement of a double bearing for the hollow journal of the retort, in combination with a water box whereby the connection of the hollow journal with the hydraulic main, or its equivalent, is kept packed, and the journal at the same time lubricated by the water in the box. Thirdly, in a certain method of applying a steam-pipe for the admission of steam into and among the charge during the distilling process. It also consists in connecting a water injection pipe with the pipe which conducts away the liquid and vapor from the retort and hydraulic main to the condensing apparatus for the purpose of admitting water among the vapor in the pipe to assist in its condensation.]

CAMERA STANDS—Henry J. Lewis, of Brooklyn, N. Y., (assignor to himself and Richard A. Lewis, of New York City): I claim the combination of the braces, f f f, and screw clamping blocks, i i i, or their equivalents, with the legs, a, in substantially the manner and for the purposes specified.

MILK PAN—E. L. Pratt, (assignor to himself and R. B. Fitts,) of Philadelphia, Pa.: I claim, as new manufacture, a pan, with a detachable or hinged over, forming when combined a vessel closed, with the exception of a series of minute perforations below for the access of cold air, and a suitable distance above the latter, another series of perforations for the exit of warm air and gases, and otherwise constructed, substantially as set forth and for the purpose specified.

SEEDING-MACHINES—Alonzo R. Root, (assignor to Rufus S. Rickey,) Keokuk, Iowa: I do not claim the invention of the revolving head of Mr. Ring, nor the application of the centrifugal force to the purpose of seed-sowing, nor any other principle secured to A. Ring, Esq., by Letters Patent.

But I do claim, first, in combination with the hopper, I, and the revolving tubes or arms, the regulator,

B, onstructed and operating therewith substantially as described.

I also claim, in combination with the regulator and revolving tubes or arms, the vertical and inclined partitions, C C, and lip, D, for the purpose of directing the seed to be sown from the hopper to the openings in the arms or tubes, and to prevent the seed from escaping unduly through the arm or tube, for the time being, immediately under the lip, substantially as described.

GRINDING MILLS—Geo. Selser, (assignor to himself, J. Cook and W. Cook,) of Philadelphia, Pa.: I claim attaching the hollow steel burr to the spindle, D, by screwing or otherwise securing the end of the latter to a plate, I, which is fitted snugly to the inside of the burr, a shoulder, e, on the spindle bearing on the top of the burr, as set forth.

MARINE PROPELLER—John Taggart, of Roxbury, Mass., (assignor to himself and Geo. R. Sampson, of Brookline, Mass.): I claim my improved mode of propelling a navigable vessel through the water, viz.: by the conjoint action of two separate rotary or screw propellers, E and F, respectively operating or screwing into the water and air, arranged and combined substantially as described, and propelled by a steam engine, or motor within, or carried by the vessel.

I also claim arranging the air screwpropeller, F, or its axis, at an inclination upward from the keel or plane of flotation of the vessel, substantially as shown, in order that the said propeller, while being rotated, may operate, not only to draw the vessel ahead, but to lift her bow more or less out of water.

GAS RETORTS—Davis L. Weatherhead, (assignor to himself and S. E. Southland,) of Philadelphia, Pa.: I claim the cap, E, with its box or reservoir, F, when arranged in respect to the lower chamber, A, the upper chamber, B, and exit pipe, D, of the retort, substantially as and for the purpose set forth.

SAW-SET—Olive Ann Brooks, of Great Falls, N. Y., administratrix of the estate of Lebbeus Brooks, deceased, late of Great Falls aforesaid: What is claimed as the invention of the said Lebbeus Brooks, is the arrangement and application of the benders and bending screw together, and with respect to the two handles, substantially as set forth, whereby the center of motion of the benders is at the place of contact, or the vertex of the angle of their upper surfaces, and no fulcrum pin is exployed for the support and connection of the levers.

BRICK MACHINE—William Wood, of Hartford, Conn. Patented March 22, 1859: I claim the arms, B B, in combination with the slides, A A, provided with the lever, C, and tappet, c, for operating the molds, M, as described.

RE-ISSUES.

SMELTING FURNACE—Charles C. Alger, of Newburgh, N. Y. Patented June 30, 1857: I claim constructing furnaces with the hearth and boshes of an elliptical or elongated form, substantially as described, in combination with the application of the blast at the sides, so arranged as to introduce the blast in the direction of the breadth, and for the purposes specified.

I also claim, in combination with the hearth and boshes made of an elliptical or elongated form, substantially as described, the construction of such furnaces with two mouths, one at each end, for working and tapping, substantially as and for the purpose specified.

RECLINING CHAIRS FOR RAILROAD CARS AND OTHER USES—Isaac L. Devoe, of Staten Island, N. Y., assignee through mesne assignment of Samuel M. Perry, of New York City. Patented July 27, 1852; I claim, first, to so combine the back, D, with the two end frames, B C, by means of bars, E F, jointed to it one or two studs, a, and one or two series of notches, d d, or equivalents therefor, that the said back, when not a reversible one, may be raised and inclined in various positions, so as to not only support the back, but the head of a person at the same time.

Second, Making the back reversible by means of two series of notches, d d and e e, &c., and two sets of studs, b, or equivalents, the same being arranged on opposite sides of the chair and made to operate as specified.

Third, The improvement of making each arm or bar, E F, with a rack or racks of teeth, or succession of notches, or equivalents therefor, for the purpose of adjusting and securing the backs in the desired position, whereby the occupant can alter or vary said position without rising from the seat, substantially as set forth.

DESIGN.

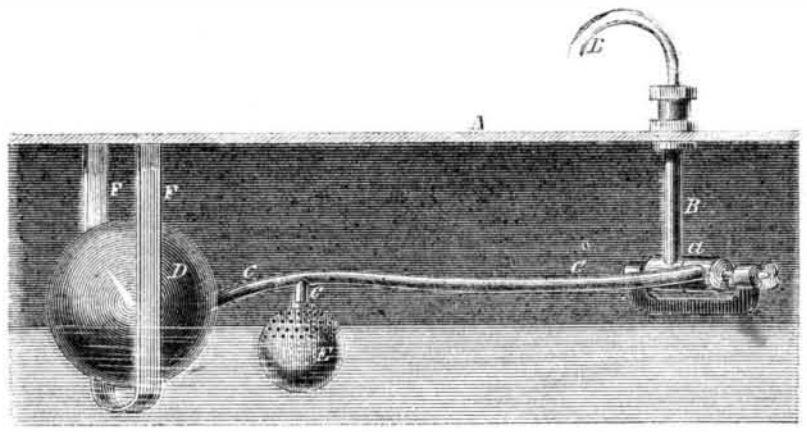
HAT-RACKS—Edward Reynolds, (assignor to Thomas W. Brown,) of Boston, Mass.

Improved Blow-off for Boilers.

This invention makes security doubly sure, and adds an additional protection or preventive of accidents to boilers by the sedimentary deposits from the water. There is much solid matter contained in water, some of it organic particles which when the water ceases to hold them in suspension, they rise to the surface instead of falling to the bottom. The same is true of salt water, the salts in which, as evaporation goes on, rise crystallizing to the surface and afterwards form a scale on the inside of the boiler, causing it to burn out rapidly, and being at the same time a fruitful source of accident. The design, then, of this surface blow-off, invented by J. H. Washington, of 36 Fawn-street, Baltimore, Md., is to prevent the forming of this scale by blowing-off continually from the surface.

A is the boiler, through the top of which projects a pipe B, to the bottom of which (inside the boiler) is attached by a water-tight hinge or joint, *a*, the tubular arm, C, carrying at its extremity the hollow float-ball, D. D moves up and down in guides, F, which are proportioned according to the limits beyond which it is not safe to allow the water in the boiler to rise or fall. A steam whistle may be attached to the end of C, to notify the engineer when the water is too low. Near the end of C there is a small branch-pipe, *c*, projecting vertically downwards, and over this is slipped the perforated hollow ball, E, which is itself half filled with water, the perforations only being made on the upper hemisphere. This can be slid up and down on *c* to take the proper relative position with respect to D and the surface of the water. This it will be seen will accommodate itself by the float, D, to the motion of the water in the boiler caused by the rocking of the vessel, and should any sudden lurch occur, which leaves the upper hemisphere of ball E, entirely exposed to the steam, the contained water has first to be blown out before the steam can escape and by that time the ship will have righted itself, and if not steadied then, will refill E with water which will again act as a preventive to the escape of steam should a similar lurch occur,

WASHINGTON'S BLOW-OFF FOR BOILERS.

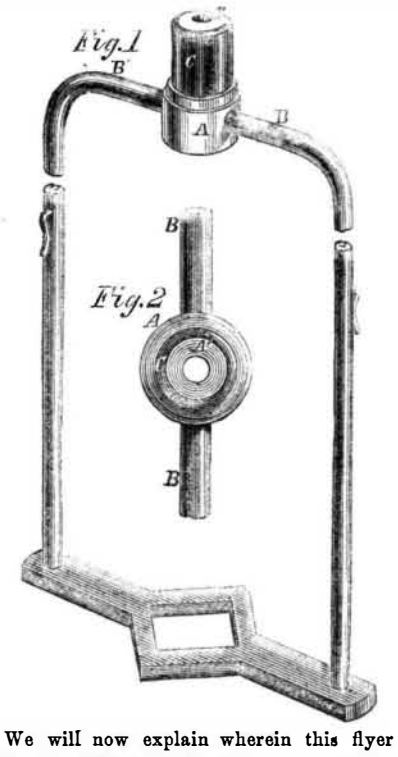


The device is remarkably simple; and, judging from the testimonials we have seen from the engineers of steamships which have it fitted in their boilers, and from the Inspector of Boilers for the Baltimore district, it very thoroughly, efficiently, and perfectly performs the work for which it is designed. It was patented Jan. 25, 1859, and any further information may be obtained by addressing the inventor as above.

Sawtell's Spinning Flyer.

The accompanying figures represent an improvement in spinning flyers, invented by J. N. Sawtell; Fig. 1 is a side elevation and Fig. 2 a plan view of the nozzle. In form it is similar to the common flyer, but in construction quite different.

A is the bronze shoulder of the nozzle and B B are the arms of the flyer. The bronze part extends upwards, forming the tube, A′, and C is the hardened iron capping or collar on the neck.

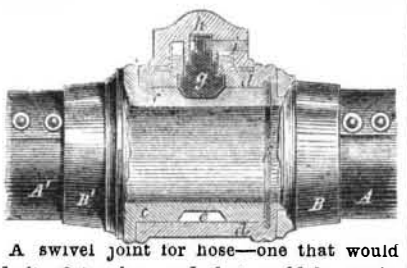


We will now explain wherein this flyer differs from others, and point out its advantages. In making the common flyer, the neck or nozzle is brazed to the arms or wires, B B, but this flyer is constructed by casting the nozzle (which is bronze) on the arms and thus uniting them together in a more permament and superior manner. By the old way of brazing the nozzle and arms, the wires are highly heated, which injures their elasticity and strength, and by the refinishing which they require afterwards they are reduced in size which renders them weaker still. One of the arms is also liable to be reduced somewhat smaller than the other which thus tends to throw the flyer out of balance, and render the operation defective. The brazing is also sometimes imperfect and the arms, as a consequence, soon become loose; and when a nozzle becomes much worn, the cost of repairing it is so great as to render this operation inexpedient.

In constructing this improved flyer by casting the bronze nozzle on the arms, B B, the two metals are permanently united, yet this is done in such a manner that the wires are not overheated, and thereby not softened, nor do they require to be reduced in size afterwards, but retain all their original stiffness, strength and elasticity; they are therefore not liable to work loose, nor be thrown out of balance; and should the hardened capping, C, become worn, it can be renewed at a small cost, and the whole nozzle rendered as good as when new.

These flyers have now been in operation for nearly three years and have given great satisfaction. They are manufactured by the Ames Manufacturing Company at Chicopee, Mass., who will attend to communications addressed to them on the subject. It was patented Feb. 17, 1857. For more information see advertisement on another page.

Lawton & Bliss' Hose Coupling.



A swivel joint for hose—one that would admit of turning, and that could be easily put together—has long been wanted. Here it is. It is the invention of R. B. Lawton and W. H. Bliss, of Newport, R. I., and was patented Feb. 22, 1859. Our illustration fully shows the invention, the coupling being seen in section.

A A′ are the ends of the two hose provided with caps, B B′, by which they are attached to their respective metallic rings or thimbles, *c d*, the one, *c*, fitting into the other, *d*, and pressing against a rubber packing ring, *f*, in *d* which renders the joint water-tight. Around *c* a groove, *e*, is made, and in *d* there is a hole in which a hollow screw is fitted provided with a screw-cap, *h*, through *h* a pin, *i*, projects that fits into the groove in the top of the roller, *g*, that is conical at its end and fits into the groove, *e*, thus securing the thimbles, *c d*, together and allowing one to move round the other with perfect freedom, but at the same time preventing them coming apart. This roller being conically shaped and the groove having inclined sides, the pressure of *g* upon the side of *e* will always tend to keep *c* close *o d*, and thus compensate for any wear by the simple act of connecting them together.

A simpler and more efficient hose coupling it would seem impossible to devise, especially when so many ends are attained by the same device. Any person desirous of knowing more concerning it, in a business or other point of view, should address W. H. Bliss, at Newport, R. I.

Firing of Locomotives.

In the saving of wear and tear, and in the economy of fuel and oil in running locomotives, a very great deal depends upon the engineer. This is very clearly set forth in the recent report of R. A. Wilder, Esq., Superintendent of the Minehill and Schuylkill Haven Railroad, published in the *Miner's Journal*, of Pottsville, Pa. The principle feature of this report is the information contained about the successful use of anthracite coal for fuel. It is used on the engines running on this road, and has been found much cheaper than wood at two dollars per cord. The engines are similar to those in which wood is employed for fuel, excepting that the fire-box is larger in area, but not quite so deep. An engine of 30 tons will take a train of 140 cars, to the summit of the mountain and return loaded—a distance of 65 miles, consuming four tons of coal—the total rise in the road being 900 feet. The coal used is all broken with a hammer, as it has been observed that when broken by rollers, although the work is done more rapidly, it does not ignite so readily, on account of the sharp angles being broken off. The fire in the furnace, is never more than six or eight inches deep, and an experienced fireman never throws in too much fresh coal at once; great care and skill are required in firing—in fact most of the success of coal-burning locomotives depends on this operation. A fireman has been known to burn out a set of grate-bars in one day, while another using the same coal, and raising as much steam, has preserved a set of bars for several months. The rapid destruction of fire-boxes, under the use of coal as fuel, has retarded its introduction as a substitute for wood. As the bottom parts of the fire-box plates are subject to the most rapid destruction; it has been necessary to remove the entire box to replace the injured parts. This has been owing to the method by which the sheets have been riveted together. On the above road, the lower parts of the fire sheets which are injured are only cut away, not the entire fire-box, and a saving of nine-tenths of the usual cost has been effected. By forming the fire-boxes with a set of lower fire-plates, joined to the upper portion above the fire surface by a horizontal seam, these could be easily removed, when burned out, with but little expense in comparison with that now incurred, according to the method by which fire-boxes are at present constructed. The firemen were very much prejudiced against coal when they first commenced its use, but now they prefer to work on coal-burners rather than those in which wood is employed. Engines which use wood require to stop frequently to obtain a supply of fuel; a tender full of coals will last an entire day. In Pennsylvania, where good oak wood can be obtained for two dollars and a quarter per cord, coal is found to be cheaper, and ten years experience on the above railroad has established the superiority of coal over every other kind of fuel. Common locomotives with large fire-boxes can be altered with very little expense, to burn anthracite; all that is required for their success is careful firing—no large lumps being used, and a thin fire kept up.

CHEAP GAS.—In the city of Dublin, Ireland, a new gas company supplies good coal gas at 80 cents per 1000 cubic feet, and no rent charged for meters. This is certainly very cheap gas in such a city, when it is considered that all the coal used is imported from England.