

light rapidly becomes putrid; and in the Indies, the negroes who will lie sweltering and uncovered beneath the full glare of a tropical sun, carefully muffle their heads and faces when exposed to the moonbeams, which they believe will cause swelling and distortion of the features, and sometimes even blindness.

### Improved Dumping Wagon.

The advantages that are gained by constructing common road wagons, so that they will "dump" are so well known that it is unnecessary to recapitulate them. The wagon which is the subject of our illustration dumps in two parts, the body being divided transversely at or near the center of its length, and the sections are hinged so that they can be tilted independently of each other. This arrangement avoids the necessity of shifting or sliding the body, even if made long, independently of the frame, when it is desired to dump the load, as the front section can be dumped, and the truck then moved forward far enough to bring the rear section in proper position for dumping like the first, so that its load may be dumped on that deposited by the first section. Two different materials can be carried in this wagon and dumped separately, in different places, or in the same as desired.

In our engravings, Fig. 1 is a perspective view of the wagon, dumped. Fig. 2 is a side elevation of the wagon as ready for carrying a load, and Fig. 3 is a view of the mechanism by which the parts are dumped. A A are the wheels, and B B the axles of a common road wagon. D D are two side bars resting on the bolster of the front axle, and fastened permanently to the axle of the rear wheels. These bars are also connected to ether by stay-bars, E E. On the fram formed by the bars the body of the wagon is mounted; the section, G, being hinged at H, and the section, G', being hinged at H'. The line, I, of division between the sections, is cut obliquely down through the body, so that the front section may descend without touching the rear one, and still a tight joint be maintained when the sections are locked together. The two sections are held up at the point, I, by the sliding bar, J, and by hinged catches, a. The bar comes underneath the division line, being arranged to slide back and forward in brackets, j j, and when under the

neither part will tilt, and the load may consequently be carried to the desired place. It is also evident that after the load is transported to the place of destination, and the sliding locking bar, J, moved to the position shown in Fig. 1, the front section may be as easily

Fig. 3



In the art of brewing it is essential that the wort, after being boiled with the necessary quantity of hops, and properly concentrated and rendered clear, should be cooled as rapidly as possible, to prevent acetification, or "fixing," as it is technically termed. The means employed at present to effect this object consists in having large shallow vessels constructed of wood, into which the liquor is poured,

and employing horizontal fans, by which a powerful draft of air is created over the surface of the liquor. Success by this means is not always certain, and the liquor is often acetified before it is cooled.

This invention renders the speedy cooling of the liquor a matter of certainty, and the construction of this improved cooler is extremely simple.

lowed by an increasing mortality. By this is not meant the absolute amount of aqueous vapor in a cubic foot of air, but its relative amount. Thus, at a temperature of 30° Fah. a cubic foot of air requires about two grains in weight of watery vapor to saturate it completely. But if the heat of that air be raised to 60°, it requires rather more than of grains in weight of aqueous vapor to produce the same amount of saturation. Yet both these airs are in the same relative state as to saturation with moisture, both have just that amount which they can easily carry. Meteorologists have agreed to reckon full saturation of the air with moisture, whatever be the temperature, as 100; and in Scotland the degree of humidity which appears to be most conducive to health ranges from 80° to 85° Thus, air at the temperature of 30°, with one grain and six-tenths of aqueous vapor, would be in the same state, as to moisture, as air at  $60^{\circ}$  with  $4\frac{1}{2}$  grains in weight of watery vapor -both would indicate 50° of humidity, and be in the best condition, in so far as amount of moisture is concerned, for the support of health.

## Cisterns that will keep out Surface Water.

A correspondent—C. A. White, of Burlington, Iowa,—informs us that the following method of building cisterns in moist ground will effectually prevent water soaking through them from the outside and inside also :—

"The bottom of the cistern is spread with hydraulic cement in the usual manner, then laid over with brick, upon which the wall is commenced about an inch, or an inch and a half from the earth all around. When the wall is about four courses high, the interstices between the wall and the earth are filled with grout, or the ordinary cement, made very thin, and poured in ; then build up the wall, and fill in with grout as before. When the cistern is plastered inside, the wall is completely encased with a coat of cement, that prevents the passage of water both ways."

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Two schooners have already cleared from Detroit, Mich., this season, direct for Liverpool, and seven more are to sail on like voyages during the present month. Their cargoes are principally staves and other small hardwood timber.

## Scientific American.



Issued from the United States Patent Office FOR THE WEEK ENDING MAY 11, 1858.

## [Reported officially for the Scientific American.]

WRENCE-James McKenzie, of Green Island, N. Y.: I claim fixing the movable jaw of an adjustable wrench by a toothed wedge, passing through the said jaw, fitting into the teeth or notches on the shank, in the manner specified, so as to keep the movable jaw firm to resist all pressure that may be applied to it.

REAPING AND MOWING MACHINES—L. J., WM. S., and Cyrus H. McCormick, of Chicago, Ill.: We claim making the finger bar of a mowing machine of a bar of iron, wedge-formed in its cross-section, with its forward edge which carries the fingers made thin, that the sickle may act upon, and cut leaning grass, and with its rear edge thick to obtain the required strength, and the under surface inclined that it may act like a runner, to pass and ride over the surface of the ground to keep the cruting edge of the sickle clear of obstructions, whilst at the same time it can have access to leaning grass, all substantially as described.

COMPOUND PHOTOGRAPHS-Thos. Miltenberge Bellefontaine, Ohio: I claim the production of a Belletontaine, Ohio: I claim the production of a com-pound photograph, or the taking of separate distinct photographic impressions on each side of a glass plate, ortransparenttablet, and producing thereby a compound relievo or double stereoscopic effect on a single or sim-ple plane or flat surface, in combination with a totally black background, through which solely is produced a transparent collodion film, in the manner substantially as set forth and described.

CARTEIDGE CASE—Geo. W. Morse, of Baton Rouge, La.: I claim my improved cartridge case as constructed with a tize, C, an annular shoulder, a, and an expansi-ble cartridge closer, B, arranged within the body, A, of the cartridge, and made to slide longitudiually therein, and to operate in other respects substantially as above specified.

BINDING DEVICE FOR HARVESTERS—George Notman, of Deerfield, Ohio: I claim the grain box or receptacle, F, revolving fork, a; sliding fork, m', rod, g', slide bar, H, and sliding bottom, I, arranged to operate as herein described, and used in connection with any proper raking or conveyling device, whereby the grain as it is cut is bound and discharged in sheaves from the machine.

[This invention consists in the employment of an intermittingly moving apron, grain receptacle, certain mechanism for twisting the bands around the grain in the receptacle, and a discharging device, the whole being attached to the machine, and arranged so that the grain as fast as it is cut by the machine may be gathered into gavels of requisite size, firmly bound, and discharged upon the ground.]

Corron Gins-Enoch Osgood, of Boston, Mass.: I claim the combination of the oscillating clearer, D, and the conceve guard or plate, C, constructed and arranged with the cylinder, B, and the rack, M, and made to operate therewith, substantially in the manner and for the purpose as before specified.

SELF-INFING HAND STAMPS-S. E. Pettee, of Mans-field, and Elias G. Cobb, of Foxborough, Mass.: We claim the hand stamp, the roller, Q, or its equivalent, on the lever, H, working against the curve, R, or its equivalent on the lever, N, to operate said lever, and carry the inking roller on, across, and off of the type, parallel or nearly parallel with the face of the type, so as to ink them uniformly and evenly to make a fair impression.

IMPLEMENT FOR SHOOTING MISSILES AT COWS, &d., on RAILROADS—Stephen Scotton, of Richmond, Ind. I do not claim the tube for shooting or squirting steam at stock in front of a locomotive, for that has been done

at stock in iron of a local before. Neither do I claim separately any of the parts de-scribed in the second claim. But I claim, first, the combination of a tube and ravel feeder with a locomotive, for the purpose de-

gravel feeder with a locomotive, for the provided scribed. Second, The arrangement for closing and opening the slide, K, when combined with lever, J, and tube, A, substantially as described. Third, The self-adjusting valve, F, in combination with the tube, A, as herein described. Fourth, The elastic disk, E, combined with the tube, A cond ubug, D, for purposes set forth.

INSTRUMENT FOR SHARPENING SLATE PENOILS-Gerard Sickels, of Brooklyn, N. Y.: I claim the instrument consisting as described, of a piece of steel, with an arched conceve surface, on which teeth are cut, and with eyes at its ends to attach it to the slate frame, or other foundation. (This invention consists in a plate of steel having its

transverse section formed with a concave arch for the greater portion of its length, and having float or file-like teeth on its concave-arched face and eves at its ends which admit of tacks or screws to attach it to the frame of a slate. The pencil is held in proper position and scraped along it, and the teeth cut it to a point.]

CIDER MILLS-Michael Stevens, of Lucas, Ohio: I claim the arrangement of the several parts for the pur-pose "of retaining the liquor," and in the manner set forth. forth.

HARVESTERS—Oren Stoddard, of Busti, N. Y.: I claim the supplementary sickle, D. connected with the sickle proper, C, and placed relatively with the sickle, C, so as to operate as and for the purpose set forth.

(This invention consists in the use of a supplementary sickle attached to the shoe at the outer end of the cutter bar, and arranged so as to be operated from any of the usual reciprocating sickles, and at the same time to cut vertically and at right angles with the sickle proper. The object of the invention is to cause the cut grass or grain to be perfectly divided from the standing grass or grain, so that a clean, close, and even swath is obtained, and a free path for the team.]

HARNESS TUCE BUCKLE-WM. Straw and Ramson H. Armstrong, of Hudson, Mich.: We claim the plate, B. provided with one or more tongues, i, attached to the frame, A, at one end by means of a sliding joint and attached at the opposite end to the frame by means of a catch, h, and dove-tail connection formed by the groove, f, in the cross piece, g, of the frame, and the beveled front end, e, of plate, B, the whole being ar-ranged as and for the purpose set forth. . (There is a plate attached by a sliding joint to a frame, the plate being provided with one or more tongues, and so arranged in connection with a catch

历险 Ago. tongues, and so arranged in connection with a catch that the tug can be readily adjusted so as to be of greater or less length as desired, and at the same time the connection rendered more secure than in the usual way.]

A.

COEN HUGHERS-Daniel C. Smith, of Tecumseh, Mich.: I do not claim the forceps separately. But I claim the combination of the forceps, A, with the wedge, J, roller, H, lever, g, post, L, with its slot, m, the knife. B, and plate, D, when these several parts are arranged as and for the purposes set forth. I also claim, in combination with the forceps, A, the spring, E, fork, C, and thumb-serew, F, when arranged and operated as and for the purposes specified.

STRAW COTTERS-Solomon P. Smith, of Crescent, N. Y.: I claim the arrangement of the arm, C, knite, E, and recoil spring, L, with straw box, A, when construct-ed for operation conjointly in the manner and for the purpose set forth.

purpose set forth. HARVESTERS—Henry C. Smith, of Cleveland, Ohio : I claim the application of the intermediate wheel, X, at the end of the finger bar, when used in combination with the curved lever, Y, and flexible rod, W, arranged and operating substantially as specified. I claim also the stops, a a, connected to the frame, and placed in such position to the line of draft, as will tend to counteract the dragging of the guards or finger bar wheel by the arms, M M, substantially in the manner and for the purpose described. I claim, also, the steps, d d, in combination with the spurs, ff, attached to the arms, M M, for the purpose of raising the cutter bar in connection with the described system of leverage as set forth. Also I claim the rebate, or groove, c, formed in the

Also I claim the rebate or groove, c, formed in the heel of the cutter bar in the manner and for the purpose described.

BRUSH-Joel H. Tatum, of New York City: I claim the brush constructed as herein shown and described, so as to form a new and useful article of manufacture, to wit: having the bristles, B, secured in detached positions in a metal plate, A, which forms the back of the brush. [A notice of this invention will be found in another column.]

HARVESTERS—John S. Trozel, of Mount Pleasant, Pa: I claim hanging and operating reels for harvesters on the main shaft, by means of yoke lever, C. and slotted lever, E, rod, G, and movable arms, L, slotted blades, d, pulley and strap, b, and slotted plate, B, with screw bolt, T, as set forth and described.

LARTS-Sidney S. Turner, of Westborough, Mass.: I claim a last made of wood, and provided with metallic edge guards, a a, and with grooves, b, arranged along and against the inner sides of such edge guards and for the purpose of receiving strips of wood, c c, or other suitable material for the points of the pegs to enter while the last is in use, or a shoe thereon is being peg-ged, as described.

REPEATING ORDNANCE-George Utley, of Louisburgh, N. C.: I claim the shaft, S, with cams, D and f, as de-scribed, in combination with the reciprocating hammer, h, the laterally moving toothed wheel, m, and the de-tent, g', said parts being connected and operating with a many chambered breech piece having a rectilinear movement substantially as and for the purposes before set forth set forth.

WASHING MACHINE-Miner Van Auken, of Chazy, N. Y.: I claim the adjustable stop board, F, arranged at the rear end of the rubber in combination with the scroll terminating slots, i j, in the pendulous arms of the rubber, E, substantially as and for the purposes set forth.

[This is an improvement on that class of washing machines in which an oscillating and curved corrugated rubber is employed in a box with a corrugated bottom. The improvement is in the hanging of the rubber and in the employment of a board, to facilitate and aid the more perfect cleansing of the fabrics to be washed.]

IRONING TABLE-Wm. Vandenburg, Jr., of New York City : I claim the ironing table composed of a board at-tached to one end of a stand, in such manner as to be capable of moving horizontally the: con to and from the other end of the stand, that it may be supported at both its ends during the ironing operation, but permitted to have a garment passed over one end before and after the ironing operation in the manner specified.

(This was refered to in conjunction with another ironing table by the same inventor, of which we published an engraving and description last week.]

BUNCEDS FOR VAPOR LAMPS-Thomas Varney, of San Francisco, Cal.: I claim the arrangement of the tubes, a b c f, and the passages between them, the burner tip the wick, and the pipes, B C, substantially as set forth. [See another page for a description of this improve ment.]

Working Sups' Lower Sairs or Courses-Samuel Very, Jr., of Salem, Mass.: I claim constructing what are commonly known as the 'courses' of a vessel, viz., the foresail, mainsail, and cross-jack, with a central clew for a sheet or tack in addition to the usual sheet and tack of such sail, for the purpose of enabling a lighter crew to handle those sails, as set forth.

Igniter crew to namble those sains, as set torth. WATER WHEELS-Alongo Warren and Elijah Damon, Jr., of Wareham, Mass.: We claim the supplementary or auxiliary buckets, i, attached to the underside of the lower rim, m, of the wheel, and arranged relatively with the edge of the rim and plato, k, as shown, for the purpose set forth. We further claim in combination with the auxiliary buckets, i, the annular L-shaped plate, C and D, attach-ed to the scroll, A, in connection with the ledge, c, on the upper surface of the disk, by of the wheel, the whole being arranged to operate as and for the purpose set forth.

[The object of this invention is to render available as

power, the leakage water, that is, the portion that usu-ally escapes between the rims of the wheel and the scroll, and has hitherto been wholly lost, diminishing to a considerable degree the maximum power of the wheel.[

Fix NETS-Robert Wilson, of Milton, Pa.: I claim the peculiar construction of the fiy-net having the stitch set parallel with the rib combined with the two right angles, formed by the lashes in passing through the rib, whether ribsare made flat, round, or any other shape, substantially in the manner and for the purpose set forth set forth.

METALLIC ROLLING SHUTTERS-WM. E. Worthen, of New York City: I claim, first, a revolving shutter, com-New York City: I claim, first, a revolving shutter, com-posed of slats of double thickness of sheet metal so formed at their edges substantially as specified, that each slat shall interlock with its neighbor by being bent at the edge into a configuration substantially such as is set forth herein. And, second, I claim the combination of a series of such slats, having such interlocking edges substantially as described, with a chain on the sides thereof, said chain being constructed and combined with the slats substantially in the manner before made known.

Substantially in the manner before made known. SELF-REGULATING GRAIN MEASURER-George W. At-kine, of Milton Del.: First, I claim the arrangement of the platform, B, in combination with a box or case, A, so that the said platform shall have an up and down motion, by turning as a lever upon the hinge, H, or its equivalent, and being supported by means of the dou-ble cross lever. G, and sprine, F, in such a manner as to yield downwardly under the weight of the measure of grain when it is placed thereon, and epring upward-ly on moving the same, substantially in the manner and for the purpose set forth and described. Second, I also claim, in combination with the said ratchet wheels, pawls, lever, indexes, and platform, ar-ranged and operating together substantially as de-scribed, the two bells, v and y, or their equivalents, for the purpose of indicating audibly both the single and hundreds of measures of grain registered by the index, as described.

WATER WHEFL—Jesse Bartoo, of East Aurora, N. Y.: I claim the iron segment, H, in combination with the adjustable band, D, and semi-cylindrical cap, C, for the purposes substantially as set forth.

CHUEN-William Brown, of Duncannon, Pa.: I claim the combination in a churn dasher of a series of slatted agitating and separating wings, oc c c, a series of gath-ering and rotaining flanges, e e e e, and a solid con-caved roll-forming hub, a, all substantially as and for the purposes set forth.

DRESSING AND SIZING WARPS-William Bradley, of Manchester, Va. : I am aware that drying cylinders have been used heretofore in dressing frames, therefore

have been used heretofore in dressing fraines, therefore I make no claim to them. Neither do I claim as new the circular brushes. I am also well aware that reeds and harness have been used heretofore in dressing machines, consequent-ly I make no claim to them as such. But I claim the combination of the section sleys or reeds, together with the warp sleys or reeds, and the harness for taking the lease or cross shed before the warp is sized in every alternate thread or threads, so as to allow the lease rods to pass with the warp to the yaru heam, and thus dispense with the use of combs, ravels, or guides, after the warp has passed through the size, substantially as described.

HARVFSTERS-C. B. Brown, of Alton, Ill. : I am aware that endless aprons have been applied to harvest-ers, and arranged in various ways, for the purpose of discharging the cut grain therefrom. But I am not aware that an apron has been arranged as shown, and used in connection with guides, so as to discharge the cut hem; at a distance from the standing hemp, in order to forr an unobstructed track for the team. I do not claim, therefore, an endless apron sep-arately considered, or independent of the arrangement shown.

[A notice of this improvement will be found in another column.]

METHOD OF SEATING THE MOVABLE CUTTER IN EX-PANSIVE BITS--William A. Clark, of Bethany, Conn.: I claim the combination of the V-shaped projection or seat, a, or its equivalent, with the corresponding groove in the movable cutter above the cutting edge, by which I am enabled to vary the distance of the edge of the cut-ter, B, near the stock, above that of the central cutter, to any desirable extent, substantially as and for the pur-poses set forth.

CORN PLANTERS-Robert J. Clay, of St. Louis, Mo. : I claim the arrangement of the hoppers, D D', valve, J, wheels, k, shaft, a, standard, e, and scraper, l, when the whole are constructed to operate conjointly as and for the purpose specified.

FASTENERS FOR SLEEVE BUTTONS—Henry Cogswell, of Providence, R. I. : I claim constructing sleeve but-tous by attaching the bar, **B**, to the projections, a b, at the inner side of the plate, A, as shown, viz., one end of the bar being pivoted in one projection, a, and the other projection containing a catch, e, and spring, i, to retain the opposite end of the bar when closed, substantially as shown and described.

This invention consists in pivoting a bar to a project tion at one end of the under side of a plate, said bar being secured to a projection at the opposite end of the plate by a "snap;" the whole being so arranged that one button is made to answer the purpose of two linked plates that have hitherto been used.]

HARROWS—Jonas C. Conkey, of Washington, Ohio : I claim the combination of the hinge, i, axle, H I, and axletree, C, when arranged in connection with revolv-ing harrows, as described, for the purpose set forth.

GRAIN-CLEANING MACHINES—John de Rush, of St. Mary's, Ohio: I claim the scouring plates, ef, fan, F, and suction spouts, A' L I M H, when combined and arranged relatively with each other, substantially as and for the purpose set forth.

[This invention consists in the use of a beater and screen peculiarly constructed, and arranged relatively with suction spouts and a fan, whereby a machine exceedingly simple and economical in its construction is obtained, and one that will separate smut, dirt, and all foreign substances from grain.]

HUB MACHINE-Lovett Eames, of Kalamazoo, Mich. : I claim operating or giving the feed movement to the carriage, B, in which the mortising tool is fitted or placed, by means of the horizontal rotating disk, **H**, provided with the ledges, e f, and having its shaft, G, stepped in the treadle, H, in connection with the rollers i h, on the sluaft, 1, which is rotated from the driving shaft, F, the parts being arranged as shown, or in an equivalent way, to operate as described.

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

RECENTING CHAIN-Augustus Eliaers, of Boston, Mass.: I claim, first, The general arrangement of the chairdescribed, whereby the back, foot-rest, &c., are sustained and actuated as specified, and the foot-rest made adjustable, and locked in any desired position, as set forth

set forth. I also claim the combination of the hinged rails, p p, sliding arms, ss, and mortises to receive the rails, p p, or in lieu of the rails entring the mortises in the said combination, the arm, g', attached to the back, and turning upon a pivot in the grooved or mortised sliding arm, whereby I am enabled to obtain a very long arm, as set forth.

FIFES FOR SMOKING TOBACCO-James W. Evans, of New York City: I claim the combination of the bulb or chamber, and the sponge or any other suitable ma-terial saturated with water, in the construction of smoking pipes or cigar-holders, constructed and ar-ranged substantially as described.

ranged substantially as described. WATER WHRELS-J. H. Fairchild, of Jericho, Vt. : I do not claim, separately, the draft tube, F, for that has been previously used. But I claim the tube, F, in combination with the wheel formed of the screws, D D, placed on a shaft, B, and working within the tubular projections, as, the whole being arranged to operate as described. I also claim, in combination with the wheel and draft tube, the gates, E E, arranged as described.

[This is an improvement in that class of water wheels in which the water is made to act upon the wheel by a vacuum formed in a draft below the wheel. The in-

vention consists in the peculiar construction of the whcel and gates in connection with the draft, whereby the wheel is made exceedingly simple.]

TIME-KEEPERS-Henry C. Fay, of Troy, N. Y. : I dis-claim the invention of a jointed verge, or one with movable detents, as that has been used by John Harri-ion and others (vide "Reid on Clock and Watch-mak-ing." page 205). But I claim the invention of a verge with movable detents, so constructed that in the vibrations of the pen-dulum or balance each detent will be carried on, nearly on, or past its dead center, so as to greatly lessen the recoil of the movement.

PRESERVE CANS—Edwin W. Gilmore, of North Eas-ton, Mass. : I claim the arrangement of the arm, and the cam, and the bar, B. whereby the cam is not only made to operate to aid in strengthening the bar when supported as described, but the arm is enabled to oper-ate as a stop to maintain the cam in place while forcing down the cover, as set forth.

BEE HIVES-Edward P. French, of Nashua, N. H : I m aware that it is not new to place a feeding chamber an aware that it is not new to place a reculing chamber in front of the hive, or the end thereof; also, that it is not new to arrange a feeding chamber in one of the secondary chambers or shorey boxes. I do not claim such, as in the one case the feed chamber is exposed to robber bees, while in the other it is arranged in an in-convenient manner, and is objectionable in many re-suects.

convenient manner, and is objectionable in many re-spects. I claim making the lower part, or both sides, of the main chamber, B, inclined toward the orifice of en-trance, e, in combination with the arrangement of an excretising and entrance chamber, D, chamber, F, feed-ing box, h, warm air spaces, G G, and air or venti-lating passage,  $\Phi$ , leading from the exercising chamber B, upward against the front sides of the secondary chambers, and over their tops into the chamber, I, the main chamber communicating with said passage only by means of orfice e, at its bottom, whereby the main and secondary chambers are kept warm, and at the same time relieved of bad air or carbonic acid gas by a ventilating current of air induced by their heat, the several parts being arranged as respects each other, and constructed as described, for the purpose set forth.

PRINTING PRESES-G. P. Gordon and F. O. Degener, of New York City: We do not claim the peculiar manner of hanging or arranging the reciprocating bed, K, for that is already patented, as previously stated. Nor do we claim, broadly, giving a continuous rotary motion to a cylinder, when used with a reciprocating bed, as this has been previously done, and is common to many cylinder presses in use. But we claim communicating motion to the cylinder at the time of giving the impression, by and through the motion of the bed, while the revolution of the cyl-inder shall be perfected by or through ordinary gear-ing, or other means entirely independent of the motion of the bed, thus alternating from one of these means to the other, to give a full revolution to the cylinder.

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

PAINT COMPOUNDE—William G. Huyett, of Williams-burg, Pa.: I do not claim the use of calcined iron ore, lime, or coal, except when compounded so as to form a paint as described by whe. To the best of my knowledge and belief no such paint compound has ever been heaven or used And belief he stat, part compared to the state of the sta

[This is a cheap paint, and of great durability.]

SOFA BEDSTEAD-John Irwin, of Philadelphia, Pa.: I am aware that the brunches of gate hinges have been bent, and that a three-fold hinge is not, in itself, new. But my hinge differs from all other known hinges, and in its application to sofa bedsteads, forms, I believe, both an important and a patentable improvement. I claim the described hinge, in combination with the back and seat of sofa bedsteads, for the purposes sub-stantially as set forth.

CULTIVATORS—L. W. Kelley, of Brunswick, Ohio: I claim the combination and arrangement of the teeth beams, B B, with their attaching and adjusting bars, E s and G G, and the crapers, M, with their attaching and adjusting bars, L and G' G', with each other, and with the cuntral beam, A, substantially in the manner aud for the purposes set forth.

and for the purposes set forth. COEN MILLS—Charles Leavitt, of Cleveland, Ohio : I Claim the manner of securing the revolving grinder, P, to the spindle, F, by means of the collar, L, wings, L', cap and nut. Q Q, when arranged as described, also the receess S, in the outer casing, B', in combination therewith the adjusting and securing the grinder, **R**, in place, by means of the outer casing, IB and B', and the diaphragm, M, upon which the grinder is superimposed in the manner specified. Also dividing the surfaces of the two grinders into an unequal number of parts or sections, for the purpose of pringing the several sections of the grinders successively into opposition, in the man-ner described, and for the purpose specified : and also the diaphragm, M, when arranged in relation to the support of the sepindle, F, and grinder, R, and the col-lecting and discharging of the meal at one point, as specified ; these eeveral devices I claim when rranged as described, and applied to the purpose set forth.

CANS FOR PRESERVING FOOD—A. S. Lyman, of New York City: I claim, in cans for preserving food, the combination of the reservoir, or filter, of suitable ma-terial, with a can having an arrangement for discharg-ing its contents in such a manner, that whenever any iood is drawn off, air, or gas deprived of the primary cause of decomposition, shall supply its place, substan-tially as and for the purposes specified.

RAILBOAD CAR BRAKES-Geo. W. Zeigler, of Tiffin, Ohio: I claim the application of pressure to the rubbers by a longitudinal rotary and under the truck, combined with cams, C C', arranged and operating substantially a described.

Whit came, of 0, arranged and opened and came as described. I also claim, in combination with the rods and came of the several cars, as described, the universal joint coupling, H, constructed and operating substantially as specified, to connect the aforesaid rods throughout the train. I further claim transmitting the power to rotate the rods through a spring indicating apparatus, substantial-ly as and for the purpose specified.

SABH FASTENER-F. W. Brocksieper and J. B. Sar-gent (assignorsto J. B. Sargent), of New Britain, Conn.: We claim the bolt, D, as an attachment to a sash fas-tener, operating substantially in the manner as de-scribed.

STREENG APPARATCS-S. B. Cram and Chas. Weed (assignors to S. B. Cram), of Boston, Mass. : We claim the screw, and nut, G. in combination with the ropes operating in the manner substantially as set forth. Second And in combination with the above, we claim the described tightening apparatus, and anoty and alent thereof, arranged in the manner set forth for the purpose predified.

purpose specified. Third, And iu combination with the described ar-rangement of ropes or chains as applied to "mechanical steevers," we claim the employment of springs operat-ing as described for the purpose specified.

Ing as described for the purpose specified. CANDY MACHINES-G. P. Farrington and Samuel Brown, Jr. (assigners to themselves and D. B. Tiffany), of Xenia, Ohio: We do not ciaim the endless apron, al-thongh we do not know of its ever being used in the mannerdescribed. What we claim is the construction of the machine, the construction of the sugar kettle and spouts as de-scribed, the method described of cutting eff all the drops with one stroke of the knife working vertically in connection with the adjustable pitman, or any other means substantially the same, producing the same effect.

FORKS FOR ELEVATING HAY -C. E. and J. N. Glad. FORKS FOR ELEVATING Hxx—C. E. and J. N. Gladding (assignors to C. E. Gladding), of Troy, Pa. : We claim the arrangement and combination substantially as shown and described of the head, B, joint, C, strap, c, plate d, loop E, and cord or wire, F, whereby all projecting arms are dispensed with, so that the instrument when not required for hoisting purposes may be used as a common fork.

[See a description in another portion of this paper.] UTILIZING WASTE VULCANIZED RUBBER-Hiram L. Hall, of Beverly, Mass., assignor to the Beverly Rubber Company: I do not claim the mixing of asphalt, coal tar, resin or shellac, or other similar sub-stauce with native rubber, nor with vulcanized rubber previouslydissolved by means of essential oils or other solvents.

previously dissolved by means of essential oils or other solvents. But I claim the restoring of waste vulcanized rubber by grinding it and mixing it with asphalt, coal tar, resin, pitch, shellac, or other similar substances, so that it can be used again in the manufacture of vulcanized rubber fabrics, and be as serviceable, or nearly so, as when the fabrics are made with the use of the native rubber. 5

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hown. But I claim placing the endless apron, F, in an ob-lique position with the sickle, E, so as to operate as and But I claim plate the sickle, E, so as to operate as and for the purpose set forth. I also claim the endless apron, F, in combination with the guide rods, I K, and sickle, E, when the sev-eral parts are placed relatively with each other, as ghown, so as to operate as and for the purpose specified.

FINGER OF GUARD FOR HARVESTERS-Lewis Miller, (assignor to C. Aultman & Company), of Canton, Ohio: I claim forming the shoulder on a wrought iron guard, by welding on a piece instead of drawing down a large bar, as set forth and for the pur-nese described. arawing down a large our, as set forth and for the pur-pose described. And I also claim the shaping, leveling and truing of the guard or finger, so as to make them of uniform shape and size by means of a block, as described and represented.

WASHING MACHINE-D. E. Rohr (assignor to himself and Thomas W. Davis), of Charlestown, Va. : I claim the construction of the fluted rotating device, a b cd, the sliding redup:reducting board, I J J, with fluted or grouved squeezes or washing board, I J J, with yoke, beam soil pendant, devices, K K L L, m, arranged, combined and operating substantially as in the manner fully described.

Guibes FOR SEWING MACHINES—Lemuel W. Serrell, of Brooklyn, N. Y., assignor to John Harold, of Hemp-stead, N. Y.: I clain, first, The detached tongue, g, around which the edge of the cloth to be hemmed is folded or wrapped to a greaterorlesser extent, substan-tially as and for the purposes specified. Second, I claim the adjustable hem spreadcr, K, in combination with the tongue, g, substantially as speci-fied.

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**BE-ISQUES. AEITHMOMETEE FOR ADDING**—O. L. Castle, of Upper Alton, II. Patented Nov. 24, 1857 : I claim, first, The combination of the repeater, X, the stationary repeater stop, 17. the sliding stop bars, T1, T2, &cc. and the stationary stop pin, w, with the driving wheel, D, or its equivalent, provided with a series of heles, ee, the whole operaling substantially as described to control the motion of the register. Second, Combining the shaft of the driving wheel, D, or its equivalent, with the keys, S1 S2, &cc., by means of a stronger spring, v, and a weak er spring, R, and a lever, 13, deriving motion frem the keys, the whole op-erating substantially as described for the purpose set forth.

eratingsubstantially as described for the purpose set forth. Third, Combining the keys with the sliding stop bars, T 1 T 2, &c., by means of the wedges, 8 &, attached to the keys; the arms, v v, sliding on guide bars, V, and and the collars, 6 &, and springs, 77, applied to the guide bars, substantially as and for the purpose speci-fied. Fourth, The loose teeth, r, applied to the wheels, oo, and operating substantially as described for the pur-pose specified. Fifth, Making the "register" movable longitudinal-ly relatively to the driving wheel, D, or its equivalent, substantially as described, for the purpose of changing the driving operation to the register wheels of different denominations at pleasure. IT his invention was noticed on page 90 of the present

[This invention was noticed on page 99 of the present volume, and has now been re-issued in an amended form.1

form.] SAWING MILL-Wm. Hawkins and Wm. C. Clary, of Milwaukie, Wis. Patented March 30, 1558 : We claim changing the saw after each cut, alternately, from an oblique position in one direction, to an obliqe position in a contrary direction, to the line of the log carriage while cutting in either direction by the movements of the machine, and for the purposes set forth. We also claim the swing guides, w w.for the purpose of guiding the saw as described. We also claim the two wedge rollers, or wedges, P' and P'', to keep the board clear of the saw. while cut-ting in either direction, as described. We also claim the combination of pinions, i, and pins, o, entering into recesses of plates, b, the ratchet wheels, g, the ratchets, a, the adjustable segmenta, J, the wheels, G', the screws, G, and the rods, K, with their clutches, z and v, for the purpose of setting the log to the saw, and stopping the setting when the log frame advances too close to the saw. And we also claim the notched plate, t in combina-tion with the latch, g, lever, w, and link, J, for the pur-gose of operating the beit shifter, i, withont turning the lever, D, substantially as Set forth.

SEED PLANTERS—B. Kuhns, of Dayton. Ohio, and M. J. Haines, of Delaware City, Del. Patented Sept. 30, 1855: We make no claim to the pocketed wheel of it-self, nor do we claim the adjustable seed discharge

self, nor do we claim the adjustable seed discharge apertures. We also disclaim the grooved roller in Fig. 27, and described on page 104 of Low's Elements of Practical Agriculture. But we claim the pocketed roller, as described, run-ning close to the bottom of the cell, in combination with the adjustable aperture in said cell bottom, when the relation between the width of the pocket and maxi-mum size of the aperture is such that the pocket will always embrace the apertures, and for the purposes de-scribed.

SEEDING MACHINES-C. W. Cahoon (assignor to J. B. Cahoon and D. H. Furbish), of Portland, Me. Patent-ed Sept. 1, 1857: I do not claim the slide, b, nor the rock shaft, c, with teeth, d, attached, for stirring or ragitating the seed within the hopper, separately; neither do I claim distributing or sewing seed broadcast by means of centritugal force effected by the rotation of wheels or cylinders, irrespective of the construction and arrange-ment shown.

of centritugal force effected by the rotation of wheels or ment shown. But I claim, first, The employment of a tubular chamber or discharger, rotating rapidly in a horizontal pation, so that its outser edge or periphery will be in a plane vertical or nearly vertical to the horizon, and thereby communicating a centrifugal motion to the grain, seed, &c., away from the center of a circle whose plane is thus vertical to a funnel-shaped dis-charging chamber for the purpose, and rotating in the position above described, having spiral finanches or their equivalents inserted therein, and operating to arrest the too direct flow of the grain or seed, &c., through the discharger, and retaining it therein until the ne-cessary centritugalforce is communicated to it before it leaves the discharger, as above described. Third, The combination and use of the above de-scribed and above claimed tubular or funnel-shaped discharging chamber, rotating in the position above de-scribed and above claimed tubular or funnel-shaped discharging chamber, rotating in the position above de-scribed and above claimed tubular or funnel-shaped discharging chamber, rotating in the position above de-scribed and above claimed tubular or funnel-shaped discharging chamber, rotating in the position above de-scribed with the disk, H, placed and operating in the manner above described. Fourth, The combination and use of the above de-scribed whether with or without the use of the disk, H, with a hopper constructed of any proper material, and fitted with the side b, and rockshaft c, with teeth d, at-tached, or their equivalents, and operating substantial-ly in the manner above described to feed the grain, seed, &c., into the discharging chamber.

seed, &c., into the discharging chamber. MAGHNER Y FOR SEPARATING FLOURFROM BEAN-Issa-char Frost and James Monroe, of Albion, Mich., as-signors to Henry A, Burr, I. D. Condit, Alex, Swift, D. Barnum, and Jobn M. Carr, of New York City. Fat-ented Feb. 27, 1849-Re-issued March 13, 1855-Again re-issued May 11, 1858 : We do not claim as our inven-tion the placing of the bolt in a vertical position as this was known before our said invention, but under a com-bination of parts resulting in a mode of operation es-sentially different from our said invention. Nor do we claim any of the separate parts, or sub-combinations other than as after specified. What we do claim is, the combination of the follow-ing essential features or their equivalents, viz.:---First, The vertical or nearly vertical position of the Societ A surrounding case forming a chamber on

Second, A surrounding case forming a chamber or chambers around the bolt, substantially as and for the

# Scientific American.

purpose specified, and provided with suitable means for the delivery of the flour as specified. Third, A rotating distribution head at or near the upper end of the bolt, substantially as described. Tourth. Rotating beaters or fans within the bolt, sub-stantially as and for the purpose specified. We also claim, in combination with the first, second, and fourth features of the combination first claimed, the closed up top of the bolt, except an aperture or apertures for the armission of the material and air, substantially as and for the purpose specified. We also claim, in combination with the first, second, and fourth features of the combination first claimed, the closed up bottom of the bolt proper, except an aperture or apertures for the discharge of the bran, substantially as and for the purpose specified. We also claim, in combination with the first, second, and fourthfeatures of the combination first claimed. We also claim, in combination with the first, second, and fourthfeatures of the discharge of the bran, substantially as and for the purpose specified is whether the said bol-tom be, or be not, specially provided with an aperture or apertures, for the admission of air as specified. We also claim, or to be integrams, or swings moving in closeproxinity with the inner surface of the closed up bottom, substantially as and for the purpose speci-fied. We claim the combination of all the features speciup bottom, substantially as and for the purpose speci-fied. We claim the combination of all the features speci-fied as essential features, substantially as described, or any equivalents for any or all of the said features.

#### TOOL BOXES-Herrick Aiken, of Franklin, N. H.

COOKING STOVES-Thos. H. Wood and J. E. Boberts, of Utica, N. Y., and H. S, Hubbell, of Buffalo, N. Y. COOKING STOVES-S. W. Gibbs (assignor to Rathbone & Co.), of Albany, N. Y.

DESIGNS.

PARLOR STOVES-S. W. Gibbs (assignor to Rathbone & Co.), of Albany. N. Y.

STOVE DOGRS-Jacob Receiv (assignor to J. S. Clark and Washington Harris), of Philadelebia, Pa.

#### -----Petrifying Wells.

Let us away to the hills, to the green meadows decked with daisies, to the field path, to the banks of Derwent's stream. This is the village of Matlock, nestling in the bosom of mother earth, a charming spot in the plains of Derbyshire, famous all the world over for its petrifying wells.

These are the Hights of Abraham; that towering rock is High Tor, "frowning at night and smiling in the morning ;" between them flows the river Derwent. From the sides of these rocks little streams issue, and (marvelous as it may seem) everything this water runs over turns to stone! This is no fiction, but a positive fact. For instance, if you take a favorite rose bush, and so place it as to allow the stream to drip down its thorny side, it will, in the course of twelve moons, become petrified-a rock of beauty, in fact, defying the sculptor's art. No matter what you put there, the effect is the same. Some of the wicked wags of Matlock went over to Ambergate one evening, and stole from John Wiggins his wig, which they placed in the petrifying well, and it was turned to stone. The favorite things to petrify are birds' nests and eggs, which are very beautiful. The three petrifying wells here are literally filled with all sorts of things undergoing the rockification process. Many of these things have been brought from a great distance, (even from Canada and Ceylon,) as tokens of affection and love. Toys, once the favorite playthings of a now departed child, are here petrified; and thus they become a real treasure, the only one mamma has left.

With very few exceptions, springwater contains lime, magnesia, and other stony stuff dissolved in it, which accumulates during its subterranean travels. You know that if water runs over a bed of sugar, a sweet well is the result. In Cheshire there are salt beds; these produce salt or brine wells, from the springs of water that come into contact with them. Thus we have also water containing lime. magnesia, strontia, and baryta. The petrifying springs that trickle out of the perpendicular sides of Mount Abraham and High Tor, at Matlock, are highly charged with lime; on exposure to the air, a large portion of the water evaporates, and the lime remains; whatever this reduced quantity of water trickles over, therefore, soon becomes coated with a thin film of lime, which increasing in substance partakes of the property of limestone. Woody fiber that will absorb the water will have lime deposited within its cells, and which, hardening to the consistence of stone, imparts at length that solidity which we call petrifaction.

The petrifying wells, however, are not the only natural curiosities that are to be seen at Matlock. You can, if so disposed, penetrate into the earth's crust. What is called the Speedwell lead mine is in truth a crystal cavern of resplendent beauty, full of stalactites and staglamites, spar, dogtooth crystals of carbonate of lime and doubly refracting spar. be 1858.

As you walk through the Straud, in London, the shop of Mr. Tennant, the mineralogist, will be likely to arrest your attention, for in the window may be seen a fine specimen of this double refracting spar from Derbyshire. If you draw a black ink line on a piece of paper, and look at it through this glassy spar, there will appear two lines. Everything, in fact, appears double that is seen through it. Now the production of all these beautiful crystals, these stalactites, these staglamites, these spars, has been the work of many hundreds of years. Chemistry assures us that they are all composed of the very same ingredients as are now found in the waters of the petrifying well.

## SEPTIMUS PIESSE.

#### The American Horse.

It appears to be a matter of history that the horse, which is now so extensively distributed, both in a wild and domestic condition, throughout our continent, was not an inhabitant of it when America was discovered by Columbus. It is stated that the first European horsemen were taken to be strange beings-the horse and his rider as one personby the aborigines of our country. Although this is probably true of the horse, yet recent scientific explorations go to prove that he was an old resident of the New World as well as the Old.

Professor F. Holmes, of Charleston, S. C., has discovered several fossil teeth of the horse in a post-pleiocene deposit on the Ashley river, and several teeth have also been exhumed by Col. McChesney, of Troy, N. Y., in his garden. The fossil American horse appears to have been cotemporary with the mastodon; and some of our naturalists have been speculating on his age, and the unity of the species. Agassiz, who is at the head of our naturalists, does not believe in the unity of the species of men or brutes, and the tendency of the belief of his school of naturalists is, that the horse and man were inhabitants of this continent many thousands of years before this world was created-according to the popular belief-about six thousand years ago. It is all vanity to speculate on these questions of time in regard to natural events, they never can be settled. It would be more wise and profitable for these philosophers to devote attention to the discovery of the cause or causes which led to the extinction of those horses which once inhabited America; because the same causes which operated then to destroy large numbers of animals-completely annihilated them-may operate again to produce like effects. In our opinion, there was at one period perfect land communication between the Old World and the New. The old tradition that there was once a great, rich and populous country, known to the ancients, and called "Atlantis," which was swallowed up by a storm in the Atlantic ocean, may be founded on fact.

## Yield of Maple Sugar.

The Montpelier (Vt.) correspondent of the Boston Traveler writes that the maple sugar season is about over, the crop being a full average one, or a trifle less than three pounds to the tree. Last year was an extraordinary season, the yield being over five pounds to the tree, or nearly enough, if equally distributed, and all kept for home consumption, to have supplied every family in the State.

#### · ···· ···· Ethnography.

This science, one of modern creation, describes the customs, religion, and, in fact, everything which is characteristic of a nation. The importance of pursuing it as a study cannot be too highly estimated in this traveling age, and it takes an equal place with geography and history, for without them it cannot be understood, and at the same time its facts throw much light on them.

## Correction.

In our last number, in the description of W. Vandenburgh, Jr.'s ironing table, we stated that it was patented April 6, 1856; it should

In the article on this subject in the "New American Cyclopædia," just publishing, there is considerable information in relation to what has been done in this branch of the engineering art in Europe, but there is nothing said about what has been done in America. This is to be regretted, as considerable information might have been obtained to have redeemed the work from the charge of "an incompetent compilation," and which might have made its character more in accordance with its name, as an American work. If the pages of the SCIENTIFIC AMERICAN had been consulted, the editors would have found Ira Avery's atmospheric railroad illustrated on page 273, Vol. III, for which an American patent was granted in September, 1847; and on page 265, Vol. VIII, they would also have been enlightened with an illustrated description of Richardson's atmospheric tubular railway, which made considerable noise in Congress a few years since on account of appropriations being asked, for to construct a government line.

Atmospheric Railways.

## Recent Patented Improvements.

The following inventions have been patented this week, as will be found by referring to our List of Claims :---

HEMP HARVESTER.-C. B. Brown, of Alton, Ill., has invented an improved machine for harvesting hemp, the invention in which consists in the employment of an endless apron and guide rods arranged relatively with each other and the sickle or cutting device, whereby the hemp as it is cut, and one swath formed, is conveyed back from the sickle and deposited on the ground at a sufficient distance from the standing hemp, to allow an unobstructed walk or track for the team when the succeeding swath is being formed.

PRINTING PRESS.—This is an improvement on that class of printing presses, in which a continuous rotating cylinder that receives the sheet to be printed is used in connection with a reciprocating bed on which the form is placed. The object of the invention is to simplify in a great degree the construction of such presses, and also to obtain a positive or vibratory movement of the cylinder and bed relatively with each other at the time the impression is given to the sheet, thereby ensuring a perfect register and a clear impression. G. P. Gordon und F. O. Degener, of New York, are the inventors.

BURNER FOR VAPOR LAMPS .- Thos. Varney, of San Francisco, Cal., has invented an improved construction of burners for burning the vapor of Benzole, or of other hydro-carbon that can be burned in vapor lamps. They are made in such a manner that the admixture with the vapor of the necessary quantity of air supplied by a blowing apparatus to make it burn with a brilliant light shall be effected within the burner instead of within the reservoir, as is now usual.

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BRUSHES.-J. H. Tatem, of New York, has invented an improvement in the manufacture of brushes, which consists in having the back of the brush in which the bristles are secured formed of a thin metal plate, the bristles being secured in this plate detached from each other and at equal distances apart. The object of this invention is to obtain a brush that can be readily cleaned, which will not absorb grease, and will not in any way be affected by moisture, and hence be exceedingly durable, and at the same time not more expensive than those at present in use.

HAY FORK.-This invention relates to an improvement in that class of hav forks in which a tackle is used for elevating the loaded fork. The invention consists in attaching to its handle by means of a joint and securing the rake when loaded in a proper relative position with the handle by means of a catch or fastening connected with a rope, which is also attached to the handle. The parts are arranged so that the fork may be readily elevated and loaded and unloaded, the manipulation throughout being extremely simple. Chas. E. and Joseph N. Gladding, of Troy, Pa., are the inventors.