

ployed for a great variety of manufactures, where it is desirable to keep the product from the atmosphere.

The establishment at Elgin is capable of reducing the carcasses of eight heaves per day; from 100 lbs. of meat  $4\frac{1}{2}$  lbs. of extract are obtained. Mr. Borden claims to get all the albumen, and everything but the fiber. He says that farmers who have given the substance remaining to their hogs, affirm that the swine refuse to eat it, and that it is worthless for purposes of food for any animal. The gelatin is not included in the extract; it is well known that that substance is all eliminated by the kidneys without imparting nutriment to the system.

We have tried Mr. Borden's extract, and find that it makes a palatable and nutritious beef tea. It is recommended by the Boston *Medical and Surgical Journal*, and other medical authorities of the highest respectability, for the use of invalids.

**MAKING CRUCIBLES IN MOLDS.**

In a visit to the plumbago crucible manufactory of J. H. Gantier & Co., of Jersey City, N. J., we learned that an entire revolution has recently been made in the process of fashioning the crucible. They were formerly all made by hand, on that ancient implement, the potter's wheel, but the substitution of steam for hand power, in its irresistible progress, has invaded even this most conservative portion of the arts. The wheel is still used, but it is driven by machinery, and the crucible is formed in a mold instead of being fashioned wholly by the hand of the workman, as heretofore.

In the old process, the black lead, after being assorted, ground, mixed with its proper proportion of clay and water, and kneaded for a long time by hand to beat out any bubbles of air which it might inclose, was divided into lumps of a suitable size each for a crucible. The "thrower" seized one of these lumps, and dashed it down upon the center of his wheel, which was a disk of cast iron, about fifteen inches in diameter, driven by a treadle working horizontally. As the lump revolved, the workman with his wet hands drew it up in a rude conical form, and then pressing one hand down the center of the mass, he brought it into the shape of an irregular hollow cylinder. Keeping his hands constantly wet, and continuing his manipulations with great dexterity, he soon brought the crucible to the desired shape in all particulars. The only guides to the eye of the workman in this operation, were two wires projecting horizontally at different heights from a vertical standard, and by so making the vessel that its exterior surface would be very near the ends of these wires, the desired form and size were obtained.

The improvement consists in the use of a plaster mold, the interior of which is of the proper form for the exterior of the crucible. This mold is set upon the center of the wheel, which rotates much more rapidly than wheels driven by the foot, the lump of plumbago is dropped into it, and is partly driven out from the center by centrifugal force against the sides of the mold. A bent lever, which has the exterior edge of its vertical arm cut to the form desired for the interior surface of the crucible, is now turned down so as to bring this arm into the mold, when the fashioning of the crucible is quickly completed.

The mold, with the crucible in it, is then set aside to dry, and when the drying is completed the crucibles are packed in the kiln to bake—each one being set in a rough earthenware sagger to protect it from the dust of the furnace.

Though crucibles made by the improved process answer perfectly well for melting steel or brass by anthracite fires, they do not prove durable when exposed to coke fires. Consequently, crucibles for the steel makers of Pittsburgh must still be fashioned by hand, and Messrs. J. H. Gantier & Co. continue to make them in the old way for the Pittsburgh market.

**DEEP GOLD-COLORED LACKER.**—Seed-lac three ounces turmeric one ounce, dragon's blood one-fourth ounce, alcohol one pint; digest for a week, frequently shaking, decant and filter.

Lackers are used upon polished metals to impart the appearance of gold. If yellow is required, use turmeric, aloes, saffron, or gamboge; for red, use annatto, or dragon's blood, to color. Turmeric, gamboge, and dragon's blood, generally afford a sufficient range of colors.

**BROMIDE OF POTASSIUM.**

Considerable stir has lately been occasioned among the photographers in this vicinity, in consequence of the visits among them of the assignee's agent of Cutting's "Bromide" patent, who has made profitable collections of money as damages for past and future use.

The patent in question was granted to James A. Cutting, of Boston, Mass., July 11, 1854, and contains the following claim:—"The employment of bromide of potassium in combination with collodion." No suggestion or allusion is contained in the patent to the use of free bromine, or any salt or extract thereof, except bromide of potassium.

The original application for the patent was rejected. The applicant then asserted that he could prove the use of a bromide basis in collodion in the month of April, 1853. The Patent Office replied, citing references conclusively showing the use of bromine long anterior to that date. Among the salts thus used was bromide of ammonium. A patent was finally granted to Mr. Cutting, with a claim to the use of bromide of potassium in collodion, as quoted, and those who use that salt appear to be infringers; but the use of any other salt or form of bromine in collodion, is free to the public.

The effect of bromide of potassium in collodion is to increase its sensitiveness, and thus to render photographic pictures more brilliant in their details of light and shadow.

This salt also possesses peculiar medicinal qualities. It has a sedative and soothing effect upon the perceptive faculties, produces good humor, and brings on sleep. The assignee of the patent seems to have understood this use of the drug; for the leading photographic dealers have complacently joined in a certificate to the validity of the patent, and have good naturedly paid over large sums for its use, and the patent is considered good for the collection of a million more. We congratulate all the parties concerned. We like to see patents well sustained and liberally paid for.

We have had frequent occasion to notice the great value of some small inventions, and in the above we have another example. Truly, it was a lucky thought of Mr. Cutting's to drop  $2\frac{1}{2}$  grains of the bromide into an ounce of collodion.

On the 28th of October, 1808, there was submitted to the Emperor Napoleon by General Clark, Minister of War, the quixotic plan of a person named L'Houmond, designated as "ex-chief of the battalion of aeronauts," for making a descent on England by means of one hundred balloons of one hundred meters diameter each, the car of which could contain one thousand men with provisions for ten days, two peices of cannon with their ammunition chests, twenty-five horses, and fuel for the balloons. The Emperor wrote a few words on the margin, ordering the plan to M. Monge, the celebrated mathematician, "to see if it wereworth while to make so great an experiment."

WERE it not for the friction and the contraction of the vein, water would flow from a circular orifice with a velocity equal to that acquired by a body falling from the level of the surface to the level of the orifice, and in quantity equal to a solid cylinder moving with this velocity and equal in size to the orifice. In practice the flow is about two-thirds of this quantity.

**STAVE, BARREL AND BRICK MACHINERY; ALSO HAND LOOMS FOR FLANNEL, ETC.**—We have inquiries from our readers for the best mechanism of the above character. We advise the manufacturers to advertise in the SCIENTIFIC AMERICAN. Regular advertisements in our columns will doubtless bring them orders from all parts of the world.

Up to the year 1860, no less than fifty wells had been sunk in the great Sahara desert by the French. The total quantity of water given by these wells amounts to 7,920,000 gallons per day.

**LACKER FOR TIN.**—Any good lacker laid upon tin gives it the appearance of copper or brass. It is made by coloring lac varnish with turmeric to impart the color of brass to it, and with annatto, to give it the color of copper.

**PATENT-OFFICE DECISIONS.**

**IMPROVEMENT IN PACKING FERULES FOR CONDENSERS AND REFRIGERATORS.**

*The Board, by Elisha Foote.*—These ferules serve to make the joints between the tubes and headsheet steam and water tight, and at the same time allow the movement produced by expansion and contraction of the tubes from variations of temperature. The applicant has already a patent for these ferules. He has heretofore made them of lead, wood, and some other materials, but has found that paper best answers the purpose, and now he claims an additional patent for the substitution of that material. No change of any part of the apparatus was required for the use of one material rather than another.

As a general rule, the mere substitution of one material for another is not patentable—as in the prominent case of a porcelain door knob. A machine or instrument may be greatly improved by the use of steel, brass, etc. in place of poorer materials, but this involves the exercise of mechanical skill, rather than of the inventive faculties.

The rule, however, has its exceptions, and they apply in those cases where the result of the substitution is so decided and important as to give it the character of a new discovery or of an invention.

We do not perceive any such advantages from the use of paper to the applicant's device, and consequently must affirm the Examiner's decision regarding the application.

**IMPROVEMENT IN BREACH-LOADING FIRE-ARMS.**

*The Board, by Elisha Foote.*—The reference given by the Examiner seems to fully anticipate the applicant's device.

Besides there is a defect in his specification. In the apparatus shown, there is nothing to receive the recoil of the charge. The applicant states that he employs means for supporting the block against the force tending to cause it to recede during the explosion, but that these means being no part of his present improvement, need not be described. In this he is mistaken. He must show all that is necessary to carry his invention into practical operation. It is admissible to refer to what is already well known, or to what is described in some other patent, but nothing must be left to be devised by others or ascertained by experiment. A mechanic, skilled in the art, must be able by following the description and the drawings to construct the apparatus and make it practically operative and useful.

In this case something would have to be invented before the applicant's device would be made practical. The decision of the Examiner is affirmed.



ISSUED FROM THE UNITED STATES PATENT-OFFICE FOR THE WEEK ENDING DECEMBER 26, 1865.

Reported Officially for the Scientific American.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying 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.

51,675.—Combined Level Square, Compass, and Plumb Staff.—James R. Abbott, Midway, Ind.:

I claim the combined level square, compass and plumb staff, substantially as described.

51,676.—Machine for Boring Fence Posts.—John Agnew, Bath, Pa.:

I claim the post borer constructed as herein described, with sliding carriage, L, notched bar, O, clamps, P, racks, K, pinions, G, straps, H, and treadles, J, all arranged to operate substantially as and for the purposes set forth.

[This invention relates to a new and useful machine for boring fence posts, and it consists in the employment or use of a carriage arranged in such a manner that it may be readily moved towards and from the auger, the carriage being provided with a sliding gage, which is fitted on the carriage, and has the post to be bored clamped to it, all being arranged in such a manner that the posts may be bored very accurately and with the greatest facility.]

51,677.—Crutch.—George T. Allamby and John G. Bugbee, Bangor, Me.:

We claim the combination of the buffer, D, with the adjustable spur, C, inserted in a socket, A, placed on the lower part of a crutch; the spur, C, being provided with a spring, a, and knob, b, the knob through a slot, E, in the socket, A, all arranged to operate substantially as and for the purposes specified.

We also claim the sliding tube, c, in combination with socket, A, spur, C, spring, a, slot, E, and knob, b, when arranged to operate substantially as and for the purposes specified.

51,678.—Ore Separator.—Stephen F. Ambler, Brooklyn, N. Y.:

First, I claim the use and employment of the vertical hollow shaft, C, in combination with the basin, B, sieve, G, agitators, m, and branch tubes, F, arranged and operated as shown for the purpose specified.

Second, in combination with the same, I claim the scrapers, E, arranged and operated in the manner described and for the purpose specified.

51,679.—Safety Fuse.—Albert F. and John H. Andrews, Avon, Conn.:

First, We claim employing in the body of safety fuses, sliver of cotton or other suitable fiber, substantially in the manner and for the purpose herein set forth.

Second, We claim the combination of the tubular powder casing, D, the sliver, A, and the equivalent saturating material, M, the la-

ter being allowed to permeate through the sliver, A, by reason of its loose condition...

Third, we claim the spiral position of the covering of the sliver, F, adapted to closely but not so envelope and bind together...

51,690.—Cultivator.—James Armstrong, Jr., Elmira, Ill.:

First, I claim the shovel-carrying frame, D, D', with the driver's seat, D'', secured to its rear end...

Second, The movable stepped block, C, applied to the axle, B, of a cultivator carriage...

Third, The longitudinal laterally-rocking rods, e, e', in combination with the pivoted cap, J, applied in a cultivator...

Fourth, The compound pivot joint, e, i, for connecting the shovel standards, G, G', to their supporting frame...

Fifth, Constructing the shovel, S, with an embracing extension, T, which is pivoted to the standard in the manner described...

Sixth, The combination of the shovel frame, D, D', with the levers, C, C', vibrating standards, G, G', curved levers, I, I', and treadles, H, H' substantially as described.

51,691.—Coal Stove.—Robert Bailey, Cleveland, Ohio.:

First, I claim, in combination with a hot-air chamber, so located as to receive the heat directly from the fire chamber on one side, and from the escaping heated products of combustion on the other...

Second, I claim the illuminating flame flue, F, formed by the combination of the vertical plate, P', and the exterior wire gauze or perforated plate, P'', arranged and operating substantially as described.

Third, In combination with a hot-air chamber, receiving the heat directly from the fire chamber on one side and from the escaping heated products of combustion on the other side, I claim an illuminating flame flue into which heated air is introduced...

Fourth, I also claim the perforated plate, dividing the upper combustion chamber from the flue through which the products of combustion pass away, substantially as and for the purpose described.

Fifth, I claim the combination of the fire pot, the hot-air chamber, the illuminating flame flue, and the wire-gauze or perforated illuminating plate, all constructed and arranged substantially as shown and described.

51,692.—Cultivator Plow.—C. C. Baum, Oxford, Iowa.:

I claim the combination of the bars, C, vertical shafts, D, cranks, b, b', connecting rod, E, lever, F, heads, I, and axles, K, as and for the purposes set forth.

[This invention relates to a new and improved cultivator plow, and it consists in a novel construction and arrangement of the parts, whereby the device is placed under the complete control of the operator, and the plow rendered capable of being very readily manipulated, so as to conform to the sinuosities of the rows of plants, and to plow at a greater or less distance from them, as may be required.]

51,693.—Evaporator.—J. C. Bell, Pawnee City, Nebraska.:

First, I claim the tilting rails, e, arranged in combination with the frames, E, E', supported by wheels, C, C', and supporting the pans, F, F', and arch, G, substantially in the manner and for the purpose set forth.

Second, The rock shaft, c, c', and hand levers, g, g', in combination with the tilting rails, e, cranks, B, B', pans, F, F', and arch, G, all constructed and operating substantially as and for the purpose described.

51,694.—Wagon Brake.—George and William Bench, Auburn, N. Y.:

We claim the combination of the locking device with the wagon brake when constructed and operated in the manner above described.

51,695.—Tire Cooler.—Henry Bloedel, Fond du Lac, Wis.:

I claim, in the apparatus herein described, consisting of the frame, B, provided with the wheels, o, attached as shown, and the central stud, b, having the spiral grooves, l, in combination with the tub, A, provided with the inclines, a, secured to its bottom, and the central block, b', provided with its central hole and pins, c, when arranged to operate as and for the purpose herein set forth.

Second, The combination with a screen or riddle adapted to move independently of its shoe of the triangular bar, H, so constructed and located as to confine the vibratory movement of the screen above the plane which it occupies when at rest, or, in other words, prevent the ragging or depression of the screen while in operation, substantially as described.

Third, In combination with the board, m, or m', or other device to prevent the longer grain from assuming a vertical position under the circumstances set forth, I claim a sieve or riddle whose apertures or openings are made of a certain determinate depth with a view to prevent the longer grain from passing through the sieve in any of the inclined positions into which it may be thrown by the movement of the sieve, substantially as described.

Fourth, The valve, J, arranged within the shoe, B, and in relation with the screen, e, substantially as and for the purpose specified.

Fifth, The hinged board, A', arranged substantially as shown, to form a connection between the two shoes, B, B', when required.

[This invention relates to certain improvements in a grain separator for which Letters Patent were granted this inventor Nov. 10, 1863, and it consists in certain modifications and additions whereby the efficiency of the original machine is greatly augmented.]

51,698.—Machine for Boring Wagon Hubs.—Frederick Bremerman, Indianapolis, Ind.:

I claim the tool guide for boring out wheel hubs for boxes, when the same is constructed and operated substantially as and for the purpose set forth.

51,699.—Broom Head.—D. J. Brougner, Harrisburg, Pa.:

I claim a broom head consisting of the thin metallic case, A, provided with the band, C, and bolts, a, all arranged and operating as shown and described.

51,700.—Revolving Fire-arm.—George C. Bunsen, Belleville, Ill.:

First, I claim a revolving fire-arm adapted in the manner herein described to discharge the chambers of the cylinder successively through one barrel by a single pull of the trigger.

operating upon the bolt, 15, as described, to lock and unlock the revolving cylinder.

Sixth, In combination with the parts specified in the preceding clause, I further claim the eccentric surface on the block, 13, to close the disk against the cylinder and the spring, 5, to withdraw said disk.

Seventh, I claim the combination of the fan wheel with the segment wheel, c, and the mechanism for rotating the disk, I, and operating the cocker and the lever, a, substantially as described.

Eighth, I claim the segment or fractional pinion, C', and its train of gearing, Q, Q', etc., so arranged with the mechanism which cocks the hammer and rotates the cylinder as to be in action to retard the speed of the mechanism when the hammer is striking the cap, substantially as described.

51,691.—Fence.—Thomas R. Byrnes, Washington, D. C.:

I claim the fence herein described, the same consisting of the notched batten or uprights, A, and notched rails, B, connected or interlocked, substantially as described.

51,692.—Tweers.—W. P. Cain, Moravia, Iowa.:

I claim as a new article of manufacture the tongue herein described, consisting of the spherical body, A, nozzle, B, tube, D, plug, E, and valve, arranged and employed in the manner and for the purpose described.

[This invention relates to a twee of characteristic cheapness and simplicity. A tube is formed in one piece with the body of the twee, and communicates therewith so as to receive the cinders, etc., and permit a supply of air to pass up to the fire when the work is temporarily suspended, such air being admitted into the tube through a small valve at its lower end.]

51,693.—Coffin Handles.—Augustus Clark, Amsterdam, N. Y.:

I claim the combination of the hinged-handle arm, b, and sustaining spring, g, constructed, arranged, and operating as described.

51,694.—Parallel or Other Rods.—Charles H. Clark, Wilmington, Del.:

I claim the combination of the divided cap, D, plate, E, setscrew, d, and wedge key, k, k', substantially as and for the purpose described.

[This invention relates to a novel arrangement of the boxes in the ends of parallel and other rods, such as are generally used to couple the wheels of locomotive engines or to transmit motion from one part of an engine or other machine to another.]

51,695.—Car Coupling.—G. E. Clarke, Racine, Wis.:

I claim the shackles, z, provided with hooks, a, at their outer ends, and fitted in the draw heads so as to work or swing vertically, and one catch over the inner end of the other, substantially as and for the purpose herein set forth.

I also claim the coil springs, c, attached to one of the journals of the shackles, for the purpose of keeping the latter in a horizontal position, as described.

I also claim the springs, D, placed within the draw heads, A, A', when used in combination with the shackles, B, substantially as and for the purpose specified.

I also claim the chains, D, attached to the rear parts of the shackles, B, and having levers, E, connected to their rear ends, substantially as and for the purpose set forth.

[This invention relates to a new and improved car coupling of that class which are termed self-acting, or self-coupling, and it consists in a novel arrangement of shackles or links, springs, and a shackle-releasing mechanism, whereby the adjoining cars, when coming in contact, will be coupled with certainty, and readily uncoupled at any time when necessary, and made to uncouple or disconnect itself in case of a car being thrown from the track, so that said car cannot drag the others connected with it from the track.]

51,696.—Swing Jack for Railway Cars.—Joseph H. Clark, Westbrook, Me. Antedated Dec. 13, 1865.:

First, I claim the employment and use of the joint at the base, D, Second, The combination of the joint at the base, D, with the pieces, A, B, C, and the brace, G.

51,697.—Rubber Spring for Wagons.—Samuel G. Clough, Waupun, Wis.:

I claim the combination and arrangement of the cups, E, E', the axle, M, and bolster, L, with the double-headed piston, F, F', and cross-bar, H, all constructed and operating substantially as set forth, for the purpose described.

51,698.—Railroad Car.—George W. Cook, Rock Island, Ill.:

I claim the self-adjustable conducting rollers, D, in combination with their elongated boxing, B, in which they play, when applied to railroad cars and locomotives, for the purpose herein described and set forth.

51,699.—Pressure Frame for Photographic Printing.—L. E. Denison, Winthrop, Conn.:

First, I claim the combination of the stationary cushion, B, with the pressure frame of photographic apparatus, substantially as described and for the purpose set forth.

Second, The combination of the clamps, D, two or more, with the stationary cushion, B, in the pressure frame of a photographic apparatus, substantially as and for the purpose set forth.

Third, The combination of the movable spring negative frame, G, with the frame, F, and stationary cushion, B, in the pressure frame of a photographic apparatus, substantially as described and for the purpose set forth.

Fourth, The combination of the springs, I, or their equivalent, with the movable negative frame, G, and the frame, F, in the pressure frame of a photographic apparatus, substantially as described and for the purpose set forth.

[The object of this invention is to furnish a photographic pressure or printing frame which may be opened and the picture or representation examined without disturbing the position of the paper or interfering with the successful result of the operation, and it consists in combining with a stationary cushion two or more clamps for holding the paper, and in combining with the movable negative frame springs for regulating the pressure during the operation.]

51,700.—Composition for Lining Journal Boxes.—P. S. Devlan, Jersey City, N. J.:

I claim the composition as herein described, consisting of vegetable fiber, plumbago, soapstone, and gum, or the equivalent of the latter as set forth.

51,701.—Composition for Lining Journal Boxes.—P. S. Devlan, Jersey City, N. J.:

51,705.—Process for Treating Wood, Straw, and Other Vegetable Fibers.—John W. Dixon, Philadelphia, Pa.:

I claim subjecting wood, woody matter, straw, and other analogous vegetable matter, to the chemical action of highly-heated water under pressure, in a liquid state, within a digester, wherein the mass is merely stirred together, substantially as above described.

Second, In combination with subjecting wood, woody matter, and other fibrous material, to the action of highly-heated water in a liquid state, under pressure, in a digester, wherein the mass is merely stirred together, the injection of fresh water into the mass, while the pressure is maintained, either continuously or at intervals, to supply the place of an equal quantity of water escaping or forced out.

51,706.—Process for Treating Vegetable Fiber for the Manufacture of Paper Pulp.—John W. Dixon, Philadelphia, Pa.:

I claim subjecting wood, woody matter, straw, or other analogous vegetable fibrous material, to the chemical action of highly-heated water under pressure, in a liquid state, in a revolving digester, substantially as above described.

Second, I claim, in combination with subjecting wood, woody matter, straw, and other analogous vegetable fibrous material, to the chemical action of highly-heated water under pressure, in a liquid state, while revolved in a digester, the forcing into the woody matter, while said revolving boiler, either continuously or at intervals, fresh water to replace an equal quantity of refuse water forced out or escaping therefrom, substantially as above described.

51,707.—Grain Drill.—George W. Farley, Manchester, N. H.:

First, I claim in a seed drill the hooked rock shaft, M, in combination with the adjustable pawl, N, O, and spiral spring, U, substantially as and for the purpose set forth.

Second, I claim the seed valve, K, in combination with the bed piece, G, and adjustable slides, R, all constructed and arranged substantially as and for the purposes set forth.

Third, I claim the cogs on the side of the wheel, C, in combination with the hooked rock shaft, M, the pawl, N, O, and seed valve, K, all constructed substantially as and for the purposes set forth.

51,708.—Safety Stirrup Fastening.—Wm. Fawcett, New York City. Antedated Dec. 13, 1865.:

I claim hanging the loop of a stirrup strap to and within a spring-swinging frame of the upper end of the stirrup, having a hinged side, and arranged and operating substantially in the manner described and for the purpose specified.

[This invention consists in so constructing and arranging that portion of the stirrup through which the strap is passed and by which the stirrup is hung from the saddle, that in case of accident the stirrup can be disengaged, by the person riding, from the saddle strap.]

51,709.—Hay Press.—Edward A. Field, Sidney, Me.:

I claim the combination of the two opposite diagonal grooves, z, z', or their equivalents, with the press-box and the compressing mechanism thereof, such grooves being arranged therein as described, and so as to receive one or more divisional partitions, in manner and for the purpose set forth.

I also claim the combination and arrangement of the rotary arm, p, or the same or its turn button with the spring, u, of the pawl lever, applied to the series of teeth or studs of the windlass wheel.

51,710.—Gate Latch.—E. Otis Frink, Indianapolis, Ind.:

First, I claim the said sliding latch, when the same is constructed with the projection, K, the slot, L, and handle, E, and operated substantially as set forth.

Second, The said shield or basket, M, F, F', M', when constructed and applied substantially as set forth.

Third, The improved device as a whole, constructed and operated substantially as set forth.

51,711.—Hinge.—Samuel C. Fink, Indianapolis, Ind.:

I claim the combination of the said lug, D, the spiral groove, E, and the slot, A, G, when the same are constructed and operated substantially as set forth.

51,712.—Wicketree Attachment.—John C. Garner, Ashland, Pa.:

I claim the plate, C, provided with the lips, as shown, and secured to the bar, A, by the bolt, D, in combination with the tube, E, fitted in the wicketree and the plate, F, at the front side of the latter, the bolt, D, passing through the tube, E, and all arranged to operate in the manner substantially as and for the purpose herein set forth.

51,713.—Rotary Pump.—Reuben C. Grover and James Nickelson, Newton, Mass.:

We claim the revolving cylinder, C, provided with two or more cams or abutments, F, G, in combination with the outer casing, A, and gate, J, operating substantially as described.

51,714.—Manufacture of Plated Metal.—John Daniel Gruneberg, Philadelphia, Pa.:

I claim the process new and improved plated metal and covered metal or any other substantially the same, used which will produce the intended effect.

51,715.—Automatic Car Brake.—John Hartman, Jr., Philadelphia, Pa. Antedated Dec. 14, 1865.:

I claim the combination and arrangement of the check blocks, D, with the brake frame, B, by means of the suspension rods, a, and G, the journal boxes being rigidly attached to the said frame, and the whole being arranged and operating substantially in the manner and for the purpose above set forth.

Second, Combining and arranging the india-rubber sheet, G, or its equivalent with the check blocks, D, substantially in the manner and for the purpose set forth.

Third, The combination and arrangement of the guard, I, with the brake frame, B, by means of the suspension rods, g, and bars, h, or their equivalents, substantially as described.

51,716.—Bee-hive.—John H. Hendricks, Clinton, Ill.:

I claim the perforations, e, at the lower part of one of the side-plates, a, of the hive, as well as in connection with the alighting boards, c, on the entrance and inclined sides, a, of the hive, and the bee entrance, d, all arranged substantially as and for the purpose set forth.

[This invention consists in a novel construction of the hive, whereby simplicity is obtained, the hive properly ventilated, and kept in a dry state to promote the health of the bees.]

51,717.—Green-house Sash.—Isaac F. Hersham, Stoneham, Mass.:

I claim a series of devices as hereinabove described for operating the sashes of green-houses, etc., by means of the expansion and contraction of the metallic bars, e, e', g, etc., substantially as specified.

51,718.—Means of Closing Ship's Lights.—E. S. Hidden, New York City.:

I claim a swinging arm or strap provided with both a cam and a screw, and hinged so as to vibrate as described, in combination with a top or glass frame of a ship's light, the combination being substantially such as hereinbefore described.

51,719.—Hoisting Machine.—Philip Higdon, Cropper's Depot, Ky.:

I claim the arrangement of the double-threaded worm wheel, F, the shafts, H, J, and pulley, L, substantially as described and represented.

51,720.—Toy Blocks.—S. L. Hill, Williamsburgh, N. Y.:

First, I claim the employment or use of a series of building blocks, marked on different sides with different figures of different buildings, substantially as and for the purpose described.

Second, The longitudinal grooves, b, in the boards, D, to operate in combination with the dowels, a, in the edges of the triangular pieces, c, substantially as and for the purposes set forth.

Third, The use of building blocks having marked on their different sides, parts of the same or of different buildings, the various sides being distinguished by different colors, substantially as and for the purpose described.

[This invention consists in the employment or use of a series o

building blocks which are marked on one side with parts of the outside of one, and on the opposite with parts of the surface of another building in such a manner that by turning the corresponding sides of all the blocks out, and placing them together in the proper order, two different buildings can be produced by the same series of blocks.]

**51,721.—Cultivator.**—William H. Howell, Ewingsville, N. J.:

First, I claim the frame, consisting of the diagonal slotted bars, A, A', toneau B, and axle D, arranged as shown and described.  
Second, I claim the elbow lever, b, connected to the plow by rods, c, or its equivalent, in combination with the handle, s, and bar, f, provided with the hook, e, when arranged to operate as and for the purpose set forth.

Third, I claim the combination and arrangement of slotted bars, A, pendants, E, drag bars, F, and bar, C, as shown and described.

**51,722.—Flour Sack.**—J. M. Hurd, Auburn, N. Y.:

I claim the making of paper bags in the manner described, as a new article of manufacture.

**51,723.—Process for Hardening Iron.**—Thomas H. Jenkins, New York City:

First, I claim the process substantially as above described, for hardening malleable and non-malleable cast iron by plunging it while at or about a cherry red heat in a solution, substantially as herein described.

I also claim in combination with, and preparatory to the hardening in a solution substantially as herein described, the treatment of the iron in a heated state with a composition of prussiate of potash and charcoal, substantially as herein described.

**51,724.—Substance for Making Cutlery, Edge Tools, Etc.**—Thomas H. Jenkins, New York City:

I claim the new substance, herein described, produced from malleable cast iron, by the process herein described, or any process equivalent thereto.

**51,725.—Machine for Marking Corn Ground for Planting.**—Gallatin M. Johnson, Decorah, Iowa.:

I claim a machine for the purpose of marking land with two independent adjustable axles arranged and operated substantially as described.

**51,726.—Pump.**—Niels Johnson, Ripon, Wis.:

First, I claim the lower springs, L, surrounding the bottom or foot of the pump and operating to hold that part steady in the well, substantially as described.

Second, I also claim the springs, H, H', on the outside of the cylinder, made with pins, b, b', in combination with the rotating spring plates, c, c', by which the springs, H, are forced against the sides of the well, substantially as described.

Third, I also claim the cross piece, m, and its arms, n, in combination with the eccentric, u, of the collar, G, substantially as described.

Fourth, I also claim the valves, t, t', in the upper part of the cylinder, constructed as shown with springs, t, t', about their spindles so arranged as to admit air to the cylinder at the downward stroke of the piston, substantially as described.

[This improvement relates to the class of pumps whose cylinders are submerged. The pump is double acting, and the piston rod and piston are hollow. Among other novel features, is a device for securing the cylinder in its proper position in a well or reservoir which is operated from the top of the well.]

**51,727.—School Desk.**—W. Johnson, Topsham, Maine.:

I claim the combination and arrangement of the hinged book rest, C, rack, c, stop or pin, d, and lid, B, as and for the purposes described.

**51,728.—Compound for Tempering Steel Springs, Etc.**—L. W. Kelly, Brunswick, Ohio.:

I claim the chemical compound as herein set forth for the purpose described.

**51,729.—Electro-magnet for Oil Wells.**—Millis Knickerbocker, New Lenox, Ill.:

I claim the combination with an electro-magnet having its legs protected by any suitable covering, of the grab-irons, n, n', the whole being constructed, arranged and operated substantially in the manner described and for the purpose specified.

[The object of this invention is to provide a tool for the removal of loose pieces of iron from oil or other wells, and it consists in the use of an electro-magnet suitably arranged and constructed therefor.]

**51,730.—Sand Pump.**—Obadiah B. Latham, Seneca Falls, N. Y.:

I claim promoting the operation of a sand pump by the admission of a flow of air or water down and beneath the valve, substantially as shown and described.

**51,731.—Potato Digger.**—E. S. Lenox, New York City.:

I claim an arrangement of mold boards, substantially such as described.

I also in combination with two mold boards arranged as specified, the stirrers which bring the potatoes to the surface of the ground.

I also claim the combination of the center point with two mold boards arranged to turn the soil inward, substantially as set forth.

I also in combination with such mold boards operating as described, the guide wheels which gauge the depth of operation of the mold boards and guide and steady the implement in its progressive movement.

**51,732.—Press.**—James Lewis, Wilmington, Ohio, assignor to Nelson Bacon.:

I claim the combination of the pressing levers, C C', the connecting ties, D D', the head piece, H, and the revolving lever, G, with the frame, A, and the sliding beam, B, when constructed and arranged substantially as described and as specified for the purposes set forth.

**51,733.—Shirt Fastener.**—Henry Link, Little Falls, N. Y.:

First, I claim the manner herein described of fastening together shirt bosoms, or other garments, or of securing ornaments to persons, that is, where a device consisting of two parts, A, B, are used, each part being so constructed that its lower portion is heavier than its upper, so as to cause it to remain in an upright or vertical position substantially as described.

Second, I claim the combination of the back plate, A, and ornament, B, substantially as described.

**51,734.—Lifting Jack.**—Joel Locke, Bridgeport, N. J.:

I claim a lifting jack, consisting of two legs, A, B, lifting lever, C, and pawl, D, combined and arranged substantially as shown and described.

[This invention consists in the employment of two upright standards or legs, having the lifting lever pivoted to, or between them, and in the arrangement of a pawl in connection with teeth or stops in the lifting lever for locking or retaining the lifting lever at any desired point.]

**51,735.—Material for Roofing, Tubing, Tanks, Wainscoting, Boats and Other Structures.**—John K. Mayo, Portland, Me.:

I claim the application of scale boards or veneers in layers, the direction of whose grain is crossed or diversified, and which are connected together, forming a material for the construction on, lining or covering of land and marine structures.

**51,736.—Pump.**—Reuben A. McCauley, Baltimore, Md.:

First, I claim the piston head, b', and the sliding valve, J, as arranged in relation to the cylinder and piston rod, all substantially as described, for the purpose set forth.

Second, Enlarging the piston rod above the play of the valve and throughout the extent of the cylinder when used in connection with head, b', and valve, J.

**51,737.—Spring and Weight Piston Engines and Stamping Machine.**—Edward F. and John McFarland, Worcester, Mass.:

I claim the employment of loaded springs which are suspended

from the extremities of an oscillating beam, and guided in their upward and downward movements, substantially in the manner described.

**51,738.—Horse Shoe.**—James McPherson, Rockford, Ill.:

I claim the combination of the steel spring clasp with the shoe, when constructed and arranged substantially in the manner and for the purpose described.

**51,739.—Breech-loading Fire-arm.**—William H. and G. W. Miller, West Meriden, Conn.:

We claim the latch, E, arranged and operating in combination with the face plate, b, oscillating breech piece, B, and catch, l, substantially as described.

We claim the detent, r, in combination with the bar, o, and breech piece, B, constructed and operating substantially in the manner and for the purpose described.

**51,740.—Buckle.**—George O. Monroe, New York City.:

I claim the combination of the angular lip, c, and cross bar, d, in the buckle frame, A, as specified, so as to receive and hold the end of the strap folded back upon itself and passing between the said cross bar and lip, as and for the purposes specified.

**51,741.—Coffee Percolator.**—James H. Mason, Franklin, Mass.:

I claim the construction of the coffee and water vessels, a, b, with fluid joints, in the manner and for the purpose substantially as set forth.

**51,742.—Hoisting Tackle.**—J. W. Norcross, Middletown, Conn.:

First, I claim the clevis, B, constructed substantially as described and combined with the cast metal block, H, and axis pin, d, as explained.

Second, Forming the becket seat in the end of the block, as and for the purpose specified.

Third, The ribs, g, on the cheeks of the block, A', in combination with the bosses, h, on the ends of the shanks of the clevis, constructed and operating substantially as and for the purpose set forth.

**51,743.—Clothes Wringer.**—James O. Donald, Clinton, Ill.:

I claim the spring post, n, and the spring, a, in combination with rollers, R, dripping board, D, and the device for attaching the wringer to a tub or box, substantially as described.

**51,744.—Machine for Making Netted or Laced Fabrics.**—Herman A. Oesterle, Philadelphia, Pa.:

First, I claim the shuttles, P, each carrying a spool of thread, X, in combination with the devices herein described, or the equivalents to the same, for retaining and releasing the said shuttles on one side of the system of threads, Y, and with the devices described or their equivalents, for seizing the said shuttles, conveying them between the threads, Y, and releasing the same, all substantially in the manner described.

Second, The vibrating or reciprocating cross bar, E, its recesses, a, and spring catch levers, F, in combination with the arms, Q, of the shuttles, and the projection, i, and the bar, O, of the rocking frame, M.

Third, The stationary cross bar, E', its recesses, a', and spring catch levers, F', in combination with the arms, Q', of the shuttles and the projection, i, and the bar, O', of the rocking frame, M.

Fourth, One or more reciprocating or sliding bars, G, or their equivalents, for guiding and laterally moving the threads, Y, in combination with the shuttles, P, to which the above described movements are imparted.

Fifth, The beaters, J and J', arranged to operate on the threads and the loops of the same, substantially in the manner described for the purpose specified.

**51,745.—Process for Cleaning Cotton Seed.**—John G. Page, Rockford, Ill.:

First, I claim the process of cleansing cotton seed or depriving the same of its lint by placing the seed with pebbles, stones or other hard substances, within a rotating or moving vessel, so that the attrition produced by contact of the moving seed and pebbles or other hard substances within the vessel will accomplish the end desired.

Second, I claim the perforating of the vessel containing the seed and the pebbles or other hard substances, and also the employment of a plurality of perforated doors or removable sections to the cylinder, for the purpose of separating the fine foreign substances from the seed, while the latter is being cleansed or deprived of its lint, and also for separating the cleansed seed from the pebbles.

**51,746.—Mowing Machine.**—Aaron Palmer, Stockport, N. Y.:

I claim the special construction and arrangement of the bearing, D, consisting of the box, c, for receiving the shaft of the pitman wheel, the axle or journal, f, for receiving the bevel cog wheel and spur pinion, and the flange, b, or equivalent, for attaching to the tongue, the whole arranged so as to avoid the use of a main frame, substantially as herein set forth.

**51,747.—Wagon Wheel.**—Benjamin Pearson, Salem, Mass.:

I claim a metallic crown felly supporter, constructed and applied substantially as described, in combination with the rim and spokes of a wagon wheel at the point or points where the segments of the felly meet, substantially as and for the purpose set forth.

[The object of this invention is to strengthen wagon wheels at their weak points, viz., at the points where the ends of the felly meet. It consists in attaching to the rim of the wheel, at these points, an arched or crown brace or supporter, the ends of which rest against and are secured to the adjacent spokes.]

**51,748.—Invalid Spoon.**—David J. Pearson, Boston, Mass.:

I claim the construction or providing of a common spoon, with an adjustable lid or cover, a dial and a support, as herein described and for the purposes set forth.

**51,749.—Condensing Milk.**—Julius R. Pond, New Hartford, Conn.:

I claim the above-described process of condensing milk, consisting in combining the superheating in the manner substantially as set forth, with the evaporation in the pan of crude milk which has been run into the pan in a cold and uncoagulated state, substantially as described.

**51,750.—Adjustable Harrow.**—Hiram Pulse, St. Paul, Ind.:

I claim herein as new the arrangement of frame, A, fixed and folding harrow beams, B C D and D', and retaining devices, G H I K, or their equivalents, for the purpose set forth.

**51,751.—Manufacture of Paper.**—John B. Read, Tuscaloosa, Ala.:

I claim the applicability of the stalks of the okra plant (hibiscus esculentus) including the fibrous, the ligneous portion and the pith of the entire plant, to the manufacture of paper, paper mache and its compounds. This is virtually a combination of dissimilar material which I claim, whether the resulting paper mass be used alone or in combination with other materials.

**51,752.—Revolving Fire-arm.**—James Reid, Catskill, N. Y.:

First, I claim the sliding stop, m, fitted as specified, in combination with the frame, e, g, and barrels for the purposes and as specified.

Second, I claim connecting the trigger shield, b, and handle, a, so as to form the bow, d, for the purposes and as set forth.

**51,753.—Locomotive.**—John B. Root, New York City. Antedated Dec. 13, 1865.:

I claim the combination of cylinders, D, piston rods, E E', slotted cross heads, F F', driving wheels, C C', crank wrists c c', sliding boxes, b b', guide rods, d d', and guides, s s', the whole arranged in relation to the truck or frame, A, substantially as herein specified.

**51,754.—Plating Iron and Steel.**—Elliot Savage, West Meriden, Conn.:

I claim the process for electro-plating upon iron and steel, substantially as herein set forth.

**51,755.—Bedstead Bottom.**—George Schott, New York City.:

I claim the bed bottom formed of slats with notched ends sub-

tained by notched cross pieces, covered with felts or other yielding material, for the purpose and as specified, and in combination therewith, I claim the rails, s, notched to receive the cross pieces, b, and form a frame as set forth.

**51,756.—Carriage Wheel.**—John Scott, Ocala Florida.:

I claim the making a cast-iron hub as described, with projecting flanges from the box which flanges are covered with a wrought-iron band, thus forming the oil chamber with openings, l and H, as shown and described.

In combination with hub band and oil chamber, as above described, the double set of spokes with the cleats constructed and arranged as set forth for the purposes specified.

**51,757.—Pulverizing and Furfurizing Device.**—Charles Shibley, Brooklyn, N. Y.:

First, I claim the furrow openers or shares, l, attached to a frame mounted on wheels in combination with reciprocating toothed plates, G, G', arranged and applied to the machine to operate in the manner substantially as and for the purposes herein set forth.

Second, The attaching of the plates, G G', to the machine by means of arms, E, two or more fitted on a bar, F, and arranged substantially as shown to admit of the raising and lowering of said plates as described.

Third, The operating of the plates, G, from the driving wheels through the medium of crank shafts and pinions, I, J, and connecting rods, K, the shafts, T, having their bearings in sliding or adjustable sockets or shafts, H, H', connected to a lever, K, by which the plates, G G', may be readily rendered operative or inoperative as desired.

**51,758.—Egg Beater.**—William B. Smith, New York City.:

I claim the beating or agitating device, consisting of the ring, a, bars, c, and knives, d, all arranged and combined with the rod, D, and driven through the cover, substantially as herein specified for the purposes described.

**51,759.—Low Water Detector.**—Jonathan R. Supplee and Robert K. Wright, Philadelphia, Pa.:

We claim the combination and arrangement of the valve, C, cylinder E, pipes, A F G, attached to the outside of a boiler whereby to indicate the height of water in the boiler, as herein described.

**51,760.—Turbine Water Wheel.**—George Tallcote, New York City.:

I claim the annular water box D, placed over the joints formed by the junction of the periphery or rims of the wheel and the inner edges of the scroll, helix or box, in which the wheel is placed or fitted, substantially as and for the purpose herein set forth.

**51,761.—Scroll Sawing Machine.**—Joseph A. Talpey, Somerville, Mass.:

I claim the flexible strap and cam in connection with a spring, or its equivalent, arranged and applied to a saw to operate substantially in the manner and for the purpose specified.

[This invention relates to a sawing machine of that class in which the saw is strained and driven or operated, without a sash or frame, and which are used principally for fancy scroll or curved work. The invention consists in a novel and ingenious means for operating the saw, whereby a very compact machine of the kind is obtained, and one which may be operated by hand or by foot of the operator through the medium of a treadle, with the greatest facility.]

**51,762.—Process for Tanning.**—William H. Towers, New York City.:

I claim the process of tanning or curing hides or skins, in alcohol, as and for the purpose above set forth.

**51,763.—Lock.**—Benjamin M. Van Der Veer, Clyde, N. Y.:

I claim the combination of the wheel, n, and tooth wheel, t, with the lever, g, g', of a lock arranged with regard to each other, substantially in the same manner described, and operating as and for the purpose specified.

[This invention relates to certain improvements in locks, particularly applicable to a lock invented and patented on the 25th day of April, A.D., 1865, and it consists in a novel arrangement of parts in connection therewith, the object of which is to enable the devices constituting the lock, to be so set or adjusted as to be only susceptible of being unlocked by the person acquainted with such adjustment, the advantages resulting from which are obvious.]

**51,764.—Steam Engine Governor.**—John H. Wait, Portsmouth, Ohio.:

First, I claim the combination and arrangement of the rod, b, movable by c, notched pendulous bar, d, rods, f and k, and cams, h, i, substantially as and for the purpose explained.

Second, I claim the combination and arrangement of the governors r, r', series of cogs, u u u', stirrups, n, spiral spring, o, and rod, m, as and for the purpose set forth.

**51,765.—Machines for setting Spokes in Wagon Wheels.**—Richard Walker, Batavia, N. Y.:

I claim making an adjustable gage for setting the spokes and regulating the size of wheels, in the manner herein described and particularly set forth, and for the purpose described.

**51,766.—Flour and Sauce Sifter.**—Joseph Wells, Brooklyn, N. Y.:

First, I claim the construction of the hinged wings, G G G', and the rods, B F, with the same arranged as herein described and combined to operate substantially in the manner and for the purpose described.

Second, The combination of the radial arms, F F', hinged wings, G G', springs, H H H', and wire gauze, I, for the purpose specified.

**51,767.—Calipers.**—Seth Whalen, Burnt Hills, N. Y.:

I claim the rule, a, in combination with the adjustable cross beads or T, b, and d, forming calipers for external and internal measurements as specified.

**51,768.—Seeding Machines.**—J. B. H. Whiting, Ripon, Wisconsin.:

First, I claim the eccentric lever, l, sliding in slot, t, in conjunction with the standard, sliding through the vertical slot, s, of the beam, D, substantially as described.

Second, The stop guards, n, applied to the upper sections, n, of the toothed standards, substantially in the manner and for the purposes described.

Third, The two jointed sections, n, united to the brace rod, r, and connected to the drag bar, D, substantially as described.

Fourth, The combination of the pivoted notched arms, j, j', eccentrics, k, k', rock shaft, k', drag bars, D D', and lever, k, k', substantially in the manner described.

**51,769.—Air Pump.**—John H. Wilhelm, Chicago, Ill.:

I claim the air pump, c, contained in the elevated air chamber, i, and water tank, A, substantially as set forth.

**51,770.—Combination Spring and Caster for Furniture.**—J. H. Wilhelm and Frederick G. Ensign, Chicago, Ill.:

We claim the combination of the curvilinear springs, A B, adjusted to the stem, D, of the caster wheel, E, and strengthened by the helical spring, C, as set forth.

**51,771.—Manufacture of Iron.**—John D. Williams, Alleghany, Pa. Antedated Dec. 14th, 1865.:

I claim the process herein described for puddling or boiling iron, which process consists in pouring in on melted iron an acid or saline solution prepared substantially as described, the melted iron and furnace being manipulated in the manner herein described and for the purpose set forth.

**51,772.—Baby Swing.**—Jacob Wolf, Cleveland, Ohio.:

I claim the seat, C, with the tubes, E E, and cross pieces, D D, arranged and used as and for the purpose specified.

**51,773.—Carriage Wheel Hubs.**—McClintock Young, Frederick, Md.:

I claim, First, The channel, c, in or on the journal and curved outward and upward through the collar, and furnished with a hinged stopper for the purpose of introducing, holding and retaining a supply of oil or similar fluid lubricator, substantially as and for the purpose described.

51,774.—Apparatus for Graining Wood.—Robert A. Adams, Chicago, Ill., assignor to himself and Edwin Lee Brown, of the same place. Antedated Dec. 13, 1865.

First, I claim the hollow elastic air bag or drum to be used in a graining machine, in the manner and for the purpose substantially as above described.

Second, The combination of the said endless graining belt and elastic air bag used and operated for the purpose and in the manner substantially as above described.

Third, The device substantially as described for inflating and collapsing the hollow bag or drum by means of the hollow axle and valve.

Fourth, The device substantially as described for regulating the width of the hollow bag or drum by means of the packing box, axle and set screw.

51,775.—Method of Preventing Incrustation in Steam Boilers.—Wm. Brown, Morrison, Ill., assignor to M. G. and F. H. Jacobs, of the same place.

First, I claim in the construction of the filter the space left above the tops of the partitions, F G and H, and the cover for the free passage of steam from the cylinder into the filtering compartments, B C and D, for the purpose of heating the water, as herein set forth and described.

Second, I claim the application of hay as filtering material to be put into compartments B C and D, for the precipitated lime to adhere to, as and for the purposes herein set forth and described.

51,776.—Manufacture of Lenses for Spectacles.—Charles Buckley, West Meridian, Conn., assignor to Charles Parker, of the same place.

I claim forming the lenses by casting the blanks thereof in molds which will give to the edge of the blank the exact form and finish which it is desired that the edge of the lens shall have, and finishing the lens by grinding and polishing the faces of the blank, substantially as set forth.

51,777.—Animal Trap.—G. E. Clarke, Racine, Wis., assignor to himself and Sylvester Bullen, of the same place.

I claim the combination of the pivoted bar, H, levers, b, F K, d, d, connecting bars G E L, and doors, D, when arranged as and for the purposes specified.

[This invention relates to a new and improved animal trap, designed more especially for catching rats and mice, and of that class which are self-setting.]

51,778.—Elastic Syringe.—Herman E. Davidson, Gloucester, Mass., for himself, and as administrator of the Estate of C. H. Davidson, deceased, late of Charlestown, Mass.

I claim the improved elastic syringe bulb having flexible pipes made from a piece thereof.

51,779.—Machinery for Grinding Knives.—William Foket, Meriden, Conn., assignor to The Meriden Cutlery Co., of the same place.

I claim a cylinder arranged with fixed matrix or matrices revolving in the manner substantially as described, in combination with the bearings L, cam wheels K, and the projections thereon, constructed and arranged to operate substantially in the manner and for the purpose described.

51,780.—Turn-out Wagon Seats.—George Gregory, New Haven, Conn., assignor to Lawrence, Bradley and Pardee, New York City.

I claim the above described construction and arrangement of a turn-out seat, for wagons or other vehicles substantially as, and for the purpose set forth.

51,781.—Manufacture of Artificial Leather.—W. W. Waite, South Natick, Mass., assignor to Flax, Leather Manufacturing Co., Boston, Mass.

I claim as a new article of manufacture an artificial leather made of animal and vegetable material combined, substantially as set forth.

52,782.—Post Age Stamps, Etc.—George W. Bowlsley, Monroe, Mich.

I claim the division of the postage stamp by tearing a portion of it by the postmaster before it enters the mails.

I also claim the preparation of the stamp in the manner substantially as described so that this may be done.

51,783.—Portable Hog Scalding.—Arthur Clarke, Philadelphia, Penn.

First, I claim the combination of the table, C, and roller, D, with the boiler, B, arranged and operated substantially as set forth.

Second, The furnace, A, and boiler, B, and table, C, in combination, when the latter can be raised as a cover for the boiler as well as a table, substantially as set forth.

REISSUES.

2,134.—Door Bell.—H. H. Abbe, Chatham, Conn. Patented July 11, 1865.

I claim the employment or use in a door bell or gong of a lever or clapper stem operated under the pull by a grooved slide or other suitable mechanism, having a spring attached to it whereby the lever or clapper stem, although operated after the pull by the spring is not directly connected with the latter.

2,135.—Corn Planter.—John H. Alexander and David R. Alexander (assignors by mesne assignments to John Gross), Decatur, Ill. Patented June 6, 1865.

I claim, First, The employment or use of four seed holes, b, in seed plate, K, from which the seeds are discharged consecutively while the remaining holes are being filled or charged, substantially as and for the purpose described.

Second, The employment or use of circular intermittently rotating plates, N, provided with openings or holes, J, in combination with the vibrating seed plates, K, substantially as and for the purpose specified.

Third, The vibrating bars, O, placed below or underneath the plates, N, connected with the plates, H, and receiving their motion therefrom, and provided with pawls, M, for the purpose of operating the plate, N, as set forth.

Fourth, The circular gages, P, placed underneath the plates, N, as arranged substantially as shown for graduating the capacity of the holes, b, in the plates, K, as set forth.

Fifth, The arrangement of the cut-off or strikers, d, with springs or elastic rods, N', in the manner substantially as, and for the purpose specified.

Sixth, The scrapers, Q, Q, at the outer ends of the arms R, R, which are connected by rods, t, to treadles u, substantially as and for the purpose specified.

2,136.—Meat Mincer.—Albert W. Hale, New York City. Patented March 15, 1859.

I claim, First, The use and application of a flanged cylinder or cylinders, having the grooves between the flanges tapering and diminishing in depth, substantially as set forth.

Second, The use and application of a cylinder or cylinders having spiral flanges with grooves between them diminishing or tapering in depth, substantially as set forth.

Third, The combination of two cylinders with spiral flanges so arranged that the flanges of one cylinder overlap those of the other, so that the cylinder operated by the power or crank will give motion to and rotate the other without the interposition of other gearing.

Fourth, The combination of a cylinder or cylinders having spiral flanges or tapering grooves with a shearing knife, and a case having spiral ribs on its inner surface, substantially as set forth.

Fifth, The combination of two cylinders or cylinders having straight or spiral flanges, or tapering grooves, with a knife or case with or without spiral ribs.

Sixth, The combination of two cylinders having spiral flanges and tapering grooves with a shearing knife and a case having spiral flanges.

2,137.—Cotton Picker.—George A. Howe, Brooklyn, N. Y. Patented Dec. 4, 1855.

I claim, First, In a hand cotton harvester, an endless toothed chain, with a rotary motion, to detach and gather the cotton boll from the boll, substantially as described.

Second, The endless toothed chain or gatherer, F, in combination with an exterior case or frame, A, or stripper, H, and a bag or other receptacle, E, constructed and arranged substantially as and for the purposes described.

2,138.—Cotton Picker.—George A. Howe, Brooklyn, N. Y. Patented Dec. 4, 1855.

I claim a toothed chain, constructed substantially as herein described.

2,139.—Punching Press.—Norman C. Stiles, Meriden, Conn. Patented Jan. 26, 1864.

I claim, First, The compound eccentric, D, consisting of an eccentric wrist pin, a, adjustable disk, b, and clamp, d, or its equivalent, constructed and operated in the manner and for the purpose substantially as set forth.

Second, The V-shaped faces, g, on the slide, E, in combination with the laws, G, cast solid with the stock, A, and with the triangular gib, h, all as and for the purpose specified.

Third, The touch-off device, k H, arranged in combination with clutch pin, m, substantially as shown and described, so that said clutch pin is thrown in either direction by the direct action of the cam.

Fourth, The loose clutch pin, m, applied in combination with the band wheel, C, and shaft, B, in the manner and for the purpose substantially as specified.

Fifth, The button on the shaft, B, in combination with the spring catch, k, clutch pin, m, and n, and cam, H, arranged substantially as described, so that the cam is released automatically after the punch or cutter has completed his stroke.

Sixth, The yielding coupling pin, n, in combination with the clutch pin, m, and touch-off device, k H, constructed and operating in the manner and for the purpose substantially as specified.

Seventh, The yielding fulcrum pin, j, arranged in combination with the cam, H, clutch pin, m, and band wheel, C, substantially as and for the purpose set forth.

DESIGNS.

2,234.—Design for a Fan.—Gustavus Anton (assignor to himself, Jacob Hirner and F. Bruren), Philadelphia, Pa.

2,235.—Design for a Masonic Group of Statues.—William Christiaensen, New York City.

2,236.—Design for a Floor Oil Cloth.—James Paterson, Elizabeth, N. J. assignor to Edward Harvey, Brooklyn, N. Y.

2,237.—Design for a Hasp Hook.—Samuel M. Richardson, New York City.

2,238.—Design for a Trade Mark.—William P. Weyman and Benjamin F. W. Weyman, Pittsburgh, Pa.

THE FOLLOWING PATENTS BEAR DATE DEC. 19, 1865.

51,568.—Manufacture of Paper.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable substances by boiling in soda ash (carbonate of soda) under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw, or other vegetable fibrous substances, substantially as described.

51,569.—Process for Bleaching Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim, First, The process of bleaching pulp by the action of a solution of chlorine or chloride of lime at a high temperature and under pressure.

Second, Circulating the bleaching solution through the mass to be bleached in the vessel while highly heated, and under pressure by means of a pump or its equivalent, substantially as above described.

Third, I claim pulping, washing and bleaching wood, straw or other vegetable fibrous material, in the same digester, under pressure.

51,570.—Manufacture of Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable substances by boiling in a solution of chloride of lime or chlorine, in highly heated water under pressure, as a process or preparatory process for making pulp in the manufacture of paper from wood, straw, or other vegetable fibrous substance, substantially as described.

51,571.—Manufacture of Paper Pulp.—John W. Dixon, Philadelphia, Pa.

First, I claim the combination of a pump, P, to force highly heated fresh water into and through the wood or other material contained in a digester with a strainer and an exit pipe for the escape of water at the bottom of the digester, strained from the woody fiber.

Second, The combination of a pump, P, for forcing heated fresh water into the digester containing the material to be pulped by highly heated water under pressure with a coil, R S T N, or equivalent heating apparatus to heat the fresh water thus forced into the digester.

Third, The combination of the pump, P, for forcing fresh water into the digester containing the vegetable fibrous material to be pulped by highly heated water under pressure, with the intermediate heating boiler, K, or its equivalent, in which the fresh water is heated by the escaping effete water from the digester.

Fourth, The combination with the digester, A, of the pump, P, for forcing fresh water into and through the material in the digester to be pulped by highly heated water under pressure, the heating tank, K, or its equivalent, and the coil, R S T N, or its equivalent, for further heating the incoming fresh water.

Fifth, The combination of the pump, P, and the heating coil, R S T N, and intermediate tubing for forcing into the digester heated fresh water and the pump, X, for producing an auxiliary circulation of highly heated water from the bottom to the top of the digester.

51,572.—Process for Making Paper Pulp.—John W. Dixon, Philadelphia, Pa.

I claim the process of treating wood or other vegetable fibrous substances by boiling in a solution of caustic lime, under pressure as a process or preparatory process for making pulp for the manufacture of paper from wood, straw or other vegetable substances, substantially as described.



J. T. B. asks :—"If a patent is granted for a composition to be used in the manufacture of certain articles named in claim, can the holder of the patent sell the right of territory to manufacture one or more of those articles without invalidating the balance? For instance, I have taken out a patent for the manufacture of picture frames, busts, and other ornamental work, besides match plates and follow boards in founderies. Can I sell the right of territory for match plates and follow boards, reserving the remainder, without invalidating the claim to the other portion of my patent?"

ANS.—Yes. You can subdivide your patent and sell as many different rights as you choose.

J. R. W. asks :—"Will you have the kindness to state the best apparatus for an amateur photographer; also the best process?"

ANS.—For an amateur the best instrument will be a stereoscopic, so that stereoscopes can be taken, or single pictures. An amateur should commence with the wet process, which is that commonly practiced in the galleries, and after becoming familiar therewith, take up the various dry processes, of which the tannin process is the best. In either process the first thing to be learned is to make negatives. Then comes printing. In the latter branch

the production of porcelain pictures will be found very simple and interesting. Buy your apparatus from the first establishment whose advertisement you find in the SCIENTIFIC AMERICAN.

J. H. W. asks :—"Suppose a man has two patents, both designed to accomplish one object, but one or either can be used independently, can he sell one for any special purpose, and yet reserve the use of it for other purposes?"

ANS.—Yes. "Suppose a man has one patent adapted to two or more different purposes, as for example, a furnace which may be used by a tinner, and also by a blacksmith, can he sell the right for the use of one mechanic and reserve the right to himself to sell for other purposes?"

ANS.—Yes. J. F. asks :—"If one or more of a certain person's claims, in a combination patent, can be used by another party in another combination for the same purpose, or for another purpose, can it be done without first obtaining consent?"

ANS.—We do not fully understand the above inquiry. What do you mean by a combination patent? No person can use a patented device without the consent of the owner of the patent.

J. H., of Kansas.—A good "dip" for cast brass is sulphuric acid, 1 qt.; nitric acid, 1 qt.; water, 1 qt. Gold lacquer for undipped brass is alcohol, 4 gals.; turmeric, 3 lbs.; gamboge, 3 oz.; sandarach, 7 lbs.; shellac, 1 1/2 lbs.; turpentine varnish, 1 pint.

Green bronze dip is wine vinegar, 2 qts.; verditer green, 2 oz.; sal ammoniac, 1 oz.; salt, 2 oz.; alum, 1/2 oz.; French berries, 8 oz.—boil together.

E. C., of Pa.—A horse-power is the power that will raise 33,000 lbs. one foot in each minute; 33,000 lbs. of water falling one foot in each minute exerts one horse-power. A cubic foot of water weighs 62 1/2 lbs. To get the horse-power of a stream, there fore, multiply the number of cubic feet which flow in a minute by 62 1/2, and by the height of the fall in feet, and divide by 33,000.

G. L.—If you correspond with the advertisers of the mills which, from time to time, you see in the SCIENTIFIC AMERICAN, you will get the information you desire.

W. T., of S. C.—British subjects can obtain patents on the same terms as American citizens.

T. H. Mc. asks :—"If an inventor assigns an invention to another party, on condition of receiving a certain sum when the patent is issued, and if the assignee transfers the invention to a third party, whose interest it is not to have the patent issue, can the inventor apply independent of the other parties and take out the patent?"

ANS.—Yes. It is not new to attach runners to wheeled vehicles, as you propose. D. F. W., of R. I.—We have found ground slippery elm very efficacious in preventing scale, such as forms in your boilers.

Try it. The scale you send us seems to be chiefly mud. You might prevent the scale from entering the boiler by putting fine brush wood on your heater. The scale will form in a great measure on this brush, and thus purify the water before entering the boiler.

W. P. B., of Wis.—For your varnish receipt see another column. A good hygrometer indicates the degree to which the air is saturated with moisture, but it would require a long series of observations to determine the relation of such saturation to changes in the weather, and we are not aware of any such series of observations having been made.

C. R. A., of Pa.—You will find minute directions for making an electrical machine in "Silliman's Philosophy," and in some cheaper school philosophies.

A. C. T., of N. Y.—There are schools of mines now connected with Harvard, Yale, and Columbia Colleges, but we know of no college in which mechanical engineering is taught as a separate course.

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