INDUSTRY—MANUFACTURES—COMMERCE.

The Steamship Adriatic.—This noble vessel, after having made but one trip to Liverpool, and having ever since been lying idle, is soon to be put on Atlantic service. She is to ply between New York, Southampton, and Havre, and she will commence running early next month. Her last trial trip, it is stated, proved her machinery (as now altered and amended) to be excellent, and it is expected that she will make the fastest voyages of any steamer afloat. She belongs to the North Atlantic Company, and her cabin accommodations are unsurpassed for elegance and comfort.

The Oyster Business.—Our oyster trade is stupendous. The value of oysters packed in tin cans, in Baltimore, amouts to $3,500,000 per annum, for which no less than $250,000 worth of tin plate is required. During the past year the entire value of Baltimore oysters amounted to $4,500,000, and that of Virginia to nearly double this amount. Our oysters are mostly fished in the bays of Maryland and Virginia, and from thence carried to Philadelphia, New York, Boston, and other places. The Southern oysters are never served up in this region, as they come from their native waters; they are too poor for the palates of our epicures. To render them plump and pleasant, they are planted in the waters of Newark Bay and Long Island Sound, where they find the requisite aliment and soon fulfill the old adage "a change of pasture makes fat calves."

Domestic Goods.—There is a great buoyancy in the market for home manufactures of cotton, and business is in a most favorable condition, both for home consumption and export. The stock of woolen goods on hand is pretty large, and the market for them is somewhat depressed. Our total exports since Jan. 1, are as follows:

	Pkgs.	Value.
To British Australia	72	$3,050
Hayti	32	2,833
Venezuela (dry goods)	3	208
Brazil (dry goods)	1	150
Brazil	97	8,755
Cisplatine Republic	5	569
Argentine Republic	25	1,317
China	3,252	187,877
China (dry goods)	3	243
Total	3,480	$205,002
Previously	19,429	1,136,396
Total	22,909	$1,341,398

Another Explosion.—A boiler exploded in the Atlantic Foundry, Imlay-street, Brooklyn, on the 12th inst., by which the engineer (John Hazleton) was instantly killed, and two others wounded. The engine was broken to pieces and the house demolished. The greater portion of the boiler was impelled a distance of 80 feet, when it struck against a house, shattered the wall and fell back upon the side walk. It is believed that the water in the boiler fell below the fire line, and that it became red hot, and when the engineer let on some cold water the explosion at once followed. The evidence thus far elicited, in regard to the cause of this accident, goes to prove that the deceased engineer lost his life by his own carelessness.

The Homestead Bill.—This bill passed the House of Representatives in Washington, on the 12th inst., by a vote of 114 to 66. It provides that every person who is the head of a family, and 21 years of age may enter one quarter section (160 acres) of land, subject to pre-emption, and at the expiration of five years, if then a citizen, shall be entitled to a patent for it on payment of $10. We hope this bill will also pass the Senate at an early date. We have no doubt but much good will ultimately result from it to many workmen in our cities. The success of this measure is due to the "Land Reformers"—an organization of mechanics which was formed in this city about 15 years ago, and which has ever since continued to labor for this object with much zeal.

The Central Park.—Professor Renwick, in a letter to the New York *Times*, considers that $250,000 would have been a most liberal appropriation for embellishing the above park in the style of the "English Garden" near Munich in Bavaria. He says he knows every foot of the ground, that he surveyed the northern portion of it 40 years ago, and is perfectly familiar with the district. He considers the outlays of the commissioners extravagant, and the specifications which had been made by the engineer, for the work to be done, unworthy of the profession, as exhibiting great ignorance of surveying and engineering. A large number of our citizens have remonstrated against the extravagance of the commissioners, and have opposed the appropriations asked for and noticed in our last week's issue.

FOREIGN NEWS AND MARKETS.

The Atlantic Telegraph.—The directors of the Atlantic Telegraph Company have resolved to raise £20,000, to take up and restore to working condition the injured portions of the cable off the Irish and Newfoundland coasts. There have been £600,000 authorized to be raised as new stock by the company, but only £70,000 of this amount has been taken up conditionally.

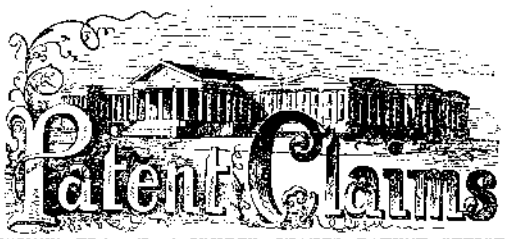
Exports to America.—The London *Times* says: "The shipments to the United States (which received a serious ckeck after the panic of 1857) have recovered to a point beyond their former scale, and are now more than 17 per cent of our total exports, foreign and colonial, and 27 per cent of our foreign exports alone. It is to be remarked that our trade with European States is every year becoming of a more secondary character, as compared with that which we have established among our Colonial and American progeny. It is to those quarters that the magnificent augmentation exhibited in the present total over 1858, and which renders it of unprecedented amount, is entirely due. The general increase is £13,831,671, while to the Colonies and the United States it was £14,022,424. The balance of our business carried on with all other parts of the world resulted therefore, in a falling off."

Exports to all the World.—The exports of Great Britain during the year 1859 were as follows:—Exported to British Possessions, £46,125,056; United States £22,611,283; all other countries, £61,764,098; total, £130,440,427; or about $625,202,135. This is an immense sum, and affords evidence that England is truly "the workshop of the world;" for no other country can approach it in the amount of exported manufactures.

Workingmen's College.—This college, which has now been established in London for several years, has progressed so satisfactorily that the institution has been removed to more commodious premises. During the past year from 200 to 300 students on an average have attended the various classes, which include among others, drawing, arithmetic, mathematics, geology, chemistry, English grammar and composition, Latin, Greek, French, and English, and Bible history. Of the students from October to Christmas, 1858, 109 out of 242 belonged strictly to the class of operatives, the remainder being principally clerks, tradesmen, tradesmen's assistants, and warehousemen. The operatives included, in the largest proportion, carpenters, cabinet makers, piano-forte makers, watch and clock-makers, opticians, printers, compositors, and bookbinders. The total number of students who joined the college in the first year was 400, in the second 350, in the third 260, in the fourth 296, and in the fifth, to the end of the second term, 169, making a total of 1,475. There are classes for women in connection with the college, in which cookery and domestic economy are especially taught, as also reading and writing, and vocal music, arithmetic, history, the Bible, needlework, and geography.

THE PHOTOGRAPHIC SOCIETY—A CURIOUS PHENOMENON.—The reports of the transactions of the scientific societies now being published in our columns are attracting much attention on account of the rare and useful information contained in them. We would direct particular attention to the remarks of Professor Draper, this week, in the report of the above society, in regard to the phenomena connected with the temperature and incandescence of bodies. He relates a remarkable circumstance regarding the colors of the spectrum being regularly developed as the temperature of a body advances, and in the same order which they are refracted in the prism. This is a philosophical fact, well worthy of being disseminated throughout the whole earth.

SEWING MACHINE CASE.—An important trial has just terminated in Boston between Elias Howe, Jr., and Ladd, Webster & Co., involving the validity of Howe's patent for sewing machines. Mr. Howe won his case. We hope soon to be able to present the points of this suit.



ISSUED FROM THE UNITED STATES PATENT OFFICE
FOR THE WEEK ENDING MARCH 13, 1860.

[Reported Officially for the SCIENTIFIC AMERICAN.]

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

27,415.—Ethan Allen, of Worcester, Mass., for an Improvement in Constructing Fire-arms:

I claim making or forming notches or catches on cylinders of fire-arms, or other work, by pressing or cutting, or both, in the manner and for the purposes as set forth and described.

27,416.—Edward Andrews and J. H. Carr, of Palo Alto, Pa., for an Improvement in Lubricating Journals:

We claim the combination and arrangement of the air-tight chamber, A, tube, B, valve, C, spring, H, and piston, D, with small hole, E, constructed and operated substantially as described.

27,417.—Peter Bailey, of Falls Township, Pa., for an Improvement in Grain Fans:

I claim the coupled rods, D and G, and D′ and G′, jointed to the frame, A, and to the shaker, B, arranged in respect to the inclined plane, b, and sieve, d, and operating substantially as set forth.

27,418—John Ballou, of Cincinnati, Ohio, for an Improvement in Adding Machines:

I claim the construction of the rings, C 1 C 2 C 3, marked on their peripheries with numerals, substantially as and for the purposes set forth.

27,419.—John W. Barcroft, of Friendship, Va., for an Improvement in Ditching Machines:

I claim, first, The combinations of buckets, or scoops, b, having hinged falling bottoms d, with a guard, E, of such shape that it keeps the bottoms of the buckets from falling, until the proper time for discharging the dirt which has been dug or scooped up, and then allows the bottoms to fall, and after the discharge of the dirt has taken place, raises the bottoms to their original position, ready for another digging or scooping operation.

Second, Combining the guard with the frame, a, which carries the buckets by means of brackets, e, having friction rollers, f, suspended on them, substantially as and for the purposes set forth.

27,420.—B. F. Barker, of Belfast, Maine, and I. F. Barker, of Montville, Maine, for an Improved Machine for Sawing Veneers Spirally from the Log:

We claim a traversing carriage carrying the devices, substantially such as are described, for holding and rotating the block, and feeding it to the saw, so as to saw it spirally from the periphery in towards the center, substantially as described.

27,421.—Curran Battle, of Warrenton, Ga., for an Improvement in Cotton Seed Planters:

I claim the arrangement of the frame, R, seed-box, A, wheels, B, handles, H, bottom, c c, cog-wheels, P P, the saw-toothed distributing wheel, N, the toothed cylinder, S, the plow, C, and the coverer, O, operating conjointly, as described, for the purposes specified.

27,421.—Joshua Bills, of Southington, Conn., for an Improved Sausage Machine:

I claim the spiral shaft, J, passing through the central slots, g, of the heads, L, essentially in the manner and for the purposes fully set forth.

I also claim the cutting knife, F, united solidly to a metal bar, G, by its being cast thereon, and forming a cavity, H, in the bottom of case, A, to receive the knife, and so position it by the single screw, I, essentially in the manner and for the purpose fully set forth.

I also claim the forward end of the stuffer being concave at C 2, and the feeding end having a portion of its spiral wings removed at B2, and inclined planes, m, inserted essentially in the manner and for the purposes fully set forth.

I also claim the arrangement of the case, A, the stuffer, X, and its case, W, so that both the cutter and stuffer may be operated in the same case, essentially in the manner and for the purposes fully set forth.

27,423.—C. C. Bomberger, of West Carlisle, Pa., for an Improved Wind Wheel:

I claim the arrangement and combination with the slats, C, of the vertical connecting bars, D, vertically moving cam, E, and governing lever, F, so that as the motion of the wheel increases or diminishes, the lever, F, will correspondingly raise or lower the cam, E, and thus regulate the speed of the wheel, all as herein shown and described.

[This invention relates to an improved means for regulating the speed of the wheel, and consists in the use of a cam actuated by a lever connected with a suitable governor, the cam being so arranged with slats composing the wings that the slats will, as the wheel rotates, be closed to a greater or less extent at certain and necessary points of its rotation in order to effect the desired end.]

27,424.—I. W. Bowers, of Cincinnati, Ohio, for an Improvement in Railroad Chairs:

I claim providing wrought iron railroad chairs with the curved lips or flanges, A′, b, substantially as and for the purposes set forth.

27,425.—C. P. Brockett, E. Todd, and John Brockett, of New Haven, Conn., for an Improved Composition for Cleaning and Silvering Metals:

We claim the compound of "silver soap" herein described, consisting of an alkaline solution of silver soap, carbonate of lime and alcohol, in about the proportions stated, and for the purposes of cleaning and plating metals as set forth.

27,426.—Adolph Brown and Felix Brown, of New York City, for an Improvement in Steam Pumps:

We claim, first, Connecting together the steam and pump cylinders of steam pumping engines by means of frames or stretchers, which contain the bearings of the crank shaft—constructed and arranged as described, and for the purpose set forth.

Second, The hinged valves constructed as above described, when the same are arranged and used in combination with steam pumping engines, as set forth.

27,427.—Walter R. Bush, of Albany, N. Y., for an Improvement in Wheel and Dress Guards for Carriages:

I claim, first, The attachment to the door of a carriage of a sliding guard, substantially as set forth.

Second, The method of operating such guard by means of a pulley containing a helix spring to raise the guard and maintain it in place, the spring being relaxed by an attachment from the pulleys to the body of the carriage, or by such lever and spring arrangements as are a mechanical equivalent for the same, substantially as set forth in the above specification.

27,428.—John W. Cochran, of New York City, for an Improvement in Cartridges for Fire-arms:

I claim the employment within the cartridge of two distinct charges of powder, substantially as shown and described, so that one of said charges will explode and start the projectile before the other charge is ignited, all as specified.

27,429.—J. W. Conway, of Franklin, Ind., for an Improvement in Cotton and Hay Presses:

I claim the employment of the screw, F, the toothed wheel, H, the conical pulleys, I I and J, and the cords, a a and c, when the same are arranged together and used in connection with the moving press head, B, substantially as and for the purpose set forth.

27,430.—John Chantrell, of Bristol, Conn., for an Improvement in Knitting Machines:

I claim, first, So applying a series of sinkers in a ribbed knitting machine that they work between the two series of needles simultaneously, substantially as described.

Second, The arrangement, in combination with a series of sliding sinkers, of a series of bearded needles, a a, and a series of latch needles, i i, arranged obliquely in opposite directions to a line perpendicular to the sliding movement of the sinkers, as illustrated in Fig. 1, and herein described.

Third, The series of plates, t t, applied substantially as described relatively to the two series of needles, to support the last completed course of rib loops against the action of the rib needles in forming the new course.

27,431.—Addison Crosby, of Fredonia, N. Y., for an Improvement in Induction Valve Gear for Steam Engines:

I claim, first, Combining the reciprocating rod, G, with the stems or shafts, a a', by means of dogs, F F', attached to the said stems or shafts, and catch bars, M M', or their equivalents attached to the said rod, when the said catch bars or equivalents are so constructed and applied to the said rod, and so controlled as to liberate the dogs during the stroke of the engine by a positive movement away from the said dogs, and transverse to the movement of the reciprocating rod, substantially as described.

Second, Controlling the liberation of the catch bars, M M', by means of blocks, N N', or their equivalents applied to slide on the reciprocating rod, I, from which the valves derive their opening movement, substantially as set forth.

Third, Providing for the variation in the lead of the valves by so constructing the catch bars, M M', attached to the reciprocating rod as to be capable of being lengthened or shortened, as herein specified.

[This invention consists in the combination of a bar or rod deriving a regular reciprocating motion from the engine with the stems or shafts of two oscillating valves or with two rockshafts suitably applied in connection with two valves of any other description, by novel means, whereby the induction of steam is enabled to be effected with such amount of "lead" as may be desired, and the cutting off to be effected by the tripping or sudden liberation of the valves at any point in the stroke under the control of a governor or of suitable means of adjustment at the command of the engineer.]

27,432.—Addison Crosby, of Fredonia, N. Y., for an Improvement in the Eduction Valve Gear of Steam Engines:

I claim the combination of the reciprocating rod, C, with the stems or shafts, b b', of the valves by means of arms, A A', and wrists, a a', attached to the said stems or shafts, and slotted links, J J', attached to the said rod; the whole arranged substantially as herein set forth.

[This invention consists in the combination of a bar or rod deriving a regular reciprocating motion from the engine, with the stems of two oscillating eduction valves or with two rock shafts suitably applied in connection with valves of any other description, by means of arms on the stem or shafts and slotted links attached to the rod to operate in combination with the said arms in such a manner that the valves are made to open quickly at the commencement of the stroke of the engine, and to remain wide open during nearly the whole stroke, but to close so gradually as to prevent slamming when valves of such construction as to be liable to slam are used.]

27,433.—Wilbur M. Davis, of Carmel, Maine, for an Improvement in Shoe Tips:

I claim the construction of such a tip or cap of wire cloth or gauze, or other braided, woven, or netted fabric of wire, whether of copper, brass, or any other metal, and the application of the same to a boot or shoe, sewed, nailed, or pegged or cemented, whether turned or otherwise, for the purpose of protecting the leather or other material of the shoe or boot from injury by wear or ordinary blows.

27,434.—George Draper, of Milford, Mass., for an Improvement in Machinery for Spinning:

I claim, in combination with the drawing mechanism of a spinning machine, a mechanism which, as the quantity of yarn wound on a bobbin or a spindle of such machine may increase, and the front set of drawing rollers may be moved with a uniform or given speed, shall so decrease the motion of one or more of the remaining sets of drawing rollers relatively to the motion such may have on being started, as to cause the yarn spun and wound around the bobbin to have a uniform size.

27,435.—Spencer B. Driggs, of New York City, for an Improvement in Piano-fortes:

I claim, first, The employment, in a piano-forte, of a bridge or bridges of a depth equal to, or nearly equal to, the whole depth between the strings and the bottom or back of the case, in combination with a single sound board which either constitutes the back of the case or is arranged in the extreme lower or rear part of the same, substantially as described.

Second, The employment, for the purpose of holding the strings at either or each of the bearings or points between which they severally vibrate, of a clamp, G, constructed with two jaws, and applied, substantially as herein described, so as to be made to bite and clamp the string or strings by the same screw which screws it to the block, plate, or bridge, as set forth.

27,436.—B. Wells Dunklee, of Boston, Mass., for an Improvement in Ranges:

I claim the construction and application of the dividing plate, E, in the form as above described, in relation to the inducting flues, D D, the bed plate, F, the check plates, a, and with respect to the damper, K, top check plates, h h, and ovens, d d, substantially as and for the purpose set forth.

I also claim the annular, e, with its openings, m f, constructed and applied with respect to the damper, K, top check plates, h h, ovens, d d, and dividing check plates, E and a, and in relation to two inducting flues, D D, substantially and for the purpose above described.

27,437.—John Fasig, of Congress, Ohio, for an Improvement in Pruning Implements:

I claim the combination of an angular cutting edge b', the double-edged saw, a'' c, and hook, d, when all these parts are combined in one instrument, substantially as described, and operating as set forth.

27,438.—William Ferguson and David Ferguson, of New York City, for an Improvement in Blackwashing Molds for Casting:

We claim blackwashing retort, pipe, or other molds by means of the piston, D, provided with the hollow rod, E, and having felt cloth, F, or other material around its edges, and brush, G, combined, or by either the piston and felt cloth or brush separately or equivalent device supplied with the blackwash, and operating as before described.

27,439.—Lawrence F. Frazee, of New Brunswick, N. J., for an Improvement in Ash-sifters:

I claim arranging in the box, A, a double bottom, C, with an aperture, I, substantially as and for the purpose specified.

[The sieve of this sifter is agitated by means of an undulating ring running around the same, and the case is so arranged that the stones and cinders can be separated from the good coal without emptying the sieve, rendering the whole very convenient and easy to operate]

27,440.—Dennis C. Gately, of Newtown, Conn., for an Improvement in Elastic Belting:

I claim the belt or band produced with a friction surface as smooth as it practically can be by grinding or polishing down the rough or unequal surface of the belt, substantially in the manner and for the purposes described.

27,441.—T. J. Gifford, of Salem, Mass., for an Improvement in Securing Scaffolding Brackets to Buildings:

I claim the combination with brackets, A B C, and the knee plate, E E', of the screw, G a f, and key, J, all arranged in the manner and for the purposes set forth.

27,442.—Richard Gill and George W. Grier, of Altoona, Pa., for an Improvement in Furnaces for Steam Boilers:

We claim a deflector composed of two walls, B'' B''', which enclose an air passage, C, between them; and when the wall, B''', is furnished with opening a, and the wall, B''', is tight, and both projecting forward over the fire, and when constructed, arranged and operating substantially as described and for the purpose set forth.

27,443.—Jackson Gorham, of Bairdstown, Ga., for an Improvement in Organ Pipes:

I claim constructing organ pipes with two musical throats and mouths both communicating with the foot, d, for the purposes and substantially as set forth.

[The object of this invention is to increase the quantity and quality of sound in organ pipes, and in that species technically known as the flute pipes, by doubling the "speaking" qualities of each pipe as will be understood from the above claim.]

27,444.—Henry H. Graham, of Paterson, N. J., for an Improvement in Connections for the Ends of Railroad Rails:

I claim the tapering connecting bar provided with the lugs, l l, entering holes in the rails, in combination with the clamp, e, driven on to said wedge, substantially as specified.

27,445.—John Guyer, of Westport, Conn., for an Improvement in Cultivators:

I claim the arrangement of the hoes, A, springs, F, guides, K, handle, D, axle, B, and tubes, J, as and for the purposes shown and described.

27,446.—Jason W. Hardie, of New York City, for an Improved Churn:

I claim the combination of the hollow revolving cylinder containing hot water, or its equivalent, with a fixed surface fitting against its periphery and adjustable to different degrees of closeness thereto, whereby not only are the cream globules effectually crushed, but the requisite degree of temperature is imparted to the cream only momentarily while passing beneath the cylinder, and is again dissipated mostly by the falling of the cream into the churn body below, substantially as specified.

27,447.—Levi Heywood, of Gardner, Mass., for an Improved Chain for Timber-bending Machines:

I claim the chain herein described, operating as set forth.

27,448.—W. W. Horton (assignor to himself and Lucius O. Vebber), of Schuyler's Lake, N. Y., for an Improvement in Water Wheels:

I claim the specific construction of the bucket hereinbefore described, embodying a straight line in combination with an involute of a circle; the straight line and involute being relatively arranged to each other and the face of the wheel as set forth.

27,449.—H. M. Hutchinson, of Baltimore, Md., for an Improved Furnace for Railroad Cars:

I claim the hot-air chamber, A, combustion chamber, C, and feeder, F, arranged as described, in relation to one another and to the car, and so that the cold air received by the combustion chamber may be drawn from the interior of the car.

27,450.—Edward Julier, of Beverly, Ohio, for an Improvement in Cultivators:

I claim the arrangement of the slotted, adjustable, laterally connected compound beam and stock, g g 2 h and L L M, Figs. 1, 3, 4, when combined with the solid wrought metal compound mold and share, d e n o s, Fig. 5, and when said combination is so arranged as that the heel or butt end of one cutting edge over-cuts the point or toe of the advance share, admitting also of being adjustable more or less forward or backward relative to each other, substantially as set forth and described.

27,451.—John P. Kennedy, of Trenton, N. J., for an Improvement in Clay Gas Retorts:

I claim the securing of the mouth-piece to an earthern retort by means of an iron yoke or band firmly clasping the neck of the earthen retort behind the collar, and having bolts on the outside of the retort passing to the flanch or mouth-piece—thus securing the earthen collar between the mouth-piece and the yoke or band; the whole being substantially as described.

27,452.—Lucius J. Knowles, of Warren, Mass., for an Improved Safety Feed Apparatus for Steam Boilers:

I claim the combination of the balls, E and F, placed outside and communcating with the boiler at different levels beneath the water line, and so arranged as to operate successively, the one to regulate the pump and the other to operate the whistle, as set forth.

27,453.—David Knox and Thomas Ditchburn, of Lynn, Mass., for an Improvement in Sole-cutting Machines:

We claim, first, Giving a reciprocating or vibrating motion to the head, D, by means of the slot, g, and pin, 9, substantially as set forth and for the objects specified.

Second, The use of an eccentric bush in the eye of the connecting rods, substantially as described, for the purpose of raising or lowering the knives.

Third, Giving a lateral motion to the back gage by the use of a swivel, T, or in any equivalent manner, as described, so that both knives may be made to cut the same sized sole.

Fourth, The use of the double crank for actuating the connecting rods, E F, in combination with the movable head, D, substantially as and for the objects specified.

27,454.—Reinhold Landstrom, of Boston, Mass., for an Improvement in Coffee-roasters:

I claim constructing the lining of a coffee-roaster of staves or pieces and heads of soapstone, and a metallic frame, applied together substantially as described.

And I also claim the mode of making each bar or stave provided with steam escape holes, viz.: with a channeled or grooved external surface, so as to form with the outer case of the roaster a steam passage open at the ends of the stave, and to be so covered at the outer case that the coffee may be protected from the smoke and gases of the furnace, as specified.

27,455.—George W. Lane, of Boston, Mass., for an Improved Method of Testing Hollow Spheres for Water Gages and other purposes:

I claim the described mode of testing hollow floats, to be used in steam boilers or other vessels in which great heat and pressure, or either, may be employed.

27,456.—John Loft, of Brooklyn, N. Y., for an Improved Machine for Covering the Springs of Skeleton Skirts:

I claim, first, Covering wires or springs for hoop skirts by passing the same, in connection with strips or covers of suitable fabric having a suitable glue, cement or adhesive substance applied to them through folders, P, and between drawing and pressure rollers, L M, arranged to operate substantially as and for the purpose set forth.

Second, The use of cutters, a, and disks or guides, b f, placed respectively on the shafts, F G K, in connection with the roller, B, on which the fabric is wound, the glue or cement reservoir, H, and the rollers, I J; all being arranged substantially as and for the purpose specified.

Third, In connection with the glue or cement reservoir, H, and rollers, I J, the reservoir, C, and roller, D, arranged relatively with each other, and the disks or guides, f, on the shaft, K, to operate as and for the purpose specified.

Fourth, The combination of the drawing and pressure rollers, L M, folders, P, roller, N, glue or cement reservoir, C H, with their rollers, D I J, the roller, B, cutters, a, and guides, b f, arranged for joint operation as and for the purpose specified.

27,457.—Francis C. Lowthorp, of Trenton, N. J., for an Improvement in Plate for Securing Chords, Braces, &c., of Truss Bridges:

I claim the combination of plate, A, with open slots adapted to receive, and arranged in respect to, the enlarged ends of the chord rods, G and G', and also arranged to receive the verticals and diagonals of a truss, frame or other bridge, substantially as and for the purpose set forth.

27,458.—Edward Mattacks, of Lyndon, Vt., for an Improvement in Shutter Operators:

I claim the combination of devices set forth for controlling the movements of a window blind, whereby it may be unlatched, opened or closed and re-latched, as circumstances may require; such devices being the rectangular tube, C, the spring catch bar, D, and the cord, f; the same being arranged and made to operate together substantially in manner as set forth.

27,459.—Thos. H. McCray, of Tellico, Texas, for an Improvement in Cotton Presses:

I claim the arrangement of the toggle arms, E E E E, so as to connect all the four bale boxes, as described, in combination therewith, whereby the same action of the power applied will both effect the pressing in one pair of bale boxes and bring back the other pair of bale boxes ready for pressing again, substantially as specified.

I also claim the employment of movable bale boxes, in combination with stationary bed blocks, substantially in the manner and for the purposes specified.

27,460.—S. T. McDougall, of New York City, for an Improvement in the Manufacture of Gas:

I claim the combination of an air blast, a vaporizing chamber, a retort and furnace, a purifying vessel and a gasometer, arranged and constructed substantially as described.

27,461.—Thos. E. McNeill, of Philadelphia, Pa., for an Improved Hot-air Register:

I claim, first, Combining a net work, or its equivalent, of fibrous or other material capable of absorbing moisture, and a water reservoir with a hot-air register, substantially in the manner and for the purpose set forth.

Second, I claim the plate, I, with its projection, i, when connected with the bar, D, and arranged in respect to the partition, e, as and for the purpose set forth.

27,462.—William Mitchell, of New York City, for an Improvement in Apparatuses for Revivifying Bone Black:

I claim, first, Placing the cast metal plates, I I, on the fire arches, J, arranged as shown, to wit, two being placed longitudinally in the chamber, A, and the other transversely in a perforated partition, for the purpose of properly sustaining the plates, I I, and at the same time permitting of a proper draught.

Second, The employment or use of two series or rows of chambers or tubes, G H, placed at one or both sides of the fire chamber, when said chambers or tubes are placed in the position as shown, and the outermost rows made of smaller capacity than the innermost one, for the purpose specified.

Third, Having the chambers or tubes, G H, made transversely, of egg-form (or of greater dimensions at one of their shorter curved sides than at the opposite ones), and also made longitudinally and transversely of varying thickness, substantially as and for the purposes set forth.

Fourth, The arrangement of the flues, J' K, in connection with the chambers or tubes, G H, as and for the purpose described.

Fifth, The connecting of the coolers, F, to the tubes, d, of the chambers, G H, by means of the ears or lugs, f, and hooks or pins, g, as set forth.

Sixth, Forming the plates, k, with fluted surfaces, so as to produce valleys or gutters, l, and placing said plates in an inclined position on the top of the chamber, L, for the purpose set forth.

Seventh, Connecting the chamber, L, with the flues, J' K, in the manner substantially as shown and described, so that the burning and drying processes may be performed simultaneously with one and the same source of heat.

27,463.—Geo. E. Mills, of New York City, for an Improved Ore-washer:

I claim the channels, the revolving rakes diverging from the center, the oblique riffles in the disk, and the flattened or half-round flow-pipe; all in combination as specified and for the purposes set forth.

27,464.—Andrew J. Moser, of New York City, for a Book-ruler:

I claim the book-ruler, with curved ends, herein described and represented.

[This invention consists in curving the ends of a ruler in opposite directions, and leveling the edges of the same in the usual manner, so it may be used either side up as a useful book-ruler.]

27,465.—M. W. Nalton, of Utica, N. Y., for an Improved Measure Faucet:

I claim, first, The employment or use of a plurality of hollow cylinders or vessels, A B, connected by tubes, C, provided with cocks, arranged substantially as shown and described, to admit of the alternate filling and discharging of the vessels, for the purpose described.

Second, The dividing of one or more of the hollow cylinders or vessels into compartments by means of the partitions provided with the valves, g h, and rod, H, arranged as shown, to admit of the drawing-off of the contents of one or more of the compartments, as occasion may require, in connection with the index, I, and graduated arc; all for the purpose and in the manner set forth.

27,466.—John North, of Middletown, Conn., for an Improvement in Drop Letter-boxes:

I claim, first, The applying to a drop letter-box the inner lid, for the purpose of preventing the abstracting of letters from the aperture of the letter-box, as described.

Second, I claim the inner lid, in combination with the outer lid, attached to a drop letter-box, whereby the inside lid is closed on opening the outer lid, for the purpose as described.

27,467.—Geo. W. Osborn, of Centerville, Mich., for an Improvement in Grain-cleaners.

I claim the arrangement of the trough, d, the elevators, D, the fan, E, and the shoe, as constructed; the trough being placed at the bottom of the shoes, with one end passing into the elevator case, and having an independent longitudinal vibration, substantially as and for the purpose set forth.

27,468.—B. E. Orton, of Lyndon, Ill., for an Improvement in the Mode of Applying Horse-power to Mills:

I claim the combination of the toothed rim, G, stationary pinions, d d, adjustable pinions, b b, mill, D, and the bevel gearing, I J, with shaft, K, arranged substantially as and for the purpose set forth.

[The object of this invention is to combine a horse-power and grinding mill in such a way that a very compact mechanism will be

obtained, and one that will admit of the mill being detached and other machinery connected, when required, so as to be driven by it. The invention is designed chiefly for the use of farmers and others, who require horse-power of a portable character and simple in construction, and with whom a grinding mill is the essential feature or the most important device to be driven.]

27,469.—F. I. Palmer, of Knoxville, Tenn., for an Improvement in Car Seats:

I claim combining a self-locking clasping apparatus with either or both of the shoulder plates, B, of a car seat, substantially in the manner and for the purpose represented and described.

27,470.—F. S. Pease, of Buffalo, N. Y., for an Improvement in Hydro-carbon Vapor Apparatuses:

I claim the combination of the box, A, when provided with a supply pipe, C, at the top, and with pans, B, and plates, b, as shown, with the condenser, E, constructed as set forth; the whole operating in the manner and for the purpose represented and described.

[The object of this invention is to facilitate the operation of impregnating inferior gas with the vapor of hydro-carbon liquids, such as naphtha, benzoles, ether, &c. The gas passes over a series of shallow pans filled with the liquid; and, in order to cause the gas to absorb the vapor more readily, it is compelled to pass through a series of stops of wire gauze or perforated sheet metal, whereby a number of minute streams of gas are brought in contact with a similar number of streams of vapor, causing both to intermingle quite readily.]

27,471.—James Peatfield and Sanford Peatfield, of Ipswich, Mass., for an Improvement in Elastic Belting:

We claim, as a new article of manufacture, india-rubber belting made upon a knitted foundation, and having a slight degree of elasticity, as set forth.

27,472.—John Protz, of Easton, Pa., for an Improved Knife and Fork Cleaner:

I claim the box, A, provided at one end with the pressure block, k, attached to springs, b b, in connection with the leather, B, secured to the inner side of the lid, A, of the box, and connected at one end to a slide, d; all being arranged to form an improved article of manufacture for the purposes specified.

[The object of this invention is to obtain a simple and convenient device by which both knives and forks may be expeditiously cleaned in a thorough manner. The invention is designed for ordinary family use, and to be operated manually.]

27,473.—Lewis L. Reynolds, of Manchester, N. H., for an Improved Window Screen:

I claim the combination and arrangement of the frame, A, with the rods, C C, the pins, D, and springs, E, substantially as and for the purpose set forth.

27,474.—William Riker, of Newark, N. J., for a Process of Embossing Designs on Metal for Jewelry:

I claim, first, The use of the softer metal, as at K (Fig. 1), substantially in the manner and for the purposes described.

Second, I claim the use of the die roll, A (Figs. 1 and 2), substantially in the manner and for the purposes set forth.

27,475.—E. D. Rosencrantz, of New York City, for Improved Telegraph Wires:

I claim, first, The employment of a compound wire for telegraphs, consisting of a silver center and outside of copper (or other equivalent metals in which the center is the best conductor) for the purposes set forth.

Second, I claim, in placing telegraph wires, the selection of the end leaving the draw plate for the purposes substantially as set forth.

27,476.—E. A. G. Roulston, of Roxbury, Mass., for an Improvement in Trunks:

I claim, as a new article of manufacture, a trunk made of corrugated metallic plates, applied together substantially as set forth.

27,477.—Silas C. Schofield, of Freeport, Ill., for an Improvement in Harrows:

I claim, first, The combination, with the teeth of a rotary harrow, of a strip of metal running spirally from end to end of the harrow, and fixed at an intermediate point between the ends of the teeth and the harrow shaft, as set forth.

Second, I claim, in combination with the harrow frame and rotary harrows, of the wheel, G, hung in arms, H H, which are jointed to the main frame, standards, J J, and driver's seat, K, when this seat is connected to the frame by jointed braces, L L, and furnished with a set screw, b, for raising the frame, A A, in the manner set forth, at the same time allowing the frame to swing freely on the joint, a, and adapt itself to the unevenness of the ground.

[This invention consists, firstly, in arranging along the sides of a quadrangular frame four peculiarly-constructed rotary harrows, which harrow and pulverize the earth at the same time; these are arranged at right angles to each other, and at an angle of about 45° with the line of draught, for the purpose of harrowing and cross-harrowing the earth and preparing it for receiving seed, and then harrowing in the seed which falls between the front and rear harrows. It consists, secondly, in a novel mode of hanging the harrow frame so that it will accommodate itself to the unevenness of the surface of the ground, and so that the harrow may be raised from the ground by the driver, when necessary.]

27,478.—William Sellers, of Philadelphia, Pa., for an Improvement in Turning Lathes:

I claim, first, Constructing lathe heads in the form of a hollow box, and revolving the spindle in journals which are connected together and surround the spindle throughout its length, substantially as described and for the purposes specified, whether said journals are so arranged as to form a continuous bearing throughout the entire length of the spindle or not.

Second, I claim attaching the heads of a lathe to the bed in such a manner that a line drawn from the axis of a spindle perpendicular to the upper surface of said bed shall fall on or about the back edge of the bed, substantially as described and for the purpose specified.

Third, Constructing lathe beds with their upper surfaces horizontal, or substantially so, when this is combined with one other surface on the bed and corresponding surfaces on the heads, which surfaces being brought in contact shall insure the parallelism of the axis of the spindle, substantially as described.

Fourth, I claim the use of a plate bed having its upper surface divided longitudinally into two similar parts, each part having its edges beveled so that the slide rest may be attached to either side, substantially as described and for the purpose specified.

Fifth, I claim the combination of the internal and external gearing on the same face plate, for the purpose of obtaining the required variation of speed and of stiffening the plate, substantially as described.

27,479.—William Sherburne, of Charlestown, Mass., for an Improvement in Scarf Pins:

I claim locking the pin, b, by turning the screw, d, substantially in the manner set forth.

27,480.—William H. Sherwood, of Greenwich, Conn., for an Improved Composition for Artificial Stone:

I claim the within-described composition of Keen's cement, alum, soluble glass, rosin and water, mixed together in about the proportion stated, and for the purposes specified.

[The marble produced by this composition imitates, in its color and weight, the genuine marble so closely that it can be discriminated only by persons well acquainted with both materials; and, in regard to the influence of acids or other liquids on it, the imitation marble is vastly superior to the genuine article, as it does not become stained by water, oil or by any of the common acids.]

27,481.—Robert A. Smith, of New York City, for a Street-sweeping Machine:

I claim the arm or lever, B, hung on and concentric with the main broom shaft, a, moving as a radius therefrom; the lower part of said arm runs on the street by means of slides or rollers; the upper end, Y, is adjusted and secured as described.

I also claim the cup or concavity, J, and inclined plane, I, immediately under, and adjusted to, the circle described by broom, G.

I also claim the inclined plane or spout, K, for conveying the dirt delivered by broom, G, into rows outside the cart wheel; this inclined plane can be supported at the highest end by hinges or springs or by their equivalents; the lower end by chains.

27,482.—T. J. Southard, of Richmond, Maine, for an Improved Hawse Pipe:

I claim a hawse pipe extending into or through the side of the vessel, and provided on the outside end with a flanged head and cheeks containing a roller, substantially as described, for the purposes set forth.

27,483.—Marcus Stevens, of Detroit, Mich., for an Improved Self-adjusting Reclining Chair:

I claim, first, The arrangement of the apron or front piece, C, hinged to the seat, in combination with the braces, b, secured to the sides of the apron and hinged to the arms, D, and pivoted to the etationary frame or body of the chair between the arms and the seat, substantially as shown and described.

Second, The detachable foot board, in combination with the hooks in the backs of the front legs, and made reversible relatively to the front or apron piece of the chair for attachment thereto at pleasure in either of the two directions specified.

27,484.—Thos. Thorp, of New York City, for a Cigar-heading Socket:

I claim the cigar-heading socket made in one, two or more parts, so constructed and arranged as to be attached to any cigar-making machine, or in such a manner that the socket can operate to give a proper finish to various sizes of cigar heads, substantially as set forth.

I also claim, in connection therewith, the hinging of the parts, A and E, at the point, a, for the purpose set forth.

I also claim the said cigar-heading socket, with the opening, m, made in the form and so as to operate as described, whether with or without the hinge, a.

27,485.—Augustus Tufts, of Malden, Mass., for an Improvement in Lanterns:

I claim in a lantern the combination of a series of horizontal refracting zones or belts formed on the exterior of the lantern, with a series of vertical ribs formed on the interior thereof, substantially as described, whereby the lights are both multiplied and elongated, as set forth.

27,486.—Enoch B. Turner, of Providence, R. I., for an Improvement in Brakes for Railroad Cars:

I claim the simultaneous operation, by the momentum of the train, of the brakes upon the shoes on the wheels, in two or more railroad cars, through the action of the bar, A, connected with shoes, in the manner substantially as described.

I also claim the stirrup, D, and its combination with the cord described; one extending through the train, and the other connecting that cord with the stirrup, substantially as described for the purposes set forth.

27,487.—David Utley, 2nd, and Pell Teed, of Leicester, N. Y., for an Improvement in Straw-cutters:

We claim the arrangement of the knives, K K', levers, L l, pitmans, P p, slotted guide, C, crank shaft, S, hopper, H, concave bed, c, and toothed roller, R, as and for the purposes set forth.

27,488.—John Walch, of New York City, for an Improvement in Stoves:

I claim the application and combination, with a stove, of an air-chamber, constructed and arranged as described; said chamber rising directly from the lower part of the stove base until within a short distance of the top of the stove, and forming first the back part of the fire-place or fire-pot, and then a distinct division in the stove from one side to the other side of the stove, whereby the flame and gases are made to pass upon the front, over the top and down in the rear of said chamber to the smoke pipe, in the manner and for the purpose substantially as specified.

27,489.—A. T. Waldo, of Dryden, N. Y., for an Improvement in Grain-cleaners:

I claim the combination of the fan, B, spouts, O and S, valve, V, and spring, F, the cup, R, slide, K, and projection, P, when constructed and arranged as specified, for the purpose of cleaning grain as the same is fed into the eye of the millstone.

27,490.—Wm. Watson, of Bishopville, S. C., for an Improvement in Plows:

I claim the combination of the pivoted clamping hook plate, E, fastening wedge, f, standard, B, and moldboard, D, substantially as and for the purposes set forth.

27,491.—Francis F. Wells, of Texana, Texas, for an Improvement in Pessaries:

I claim, in the construction of pessaries, the particular manner of hinging the ring to the tube, and to the lever, c, passing through said tube, so that the said ring may be readily turned on the tube and firmly held thereto when in its proper position for supporting the uterus, as substantially set forth and explained.

I also claim the particular manner of uniting the ring to the frame, viz., by means of the recesses in the ring and the swinging button, S, on the lever, b, the whole being arranged and combined for the purpose of ready removal and replacement of the ring, for cleansing the instrument or changing the ring, substantially as represented.

27,492.—Wm. Orton Williams, of Washington, D. C., for an Improvement in Bridle Reins:

I claim the combination of a ring, or its equivalent, with the crossed reins of a bridle, and this I claim whether combined with the martingale or not.

27,493.—R. A. Wilder, of Cressona, Pa., for an Improvement in Railroad Switch Stands:

I claim the so arranging the lever, b, that connects the bolt, e, with the main lever, C, as that the operator, by one hand, may seize and operate both levers, substantially in the manner and for the purpose described.

I also claim, in combination with the lever, C, and the bolt, e, a locking mechanism, and the shield, F, for protecting the lock and bolt, substantially as described.

27,494.—Reuben Wood, of Grand Ledge, Mich., for an Improvement in Jacks:

I claim the combination of the pawls and ratchet bar with the disks, D1 D2 D3, having annular inclined tracks, E F, on their faces, between which rollers or balls may travel continuously in one direction, or alternately back and forth, in such a manner as to change the progressive speed at which the ratchet bar is worked by a different manipulation of the hand lever, substantially as and for the purposes specified.

27,495.—Horace Woodman, of Biddeford, Maine, for an Improvement in Machines for Cleaning Machine Cards:

I claim, first, Raising, suspending, cleansing and replacing the top flat cards by incline planes, J, moved within the carding machine and between the arches and the end of the main cylinder, and the brush bar, L, placed, secured to and operated by and between these incline planes and over the card cylinder, essentially in the manner and for the purposes fully set forth.

Second, I claim the secondary incline planes, M, as constructed and connected to the main incline planes, J, as to elevate themselves by contact with top flat cards, and they in turn elevate the top flat cards when these incline planes, M, pass from the feed roll towards the doffer, and they being depressed by contact with, and also the top flat cards with them in the return movement, and bring the card teeth of the cards and brush bar effectually together for cleansing the cards, essentially in the manner and for the purposes fully set forth.

Third, I claim imparting an intermittent motion to the brush bar, L, by the combination and arrangement of the notched wheel, D2, pawl, E, and cam, G2, in the manner set forth.

Fourth, I claim imparting to the incline planes, J and M, a complete and then a partial movement to first cleanse all the top flat cards once, and then one or more the second time, and then back again to give an increased or double cleansing to the top flat cards most needing it, essentially in the manner and for the purposes fully set forth.

Fifth, I claim imparting first a complete and then a partial movement to the brush bar, L, by means of the stud, H2, and arm, I2, combined with pawl, E2, cam or guide, G2, and wheel, D2, or any equivalent combination, essentially in the manner set forth.

Sixth, I claim so arranging and operating the brush bar, L, in combination with comb, T, that the latter will cleanse the former at each cleansing it gives the top flat cards, essentially in the manner and for the purposes fully set forth.

27,497.—A. J. Woodworth, of Henrico county, Va., for an Improvement in Soap:

I claim, as an article of manufacture, a compound soap, which has for one of its ingredients bleaching soap, and which is made substantially of the ingredients set forth in the proportions specified.

27,497.—Abram Gaar (assignor to himself, J. M. Gaar and W. G. Scott), of Richmond, Ind., for an Improvement in Grain-cleaners:

I claim separating the grain chaff and straw by providing the grain-carrier as well as the straw-carrier with separate boards, E K, on which the grain is collected, and from which it is discharged separately to the fanning mill, substantially in the manner and for the pose described.

I also claim arranging the upper line of the open straw-carrier below and under the lower line of the cell-carrier, when combined with a shaker, F, and with the separating boards, E g K, so as to produce a fall between the two carriers for the purpose of facilitating the separating of the grain from the straw, as described.

27,498.—Francis A. Hoyt (assignor to himself, Geo. W. Lane, Wm. G. Howe and Alfred W. Adams), of Boston, Mass., for an Improved Magnetic Gage for Steam Boilers:

I claim the arrangement of the lever arm box, D, the indicator, steam column and case, and the float lever, and float, together and relatively to the boiler head, substantially as described.

I also claim the application of the fulcrum bearings to the lever arm box, and so as to be movable therewith and separate from the boiler head.

I also claim my improved arrangement of the magnet and its armature with reference to the interior or steam space of the boiler, the said arrangement consisting not only in placing the magnet in an indicating or other proper chamber, entirely insulated from or having no connection with the said steam space or the armature chamber, so that steam can pass therefrom into the magnet chamber, but in arranging the armature with respect to the magnet and applying the float to the armature, so as to operate it substantially in manner as described.

I also claim combining a separate index pointer with the magnet so as to extend therefrom, as specified.

27,499.—Wm. L. R. Mattason (assignor to himself and J. M. French & Co.), of Rochester, N. Y., for an Improved Feathering Paddle Wheel:

I claim the bearing resting arm or shoulder, substantially as and for the purpose of adjusting the center of the eccentric wheel, as described.

27,500.—Zuriel Swope (assignor to himself, H. D. Musselman and Wm. D. Sprecher), of Lancaster, Pa., for an Improvement in Lamps:

I claim arranging the funnel, E, and pipes, F G and H, with such relation to the wick tube, I, that heat may be taken from the flame and passed down into the lamp under the wick tube, so that the heated oil will rise towards the flame and around the wick, substantially as and for the purpose specified.

27,501.—Halsey D. Walcott (assignor to Martin L. Bradford & Co.), of Boston, Mass., for Improved Scissors and Nippers:

I claim, as a new article of manufacture, a pair of scissors with the points of the blades formed into nippers, substantially as described.

27,502.—Suspended.

27,503.—Franklin W. Willard, of New York City, assignor to himself and E. G. Allen, of Boston, Mass., for an Improvement in Apparatuses for Distilling:

I claim the method described of distilling and evaporating liquids, the same consisting in the employment of a revolving still, provided within its interior with a series of buckets, whereby, while the still is maintained at a uniform temperature, the liquid which is to be acted upon is kept in motion, and portions of the same successively separated, taken up and returned to the mass in thin films, substantially as specified and for the purposes set forth.

27,504.—Daniel H. Wiswell, of Buffalo, N. Y., assignor to Charles W. Adams, of Evans, N. Y., and Debby Pinner, of Buffalo aforesaid, for an Improved Churn:

I claim the inner cover, marked A, of the form described, the scoops or arms, marked B, the sharp edge and slant of the upper part of ribs marked C, combined and arranged as specified, for the purposes set forth.

27,505.—Albert H. Wright (assignor to J. C. Fuller and B. J. Woodward), of Philadelphia, Pa., for an Improved Elastic Chain or Surge Spring for Ship's Cables:

I claim the combined arrangement of the links, A, elastic blocks, B, and swivel bolts, e, the same operating together in the manner and for the purpose specified.

27,506.—S. F. Van Choate, of Yreka, Cal., for an Improvement in Electric Telegraphing:

I claim the employment of a system of connections, substantially as described, connecting the main circuit of one line of electric telegraph and the local circuit of another line in such manner that, by opening the main circuit of one line, the current of its local circuit shall produce an interruption to the current of the main circuit of the other line by repulsive action, as specified.

I also claim the employment of a substantially similar system of connections, operating in a substantially similar manner, to render any electric circuit continuous or interrupted at pleasure by the closing and opening of another and entirely separate circuit.

RE-ISSUES.

Jonas B. Aiken, of Manchester, N. H. (assignee through mesne-assignments of himself and Walter Aiken, of Franklin, N. H.), for an Improvement in Knitting Machines. Patented Sept. 11, 1855:

I claim, first, The use of a hollow circular needle plate, substantially as described, and having grooves in the outer or upper surface for the purpose set forth.

Second, The loop regulator, I, or equivalent thereof, for the purposes and object substantially as described.

Third, The loop regulator, or equivalent thereof, in combination with the needle, and hollow circular needle plate, A, having grooves in the outer or upper surface, as described, the said several parts operating in the manner and for the purposes set forth.

J. McMannus, of New York City, for an Improvement in the Ventilation of Hats. Patented Jan. 3, 1860:

I claim a ventilating piece having a smooth surface next the head and grooves, or openings next the brim, and made of india-rubber, gutta-percha or prepared paper, and firm enough not to crush or close

up said openings, and impervious to perspiration, as represented, and for the purpose set forth.

Lauriston Towne, of Providence, R. I., for an Improved Chain Machine. Patented Oct. 20, 1857:

I claim, first, The combination of a punch-plunger, or other equivalent instrument, with a forming guide, or its equivalent, substantially as described.

Second, I also claim the combination of a forming guide, or its equivalent, with the instruments co-operating with said guide, or their equivalents, to effect the bending of the arms, substantially as described.

Third, I also claim the combination of a die, j, Fig. 6, or its equivalent, for giving the first bend to the link with a forming guide, or its equivalent, substantially as described.

Fourth, I also claim the combination of a carrier on which the link is transported with a forming guide in which the link is deposited, or their equivalents, substantially as described.

Fifth, I also claim the forming guide for holding and transmitting the chain during the formation thereof, or its equivalent, substantially as described.

Sixth, I also claim giving to the forming guide an angular or intermittent rotary movement upon its axis, so as to present the chain to the successive links in such positions that the arms thereof will alternately interlock.

Seventh, I also claim the slender converging rods, r r, or other equivalent instruments, for holding down the top link while the arms of the link next beneath are being bent over it, substantially as described.

Eighth, I also claim the arrangement and operation of the slides, aa, or their equivalents, substantially as described, so as to bend the arms of each link successively by pairs and cause the succeeding pair or pairs to overlap the preceding ones, or in case the links have an odd number of arms, to cause the succeeding arms of each link to overlap the preceding ones singly in succession.

Philip Ulmer, of New York City, for an Improved Spring Bed Bottom. Patented Oct. 4, 1859:

I claim, first, The method described of connecting the spring, b, or any equivalent means, to the strip, a, by which the same is secured in placed by contact between compressing surfaces, substantially in the manner and for the purposes set forth.

Second, I also claim the use and application of the strip, a, substantially in the manner and for the purpose specified.

D. S. Wagener, of Penn Yan, N. Y., for an Improvement in Flouring Mills. Patented Sept. 25, 1855:

I claim the arrangement of tubes, B and C, connected by the supplemental shoe, K, within the air-tight chamber, A, in the manner described and for the purposes specified.

I claim cleaning grain through a tube or case at the point, K, by means of tube or case, C and K, and blast fan, D, or their equivalent, as set forth.

ADDITIONAL IMPROVEMENTS.

Norman Cowles and Abijah Hulbert, of Edgefield, S. C., for an Improvement in Spring Back Carriage Seats. Patented Oct. 11, 1859:

We claim the upright spring blades, c c, supporting the lazy-back, B, the arm rest springs, D D, when arranged and combined substantially in the manner and for the purposes set forth.

EXTENSIONS.

Solyman Merrick, of Springfield, Mass., for an Improvement in Feeders for Screw Machines. Patented March 7, 1846; re-issued May 7, 1850:

I claim, first, The method, substantially as described, of arranging screw blanks, &c., by the motion of oppositely inclined beveled or curved surfaces with sufficient space between them to receive freely the shanks of the blanks whilst they hang suspended by their heads, the said motion of such surfaces being in the direction of the space between them, substantially as described.

Second, Making one of the said inclined beveled or curved surfaces in two parts, one above the other, substantially in the manner and for the purpose specified.

Third, Combining with the said oppositely inclined beveled or curved surfaces, a fence or guard plate placed across from the one towards the other, and over the space in which the blanks are suspended, substantially in the manner and for the purpose specified.

Fourth, In combining with oppositely inclined beveled or curved surfaces revolving arms, wings or heaters, substantially in the manner and for the purpose specified.

Fifth, In combining with the said oppositely inclined beveled or curved surfaces a checking and delivering apparatus, substantially in the manner and for the purpose specified.

Ezra Ripley, of Troy, N. Y., for an Improvement in Tea Kettles. Patented March 14, 1846:

I claim making the spout of teakettles at its junction with the body to extend from the bulge of the body to within a short distance of the top, whereby, in molding, the spout can be formed by means of a green instead of a dry sand core, as described.

Notes & Queries

J. M. R., of Ohio.—The oil springs are probably the result of the decomposition of vegetable substances by the action of the internal heat of the earth. It is not likely that any of them are absolutely inexhaustable, and their extent will no doubt vary like that of coal beds and other geological deposits.

F. J. H., of D. C.—We saw the boiler and engine of Mr. Frost, while he was alive, in Brooklyn, and witnessed several experiments with his "stame." This is what is now commonly called superheated steam and it is being somewhat extensively applied in England.

W. G. C. W., of Mass.—Your case is slowly progressing.

D. R, K., of Conn.—The rock formation of which you speak is by no means of an unusual extent. The whole peninsula of Sweden and Norway is now slowly rising, and the process has been going on for centuries.

W. T. G., of Conn.—The shining substance which you send us is "mica," one of the three constituents of granite. Your stone walls are no doubt full of it, but you have not a placer notwithstanding.

M. A. S., of Ill.—You can gain no power by a siphon. If you have a fall of one foot, and turn over its siphon which has one leg four feet long, and the other five, the power obtained by the fall of the water through four feet of the longer leg is just expended in drawing the water up through the shorter leg.

J. F., of Md.—If the twist of trees is more apt to turn in a direction corresponding with the course of the sun, it is certainly a very curious fact. Suppose you make a memorandum of the next hundred trees that you split, and see in how many the twist is with the sun.

R. H., of Pa.—You have probably noticed that the statement of a correspondent, that coal tar would keep the curculio off from trees, has been already contradicted.

L. K., of N. Y.—The general rule used for cutting the depth of wheel teeth is to allow .65 of the pitch for the depth. If the space is one inch between two teeth, the depth should be .65 of an inch.

J. C. H., of Tenn.—There is no work in print specially devoted to steam engines and power presses. Catechu is very good for putting into steam boilers to remove incrustations. Slippery elm bark would suit your purpose better than any other substance for the boiler.

A. C. Jr., of Texas.—If you will send us some of the California beer seed we will examine it, and give you our opinion of it.

P. S., of Md.—We like to answer all questions addressed to us, if we can, but really we have not the space to spare for replies to all of yours. They would fill our whole paper. We think that Appleton's Cyclopædia is just the thing for the great mass of intelligent families in this country.

M. & J. H. B. & Co., of N. H.—We hope soon to have a full report of the experiments with turbine wheels at Philadelphia, which we shall lose no time in laying before our readers.

J. A. W., of N. Y.—The breaking weight of different kinds of wood has been found by experiment to be as follows: the sticks, one inch square, extended horizontally with the weight suspended at the end, one foot from the support: oak, 240 lbs.; chestnut, 170; yellow pine; 150; white pine, 135; ash, 175; hickory, 270.

H. L. R., of Texas.—The spinning wheel, for spinning wool by hand, was in universal use by the last generation, and they are very common now in many parts of the country. We presume you can get them made in Texas. The placing of oyster shells in steam boilers to prevent incrustations has been repeatedly suggested.

W. M., of N. Y.—Very manifestly the statement should be: "Water changing into ice converts 140° of latent into sensible heat."

C. H. A., of Mass.—If you mix fine plumbago with india-rubber, you will obtain an article which will have a smooth and hard surface, if a sufficient quantity of it is used. Chalk makes a hard white compound when mixed with india-rubber.

J. S., of N. Y.—The process of rectifying naphtha by distillation is public property—free to you and all. The instructions given on page 350 of our last volume, for purifying coal oil, are suitable to your case, and may be followed with profit.

C. L. C., of Conn.—We believe that a solution of the sulphate of copper (blue vitriol) is better for preserving timber than a mixture of the sulphate of iron (copperas) and copper.

F. F., of Kansas.—You can only obtain works published by order of Congress by applying for them to some of the members. We do not know where you can get "astronomical telescopes at the lowest price." The best telescopes in our observatories have been made to order in Germany.

S. K., of Conn.—A small quantity of the nitrate of silver dissolved in ammonia, and added to your stencil ink, will render it indelible; but it should be kept in a blue-colored dish, or it will be decomposed before it is applied by the action of white light.

D. A. W., of Vt.—The best composition to put on iron gearing as a lubricator when it is exposed to water, to prevent wearing out, is one pound of tallow to the quart of sperm oil, and one ounce of fine plumbago carefully stirred in when the tallow and oil are warm. Oak is the most durable timber for the sills of mills. If you char the surface of the wood by burning it slightly, it will endure much longer, either above or below water. An application of hot pitch to the surface of such wood also renders it more durable.

J. P. A., of Ohio.—A good lacquer is made by coloring lac-varnish with turmeric and annato. Add as much of these two coloring substances to the varnish as will give it the proper color; then squeeze the varnish through a cotton cloth, when it forms lacquer. You can obtain bronze powders in any store where artists' materials are sold. With any proper varnish, you can bronze lamps with such colored bronze powders as may suit your taste.

G. B., of N. Y.—Perhaps the reason of our misunderstanding you is to be found in the peculiar manner in which you use the word "ponderable." As ordinarily understood, carbon is just as ponderable when floating in the air as when concentrated in woody fiber or charcoal. The position of yours which we pronounced unsound, was that vegetable life converts imponderable into ponderable substances.

T. S. P., of Ill.—The experiment has been tried of melting quartz to extract the gold. One trader in this city was induded to purchase the secret of a flux, and to fit out quite an expedition to California to put it in practice. After he got there, he was surprised to find how great a heat was required to melt the quartz; and the first intelligent man that he fell in with told him that no doubt the flux which he was keeping so private was potash. The plan takes too much fuel to be profitable.

E. T. Q., of N. H.—Certainly our answers are open to criticism. Of course, writing for so many readers and making a business of it, we use every means in our power to make our statements correct, but none but a perfect ass will pretend to be infallible. If we make a false assertion we are more anxious than any one else can be to have it promptly and unequivocally corrected, and we thank you for calling our attention to the answers which you speak of. The one in regard to the mirror was made in reference to our understanding of the question, which you will find fully explained elsewhere. In regard to the velocities of falling bodies: Suppose that there were but two bodies in the universe—the earth and a pebble the size of an egg—and that they were 95,000,000 of miles apart in a state of rest when the force of gravitation commenced its action upon them, they would fall toward each other, meeting at their common center of gravity (Newton's Principia, law iii., cor. 4). Now, suppose again but two bodies—the earth and the sun—meeting also at their common center of gravity. Would not the pebble move with greater velocity than the sun?

J. H. M., of N. Y.—Numerous correspondents have entirely settled the question in regard to cracks in frozen mud. They run in all directions, and "Medicus" was in error.

G. E. S., of Mass.—The plan of forcing up water into an elevated reservoir and then using the head to throw the water over buildings in case of fire, has been long in use. The city of Worcester has such a water supply, though we believe the reservoir is supplied by natural sources from the hills and requires no power to raise it.

J. C. W., of Ohio.—Water colors are used for colcring maps. They are applied with a brush, and when done in large establishments, generally through stencil plates.

E. H. C., of Mass.—A horse will draw a larger load up hill if the wheels of the wagon run on iron rails than if they run on a good hard road.

Money Received

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, March 17, 1860:—

A. W., of Conn., $20; F. Y. C., of Ga., $30; E. T. W., of Ind., $30. I. C., of Iowa, $30; H. N. & J. C. B., of Conn., $25; S. F. J., of Ind., $30; T. & W., of N. Y., $25; J. M., Jr., of Ill., $30; B. & McC., of Iowa, $30; I. R. S., of Va., $30; G. T., of U. C., $25; E. P. G., of Iowa, $28; G. D., of Ill., $30; D. S. H., of Mich., $10; J. & S., of R. I., $30; G. E. H., of N. Y., $30; W. F. J., of Ala., $100; W. A. B., of Texas, $30; S. R. G., of N. Y., $20; A. H., of Conn., $30; E. C. K., of N. Y., $25; J. T. F., of Ky., $25; S. & P., of Mich., $30; C. E. H., of Mass., $25; S. & S., of Vt., $30; W. G., of Ohio, $25; W. J. J., of Ala., $30; J. B. J., of N. Y., $30; J. O. C., of Conn., $25; W. H. S., of Conn., $35; A. S., of N. J., $20; S. & M., of N. Y., $25; T. B. L., of Mich., $30; J. W., of Iowa, $60; G. A. N., of N. Y., $150; F. F., of N. Y., $25; A. & W., of N. Y., $25; H. & W., of Ohio, $10; H. S., of R. I., $25; W. F., of Mich., $25; S. L. A., of N. Y., $30; C. M. D., of Conn., $30; J. S., of N. Y., $25; E. B., of Conn., $58; N. H. H., of Wis., $25; H. & P., of N. Y., $150; O. Z. P., of N. Y., $25; G. M., of Conn., $25; F. F. S., of Ill., $12; L. H., of N. Y., $30; H. Van S. & Co., of N. Y., $58; J. H. I., of Ill., $30; H. G. S., of Iowa, $25; B. & L., of N. Y., $25; J. B., of Del., $25; G. & B., of Conn., $20; B. S., of Va., $25; J. H., Jr., of N. J., $25; O. Z. P., of Conn., $30; W. P. F., of Conn., $30; J. J., of Ill., $30; G. W., of Pa., $30; T. H. G., of Wis., $25; F. G. & E. A. F., of Ill., $30; W. W. H., of N. Y., $30; F. B. L., of N. Y., $25; J. M., of Ill., $25; W. S., of N. Y., $30; H. B., of N. Y., $30; E. H. B., of N. Y., $25; J. H. L., of N. Y., $25.

Specifications, drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, March 17, 1860:—

F. Y. C., of Ga.; G. M., of Conn.; J. O. C., of Conn.; M. E. T., of N. Y.; B. S., of Va.; J. L., of N. J.; T. H. G., of Wis.; W. F., of Mich.; F. B. L., of N. Y.; J. E. A., of Tenn.; J. M., of Ill.; N. H. H., of Wis.; C. E. H., of Mass.; J. H., Jr., of N. J.; G. M., of Conn.; W. G., of Ohio; H. G. S., of Iowa; B. & L., of N. Y.; S. & M., of N. Y.; T. & W., of N. Y.; J. M., of Ill.; E. P. G., of Iowa; K. C. K., of N. Y.; E. B., of Conn.; E. H. B., of N. Y.; J. T. F., of Ky.; S. & S., of Vt.; H. N. & J. C. B., of Conn.; M. A. H., Jr., of Ill.; W. H. S., of Conn.; J. B., of Del.; T. B. L., of Mich.; H. S. of R. I.; H. A. J., of Mo.; A. & W., of N. Y.; D. S. H., of Ill.; J. H. L., of N. Y.; W. M. B., of Ind.; O. Z. P., of Conn.

HINTS TO OUR READERS.

To New Subscribers.—Back numbers to commence the volume.—As most subscribers to this paper desire the back numbers to render their volumes complete for binding, we shall continue to send the back numbers to January 1st (the commencement of Vol. II, new series), unless the person ordering the paper instructs us to the contrary, at the time of making the remittance. Should the person sending for the paper desire his subscription to commence at the time he makes his remittance, or at any other period, he can be accommodated, as we are constantly re-printing back numbers from our electrotype plates, and can supply as many of any number as may be desired, up to a million of copies; in fact we have printed over 70,000 copies of a single number—such has been the demand for back numbers.

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