The Wild Silk Worms of India, made use of in Manufacturing the Material for Clothing Worn by the Middle and Lower Classes.

We have before us a fragment of the silken cloth woven from the threads of one of the *Tussah*, or wild silk worms of India, sent us by Dr. Eights, of Albany. He says:—

I send you samples from three distinct species, which are to be found in all the western forests, extending from Ramghur to Midnapore; the cocoons of each are collected in the month of September.

The first of these (which, in the language of the country, is termed the *Mooga*) is the most common and plentiful; the thread is coarse in its texture, but can be wound with the greatest facility. The cocoons are obtained directly from the trees of the forest, and are sold in an unprepared state to the purchasers. The caterpillars are to be found freely feeding upon the leaves of the ashan, saul and sejah trees, being frequently placed on their branches when found elsewhere for that purpose. These larvæ commence spinning their cocoons about the middle of the month, and complete the process near its close; they are then collected, and placed in boiling water to destroy the grub.

The *Teerah* is the second species. It furnishes a much smaller cocoon, and is supposed by many to be the male of the former. The thread is represented as being much finer in texture, but not so easily reeled.

The third is the *Bonbunda*, the largest of the wild silkworms in the country, and from which the present specimen of silk cloth was obtained. This is the species that bears so close an alliance to the *Saturnia cecropia* of this country, spoken of in a former article. In its wild state, the cocoon is of much larger size than any of the cultivated species. In some seasons, it is to be found in considerable quantities; but it is generally scarce. This is supposed to be owing to the depredations of many of the feathered races, who esteem them highly as an article of food.

These three species, belonging to the same genus, are termed by the natives, the "rainy weather" varieties; but there are others peculiar to the dry months, which, by way of distinction, are called the *Dabbo* and the *Buggoy*.

The former of these yields a fine thread and an excellent cocoon. The chrysalis begins to eat its way through the pod from the 8th of June to the termination of the month, and spins its mantle from the middle to the end of August.

The *Buggoy* is of a light drab color, giving out a fine thread, and very soft; so much so as almost to equal in value the cocoon of the mulberry silk-spinning moth, particularly those reared in the vicinity of Singhboom. It approaches so near to the pure silk that the weavers are said to mix it frequently with the real, in the proportion of one thread to three, at their manufactories. The seed is procured in August and September; spinning begins in the middle and is completed by the end of November.

There is another inferior species gathered in December, called the *Yarroy*. It is a small cocoon, and difficult to wind; the thread, also, being exceedingly harsh. The seed is procured in the month of October, and the caterpillars spin their cocoons from the 15th to the close of December. It is held in less estimation than any of the other species. The natives, in preparing the silk for use, boil the cocoon in an alkali until it shells off, and the threads appear to separate.

Paraffine Oils for Lubrication and Cartridges.

In the patent of James Young—the first one obtained for the manufacture of coal oils—he calls such coal products "paraffine oils." Perhaps this is really the best name which can be applied to the heavy oils so obtained, as they contain a great quantity of paraffine. This peculiar substance is derived from the refined coal oils, by freezing them with ice, then submitting them to severe pressure in bags. The paraffine is thus obtained in cakes, and, when bleached, is a most beautiful white substance, resembling spermaciti.

Paraffine is almost unalterable in its character in contact with the atmosphere; hence it is perhaps the best substance which can be used to protect the surfaces of polished steel and iron. Paraffine oils may be retained in contact with polished iron without causing it to tarnish. In the machines employed at Woolwich, Eng., for making bullets for Enfield rifles, by compression, out of solid bars of lead, paraffine oil is exclusively used for lubrication of the dies, because it produces no chemical action upon the lead.

A patent has lately been taken out in England for the use of paraffine as a lubricating agent for army cartridges. The inventor states that the heat of the ignited powder completely volatilizes the paraffine, and it leaves no residue in the barrel of the rifle.

CAPT. DEGROOT, who sold the *Reliance* and *Resolute* steamboats to the government, is about building two large steamers which he intends to cover with steel plates four inches in thickness, to render the vessels shellproof. So says the *Herald*, of the 9th inst.

A PUBLIC trial of chain cables lately took place at Tipton, England, at the chain-works of H. P. Parks. Four sizes of links were proved; the smallest ½-inch, the second ⅝, third ¾, and one-inch. The first broke with a pressure of 8 tuns 10 cwt.; the second with 17 tuns; the third, 28 tuns; the fourth, 32 tuns.

ISSUED FROM THE UNITED STATES PATENT OFFICE

FOR THE WEEK ENDING JULY 2, 1861.

Reported Officially for the Scientific American.

*** Pamphlets giving full particulars of the mode of applying for patents, under the new law which went into force March 4, 1861, 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.

1,668.—Bernard Ackerman, of New York City, for an Improvement in Lithographic Power Presses:

I claim, first, The manner of setting the tympan frame, N, and tympan, N′, gripers, U′, &c., in motion, without interrupting the motion of the gears, K, and therefore leaving them continually geared with the racks, I, substantially as described.

Second, The manner of operating the scraper, Q′, by means of the cam, ●, attached to the revolving tympan frame, N, or part thereof, which cam is connected to the scraper box, P, by means of a dove-tailed pin and roller, set in motion by said cam, ●, or its equivalent, the whole as described.

Third, I claim the method of fastening the scraper, Q′, in the scraper-box, P, by means of the vice-shaped pieces, Q.

Fourth, The manner of adjusting the bed, G, receiving the stone, H, by means of the double wedge, F′, moved by a screw, so that by turning the screw forward or backward, the bed, G, is raised or lowered. The same arrangement also used for regulating the pressure.

Fifth, The manner of carrying the sheet of paper off, after the gripers, U, have let loose, by means of the rollers, r s, the arms, q, and cam, T, attached to the tympan frame, N, or part thereof, and operating substantially as described.

Sixth, The disposition of the double ink-fountain, two cylinders and four rollers rolling the stone, the whole disposed in reference to cylinder, L, as shown and described.

Seventh, The manner of operating the carriage, F, by means of the two internal racks, E, and guides, E′, the whole as described.

Eighth, The manner of operating the fly by means of the inclined slotted lever, V, the roller, u, the connecting pieces, x and y, substantially as described.

Ninth, I claim the position of the damping roller, 8, behind the cylinder in order to get a better damping of the stone, such rolling over the stone both ways, whereas, being in front of the cylinder, L, it can roll but once over stone.

1,669.—Augustus Adams, of Sandwich, Ill., for an Improved Horse-Power:

I claim the attachment of each of the driving levers to the opposite sides of the crown of the driving wheel, in the manner described and for the purpose specified.

And I also claim the shifting shaft, n, when used for transmitting the motion of either of two or more revolving shafts, substantially as and for purpose described.

1,670.—Walter Aiken, of Franklin, N. H., for an Improvement in Knitting Machines:

I claim, in knitting machines, the vibrating frame, E, with its system of gearing and friction pulleys, for alternately operating and releasing the take-up rollers, substantially as above described.

I also claim operating the belt-shifting apparatus, by means of the vibration of the take-up frame, E, through the action of the adjustable pin or screw, e, on the latch, a, and its connections, substantially as described.

1,671.—Charles H. Alsop, of Middletown, Conn., for an Improved Chuck for Boring Fire-Arm Cylinders.

I claim the cylindrical clamp, E, with its flexible jaws, k, conical external portion, i i, and internally conical ring, F, the lever, H; and stirrup-screw, J, or their equivalent, and the rigid central pin, K, the whole combined and applied in connection with the eccentric plate, C, of the lathe chuck, substantially as and for the purpose specified.

1,672.—N. Aubin, of Albany, N. Y., for an Improvement in Dry Gas Holders:

I claim a dry gas holder composed of a lower and rigid vessel, and an upper flexible vessel, attached each to the other, and constructed and operating substantially in the manner described, by the combined action of the pressure of the gas and that of a disk, or weight, and this I claim, irrespective of the precise method of attaching the edge of one vessel to the edge of the other.

1,673.—Jerome and Gilbert Bacon, of Medina, Wis., for an Improved Washing Machine:

I claim the arrangement of the self-adjusting sliding journal boxes, D, in combination with the crank-shaft, C, pounders, A A, and tub, B, constructed and operating in the manner and for the purpose shown and described.

1,674.—Charles Bentz, of Mindenville, N. Y., for an Improvement in Whiffle-Tree Hooks:

I claim the arrangement of the spring, H, cockeye, G, lever, F, and bed-piece, B, when they are attached to the whiffle-tree, A, and made to operate in the manner and for the purposes within described.

1,675.—Charles N. Brock, of Philadelphia, Pa., for an Improvement in Apparatus for Revivifying Bone-Black:

I claim the combination of the perforated receiving vessel, A, and diaphragm or screen, E, with the supply pipe or vessel, D, the air-pipe, B, and fan, C, substantially in the manner and for the purpose shown and described.

[The ordinary process of revivifying bone-black used in sugar refining, consists in burning and washing. By burning, a large portion of the impurities are driven off, in the form of gas, but a considerable quantity, (lime, caramel, &c.,) though separated, remains distributed in the state of fine dust, over and among the grains of the black, and can be but very imperfectly extracted by washing. Washing has sometimes been performed before burning, but this fails to extract much of the impurity. This invention consists in extracting the impurities remaining after burning, by causing the black, in the dry condition in which it leaves the kiln, to fall through an upward current of air, produced by a fan, stack draft, air-pump or other suitable agency.]

1,676.—Charles Busher, of Philadelphia, Pa., for an Improved Machine for Loading Coal, &c.:

I claim, first, The arrangement of an elevator, B, and conveyer, D, with a circular moving conveyer, H, substantially in the manner and for the purpose described.

Second, I claim the arrangement of the conveyer, H, capable of turning at one end around a center, and supporting the other end upon a circular railway, in the manner and for the purpose herein described.

1,677.—Thomas Castor, of Philadelphia, Pa., for an Improvement in opening Railroad Car Doors:

I claim the combination of the lever, C, upon the front of the car, and the double sliding doors, B B, when connected by a suitable combination of levers to open and close the doors substantially as herein described.

1,678.—Frank Colligon, of Buffalo, N. Y., for an Improved Steam Boiler:

I claim the arrangement of a supplemental flue boiler within the large flue space of an ordinary steam boiler and connecting the two boilers together in such a manner that the flame and heat from the fire shall first pass through the flues of, and around the supplemental boiler and be then returned under the outer boiler to near its front end, and thence returned over the sides of the outer boiler to the chimney, and so that the water and steam may freely pass from one boiler to the other, for the purposes and substantially as described.

Second, I also claim connecting the supplemental boiler to the outer boiler by means of the pipes, G H I, in the manner and for the purposes substantially set forth.

1,679.—William F. Converse, of Harrison, Ohio, for an Improved Bed Bottom:

I claim, first, Forming a tight, elastic cord or wire bottom for beds, chairs, lounges, &c., by forcing and securing the cord or wire into a series of alternate deflections, by means of the open link, D, substantially as described.

Second, I claim the pin, Fig. 2, and strips, a a′ b b′, constructed and attached substantially as and for the purpose stated.

1,680.—D. A. Danforth and Wm. A. Wilkinson, of Elkhart, Ind., for an Improvement in Stump Extractors:

We claim the arrangement of the lever, L, and braces, P P, in connection with cog-wheels, J, movable check, or bite, B, and hook, C, all being arranged and secured, as set forth in this application and described in the drawings.

1,681.—J. A. de Brame, of New York City, for an Improvement in Fire-Arms:

I claim, first, The construction of any portion of the length of the barrel of a piece of ordnance or fire-arm, of skeleton form, substantially as specified.

Second, The combination in a piece of ordinance, or fire-arm, with a movable chambered breech, of a chamber or chambers of ordinary construction—that is to say, without openings in the sides, and a stationary barrel of skeleton form, substantially as specified.

[See engraving on page 285, Vol. 4, new series.]

1,682.—Frank Dibben, of New York City, for an Improvement in the Method of Amalgamating Ores of the Precious Metals:

I claim the process of amalgamating a precious metal contained in a finely divided matrix by depositing or "throwing down" mercury thereon from a soluable salt of mercury by local electro-chemical action induced between the precious metal and particles of zinc or other suitable material distributed throughout the mass to serve as a positive pole or a node, substantially as and for the purpose set forth.

1,683.—Andrew Foster, of New York City, for an Improved Bedstead:

I claim a bedstead constructed as shown, in combination with the S-shaped springs and slats, the whole arranged and operated as and for the purpose set forth.

1,684.—J. S. Foster, of Vallicita, Cal., for an Improved Machine for Felling Trees:

I claim the carriage, C, carrying the cutter, G, and the pulleys, E e, for operating this cutter in combination with the weight, b, frame, C, and clamps, h h, all arranged and operating substantially as and for the purposes specified.

[This invention relates to a novel machine for felling trees, and cutting the trees up into logs. It consists in a rotary cutter, sliding weighted carriage or frame, and a driving wheel for operating said cutter, the whole being combined with and mounted on a portable frame or table furnished with suitable clamps for securing it to the trunk of a tree.]

1,685.—John Gault, of Boston, Mass., for Improved Projectiles for Ordnance:

I claim, first, The combination of the hinged movable sections, A A, and the chamber, b, to contain a charge of powder within said sections, substantially as and for the purpose set forth.

Second, The soft-metal band, D, fitted to a groove, e e, in the said hinged movable sections, A A, and serving the two purposes of confining the said sections and a packing-ring, substantially as herein specified.

Third, The combination with the movable sections, A A, of the breeching, E, applied substantially as and for the purpose herein specified.

Fourth, The construction of the movable sections, A A, with chambers, G G, connected with the central chamber, b, by vents, j j, substantially as and for the purpose described.

1,686.—Andrew Hartupee, of Pittsburg, Pa., for an Improvement in Valve Gear of Steam Engines:

I claim the use of lifters for puppet valves of steam engines so constructed and arranged in relation to the shaft on which they are placed and by which they are operated, as that their extremities shall be in the line of an arc of a circle, the tangential point of which, where it intersects said shaft, shall pass within the circumference of the shaft, and either through its axis or near thereto, for the purpose hereinbefore set forth.

1,687.—J. C. Henderson, of Albany, N. Y., for an Improvement in Stoves:

I claim, first, The arrangement of the ovens, i and k, and flues, n n, and p, and damper, l, in the manner and for the purposes specified.

Second, I claim the arrangement of the deflector, r, and plates, t t, in combination with the flues, p and n n, for directing the draft as it passes around the oven, k, so as to equalize the heat, as set forth.

Third, I claim the arrangement of the grate, g, front-plate, x, and register, 5 4, in the manner and for the purpose specified.

1,688.—David Hinkle, of New Pittsburg, Ohio, for an Improvement in Clover Harvesters:

I claim, first, The employment of the packing attachment, F, arranged and operated in conjunction with reel, B, substantially as and for the purpose set forth.

Second, The arrangement of the packing attachment, F, in combination with guides, d d, reel, B, knife, a, and lever, G, when all shall be constructed and operated in the manner and for the purpose specified.

1,689.—G. C. Howard, of Philadelphia, Pa., for an Improvementin Machines for Perforating Paper:

I claim, first, The reciprocating crosshead, H, its adjustable plates, I and I′, with their punches, in combination with the adjustable perforated stripper plates, J and J′, and the adjustable plates, M and M′, the whole constructed and arranged substantially as set forth, for the purpose specified.

Second, In combination with the vertically reciprocating punches, I claim the endless apron, R, and endless carrying bands, d2 and e, arranged and operating substantially as and for the purpose set forth.

Third, I claim registering the sheet prior to being submitted to the action of the punches, by means of the printed matter on the sheet, with the aid of any convenient number of registering arms, 9 10 and 11, or their equivalents, as described.

Fourth, The lever, w, hung to the frame of the machine, in combination with the arm, x, on the driving shaft, and the notched strap bar, t, for the purpose specified.

Fifth, The arm, 4, the weighted dog, 5, or its equivalent, and the adjustable arm, 3, or its equivalent, in combination with the feed wheel, 6, the whole being arranged and operating substantially as and for the purpose set forth.

1,690.—Wm. S. Hudson, of Paterson, N. J., for an Improvement in Manufacturing Tube Sheets for Boilers:

I claim the described method of producing a rolled metal sheet, one part of which is uniformly of one thickness, and another part of which is uniformly of another and different thickness; that is to say, first rolling the entire sheet to the thickness required for the thick portion, and afterward rolling two sheets with the portions required to be thinner, superposed one upon the other, substantially as set forth.

1,691.—John Hutchison, of Matteawan, N. Y., for an Improved Boat:

I claim a boat, A, made of splints, a, of hickory or other suitable wood, connected and woven together in the manner of ordinary basket work, and strengthened by a keel, b and longitudinal central strip, c, and by a gunwale, e, and covered over with india-rubber cloth or other watertight material, all in the manner shown and described.

[This invention consists in a boat made of splints of wood woven together or connected in the manner of ordinary basket work, and covered with india-rubber cloth or any other suitable material impregnable to water, thereby rendering the boat exceedingly light and buoyant, and sufficiently strong to carry a comparatively heavy load; while, at the same time, the sides of the boat are of such a nature that they are not liable to be stove in by coming in contact with another vessel.]

1,692.—T. A. Jebb and Abner Cutler, of Buffalo, N. Y., for an Improved Skate:

We claim, first, The combination of the spring, I, with the skate, the

said spring and skate being so constructed and used that the said spring shall be placed back of the leg, and be connected to the leg and heel of the skate for the purposes and substantially as set forth.

Second, We claim a heel support, c', made longitudinally adjustable on the skate runner, in combination with the metallic stirrup, H, for the purposes and substantially as described.

1,693.—T. A. Jebb, of Buffalo, N. Y., for an Improved Churn:

I claim the described arrangement of the water tubes, A A, air tube, B, and dash blades, G G G, within the churn tub, so that a space may be left between the said tubes and the sides of the churn tub, and so that the lower dash blade shall revolve under the lower ends of said tubes, while the other dash blades shall revolve in the space between said tubes, as set forth.

1,694.—Nathaniel Johnson, of New York City, for an Improved Camp Stool:

I claim the use or employment of the central ball, B, in combination with the legs, A A A, and seat, C, when the same shall be constructed and operated as specified, for the purpose specified.

1,695.—A. W. P. Ladd, of San Francisco, Cal., for an Improvement in Faucets:

I claim the combination of a faucet and auger, B, with a horn or projection, C, when arranged in relation to each other as and for the purpose described.

1,696.—J. E. Layton, of Pittsburgh, Pa., for an Improvement in Fire Places:

I claim the arrangement, in the construction of open fire places, of a fire basket placed in front of the throat of the flue, a back wall sloping backward from the top of the fire basket to the back of the throat, and the throat also sloping backward, as described.

1,697.—John Lippincott, of Pittsburgh, Pa., for an Improvement in the Manufacture of Shovels and Spades:

I claim making shovels or spades with an exterior coating of tin, as a new article of manufacture.

1,698.—James McIntire, of New York City, for an Improvement in Bomb Shells:

I claim the employment of two or more shells, a b c, kept apart by the projections, 1 and 2, in the manner specified, and forming a bomb, for the purposes and as set forth.

1,699.—G. A. Meacham, of New York City, for an Improvement in Buttons:

I claim, first, A button composed of the face plate, A, partially open back, B, revolving flexible eye, M, and the part, E, or its equivalent, for supporting and retaining M, constructed and operating together substantially as and for the purpose set forth.

Second, I also claim in buttons, substantially of the character described, the use of the guard, e, upon the ring, E, for the purpose of preventing the abrasive action of B upon M, as specified.

1,700.—Joshua Merrill, of Boston, Mass., for an Improvement in the Distillation of Hydro-carbon Oils:

I claim the described mode substantially of using caustic alkali, by aid of a pan, as set forth.

1,701.—Joshua Merrill, of Boston, Mass., for an Improvement in the Manufacture of Hydro-carbon Oils:

I claim the described improvement in the process of purifying hydro-carbon oils, by treating the first distillate with acid residues, substantially as described.

1,702.—Joshua Merrill, of Boston, Mass, for an Improvement in the Construction of Stills:

I claim the formed seamless wrought iron still bottom, substantially as described, and substantially for the purposes set forth.

I also claim the still as a whole, consisting of a cast iron top, wrought iron sides, and wrought iron seamless bottom, combined together by angle iron couplings, substantially as described, for the purpose of making a comparatively light and durable hydro-carbon oil still.

1,703.—Wm. K. Miller, of Canton, Ohio, for an Improvement in Harvesters:

I claim, first, In combination with the main frame, A, and the hinged frame, J J, the third frame, M, hinged to the hinged frame, J, so that each may have motion independent of the other, substantially as described.

Second, I also claim the hinged plate, Z, serving as a common support to the reel post, V, and to the pulley, 8, substantially as represented.

Third, I also claim the construction and arrangement of the reel, W, reel support, V, swinging on the pin, v, and driving belt, 7, geared back to or near the hinge of the said reel support, and thence to the pulley, 9, on the main frame, for the purpose of allowing the reel to accommodate itself to the rising and falling of the platform, and still keep the belt taut, as described and represented.

1,704.—Orson Morgan, of Henry, Ill., for an Improved Horse-collar Block:

I claim the construction of a horse-collar block in parts arranged in the manner described, that they may be expanded uniformly and retain the same relative proportions of length and breadth and shape, to suit the various sizes of collars.

Second, The sliding carriage, H, constructed substantially as described, with the spurs, h, for clamping the ends or points of the collar, and the lever, K, by which the rope, k k, is tightened into the hames groove.

1,705.—Francis Nichols, of New London, Conn., for an Improvement in Soda Water Apparatuses:

I claim, first, Combining the draft tube casing, B, with the cooler, C, which cools the pipe from the fountain, by means of a system of pipes by which the said casing is caused to form a portion of a siphon, substantially as and for the purpose specified.

Second, Combining the casing, J, which surrounds the sirup vessels, with the cooler, C, by means of a system of pipes, by which the said casing is made to form a portion of a siphon, substantially as specified.

Third, Combining the casings, B and J, with each other and with the cooler, C, by a system of pipes which makes both of said casings constitute portions of the same siphon, substantially as and for the purpose specified.

[This invention consists in so combining the casing of the draft tube with the cooler, by means of suitable pipes, that the said casing is made to constitute a portion of a siphon through which the waste ice water from the cooler is caused to circulate for the purpose of keeping the draft tube cool. It also consists in so constructing a casing surrounding the sirup vessels, and so combining the same with the cooler by means of pipes, as to make the said casing form a portion of a siphon by which the ice water is caused to be drawn from the cooler, the latter siphon being the same by which the ice water is drawn through the casing of the draft tube, or a separate one.]

1,706.—H. L. Paddock, of Pontiac, Mich., for an Improvement in Felling Guides for Sewing Machines:

I claim a felling guide composed of a scroll, D, and two straight edges, d and f, combined and arranged relatively to each other substantially as described.

[This invention consists in a peculiar combination and arrangement of a straight edge and taper scroll for turning the edge of the cloth to form the fell and folding the fell in a line parallel with the seam, as the cloth is moved forward toward the needle by the feed instrument; also, in the peculiar arrangement, in connection with such straight edge and scroll, of a second straight edge for keeping the edge of the fell in its place, and for guiding it close to the needle while being sewed. This felling guide may be attached to the stationary arm of the sewing machine, to the presser, or to an ordinary gage, as may be most convenient, according to the form or construction of the machine.]

1,707.—M. M. Parrish, of Pleasantville, N. Y., for an Improvement in Machines for Cutting Stone:

I claim the employment of the vibrating weighted serrated curved cutter, T, constructed as described, in combination with an adjustable weighted table, for the purpose and substantially as set forth.

1,708.—Wm. Patton, of Towanda, Pa., for an Improved Shutter and Door Fastener:

I claim the arrangement, as described, of semi-circular band, A, with notches in its periphery to receive the catch, B, at the end of the bent lever, C, attached to the window or door.

I also claim the above arrangement with receptacle, D, for the purpose as specified.

1,709.—J. S. Rand, of North Providence, R. I., for an Improvement in Water Elevators:

I claim the combination of the bucket, A, constructed as described, with the arms, C, trough, B, bar, F, latches, H, shaft, K, and arm, m, in the manner and for the purpose set forth.

1,710.—T. S. and T. W. Rappelye, of Farmer, N. Y., for an Improvment in Plows:

We claim the combination of the two, A D, when arranged substantially as shown, to wit: the share or plow, D, having its foot or standard, C, secured to the bar or beam, B, by means of the lip, d, and the screw, e, passing through the slot, f, into the bar or beam, B, and the front end of the bar or beam, B, attached to the back part of the beam, a, of plow, A, by means of the screw, c, and lips, b b, for the purpose specified.

[This invention relates to a new and improved combination of a surface and subsoil plow, in which it is designed to have the subsoil portion comprised of an attachment so arranged that it may be readily applied to any plow, and detached therefrom with facility.]

1,711.—E. C. Williams, of Jersey City, N. J., assignor to James Flanagan, of New York City, for a Tent:

I claim the waterproof cloth or canvas of the form shown and described, in combination with the jointed cross props, foot prop, cords and pegs, arranged to form a portable tent or covering for troops, substantially as specified.

[See engraving on page 360, Vol. IV.]

1,712.—J. W. Redding, of Belleville, Ohio, for an Improvement in Pumps:

I claim the cylinders, B B, flaring at top and united at bottom by curve, C, into which flows the induction pipe or cylinder, e; also, the confluent pipes, E E, air chamber, H, and discharge pipe, I, all combined and arranged as described, when operated by means of the fulcrum, M, piston rods, N N, pitman, P, crank, O, and wheel, R.

1,713.—G. M. Rhoades, of Hamilton, N. Y., for an Improvement in Butter-workers:

I claim, first, The particular form of compresser, A, made by four narrow angular strips attached to a square shaft, as set forth.

Second, The combination of the car, c, with the compresser, A, and tray, M, by means of the track, E, and upper and lower friction rollers, H H and j j, arranged substantially as set forth.

Third, The mode of connecting and disconnecting the car and tray, by means of a movable portion of the track or way, as set forth.

1,714.—T. M. Richardson, of Searsport, Maine, for a Baggage Director:

I claim the baggage director, substantially as described, and for the purposes specified.

1,715.—G. W. Robinson, of Somerville, Mass., for an Improved Steering Apparatus:

I claim the combination of the screen shaft, E, nut, L, connecting rod, K, arm, H, and pivot box, F, on the rudder head, the whole arranged to operate substantially as described, for the purpose set forth.

1,716.—Caleb Russell, of Pittsburgh, Pa., for an Apparatus for Destroying Insects, Reptiles, &c.:

I claim the adjustable valve, H, to cut off or graduate the supply of offensive material, in combination with the vessel, J, and bellows, A, the whole being constructed and arranged to operate substantially as described, for the purposes set forth.

1,717.—John Russell, of Troy, N. Y., for an Improvement in Lamps:

I claim, in combination with the wick tubes and wick of lamps, the water reservoir, B, tube and wick, b, or its equivalent device, for producing and introducing the vapor of water, or of any similar fluid, in or in contact with the lamp flame, substantially in the manner and for the purposes as described and shown.

1,718.—Wm. G. Schmidlin and J. W. Driscoll, New York City, for an Improvement in Reflectors for Lamps:

I claim the curved sections of glass applied within the curved metallic reflector in the manner and for the purposes specified.

1,719.—H. H. Seeley and P. Griswold, of Hudson, Mich., for an Improvement in Grain Separators:

We claim, first, The oscillating trough, d, the spring, c, and the screen, e, arranged and operating in the manner and for the purpose set forth.

Second, The arrangement of the shaker, a, springs, b b, adjustable bottom, f, hinged bottom, g, and spring, h, in the manner and for the purpose specified.

Third, The arrangement of the screen, i, the rod, j, the shoe, H, and the rocker, k, the same being connected and operating as and for the purpose set forth.

1,720.—T. J. Southard, of Richmond, Maine, for an Improvement in Pumps:

I claim the combination of the weighted fly wheel, the slotted pendulum, crank pin, M, and lever, H, operating two or more pumps, when arranged substantially as set forth.

1,721.—S. Z. Shores, of Towanda, Pa., for an Improvement in Hand Corn Planters:

I claim the combination of vibrating tongue, C, as described, with the rocking seed-dropping portion, G, arm, h, rod, i, arranged in the relation to swell, g, of side, B, and operating in harmony with the tongue, C, as described and shown.

[The nature of this invention consists in constructing the seed case with three sides, movable and with a vibrating opener at the bottom of the stationary side of the case, which is operated by depressing the movable portion of the case, and in combining with that portion of the seed case which is movable a seed-dropping device, which is connected with the stationary portion of the seed case by means of jointed arms, the whole being so arranged that the desired number of grains of corn will be planted each time the lower end of the machine is pressed into the earth.]

1,722.—T. F. Strong, of Fond du Lac, Wis., for an Improved Apparatus for Heating and Ventilating Railroad Cars:

I claim the combination of the hood with its inclined surface, and automatic valve, with the inlet pipe, hot-air chamber, distributing pipe and registers, when the several parts are constructed and arranged to operate in the manner and for the purpose set forth.

1,723.—C. W. Strout, of Calais, Maine, for an Improved Machine for Mortising Blind Slats:

I claim, first, The arrangement of the bar, ●, slotted plates, P P, bar, Q, and adjustable stop, h, with the eccentric, i, or its equivalent, for the purpose specified.

Second, The bar, R, with rack bar, U, attached and fitted on bar, O, in connection with the spring catch, V, in bar, O, when the bar, R, and rack bar, U, are used in connection with the bar, ●, and arranged to operate conjointly therewith, for the purpose specified.

Third, The combination of the treadle, H, straps, W W, bar, G, lever, F, and strap, f, substantially as shown, for the purpose of operating simultaneously the bar, ●, and mandrel, C, as described.

[This invention relates to a machine for cutting oblique mortises in the stiles of window blinds, for the purpose of receiving the slats. The object of the invention is to obtain a machine which will perform the desired work very expeditiously and perfectly, and by an extremely simple manipulation of parts—the mortises being spaced at proper and equal distances apart and with a greater or less degree of obliquity as may be required.]

1,724.—E. A. Tuttle, of Brooklyn, N. Y., for an Improved Fire Place Register:

I claim, as a new article of manufacture, the summer piece made ready for use by the arrangement and combination of the reserve pieces, b b, with the ornamental border, A, adjustable at points beyond the register opening, all substantially in the manner set forth.

1,725.—A. J. Vantuyl, of Hector, N. Y., for an Improvement in Grain Separators.

I claim an improved separator, for thrashing machines, consisting of the adjustable cylindrical rotating screen, G, combined and arranged with the fan, H, and carriers, D and E, substantially in the manner and for the purpose shown and described.

1,726.—W. L. Washburn, of Springfield, Mass., for an Improved Ventilator:

I claim the combination of the flanged shelf, C D, and hinged valve, F, with the window, A B, the whole being constructed and arranged in the manner and for the purpose shown and explained.

1,727.—S. A. Willett, of Philadelphia, Pa., for an Improved Heater and Boiler:

I claim the hollow fire pot, C, when combined with the inner casing, B, and outer casing, A, and with the boiler, H, and its inlet and outlet pipes, by means of the pipes, L and M, as and for the purpose set forth.

1,728.—Wm. Youdan and D. Thomas, of West Elizabeth, Pa., for an Improvement in Coal Railroads:

We claim so constructing the inclined plane of coal railroads as that the grade at one end, near the coal pits, shall be very steep, while the grade of the remaining portion of the road is but slightly inclined, and continuing the rope to which the cars are attached over both the steep and the more level portions of the road, for the purpose of gaining power, by the descent of loaded cars on the steep grade, to carry forward other loaded cars down that portion of the road which is not sufficiently inclined to cause them to descend by their own unaided gravity, as well as to draw up the empty cars on the other track, substantially as described.

Also, the use of a clasp constructed as described, of the hinged strips, t t, and slide, v, for the purpose of attaching the cars to the endless rope.

1,729.—McClintock Young, Jr., of Frederick, Md., for an Improved Gearing for Driving Machinery:

I claim a bevel pinion constructed of tapering wires set in suitable heads, to form the teeth or cogs, substantially as and for the purpose set forth.

1,730.—Edward Behr (assignor to himself and H. C. Mangels), of Brooklyn, N. Y, for an Improved Skate:

I claim the employment of the detachable slotted screw studs when made and applied as set forth and for the purpose specified.

[This invention relates to a novel means for securing the skate iron to the wooden stock of the skate, and at the same time giving a firm lateral bearing for the stock, so that it will not be liable to split longitudinally in consequence of the straining and concussions incident to the use of skates.

1,731.—L. J. Johnson (assignor to himself and James E. Owens), of Philadelphia, Pa., for an Improvement in Match Holders:

I claim the match holder, B, with elliptic sheet spring clamps, c c, for retaining the matches in place, and compelling them to "rub" against a center plate, d, with emery or sand-paper, or their equivalents attached thereon, for the purpose of causing ignition to the match when withdrawn from the same, the whole being arranged within and connected to the box or case, A, in a manner substantially as and for the purposes specified.

1,732.—Wm. A. Kirby, of Buffalo, N. Y., assignor to himself and D. M. Osborne, of Auburn, N. Y., for an Improvement in Harvesting Machines:

I claim, first, in combination with an automatic rake in a reaping machine a hinged reaching post and two connecting rods, operated from one and the same crank, for the purpose of giving said rake its motions, substantially as described.

I also claim hinging and supporting the rake post on the main frame, and inclining it backward, so that the rake will be out of the way of the falling grain when at rest, and be raised high enough as it moves towards the outside divider, to avoid the falling grain, and drop beyond the stalks on the platform preparatory to sweeping them off, substantially as described.

I also claim, in combination with a rake post on the main frame and the rake driving shaft supported at one end on a supplemental frame, the two frames having motions independent of each other, the universal joint, k, in the rake shaft, for the purpose of preventing cramping in the gearing, substantially as described.

I also claim, in combination with an automatic rake, the lever, trigger, and clutch arm, substantially as described, so that the driver at his seat may stop or set the rake in motion at his will, or set the trigger so that it will stop it after making one revolution or operation, as described.

I also claim placing or making a guard or shield rigid upon a supplemental frame or plate to which the driving wheel is attached, and passing it under and partially around the gearing attached to said wheel, to protect it from injury or from being clogged, substantially as described.

1,733.—T. J. Mayall, of Roxbury, Mass., assignor to Cyrus Wakefield, of South Reading, Mass., for an Improvement in the Mode of Cutting Ratan into Strands:

I claim the method described of first dividing the surface of ratan into longitudinal sections by cutting the stick or cane to a requisite depth and then separating said sections from the core, to form strands for caning chairs and other purposes.

1,734.—James Poole (assignor to himself and Jas. Ingram), of New York City, for an Improvement in Gas Burners:

I claim the deflecting button, b, wire gauze, c e, and disk, d, applied in the gas burner in the manner and for the purposes specified.

1,735.—Jacob Reighard, of Birmingham, Pa., assignor to Hale, Atterbury & Co., of Pittsburgh, Pa., for an Improvement in Glass Lamps:

I claim a new article of manufacture produced in the manner described, to wit, a glass lamp which has two distinct openings, a b, in its top, one in the center for the introduction of the wick into the lamp, and the other at one side of the center, for filling in the oil or other burning fluid, substantially as and for the purposes set forth.

RE-ISSUES.

99.—Nath. Cope and Wm. Hodgson, of Cincinnati, Ohio, for an Improvement in Butterfly Valves. Patented May 10, 1859:

We claim making the opening or openings controlled by the governor, valves of steam engines of gradually increasing capacity from the closed to the open position, when the valve and case are constructed and arranged to operate substantially in the manner herein specified.

Second, Controlling the excess of motion imparted to the governor valves by means of the adjustment represented and described.

100.—Jeremiah Stever, of Bristol, Conn., for an Improvement in Machines for Burnishing Metals. Patented May 1, 1855:

I claim the combination of these three things, viz., a tool proper for burnishing metals and caused to traverse mechanically, a rest or support for the article to be burnished, and a contrivance for holding the tool and article to be burnished, in working contact by a yielding or spring pressure, the combination being substantially such as specified.

101.—James S. Upton, of Battle Creek, Mich., for an Improvement in Horse Power. Patented Feb. 5, 1861:

I claim, first, The employment of the center pinion, G, when provided with a flanched collar, c, which fits into a corresponding opening in the bevel wheel, I, by means of which a firm and at the same time an easily separated connection is formed between the wheels, as set forth.

Second, The combinatton of the pinion, G, with the wheels, I and L, and shaft, J, also the combination of shaft, J, with wheels, D and K, so that I may use more power and less speed, or the converse, substantially as specified.

Third, The arrangement of the shoe, e, the levers, M and N, and the connecting bar, o, when the same are constructed and used in the manner and for the purpose set forth.

102.—A. A. Hotchkiss, administrator of the estate of A. Hotchkiss, deceased, late of Sharon, Conn., for an Improved Projectile for Rifled Ordnance. Patented October 16, 1855:

I claim, first, Constructing a projectile in three parts, one of them of flexible or plastic material, in the form of a ring, interposed between the other two parts formed of a harder material, and so arranged that in the act of loading or of firing or of both, the resistance or the explosive effect of the powder acting on a larger sectional area of the part, E, than the section of the ring, C, shall cause the latter to be so expanded or distended that it shall take the impression of the grooves and be made to fit the bore of the gun, as described.

Second, The tail piece for securing the cap to the body of the shot and as a guide to the cap in its forward motion, in the manner described.