

Third, The apparatus described, consisting of air cylinders or vessels divided into compartments traversed by tubes with stoppers for securing the grappling chains and movable escape pipes or radial tubes for the escape of the water, together with valves capable of being worked by chains or ropes and other appliances, as described.

Fourth, The combination of air vessels and chains or ropes, with windlasses or other lifting machinery, in manner described, for the purpose of grappling and raising sunken vessels or other submerged bodies, by such combined apparatus as described.

35,173.—C. E. Rankin, of New York City, for Album Case: I claim, as a new article of manufacture, the described combination of the daguerreotype cases, A, B, with the photographic leaves, D, and book cover, C, as and for the purpose shown and specified.

[This invention is a good improvement on the ordinary photographic album, and it consists in combining two ordinary daguerreotype cases with a book cover and a series of split leaves made to receive photographic or other portraits, in such a manner that an album case is obtained in which daguerreotypes or ambrotypes, as well as photographic pictures, can be preserved.]

35,174.—J. H. Redstone and A. E. Redstone, of Indianapolis, Ind., for Improvement in Valves for Steam Engines: We claim, first, The hollow valve, A, when constructed as set forth and operated in connection with the steam passages, H I, and K L.

Second, The valves, F and G, when constructed and operated as set forth.

35,175.—E. B. Requa, of Jersey City, N. J., for Improved Lamp: I claim, first, The combination of the two tubes, G J, one placed within the other, and the inner one inclosing the wick tube, E, when said tubes are provided respectively with cones or deflectors, H I, so constructed as to admit of a space, c, between them, having a narrow passage, e', to increase the rapidity of the draught and cause a quick current of air to impinge against the sides of the flame, j, substantially as and for the purpose set forth.

Second, Providing the lower end of the wick tube, E, with a cap, F, to serve as a top for the fountain, A, when said cap is used in connection with the tube, G, applied to the burner, B, the latter screwed into the jacket or case, B, and all arranged, as shown, to form a simple device to admit of the flame being supplied with a requisite quantity of air at its base, and by a current which passes around the fountain, A, to keep its contents cool, as described.

Third, Insulating the cones, H I, from their respective tubes, G J, by means of plaster of Paris, or other good non-conducting cement, for the purpose of preventing the heat being conducted down to the burner and fountain, as set forth.

Fourth, The combination of the two tubes, G J, cones, H I, wick tube, E, cap, F, burner, B, jacket or case, B, and fountain, A, all arranged as and for the purpose specified.

[This invention relates to an improved lamp of that class designed for burning coal oils without a chimney, and consists in constructing the burner of the lamp in such a manner that the flame will be supplied with a requisite amount of oxygen to insure perfect combustion and at the same time be capable of being adapted or applied to any of the lamps in general use, without heating and vaporizing the oil in the lamp to cause an explosion thereof, and without obstructing the rays of light or casting a shade around the lamp.]

35,176.—A. K. Rider, of Hydeville, Vt., for Improved Cut-off Valve: I claim, first, The cut-off valve, G, having its end or ends oblique to the direction of the movement of the main valve and applied to the latter valve in combination with a stem, F, or its equivalent, by which it is moved transversely to the main valve, and operating substantially as described, in combination with an oblique arrangement of the outer orifices of the main valve ports for the purpose set forth.

Second, Combining the stem, F, of the so constructed and applied cut-off valve, with a governor, by means of a handle or hand lever, I, dog, m, a sector plate, p, and an arm, q, substantially as and for the purpose described.

35,177.—E. Y. Robbins, of Cincinnati, Ohio, for Improvement in Ventilation: First, I claim the arrangement of the hot-air chamber, or reservoir of heat, for warming the floor and lower part of the rolls, in connection with the arrangement for the introduction at the bottom of the room of moderately warmed fresh air, which has not been in contact with the hot metallic surface either of hot water pipes or steam pipes or of a stove or furnace or any other highly-heated surface, substantially as set forth.

Second, I claim the use of the lower and outer boundary of the hot-air chamber as a large non-metallic warming surface for the purpose of warming, to a moderate degree, the fresh air before it enters the room, substantially as set forth.

Third, In case of warming the upper rooms by the waste heat of the fire in the lower story, I claim the arrangement of an inner smoke flue within the brick flue or chimney, E, Fig. 3, and the diagram, Fig. 5, for turning the current of hot air rising between this inner smoke flue of the sides of the chimney inward toward the floor of the upper room for warming it, or any equivalent device between.

Fourth, In using hot-air pipes for warming cars or rooms, I claim the making of said pipes in their different parts of different materials and of different shapes, so that their conducting and radiating power shall increase as the distance from the furnace or source of heat increases, and as the temperature of the air within them decreases; so that they shall distribute the heat as nearly uniformly as possible throughout their entire length, substantially as set forth.

35,178.—H. E. Robbins, of Hartford, Conn., for Improvement in Tobacco Cases: I claim, as a new article of manufacture, a pocket tobacco box, constructed substantially in the manner as and for the purpose as described.

35,179.—Watson Sanford, of Brooklyn, N. Y., for Improvement in Dampers: I claim the valve or register, G, when combined with the pipe collar and its flange, and applied to a stove or heater for the purposes and substantially in the manner described.

35,180.—Watson Sanford, of Brooklyn, N. Y., for Improvement in Hot-air Furnaces: I claim, first, casting the fire pot and dome or the section between the red lines, 11 and 22, or any greater section, either above the line, 11, or below the line, 22, together with the first section of smoke flues or pipes all in one piece, substantially as and for the purposes described.

Second, Forming the fire pot as well as the lower section of the dome with corrugations which shall be continuations of each other, the interior concave parts of which form the exits for the smoke or the commencement of the smoke flues, as and for the purposes set forth.

Third, Providing the furnace or heater with an enlarged dome, b, in combination with the extension of the corrugations or smoke flues, B, by means of the corrugations, F, or their equivalents down to or below the surface of the fuel charge, substantially as set forth.

Fourth, In combination with the enlarged dome and corrugations or smoke flues so located, that is, extending down to or below the surface of the fuel charge, the distribution of the smoke exits all around the body of the fire pot and near together so as to make regular corrugations for the purposes and substantially as indicated.

35,181.—Watson Sanford, of Brooklyn, N. Y., for Improvement in Stove Linings: I claim, first, The pins, b, as and for the purpose specified.

Second, The combination of the pins, b, with the corrugations, a, or cells or panels, c, d, e, substantially as and for the purpose set forth.

Third, The combination of the pins, b, and corrugations, a, with the ribs, h, in the manner and for the purpose indicated.

Fourth, When my invention is used as a guard plate or lining, I claim the exterior concave portions, f, or channels, g, for the purpose of admitting air between the said guard plate or lining and the shell of the stove or furnace, as set forth.

35,182.—John Shaefer, of Lancaster, Pa., for Improved Attachment for Bestead Rails: I claim the diagonal combination of the bevel-slotted plate, A, with the bevel-hooked plate, B, the whole being constructed and arranged and attached in the manner and for the purpose specified, substantially as set forth.

35,183.—D. C. Smith and W. P. Walling, of Adrian, Mich., for Improvement in Water Elevators and Conveyers: We claim the combination with carriage, K, of the plate, M, arranged

ed to work in joint operation with spring, T, pawl, 12, incline planes, X X, clamps, V V, and lug, 18, for the purpose set forth.

Second, We also claim, in combination with the foregoing the ball, 2, rod, 3, and cover, 4, connected together as described and for the purpose specified.

35,184.—H. J. Smith and Woodruff Jones, of Philadelphia, Pa., for Improvement in Apparatus for Testing Coal Oils and other Mixed Liquids: We claim determining the amount of volatile inflammable matter in compound liquids by means of a thermometer and a flame, the thermometer being applied to the liquid while the heat is imparted to the latter and the vapor generated by the heat being directed to the flame substantially as set forth.

35,185.—J. P. Smith, of Hummelstown, Pa., for Improvement in Corn Shellers: I claim the shifting breast beam, n, arranged and operating in combination with the shelling cylinder, d, substantially as and for the purpose specified.

I also claim the combination of the shelling bar, j, with the shelling cylinder, d, and shifting breast beam, n, substantially as set forth.

35,186.—O. W. Stearns, of Johnson, Vt., for Improvement in Wooden Tubing: I claim the tube formed by the combination and arrangement of the parts, A, A', ferrule, B, strainer, C, matching pieces, D, D', channel, E, and wire, F, F', or its equivalent, substantially as described.

35,187.—R. Van Ormer and W. J. Bell, of McAllisterville, Pa., for Improvement in Balancing Mill Stones: We claim the combination of the rods, R R', spring, S, and screw, S', in the manner and for the purpose shown and described.

35,188.—W. H. White, of Woodbury, Conn., for Improvement in Sheep Shears: I claim the described article called a sheep shears made substantially in the manner described, and consisting of a steel bow, iron handles and cutting edges, arranged and attached to each other substantially in the manner set forth.

35,189.—J. P. Walter, of Brooklyn, N. Y., for Improvement in Vacuum Tanks: I claim, first, The arrangement of one or more air pumps, B, in combination with the wheels, D D', eccentrics, j, and working beams, i, or their equivalents, and with the tank, A, constructed and operating substantially in the manner and for the purpose shown and described.

Second, The arrangement of one or more reservoirs, E, containing suitable chemicals in combination with the air pumps, B, and tank, A, substantially as and for the purpose set forth.

35,190.—Chas. Wadsworth, of New York City, for Improvement in Car Ventilators: I claim the combination of the air filtering screen, I, and air chamber, d, with the air-forcing bellows, substantially as and for the purpose shown and described.

[This invention consists in forcing or injecting into a railroad car pure air through the medium of one or more bellows and suitable pipes or pipes.]

35,191.—J. B. Winchell, of Chicago, Ill., for Improvement in Sewing Machines: I claim, first, A sewing machine organization which will interlock two threads and sew continuously in the same direction without changing the direction of feed or the character of sewing, with a single pointed hook or interlocking device, substantially as described, whether the connecting mechanism intermediate between the upper needle and the hook or interlocking device is set in motion by either a back or forward revolution of the main shaft, substantially as set forth.

Second, The combination of the specified lower spool case and the specified disks between which it is arranged, and all the remaining specified operative parts of mechanism, substantially as and for the purposes set forth.

Third, The combination of the angular slotted extension of the needle arm, slotted connecting rod, IV, main shaft, Q, rod, T, segment arm, O, of the main shaft, N, or their equivalents, substantially as and for the purposes set forth.

35,192.—G. L. Witsil, of Philadelphia, Pa., for Improved Nutmeg Grater: I claim a nutmeg grater consisting of the case, A, chamber, A', and cylinder, B, arranged and combined together, substantially in the manner described and set forth.

35,193.—J. P. Woodbury, of West Roxbury, Mass., for Improvement in Arming War Vessels: I claim, first, The employment of a gun or guns constructed and operating substantially as described, in a ship so constructed and defended with armor plates or their equivalent that the ship may approach an enemy with reasonable safety, substantially in the manner and for the purpose set forth.

Second, Combining a gun, constructed and employed in a vessel as described, with an appropriate gun carriage to support the breech; a socket and stuffing box in the side of the hull to support the muzzle, and an external port or shutter, or other device equivalent thereto, to enable the gun to be worked substantially as described.

Third, Displacing the water from the bore of the gun between the chamber and muzzle, by means of air-tight displacing case, or its equivalent, substantially as described.

35,194.—A. E. Young, of Dorchester, Mass., for Reflecting Lantern: I claim a glass lantern body as constructed, with a lateral neck and opening or socket, arranged relatively to its top and bottom necks and openings and for the reception and fixation of a reflector, substantially as specified.

35,195.—Erastus Young, of Penataquit, N. Y., for Improved Washing Machine: I claim the arrangement of the adjustable fulcrum pin, f, in combination with the hand lever, C, toggle arms, D, pressure board, B, and suds box, A, all constructed and operating as and for the purpose set forth.

[This invention consists in the arrangement of a hand lever with an adjustable fulcrum in combination with toggle arms and with an oscillating pressure board, in such a manner that by changing the position of the fulcrum of the hand lever the pressure board can be adjusted for clothes of different size and of different fabric, and that the clothes can then be subjected to any desirable pressure and the washing effected without much exertion of the operator and without the least injury to the fabric.]

35,196.—C. F. Allen (assignor to himself and C. B. Beebe and H. Taylor), of Paw Paw, Mich., for Improvement in Car Bumper and Draw-head Springs: I claim a car, bumper or draw-head spring, constructed substantially in the manner and for the purpose set forth.

35,197.—Victor Baron, of Tabasco, St. Salvador, assignor to himself and W. W. Wood, of Philadelphia, Pa., for Improvement in Concentrating and Cleaning Ores: I claim concentrating and cleansing ground or pulverized ore by causing it to pass along an agitated channel submerged in water, substantially as set forth.

35,198.—Hiram Carpenter (assignor to H. V. Gahagan), of New York City, for Improvement in Construction of Railways: I claim the combination of the pedestals with wrought-iron crosses and chairs, or their equivalents, and either with or without the addition of any elastic material, substantially in the manner described and for the purpose specified.

35,199.—H. B. Gill (assignor to Erastus Tarbox), of Ogden, N. Y., for Improvement in Machine for Packing Apples: I claim the combination of the spring hook clamps, B B, with the cross heads, A, screw, D, and follower, E, substantially as and for the purposes specified.

35,200.—C. D. Ingraham (assignor to himself and C. A. and A. Bardwell), of South Falls, Mass., for Improvement in Straw and Hay Cutters: I claim a cylinder of knives formed by having the knives arranged in sets or pairs which are shorter than the cylinder, and attached

thereto in such a manner that the knives of one set or pair will be out of line with, or in different planes from those of the other set, and used in connection with a cylinder, E, or its equivalent, substantially as and for the purpose set forth.

[This invention relates to that class of straw and hay cutters in which a cylinder of knives is employed in connection with a rotating cylinder to form a bearing for the cutting edges of the knives. The object of the invention is to obtain a machine of this class which will work or operate with the usual rapidity and cut the hay or straw much longer than those hitherto constructed, and still be self-feeding.]

35,201.—Josiah Mason, of Birmingham, England, assignor to E. C. and J. H. Pratt, of Philadelphia, Pa., for Improvement in Boxes, Cases and Carbs for Pens, &c.: I claim a box, case or card having a recess or recesses formed permanent or formed by elastic surfaces, and having suitable openings for receiving and holding a sample or samples of the articles contained in the box or in the case of a card, for holding the articles themselves, as set forth for the purpose specified.

35,202.—Joseph Moore (assignor to the Vulcan Iron Works Co.), of St. Francisco, Cal., for Improvement in Ore Crushing Mills: I claim, first, The combination of the stampers, F, grating, H, elevators, V, and screen, Y, arranged for joint operation as and for the purpose set forth.

Second, The construction of the frame of the machine, to wit, the rods, I, braced by the cross rods, J, the shrouding, M, attached to the I, to form the mortar box, and the guides, L, L, fitted on said rods, as set forth.

35,203.—I. S. Schuyler (assignor to J. J. Eckel), of New York City, for Improvement in Baling Press: I claim the two rack bars, B B', attached to the plunger or follower, N, in combination with the gears, a, a', E E', shaft, G, all arranged and applied to the box, A, to operate as and for the purpose set forth.

I also claim the fast and loose ratchet collars, e, g, placed on the shaft, C, and the collars, g, arranged with springs, i, and levers, G, substantially as shown, when said collars are used in connection with the gearing and rack bars described, as and for the purposes specified.

35,204.—E. W. Seymour, of Lisle, N. Y., for Improvement in Method of Constructing Carriages: I claim the peculiar construction and combination of the spring lengthwise, and attached behind to the axle, when combined with relieving bars behind, and both a front and rear relieving bar in front and operating in conjunction with each other, and from the center of the way, forming a reach and saving the springs from the tension of the draft.

DESIGNS.

1,572.—J. W. Bush, of New York City, for Design for Anklet.

1,573.—G. B. Owen, of New York City, for Design for a Clock Case.

1,574.—W. G. Phelps, of Newport, Del., for Design for an Arm Chair.

1,575.—Henry Terhune, of New York City, for Design for a Clock Case.

New Publications.

THE EXCHANGE. Published monthly by Sampson, Low, Son & Co., No. 47 Ludgate Hill, London, and Walter Low, No. 39 Walker street and No. 823 Broadway, New York City.

This is the initial number of what promises to be a well-conducted and useful periodical, moving in a path apart from publications devoted to a lighter literature, being a comprehensive review of commerce, manufactures and general politics. The articles in the present issue mostly to interest the American reader are on "Mexico and the Intervention," "The American Conflict," "The Resources of Canada," and "Cotton." These are all well and sensibly written. The first apply to topics more peculiarly British, but to the general commercial reader are likewise valuable.

THE INDIAN SCOUT: or, Life on the Prairie. By Gustave Aimard. Published by T. B. Peterson & Bros., Philadelphia. Sold by F. A. Brady, No. 24 Ann street, New York City. Price 50 cents, postage free.

TO OUR READERS.

Models are required to accompany applications for patents under the new law, the same as formerly, except on design patents when two good drawings are all that is required to accompany the petition, specification and oath, except the government fee.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given; but when subscribers remit their money by mail, they may consider the arrival of the first paper a bona fide acknowledgment of our reception of their funds.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and inclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of Instructions to Inventors, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.

THE CHEAPEST MODE OF INTRODUCING INVENTIONS.

INVENTORS AND CONSTRUCTORS OF NEW AND useful Contrivances or Machines, of whatever kind, can have their Inventions illustrated and described in the columns of the SCIENTIFIC AMERICAN on payment of a reasonable charge for the engraving.

No charge is made for the publication, and the cuts are furnished to the party for whom they are executed as soon as they have been used. We wish it understood, however, that no secondhand or poor engravings, such as patentees often get executed by inexperienced artists for printing circulars and handbills from, can be admitted into these pages. We also reserve the right to accept or reject such subjects as are presented for publication. And it is not our desire to receive orders for engraving and publishing any but good Inventions or Machines, and such as do not meet our approbation in this respect, we shall decline to publish.

For further particulars, address— MUNN & CO., Publishers SCIENTIFIC AMERICAN, New York City