

stone pavements amounts to from 30 to 50 per cent, enough, if only half true, to pay for laying new pavements of wood every three or four years. He sees no reason why our streets could not be made as easy for horses and vehicles as the Park avenues, if paved on the Nicolson plan.

Another praises the pavements of Buffalo which are of the "Medina Rattlesnake stone" which has been well tested there and in Chicago.

We do not know the peculiar advantages of the Buffalo pavements, although we have visited the city several times, but there can be no doubt but improvements can be made on the pavements of New York. It would probably cost much to transport the Medina stone to this city, while the material for the Nicolson pavement can be obtained at every lumber yard.

AMERICAN EXHIBITORS AT THE PARIS EXPOSITION.

The following list of the articles of American Manufacture contained in the sixth group of the American Department of the Exposition in Paris, embraces instruments and processes of common arts:

- G. J. Wardwell, Poulney, Vt.—Stone channelling and quarrying machine. R. C. E. Ganjot, Tamaqua, Penn.—A model of apparatus for breaking up coal; a model of machinery for lifting from mines. J. R. Harrington, Brooklyn, N. Y.—Self-rarifying tweek for manufacturing iron in blacksmith forges, or in any fire where a blast is used. Herman Haupt, Philadelphia, Pa.—A gang of three steam drills designed for tunneling. Philip S. Justice, Philadelphia, Pa.—Power hammer. Walker & Platt, New York.—Power hammer. E. E. Myers, Springfield, Ill.—Design for a model American farmhouse. C. H. McCormick, Chicago, Ill.—Corn-reaping machine and grass-mowing machine. R. H. Allen & Co., New York.—One combined clipper mowing and reaping machine. Walker A. Wood, Hoosick Falls, N. Y.—One self-delivering combined reaping machine. Joel A. Hall, Columbus, Ohio.—Cotton chopper, garden cultivator, and drill. A. H. Wellington, Woodstock, Vt.—Root cutter. Oscar F. Burton, New York.—On a plow made in the style of the Moline plow now in use. John G. Perry, Kingston, R. I.—One mowing machine. D. C. Coby, New York.—Flour sieve, coffee mill. Joseph W. C. Coby, New York.—One portable furrow boards for plowing sod and stubble lands; swivel plows, adapted to level lands and hillsides; expanding horse hoes with changeable teeth; Brown's hay tedder; horse hay rake; Harrington's patent sowed and cultivator combined; Howe's patent seed sower and cultivator combined; Adams' patent farming mill and grain separator; hand hoe. Emery & Co., Chicago, Ill.—One American hog tamer. H. H. Munroe & Co., Rockland, Me.—Rotary harrow. Deere & Co., Moline, Ill.—One steel plow. A. J. Fullam, Springfield, Vt.—Machine for shearing sheep and clipping horses. Morris, Tasker & Co., Philadelphia, Penn.—Hay-band machine. Hall & Spear, Pittsburg, Pa.—Iron center plow. Silas C. Herring, New York.—Billard's rotary hay tedder. Collins & Co., New York.—Steel plow. J. C. Bidwell, Pittsburg, Pa.—Comstock rotary spader, also plows. Jacob Brinkerhoff, Auburn, N. Y.—A hand Indian-corn sneller, separator, and cleaner. M. Alden & Son, Anburn, N. Y.—A horse hoe, for cultivating all kinds of hoed crops. Wheeler, Melick & Co., Albany, N. Y.—Palmer's excelsior horse pitchfork. Partridge Fork Works, New York.—Manure, spading, and hay fork, rakes, and potato diggers. L. L. Langstroth & Sons, Oxford, Ohio.—Two improved movable comb beehives. Williams, Wallace & Co., Syracuse, N. Y.—Johnson's Great Western self-raking reaper. Samuel J. Wallace, Carthage, Ill.—Grain binder, self-binding and raking harvester. John W. Free, Richmond, Ind.—Fanning mill and grain seed separator; improved shoe for grain and seed separator; improved straw cutter; grain and seed sower. Frank Fuller, New York.—Machine for husking Indian corn. John B. Seymour, Pittsburg, Pa.—Cotton planter. S. T. Bacon, Boston, Mass.—Nourse's universal plow. Silas H. Woodruff, Venice, Ill.—International shovel plow. James A. Saxton, Canton, Ohio.—Ohio reaper and mower. Gilman & Williams, Wood's Hole, Mass.—Samples of guano. John H. Noyes, Oneida, N. Y.—Specimens of animal traps, from the rat trap to the grizzly bear trap. George R. Baker, St. Louis, Mo.—Dough-kneading machine, for family use. H. H. Goodell, Antrim, N. H.—Lightning apple-parer. S. W. Palmer, Anburn, N. Y.—Combined clothes wringers, manglers, and ironers. Metropolitan Washing-Machine Company, New York.—Washing and wringing machine. D. M. Somers, Washington, D. C.—Self-acting tumbler washer. Howard Tilden, Boston, Mass.—Bou-ton flour and saucifier; self-feeding tobacco cutter. Chas. A. Harper, Rahway, N. J.—Hand flour mill. Morris Tasker & Co., Philadelphia, Pa.—Wringing machine. Winick & Co., New York.—Mechanical brush for sweeping carpets. E. K. Sargeant, Boonton, N. J.—Alarm coffee boiler. J. Ward & Co., New York.—Union washing machine; Union clothes wringing machine. Joseph Sedgwick, Painesville, Ohio.—Farm corn meal and feed grinding mill; crank hand cottage or army mill; house coffee and spice mill. Louis Elsherg, M. D., New York.—Heat-steaming and pressing machine. Howard Tilden, Boston, Mass.—Champion egg beater. John Ross, Stapleton, N. Y.—Conical Burr-stone mills with flour-dressing machines and mill apparatus. Kitting Bolt and Duster Company, Cincinnati, Ohio.—Bolt and duster machine. Geo. Purinton, Jr., New York.—Carpet sweeper. Chas. H. Hudson, New York.—Clothes washer and rinsers. Schultz & Wacker, New York.—Glass fountains for mineral waters. Joseph Dixon & Co., New York.—Plumbago or melting pots, stove-polish, and other articles of plumbago. E. A. Pond, Rutland, Vt.—One spring-power portable gas machine. Hicks Engine Company, New York.—Steam engine of 5, 15, and 60 horse-power. W. D. Andrews & Bro., New York.—Oscillating steam engines. Corliss Steam-engine Company, Providence, R. I.—One Corliss steam engine. T. R. Pickering, New York.—One stationary and one machine engine regulator. Joseph P. Pirsson, New York.—Seamless copper and brass tubes. L. H. Olmsted, Stamford, Ct.—Friction clutch pulley. Geo. Dwight, Jr., & Co., Springfield, Mass.—Steam pump. P. & F. M. Boots, Comorosville, Ind.—Rotary blower. Joseph Sheldon, New Haven, Conn.—Water-pressure regulator. Francis S. Pease, Buffalo, N. Y.—Atmospheric and hydraulic pump for mines, oil wells, and other purposes. Joseph Firmench, Buffalo, N. Y.—A variety of faucets made of hard rubber and wood. Phillips & Shaw, Boston, Mass.—Shaw's Union double-action air engine. James A. Robinson, New York.—Eriesson calorific pumping engine. 15-inch cylinder. Joel Bryant, Brooklyn, N. Y.—Bushing for ships' blocks; hand grinding mill. E. & T. Fairbanks & Co., New York.—Scales or weighing machines of various patterns; also weights of all standards. J. Crosby Judson, Rochester, N. Y.—Graduating governor for steam engine. Crosby, Butterfield & Haven, New York.—Hot-air engine one horse-power. Thos. J. Jones, New York.—Spring for steam-piston packing. Warren E. Hill, Brooklyn, N. Y.—Hill's patent grate-bars. Dr. J. H. Beidler, Lincoln, Ill.—Beidler's hydro-caloric light or steam lamp. Nat. anti-jenkins, Boston, Mass.—Valves and cocks. Howe Scale Company, Branson, Vt.—An assortment of scales. Steam Syphon Company, New York.—Steam syphon pump; model of railroad water-station pump. John B. Root, New York.—Root's trunk engine, five horse-power. J. B. Tupper, New York.—Furnace grate bars. H. C. Dart & Co., New York.—Twelve horse-power rotary steam engine steam pump. Lyon & Isaacs, New York.—Self-feeding hand and power drill for drilling holes in metals, etc. Hardy Foundry, Tappan, Boston, Mass.—Steam fire engine. C. H. Harlow, San Francisco, Cal.—Steam pump. James Cochran, New York.—Model of a method of lubricating. Wm. Sellers & Co., Philadelphia, Pa.—Planing machines, lathes, drills, slotter, boring mills, bolt-cutters, stocks (dies, taps, and tap wrenches); Giffard injectors, with self-adjusting water supply; shaking, to drive above machinery; assorted lot of finished hangers, couplings, pulleys, pillow-blocks and wall plates; also, assorted lot of pulley castings. L. H. Olmsted, Stamford, Ct.—Self-feeding ratchet drill; spring-top roller. Webster & Co., New York.—Webster's patent ordinary wrench. D. L. Harris & Co., Springfield, Mass.—One engine lathe, with improved cross feed, and Vanhorn's patent tool elevator, back gears and screw-cutting mechanism attached. Dement & Daugherty, Philadelphia, Pa.—Screw, bolt thread, and nut-tapping machine; bolt and nut-threading machine. American Tool and Machine Co., Boston, Mass.—Fox's screw-cutting lathe, with Nason's screw attachment. J. R. Brown & Sharpe, Providence, R. I.—Revolving head-screw machine for manufacturers of fire-arms, sewing machines, and other light machine work; also, a universal milling machine. A. H. Brainard, Agent, Boston, Mass.—Various sizes and styles of cast-iron vises. Bates, Hyde & Co., Bridgewater, Mass.—Power cotton gin; hand cotton gin.

- Southern Cotton-Gin Co., Bridgewater, Mass.—Saw cotton gin of 60 saws; roller cotton gin, 6-inch rolls. H. L. Emery & Son, Albany, N. Y.—American universal cotton-gin, H. L. Emery's patent; condensers, with cleaner and delivery attachment; 1 one-horse endless railway horse-power, with speed-governor attachment. Chas. A. Shaw, Bridgewater, Me.—Six spindle steps, with spindles; card-grinding machine. C. L. Goddard, New York.—One mestizo burring picker. George Crompton, Worcester, Mass.—Loom for weaving woolen fancy cassimeres. J. E. Palmer, Middletown, Ct.—Circular loom for weaving plain and twilled coverings for corsets and other tubular fabrics; circular loom to weave a double twill, with two shuttle or wett threads for hose; machine for tentering and drying wide and thin fabrics. Morris Oppen, New York.—Power loom for weaving fabric with gores or irregular surfaces, such as corsets. A. B. Prouty, Worcester, Mass.—Card-setting machine for the manufacture of card clothing for cotton and woolen machinery. Hall Manufacturing Company, Boston, Mass.—Bazon's improved twisting machine for laying up lines, cords, etc. N. B. Hooper, Newark, N. J.—Hat-finisher machine, worked by power. Bruen Manufacturing Company, New York.—An attachment for making the double loop stitch; an attachment for making the thin thread stitch for embroidery. L. H. Sewing-machine Company, New York.—Sewing machines in different styles, embracing the entirely new principle of working direct from two ordinary spools. Wheeler & Wilson, New York.—Sewing and button-hole machines of various styles, with samples of work. A. E. Howe, New York.—Sewing machines, with samples of work. Wood Sewing-machine Company, New York.—Sewing machines adapted for family and manufacturing purposes. Charles A. Shaw, Bridgewater, Me.—Foot and hand knitting machines of various styles and specimens of their work. Howe Machine Company, New York.—Sewing machines; four styles. Mos L. Wood, Boston, Mass.—Buttonhole and embroidery machines. Eisenberg Hat-blocking Machine Company, New York.—Hat stretching and blocking machine. Halligan & Shaper, New York.—Leather-sewing machines, with specimens of harness, boots, shoes, belting, etc. Continental Manufacturing Company, New York.—Crank-motion shuttle sewing machine. Joseph W. Bartlett, New York.—Sewing machines, double lock-stitch and single thread. Henry H. Reed, Philadelphia, Pa.—American buttonhole, cording, and combined sewing machines. Bartram & Fenton Manufacturing Company, Danbury, Conn.—Sewing and buttonhole machine. Florence Sewing-machine Company, New York.—Reversible feed, lock stitch sewing machine, with self-adjusting tension, making four distinct stitches. Isaac W. Lamb, Rochester, N. Y.—Family knitting machines. John J. Folsom, Weymouth, Mass.—Globe sewing machine. Thos. J. McArthur, New York.—Sewing machine. M. J. Sterling, Paris—Sewing and embroidery machines, and specimens of their work. Elliptic Hook Sewing-machine Company, New York.—Sewing machines, two styles. Chas. Houghton, Boston, Mass.—McKay sole-sewing machine. Emile Nougairt, Newark, N. J.—Hat-pounding machine. Wm. Foster & Co., Detroit, Mich.—Specimens of boot trees and lasts. John E. Ward, New York.—Double-repeating buttonhole machine. Wright & Smith, Newark, N. J.—Scroll-sawing machine. H. S. Jacobs, Portland, Oregon.—Wheel-dressing machine. C. B. Rogers & Co., Norwich, Conn.—Molding machine for planing, matching, and slitting molding; iron-frame pencil machine for making lead pencils, also adapted for sash and moldings; medium-toning machine with penholder; penholder; large foot mortising machine; large foot mortising machine; patent self-feeding saw arbor; Brooworth planing and matching machine. Fenn & Felber, St. Louis, Mo.—Zimmerman's mortising and slotting machine. Baxter D. Whitney, Winchenden, Mass.—Cylinder planing machine, two horse-power; gauge lathe, two horse-power; smoothing machine, one horse-power; Wadsworth's patent horse power, one horse power. American Saw Company, New York.—Circular saw, with Emerson's patent movable teeth. Warren P. Miller, San Francisco, Cal.—Adjustable teeth for saws. Coo, Sherman & Co., Glens Falls, N. Y.—One barrel machine. Gegeuer & Weller, New York.—Patent liberty quaternio medium job press. John E. Swadlow, Syracuse, N. Y.—Composing machine. Patrick Welch, New York.—Compositor's type case; also, a machine for dressing printers' types. Geo. B. Buell, New York.—Patent writing printing machine. Dustin F. Mellen, New York.—Screw-making machines, consisting of one heading, one threading, one shaving, and one nicking machine. Chas. B. Warren, New York.—Patent roller for printing machines. Henry Winsor, Philadelphia, Pa.—Bot and shell polishing machine. Wickersham Nail Company, Boston, Mass.—Wickersham nail machine. Henry Smith, Salem, Mass.—A method of equalizing the power of coiled springs. John Prentice, New York.—Cigar machine in operation. New York Cigar Company, New York.—Cigar wheel. Hoyle & Gillingham, Dayton, Ohio.—Self-feeding tobacco cutter. Wood Brothers, New York.—One phaeton, one buggy. Brewer Major Gen. D. H. Rucker, Chief Quartermaster's Department of Washington, D. C.—United States Government army wagon and six sets of mule harness. A. V. Bianchi & Co., Palmer, Mass.—Plough and shovel handles of bent wood. Photographs of machinery, on which the articles were made. John Scott, Ocala, Fla.—One carriage wheel. James Hall & Son, Boston, Mass.—One top buggy. Augustus Harrington, Warsaw, N. Y.—Elastic single attachment. Chas. Stalman, Natchez, Miss.—Tine lay's saddle. Chas. Williams, New York.—Ladies' and gentlemen's saddles. Geo. W. Greener, New York.—Model of an English railway carriage with Creamer's safety brake attached; model or samples of automatic ventilators; samples of perforated ventilator. B. J. La Mothe, New York.—Model of a portable house. G. Easton, United States Consul, Bristol, England.—Model and plan of a street railway and carriage. New York.—Graham's locomotive spring balance, designed to regulate and control the safety valves of the boilers of locomotive steam engines. Grant's Locomotive and Machine Company, Paterson, N. J.—Passenger locomotive engine and tender complete. Henry W. Warner, Greenfield, Mass.—Cast-iron chairs with two pieces of railroads. J. L. Booth, Rochester, N. Y.—Steel-capped rail for railroads. Star Metal Company, New York.—Star metal railway journal bearing. Thos. S. Hall, Stamford, Ct.—Electric railroad switch alarm. John Stephenson, New York.—First-class street railway car, constructed with top seats, adapted to the European mode. S. E. & C. Morse, Harrison, N. J.—A new mode of laying and raising telegraph cables. F. Warr, Philadelphia, Pa.—A chart and pamphlet representing combinations of colors arranged in geometrical order, by which the various combinations, amounting to tens of thousands, may be readily found; designed as a universal code of signals. Moses G. Farmer, Boston, Mass.—A thermo-electric battery. Paul Schultze, New York.—Model of a church. Board of Public Works, Chicago, Ill.—A drawing of the tunnel being constructed two miles under Lake Michigan. John Johnson, Saco, Me.—Model of a steam dredging machine. Isaac Gregg, Philadelphia, Pa.—A brick machine and specimens of brick. Horace H. Jay, New York.—Model of a new system of canals without locks, adapted to the passage of ships of any tonnage. Stephen Ustick, Philadelphia, Pa.—Model improved street lamp. Broughton & Moore, New York.—Instruments and apparatus for plumbers' use. B. S. Huntington, New York.—Lever blind fastener for windows. Arthur Huston, Bristol, Me.—Miter box, with scale for sawing miters. Johnson Rotary Lock Company, New York.—Locks, padlocks, door-locks, etc. Morris, Tasker & Co., Philadelphia, Pa.—Boiler flues, tubes, valves, cocks, fire plugs, heating coils, etc. Yale & Wirm Manufacturing Company, Shelburne Falls, Mass.—Various kinds of bank, safe-door, and other locks. New York Quarantine Company, New York.—Specimens of building stones. Samuel Nicolson, Boston, Mass.—Model of an improvement in wooden pavement. Wm. Webster, Rochester, N. Y.—Plans for a first-class public park; plans for the grounds of a private mansion; plans for a rural cemetery etc. James Dana, Boston, Mass.—Faced or pressed block. S. T. Bacon, Boston, Mass.—Bacon's charging locking machine. S. W. Palmer, Auburn, N. Y.—An improved adjustable bench plane. Gonges Ventilating Company, New York.—Atmospheric Ventilator. Louisville Cement Co., Louisville, Ky.—Specimens of cement. Dodas, Macenele & Urban, Cincinnati, Ohio.—Bank locks. Henry J. Newman, Andover, Mass.—Imitation of American woods, painted in oil and transparent colors on white wood plank. Charles Wells, Chicago, Ill.—Model of a swing bridge. B. D. J. Pratt, Washington, D. C.—Working model of propelling apparatus. Joseph Duffy, Paterson, N. J.—Miniature sectional model of iron-clad ships. Capt. J. M. Hudson, Brooklyn, N. Y.—Specimen of rigging for ships, having for its object the raising of the topsail yard. Wm. Van Deusen, New York.—Model of a yacht, called Fleetwing. Elisha P. Beckwith, New London, Ct.—Miniature fishing smack. Fred. E. Sicles, Oak Dale, Pa.—Working model to illustrate the effect of controlling the rudders of steam vessels by power instead of by hand. E. L. Perry, New York.—Life-saving raft for saving human life at sea. C. L. Daboll, New London, Ct.—Daboll's fog whistle or trumpet. Brown & Level, New York.—Life-saving tackle. E. W. Page, New York.—Eight pairs of one of different styles. William Oscar Reim, M.D., Springfield, Ohio.—Hydrostatic scale for ascertaining the tonnage of freight of vessels.



ISSUED FROM THE U. S. PATENT OFFICE FOR THE WEEK ENDING APRIL 16, 1867. Reported Officially for the Scientific American

Table with 2 columns: Description of patent fees and their amounts. Includes 'On filing each Caveat', 'On issuing each original Patent', etc.

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following being a schedule of fees— Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & Co., Publishers of the SCIENTIFIC AMERICAN, New York.

63,779.—MODE OF UNITING INDIA RUBBER WITH LEATHER.—Aaron C. Andrews, New Haven, Conn. I claim uniting India rubber to leather or other material by forming grooves or creases in such material into which the rubber is pressed previous to vulcanizing, as and for the purpose specified.

63,780.—SAW MILL.—Asa Bee, White Oak, West Va. First, I claim the application of the guide rollers N, or their equivalents to the straps J, substantially as and for the purpose specified. Second, I claim the V-shaped adjustable and reversible guide bars O, when constructed and applied substantially as and for the purposes set forth. Third, I claim the clearers P, which constructed and applied in the manner and for the purpose explained. Fourth, I claim the combination of the springs T T3 T5, and lever T', when constructed and operating as described to communicate motion from the saw sash to the grip iron. Fifth, I claim the spring T3, when constructed and made adjustable in the slotted lever T1, in the manner specified for the purpose of changing the feed, as described. Sixth, I claim a grip iron when constructed with adjustable gripping blocks V1 V2 substantially as and for the purpose specified. Seventh, I claim the adjustment of the blocks W1 W2 by means of the arm X, and clamp Y, as and for the purpose described.

63,781.—MOLD FOR PIPE CASTING.—Henry M. Bird, Cambridgeport, Mass. I claim the combination as well as the arrangement of two or any other suitable number of the flange finishing and core supporting blocks D, provided with masses E, of molding sand, or its equivalent with a pipe mold, A, B, and its core C, the whole being substantially as and for the purpose described.

63,782.—HARNESS BUCKLE.—George S. Caldwell, Syracuse, N. Y. I claim the combination and arrangement of the buckle as herein set forth, viz., with the toothed jaws B B, resting in the edges of the frame, and bearing upon the edges of the tug or strap by means of the pins and inclined slots I, K, or equivalent as specified.

63,783.—AXLE BOX.—Neil Campbell, (assignor to himself and William Frazier,) Brooklyn, New York. First, I claim the flanges a a' on the exterior of the pedestal in combination with the grooved and shouldered removable base plate C, substantially in the manner and for the purpose described. Second, The removable base plate constructed so as to be applied as described and also with sockets to receive a tie rod and end braces D D, substantially in the manner shown and described. Third, The combination of the brackets E', studs d d', and solid springs F, substantially in the manner and for the purpose described. Fourth, The combination of the enlarged sleeves K, with a grooved face bearing block H, having flanges I, substantially as described. Fifth, The lugs h, collar I, and pin j, in combination, as a means for securing a removable sleeve K, to the arm of a railroad car axle, substantially as herein described. Sixth, The box E, with brackets E', on its sides and the pedestal with semi-cylindrical chambers and with a cap A, so that the solid springs F, may be employed and confined in place by means of the removable base plate C, all substantially in the manner described.

63,784.—MACHINE FOR MAKING DRAIN WATER PIPES.—Chas. Collier, Charlestown, Mass. I claim a clay cylinder or receiver B, in combination with a hydraulic cylinder operating a piston or plunger D, for ejecting the clay from the receiver in the required form for a pipe or the substantially as described. I also claim connecting the head of the plunger D, with the piston E, of the hydraulic apparatus by means of a screw C, so that it may be moved toward and from the clay-cylinder by hand for the purpose specified.

63,785.—PAPER FILE.—Germond Crandell, Washington, D. C. I claim a bill and paper file made as herein described or its substantial equivalent.

63,786.—MILLSTONE FEED.—Michael DeCamp, South Bend, Ind. First, I claim the separator constructed and operating substantially in the manner herein described and applied in the relation substantially as shown and described to the millstone feeder and the eye of mill stones for the purpose set forth. Second, The construction of the mouth of the separator in the manner substantially as shown and described, so that the separator is adapted to be applied to a mill and to operate substantially as described, for the purpose set forth. Third, The arrangement of a millstone feeder and a separator in the relation to one another substantially as shown and described and for the purpose set forth. Fourth, The raised step e e', arranged on an inclined support and in relation to the inclined partition b, and the passage d, substantially as and for the purpose described.

63,787.—SASH SUPPORTER.—Herman Ehle, Utica, N. Y. I claim the employment and use of one or more rods or bars C, attached to the sash and operated substantially as described. I also claim in combination with said rods or bars C, and sash B, the nuts or disks D, and thumb screws E, the whole being attached and operated substantially in the manner described, for the purpose mentioned.

63,788.—TRESSING MACHINE.—George Eichenseer, Waterloo, Ill. I claim the combination of the screw bolts, a and a', substantially as and for the purpose set forth. Second, The combination of the shaft, e, its bearing block, e2, and sliding bar, e3, the ways, e4, with the screw bar, e5, and handle nut, e6, all acting substantially as and for the purpose set forth. Third, The combination of the pulleys, e11 and e12, for packing the driving band, D, substantially as and for the purpose set forth. Fourth, The cutter teeth, h9, for cleaning the crevices between the flanges, h5, and the feed plate, h4, as set forth. Fifth, The application of the drop guide plate, k5, as set forth. Sixth, The combination of the conduit, o3, and o4, with the door, o5, substantially as and for the purposes set forth. Seventh, The combination of a feed plate, h4, arranged for vertical adjustment, substantially as set forth. Eighth, The combination of the separators, k k1 k2, with the return feed plate, k3, shaft discharge plate, k4, and guide drop plate, k5, all with the air currents adjusted and directed by the vane, p4, substantially as set forth.

63,789.—APPARATUS FOR REFINING AND DISTILLING PETROLEUM, ETC.—John Ellis, New York City, and Edward C. Hattell, Binghamton, N. Y. First, we claim the use of steam and super heated steam for the purpose of separating and removing the more volatile from the less volatile portions of petroleum, kerosene, benzine, naphtha and turpentine, while these fluids are in a state of spray or drops, as specified. Second, The oil pipes, E, and K, and condensing tubes, D and I, when constructed and arranged in relation to each other, and a retort, as and for the purpose specified. Third, The separating tank tub, or tube, in combination with an upper and under retort, for the purpose of separating the water and earthy impurities from the oil before the latter flows into the lower retort. Fourth, The using in a retort of scraps of metal wire, wire sieves, nails, turnings, or other metallic or earthen materials, or even vegetable substances, which will either form a screen or a porous mass through which oil can trickle down so as to expose a large surface of it to the action of heat. Fifth, The using in a retort or retorts of a series of nearly or quite horizontal plates, shallow pans or shelves, which may be concave or with edges turned up, plain or convex, perforated with from one to numerous openings, or without any openings, over which oil can flow or drop, or run from point to point, in combination with the pipe, I, and coil, K, so as to expose a very large surface to the action of steam, and to form a very large evaporating surface. Sixth, The using an agitator in a circular or nearly circular retort, for the purpose of throwing the oil into a spray or drops, so as to expose every drop as far as possible to the direct action of heat, and allowing the oil or fluid being distilled to flow through the retort in a steady stream, but not to accumulate in any considerable quantity in the retort, substantially as represented in the drawings.

EXTENSION NOTICES.

Isaac Brown, Cecilton, Md., having petitioned for the extension of a patent granted to him the 19th day of July 1833, for an improvement in Mode of Driving Saws, for seven years from the expiration of said patent, which takes place on the 19th day of July, 1867, it is ordered that the said petition be heard at the Patent Office on Monday the first day of July next. Enoch Hidden, New York, N. Y., having petitioned for the extension of a patent granted to him the 21st day of June, 1858, reissued Sept. 8th, 1863, and again reissued March 15th, 1864, for an improvement in Side Light for Ships, for seven years from the expiration of said patent, which takes place on the 21st day of June, 1867, it is ordered that the said petition be heard at the Patent Office on Monday the 17th day of June next.