

their front ends upon a fixed or movable fulcrum, and connected with an offset from the lever by rods or their equivalents, for the conjoint action of the feet and hands: 4th. The combination, with a lever carrying a saw and fulcrumed in a suitable frame-work, of the seat E, mounted upon rocking standards and connected with said lever and a pair of treadles also connected with said lever and fulcrumed at their forward ends, for the conjoint action of the body and feet: 5th. The combination, with a suitable frame, of a lever carrying at its lower end a saw, a saddle mounted upon rocking standards and connected with the lever, and a pair of treadle bars fulcrumed at their forward ends upon a fixed or movable fulcrum, and connected also to the said lever, for the conjoint action of the hands, body and feet: 6th. The combination, with the lever B slotted at its lower end and provided with a cross pin, of the saw blade C and the attached bar D, tenoned and having an open slot D', leading upwardly from its lower edge, to form an easily detached connection: 7th. The combination, with the lever B, of the treadle bars connected near their middle with said lever by rods H, and connected at their ends with said lever by elbow lever K and connection L: 8th. The combination with the frame of a sawing machine, of a wedge connected to a suitable shaft or frame, and jointed to the forward end of said frame to enter the saw kerf and hold the frame in place, and open the kerf as described.

No. 10,197. Improvements on Middlings Purifiers. (*Perfectionnements aux épurateurs des graius.*)

Frederick Thompson, Wakefield, and William H. Williamson, Leeds, England, 3rd July, 1879, for 5 years.

Claim—1st. The combination of hoppers piers, provided with collecting trays or compartments, arranged concentrically tier upon tier, and so that the central compartment, or chamber, of each tier forms part of an air shaft open to each tier, and common to the entire series of tiers. 2nd. In combination with the hoppers piers with collecting trays compartments and air chamber the central spindle with its distributors constructed to admit of the passage of air (and other matters floating with the air) through said distributors. 3rd. The combination of the hoppers piers, collect air trays compartments, air chamber, central spindle, distributors and means whereby currents of air are caused to flow centrifugally, all into one central air shaft in which they combine, and between the said hoppers piers, collecting trays and said distributors, so as to pass through, and in opposition to the showers of material thrown out centrifugally by said distributors. 4th. The combination of hoppers piers, collecting trays, air chamber, central spindle and distributors with air passages through them, and with an exterior slope shaped to a parabolic or cycloidal curve or approximating thereto, down which slope material falls, and from which it is thrown by the rotating distributors into suitable showers: 5th. In combination with the hoppers piers, collecting trays, central spindle and distributors, central air shaft, a fan or exhaustor arranged on said spindle and driven thereby or thereon.

No. 10,198. Improvements in Threshing Machines. (*Perfectionnements aux machines à battre.*)

William Crozier & David F. Keagy, Woodbury, Pa., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination, with the fixed and movable sections of a concave, of the concave lever D, pivoted to the sides of the frame, the springs B, the lever B', interlurmed at C and supporting said springs, the shaft D, and cans C'. 2nd. The combination, with the perforated shakers D', hinged at their front ends, of the rock shaft E, having spaced alternating arms F, the crank F', and the vibrating levers F' rocking said shaft: 3rd. The combination, with the spurred drum of a threshing machine, of a spurred yielding concave as specified. 4th. The combination, with a threshing machine drum, of a concave having a hinge support at one end and an elastic or yielding support at the other: 5th. The combination, with the spaced vibrating perforated shakers D', of the vertically vibrating and reciprocating saws G: 6th. The combination, with the shaker strips D, and the saws of the shaft I, having the alternating eccentrics J, and a ring and connecting rod tangential to said ring, and uniting said strips and eccentrics, whereby a vertically vibrating and reciprocating motion is imparted to said strips in alternation. 7th. The combination, with the suspended shoe L, having screens K₁ K₂, of the connecting rods G, the vibrating levers F, the eccentrics H, and the rotary shaft H': 8th. The combination, with an end blowing fan, of vibrating slats journaled in the air passage, and a valve operated by suction of the fan, to open or close said slats: 9th. The combination, with a blowing fan, of a governor for regulating the air supply to said fan: 10th. In combination with a blowing fan of a threshing machine, the adjustable, deflecting board S, having upon the end of its journal a sector Z, having spaced perforations and a pin or bolt for maintaining said adjustment: 11th. In combination with the vibrating shakers and endwise reciprocating saw strips, the sectional vibrating pawl plates engaged above said saw strips.

No. 10,199. Improvements on Fruit Driers. (*Perfectionnements aux séchoirs à fruits.*)

Marcus S. Lyon, Armada, Mich., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination of the steam generator A, having flange A, hooks F, steam supply pipe H, with pipe seat G, pipe I and steam chamber C with hooks E and valve K. 2nd. The generator A, with flange A, indicator G and hooks F, in combination with drying pan B, having flange B adapted in connection with flange A, for reception of packing, to render the joints steam tight: 3rd. The steam chamber C, having the adjustable supports C' pivoted thereto, and pipe I and pipe seat G, for supporting the detachable steam chamber C, with drying pan B and valve K.

No. 10,200. Improvements on Fire Escapes. (*Perfectionnements aux sauteurs d'incendie.*)

Joseph R. Winters, Chambersburgh, Penn., and Vernor C. Murray, New York, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination of the nuts and jam nuts K K₁, swivelled screws L, bevel gear wheels N O, shaft P, crank wheel Q, cross bar M, and slotted upright bars J, with frame A and with cross bar I, to which the end of one of the bottom sections of the ladder B is pivoted. 2nd. The combination of the two swivelled screws D, the two pairs of bevel gear wheels E F,

shaft G and crank wheels H, with frame A and with sliding cross bar C, to which the end of one of the bottom sections of the ladder B is pivoted. 3rd. The combination of the cross pipe R provided with a coupling S at each end, and two lines of hose T, passing up at the opposite sides of the ladder B and crossing each other, and passing from side to side of the said ladder B at the middle rounds of the ladder sections, with the said ladder B and with the frame A: 4th. The combination of the frame Z provided with the pulley Z' at its lower corners, and the hooks Z' at its upper corners, with the ropes or chains Y, attached to the drum V and to the cage A₁, for connecting the said cage A₁ with the ladder B detachably.

No. 10,201. Improvements on Mailing Machines. (*Perfectionnements aux machines à timbrer.*)

Samuel P. Pantton, of Milton, and Alfred F. Holmes, Napanee, O., 9th July, 1879, for 5 years.

Claim—1st. A galley or other suitable form for holding type having an intermittent motion imparted to it, in combination with a stamp having a reciprocating motion: 2nd. A spindle D, connected to eccentric E by the pitman N, in combination with the strap J, pawl K, spring P and the rack L.

No. 10,202. Improvements on Blast Furnaces. (*Perfectionnements aux fourneaux à fusion.*)

John F. Bennett, Pittsburgh, Penn., U. S., 9th July, 1879, for 5 years.

Claim—1st. Constructing a blast smelting furnace composed interiorly of two frustums of cones, placed base to base or end to end, and having first, its greatest area in cross section not greater than four times, nor less than equal to the area of the base. second, the area of the throat not less than equal to, and not more than twice the area of the base, and third, the lower frustum being not less than one fourth, and not greater than one-half the height of the upper frustum. 2nd. Constructing a blast furnace, composed interiorly of two frustums of cones, placed top to top, and having first, its base area not greater than four times, nor less than equal to its lesser area in cross section. second, the area of the throat not less than equal to, and not more than twice the area of the base, and third, the lower frustum being not less than one fourth, and not greater than one half the height of the upper frustum. 3rd. In combination with a blast furnace having an interior form of an inverted cone frustum, or of a cylinder, or of a cone frustum, the tuyeres A projecting into the interior. 4th. The use of tuyeres A, arranged so that a circle drawn through their nozzles shall divide the horizontal plane of the furnace at that level into two equal, or nearly equal parts, in combination with a furnace having its greatest area in cross section not greater than four times, nor less than equal to the area of the base. 5th. The use of tuyeres A, arranged as described, in combination with a blast smelting furnace having its greatest area in cross section not greater than four times, nor less than equal to the area of the base, the area of the throat being not less than equal to, and not more than twice greater than that of the base, and the cone or bell equal to one-half the area of the throat: 6th. The combination, in a blast smelting furnace, of a throat having an area equal to, or not more than twice the area of the base, and a charging hole or bell of about one half the area of throat.

No. 10,203. Improvements on Devices for Transmitting Motion. (*Perfectionnements aux appareils de transmission du mouvement.*)

Stephen Dennis, Bogota, D.C., U. S., 9th July, 1879, for 15 years.

Claim—1st. The frame A supporting the shafts a, b, c, pulleys B and C, clutch D, grooved rollers E E and cord, rope or chain F: 2nd. A device in which an endless cord, rope or chain is coiled one or more times around both driving and driven pulleys, and held in place by grooved rollers fixed in contact with it: 3rd. The combination of pulleys B C and cord, rope or chain F, with the grooved rollers E E, revolving in the same plane with the pulleys.

No. 10,204. Improvements in Piston Packing. (*Perfectionnements aux garnitures des pistons.*)

Samuel A. Youse, Sutter Creek, Cal., U. S., 9th July, 1879, for 5 years.

Claim—In an expandable piston packing, the body C provided with grooves J H, connecting ports I and flange D, in combination with the split rings G G E, head A and follower E, each provided with ports K.

No. 10,205. Car-Coupler. (*Attelage de wagons.*)

John W. Whitbey & Benjamin Morton (Assignees of John J. Lapping), Toronto, Ont., 9th July, 1879, (Extension of Patent No. 3,634), for 5 years.

No. 10,206. Improvements on Fishing Poles. (*Perfectionnements aux perches de pêche.*)

David J. Moore, Gananoque, O., 9th July, 1879, for 5 years.

Claim—An adjustable hook A and spring C combined together

No. 10,207. Improvements on Combined Plasters and Pads. (*Perfectionnements aux emplâtres plâtrés.*)

Robert M. Kennedy, Pittsburgh, Penn., U. S., 9th July, 1879, for 5 years.

Claim—A combined plaster and pad united for application to the human body.

No. 10,208. Improvements on Hand Trucks. (*Perfectionnements aux camions à bras.*)

Moses Johnson, Lockport, N. Y., U. S., 9th July, 1879, for 5 years.

Claim—1st. The combination of the expandable jaws A₁ A₁, shields C C and axle A₂. 2nd. The sectional axle A₂ with guides d d₁, in combination with expandable jaws A₁ A₁: 3rd. The expandable jaws A₁ A₁ with shields C C, for