

concave and cylinder. 14th. The combination of the concave, the screws E with their springs and adjusting nuts, and the screws F passing axially through the first named screws. 15th. The combination, with the sliding blocks c having bearings for the journals of a grinding agent, of the adjusting screws F threaded through said block and bearing against the block, in which the converse grinder is mounted, to determine the minimum of distance between the two grinding surfaces. 16th. The combination, with the sliding block c having bearings for the journals of the grinding agent, of the adjusting screws E and the adjusting screws F passing axially through the latter and threaded into and through the sliding blocks to bear against the pillow blocks of the converse grinder. 17th. The combination of the screws for determining the maximum of retreat of the concave, the sliding blocks, the concave journaled therein, the lever extending rearwardly from the concave and the adjusting screw working in the lever, and taking into a swivel block upon the frame. 18th. The combination of the screws for determining the maximum of retreat of the concave, the springs upon such screws, the sliding blocks, the concave journaled therein, the lever extending rearwardly from the concave and the adjusting screws working in the lever and taking into a swivel block upon the frame. 19th. The combination of the screws for determining the minimum of approach of such concave, the sliding blocks, the concave journaled therein, the lever extending rearwardly from the concave and the adjusting screw working in the lever and taking into a swivel block upon the frame.

### No. 11,669. Hose Coupling. (*Manchon de boyau.*)

John Amor, Hamilton, Ont., 26th August, 1880; (Extension of Patent No. 5,135.)

### No. 11,670. Improvements on Moccasin Ties. (*Perfectionnements aux courroies des mocassins.*)

Phillipe Vincent, Jeanne Lorette, Que., 26th August, 1880; for 5 years.

*Claim.*—The heel loop and ring F in combination with a moccasin having loops or other public devices for the passing through of the string or lace.

### No. 11,671. Improvements on Salt Sowers. (*Perfectionnements aux semoirs à sel.*)

John Harrison and Caleb Caister, Woodstock, Ont., 26th August, 1880; for 5 years.

*Claim.*—The cylinder crusher C driven by the wheel D D and the pinion E, and revolving in the concave bottom of the hopper B, in combination with the adjustable aperture c.

### No. 11,672. Improvements in Machines for Grooving Pipes. (*Perfectionnements aux machines à canneler les tuyaux.*)

Garret P. Roseboom and Charles S. Trowbridge, Auburn, N. Y., U. S., 26th August, 1880; for 5 years.

*Claim.*—1st. The combination, with a cylindrical die D constructed with a peripheral screw thread and secured to a rotating shaft d which is provided with a screw thread e working in a threaded bearing f, of a circular die K rotating in the same plane with the cylindrical die and having no motion in the line of its axis, and means whereby a positive rotary motion is imparted to the circular die. 2nd. The combination, with a rotating cylindrical die constructed with a peripheral screw thread, and means whereby the cylindrical die is positively moved in line with its axis, of a circular die rotating in the same plane with the cylindrical die, and having no motion in the line of its axis, and means whereby the circular die is rotated with greater peripheral speed than the cylindrical die.

### No. 11,673. Improvements on Weather Strips. (*Perfectionnements aux bourrelets des portes.*)

George W. Bell, St. Joseph, Mo., U. S., 26th August, 1880; for 5 years.

*Claim.*—The door B and moulding a having spring c with arm d, in combination with the hinged weather strip C, and rod E connected to the moulding and weather strip, one end of the rod projecting beyond the end of the strip and moulding.

### No. 11,674. Improvements in Locks. (*Perfectionnements aux serrures.*)

Flewelling W. Taft, Montreal, Que., 26th August, 1880; for 5 years.

*Résumé.* 10. Le ressort H en combinaison avec le fermoir F ou le loquet d5 ou F1 d5 F3 F4, et les dis fermoir et loquet proc6 tant comme 6quivalents de l'un quelconque, et le dit ressort H. 20. En combinaison avec les fermoir et loquet F F1 F3 F4 et d5 d6, les clefs fixes J6 J7 et les clefs de poche J3 J4 J5 J, ou toutes autres clefs proc6tant d'icelles ou employ6es comme 6quivalent aux pr6sentes clefs. 30. En combinaison avec un couvercle de boite ou quelconque, l'angle I3 de l'armature E, chevilles e, et 6 biseau e1, troue e2 et avec ou sans contre-armature G.

### No. 11,675. Improvements in Bakers' Ovens. (*Perfectionnements aux fours de boulangeries.*)

Thomas Hunter, Toronto, Ont., 26th August, 1880; (Re-issue of Patent No. 10,702.)

*Claim.* 1st. A fire pot or furnace placed within a baker's oven, below the sole thereof, and provided with a door situated above the grate. 2nd. A fire pot or furnace placed within a baker's oven provided with a door above the level of the sole of the oven and connected to the said furnace by an inclined guide. 3rd. A flue H leading from below the grate B to the flue E. 4th. A baker's oven provided with a circular tilting grate situated below the sole of the oven and provided with a door. 5th. A cylinder grate K placed beneath the fire grate B, in combination with a flue H.

### No. 11,676. Improvements in Bolting Machines. (*Perfectionnements aux machines à bluter.*)

Charles J. Shuttleworth (co-inventor with Orville M. Morse), Springfield, Joseph D. Larabee, Ashford, George P. Kellogg, East Pike, Edward Wilhelm and John J. Bonner, Buffalo, N. Y., U. S., 28th August, 1880; for 5 years.

*Claim.*—1st. The combination of the mechanism C, whereby the material to be bolted is elevated, an inclined bolting surface D facing the descending side of the elevating mechanism, and a similar bolting surface D' facing the ascending side of the elevating mechanism. 2nd. The combination with mechanism C, whereby the material to be bolted is elevated of an inclined bolting surface D arranged to face the elevating mechanism, and divided into two independent sections arranged side by side, each section being provided with independent discharge devices for the material rolled through each section. 3rd. The combination, with an elevating mechanism C, of an inclined bolting surface D facing the elevating mechanism J, and a feed mechanism J, whereby the material to be rolled can be introduced into the machine at a greater or less distance from the head thereof. 4th. The combination, with an elevating mechanism C and an inclined bolting surface D composed of two independent sections arranged side by side, of a feed mechanism J provided with a separating screen M, whereby the coarse bran is separated and conducted to the head of the first section of the bolting surface together with the re-ground middlings, and the material passing through the screen is admitted to the machine at the head of the second section of the bolting surface. 5th. The combination, with an elevating mechanism C, of an inclined bolting surface D facing the elevating mechanism and deflecting boards O, whereby the motion of the material through the machine is regulated. 6th. The combination, with the elevating mechanism C, of the inclined bolting surface D composed of two sections arranged side by side and the spout Q receiving the material bolted through the tail portion of the head section. 7th. The combination, with the elevating mechanism C, of the inclined bolting surface D, the feed chamber H provided with a series of discharge openings in its bottom, and the conveyor J arranged on the bottom of the feed chamber H. 8th. The combination, with the elevating mechanism C and inclined bolting surface D, of the feed chamber H, screen M arranged in said chamber, the opening h which admits the tailing of the screen to the head of the machine, the conveyor J receiving the material which passes through the screen, and one or more discharge openings h4.

### No. 11,677. Improvements in Pocket Match Boxes. (*Perfectionnements aux 6tuis à allumettes.*)

Augustus B. Wood and Moses A. Rice, Hamburg, Ark., U. S., 22th August, 1880; for 10 years.

*Claim.*—1st. A match-box formed by the combination of the plates A having their forward side edges bent inward, the spring catch bar B b1, the hinged bar C and its spring D, the slide E and its foot or hook e1, the end bar F having its forward end bent outward, and the pivoted friction-block G and its spring H with each other.

### No. 11,678. Improvements on Diaphragm Pumps. (*Perfectionnements aux pompes à diaphragme.*)

Jacob Edson, Boston, Mass., U. S., 28th August, 1880; for 5 years.

*Claim.*—1st. In a diaphragm pump, the stationary supporting surface a11 having annular bars a1 a1, grooves a11 a11 and radial grooves a11 a11, and reciprocating supporting surface e1 with its radial supporting bars e1 e1, and annular ring e11 combined with a flexible diaphragm c. 2nd. The suction valve i with its tapering top i1, conic frustum i11 and chamber i11 combined with the lift valve h having conical recess h1 and inclined projections h1 h11. 3rd. In a ship's pump, the lift valve h with its upper annular recess h11. 4th. The suction valve i with its conical projection i11, provided with finger hole i11 and hook hole i1. 5th. In a diaphragm ship's pump, the piston c with its posts e1 e1 and cross head f, in combination with the lift valve h, the automatic adjustable valve stops and weight k having a slot hole k1 and guide piece k11. 6th. The moulded rubber diaphragm c adapted to fit, when at rest, the conical bearing or supporting surface a111. 7th. In combination with the cross head f and its concentric surfaces f1 f11, the lever l with its recess h1, lip l1, semicircular sleeve l11 and the skeleton bearing b11 with its tee-headed fastening bolt n. 8th. In a ship's pump, the inclined lever l with its tapering socket l11, in combination with the reversible handle m. 9th. In combination with a ship's pump, the head b with its delivery place or nose b1 provided with projections b1 b11. 10th. The combination, with the base a1 and flexible diaphragm c of a ship's pump, of the upper head piece b. 11th. In combination with the handle m, the adjustable balance weight m1 having set screws m11.

### No. 11,679. Improvements on Steam Boiler Tube Cleaners. (*Perfectionnements aux nettoyeurs des bouilleurs des chaudières à vapeur.*)

Stephen C. Taft and Fenner Darling, Franklin, Mass., U. S., 28th August, 1880; for 5 years.

*Claim.*—1st. A boiler tube cleaner adapted to be forced through the tube and provided with rotating scraper blades or cutters, actuated by jets of steam impinging thereon. 2nd. The combination, with the hollow body or casing A adapted to be secured to the end of a steam pipe and forced through the boiler tube, of the curved or inclined rotating scraper blades or cutters E pivoted to the spool I or hub D, revolving on the journal or spindle C and actuated by jets of steam issuing from passages or discharged outlets f in the body A. 3rd. The combination with the hollow body A provided with steam discharge outlets f, of the revolving spool or hub D provided with pivoted scraper blades or cutters E and auxiliary steam blades g arranged between the blades E. 4th. The combination, with the hollow body A and its rotating scraper blades or cutters E, actuated by jets of steam, of the tapering guide H composed of a series of rigid or spring arms or bars i inclined toward the axis of the implement and applied to the front end thereof. 5th. The combination, with the rotating spool or hub D, of the curved or inclined