

same time by means of intermeshing gear wheels mounted on said frames, substantially in the manner herein set forth.

### No. 29,791. Boots and Shoes. (*Chaussures.*)

Charles Lafleur, St. Henri, Que., 1st September, 1888; 5 years.

*Claim.*—1st. The blank A with meeting edges a, a, as and for the purpose set forth. 2nd. A boot having its upper formed of a single piece with seam up the vamp, all as herein described. 3rd. In a boot or shoe upper, the combination, of the blank A, strip B, toe cap C, and re-inforcing piece D, all as herein set forth.

### No. 29,792. Stove or Furnace Grate.

(*Grille de poêle ou de fourneau.*)

Charles DeZ. Howard, Syracuse, N. Y., U. S., 1st September, 1888; 5 years

*Claim.*—1st. The combination, with the ash-pit of a stove or furnace, of a spherical grate consisting of two perforated concavo-convex shells, connected together and provided with trunnions, and having a circumferential slot for the removal of cinders, substantially as specified. 2nd. The combination, with the ash-pit of a stove or furnace and the ring r, adapted to rest in bearings formed in the upper edge of the ash-pit, of the spherical grate consisting of two perforated concavo-convex shells, connected together and having a circumferential slot for the removal of cinders, one of said shells provided with trunnions adapted to rest in bearings made in the ring r, substantially as specified.

### No. 29,793. Plough. (*Charrue.*)

Peter McAnealey, Adjala, Ont., 1st September, 1888; 5 years.

*Claim.*—The coultter clearer A pivoted to the beam of a plough and operated by the line d, substantially as herein shown and described and for the purpose set forth.

### No. 29,794. Means for Preventing Nuts and Bolts from Running Loose. (*Arête-écrou.*)

Samuel Bayliss, Wolverhampton, Eng., 1st September, 1888; 5 years.

*Claim.*—1st. In screw nuts, shoulders formed between their front and back faces, and the metal in the angle of such shoulders, preferably close up to the angle, forced in so as to distort some of the threads, substantially as and for the purpose described. 2nd. In screw-nuts, shoulders formed between their front and back faces, and lumps, which have been formed in the angle of the shoulders forced into the solid metal of the nuts, or the metal of the angles of the shoulders indented, so as to distort some of the threads, substantially as and for the purpose described. 3rd. In screw-nuts, notches formed in their top or outer edges, in the bottoms or inner ends of which lumps are forced down, or indentations punctured in, to distort some of the threads, substantially as and for the purpose described.

### No. 29,795. Roofing. (*Toiture.*)

William H. Fay, Camden, N. J., U. S., 1st September, 1888; 5 years.

*Claim.*—1st. A sheet of roofing material, having its ends folded on the board or top of the roof, and secured by clips which are covered by the continuation of said roofing material, substantially as described. 2nd. A roofing sheet folded at intervals, and clips secured to the same by nails driven into the board or top of the roof, substantially as described. 3rd. A roofing sheet, folded at intervals, and clips secured to the folded or double portions, and the board or top of the roof, said clips being of angular form, substantially as described.

### No. 29,796. Circular Knitting Machine.

(*Machin à tricot circulaire.*)

Samuel P. Kitter and Joseph J. Adgate, London, Eng., 1st September, 1888; 5 years.

*Claim.*—1st. A circular knitting machine, in which the needle jacks slide up and down in one set of grooves or races, and the needle shanks slide and are supported against the tension of the fabric in corresponding grooves of less depth than the jack grooves, and in which the needle jacks are of the shape shown and are retained in their races by a guard ring, shank or otherwise secured on to the rebated lower end of the needle cylinder, and flush with the circumference thereof, substantially as shown and described. 2nd. In a circular knitting machine, in which the cam for operating the needles is made of two separate rings, as shown, the particular arrangement of screw pillar for connecting the rings and enabling the width of the cam slot to be readily adjusted, substantially as shown and described. 3rd. In a circular knitting machine, the combination, with the spring rod R, actuating the take-up motion of a spring Q, connected to the rod R, as described, so as to act in tension, and the combination, with the spring and rod so connected, of the adjustable stop r and of the adjustable bracket supporting the anti-friction roller r, whereby the tension of the spring Q is readily adjustable, and the combination, with the foregoing mechanism, of the double inclined cam S, whereby sudden action of the spring is prevented. 4th. In a circular knitting machine, guiding the journals of the cloth roller in adjustable inclined slotted guide arms, as described. 5th. In a circular knitting machine, the temple, or device for stretching the fabric, consisting of the frame with downwardly bent ends v, in combination with the pair of cross rollers u, supporting the frame in position, substantially as specified. 6th. In a woff thread circular knitting machine, wherein a woff thread is laid between the needles, whilst in their highest position, and whilst separated into front and back rows by the moving backwards of certain of the needles, the arrangement of the woff thread guide relatively to the needles, so that the woff thread shall act as a guard for the batches of the back row of needles, as de-

scribed. 7th. In a woff thread circular knitting machine, wherein certain of the needles move back automatically when raised, the combination, with the needle cylinder having grooves of such depth as to guide and support the needles, as described, of needles having shanks bent backwards (at a point which is just above the edge of the needle cylinder, when the needles are in their highest position) and fixed in jacks which slide in the grooves of the needle cylinder, and of a guard ring which prevents contact of the lower ends of the needle jacks with the cam ring, substantially as specified.

### No. 29,797. Boots and Shoes. (*Chaussures.*)

John F. Gilmour, Langdale, Scotland, 1st September, 1888; 5 years.

*Claim.*—A boot or shoe having heel pieces H, attached by screws C and nuts D, substantially as and for the purpose hereinbefore set forth.

### No. 29,798. Automatic Fire Extinguisher.

(*Extincteur automatique d'incendie.*)

The J. C. Mackey Co., (assignee of John C. Mackey), Syracuse, N. Y., U. S., 1st September, 1888; 5 years.

*Claim.*—1st. The combination, with a body having an annular valve seat at its extreme upper end, of a valve stem, a valve secured to said stem with a soft metal face which engages the seat, and rubber or other flexible material that breaks the pounding of the water or liquid, a deflector having flanges, bottom stud N, notched upon the inner edge to receive one end of spring R, spring R notched to the other end so as to fit over stud M, bottom stud M notched on the outer edge so that slot 7 in lever O will pass over stud M, and brought in contact with notch 9 of bottom stud M, thereby pressing against the outer end of spring R, the slot 8, lever O passes over stud N, a spring R, clasp L fitting over the projecting end of stud N beneath lever O, as shown in drawings, and securely soldered in position with fusible solder, substantially as shown and described. 2nd. In an automatic fire extinguisher, a valve support consisting of a spring connected to a stud projecting from the deflector, and bearing against the bottom of the valve stem, and a cross-bar compressing said spring and fusibly connected to studs projecting from the deflector, substantially as described. 3rd. In an automatic fire extinguisher, a deflector suspended from the body and provided with bottom studs, in combination with a valve stem, a spring connected to one stud, and a cross-bar bearing against the free end of the spring and fusibly connected to the studs, substantially as shown and described.

### No. 29,799. Seal Lock. (*Serrure à cachet.*)

The Sully Car Seal Lock Company, Richmond, (assignee of Robert M. Sully, Petersburg), Va., U. S., 1st September, 1888; 5 years.

*Claim.*—1st. In a seal lock for cars, the combination of a perforated lug, a locking bolt passing through said lug, and a fastening-cap hinged to the upper end of the bolt to have locking engagement with the lug when the bolt is in locking engagement with a connected seal, and flanged to cover the whole of said lug in front of the bolt, substantially as described. 2nd. In a seal lock for cars, the combination of a perforated and mortised lug having lateral shoulders rabbeted at their lower ends, a staple, a perforated and slotted lug, a locking bolt passed through said lugs and staple, and having a hook at one end, a seal adapted to engage said hook and slotted lug, and a fastening-cap hinged to the other end of the bolt, and adapted to engage the mortised and shouldered lug, and completely cover said lug in front of the bolt, substantially as described. 3rd. In a seal lock for cars, the combination of the lug 4 having perforation 5, mortise 6, shoulders 7, and rabbets 8, the bolt, and the fastening-cap 15 hinged to the head of said bolt, and provided with a recess 16 formed by flanges adapted to cover the whole of the lug in front of the bolt studs 19 to engage the shoulders 7, and a catch 17 to engage the mortise 6, substantially as described. 4th. In a seal lock for cars, the combination of the staple 2, the perforated and mortised lug 4 having shoulders 7 and rabbets 8, the perforated lug 9 having side slots 10, the locking bolt 12 having hook 13, and perforation 23, and the fastening-cap 15 hinged to the head of said bolt, and provided with catch 17 and studs 19, said cap being adapted to cover the whole of the lug 4 in front of the bolt, substantially as described.

### No. 29,800. Steam Engine. (*Machin à vapeur.*)

The Bruno Nordberg Company, (assignee of Bruno V. Nordberg), Milwaukee, Wis., U. S., 1st September, 1888; 5 years.

*Claim.*—1st. The combination, with a cut-off valve, of trip and lifting levers, a trip frame counterpoise from which the latter is suspended, a driving sleeve upon which the counterpoise slides, and elbowed levers linked to the said driving sleeve, as set forth. 2nd. The combination, with the counterpoise and driving sleeve, of elbowed governor arms, links or toggles for connecting the inner ends of said arms to lugs on the driving sleeve, and mechanisms whereby the pivots that connect the links or toggles with the driving wheel may be adjusted horizontally to regulate the sensitiveness of the governor arms, as set forth. 3rd. The combination of the rock shaft that connects the cut-off mechanism with the eccentric of the engine, a sleeve carried thereby having two crank arms, angular trip levers, lifting levers adapted for engagement with the lower ends of said trip levers, and a hanger from which the cut-off valve is suspended, adapted to engage arms of the lifting levers with a trip frame counterpoise and governor arms connected, substantially as set forth. 4th. The combination of the trip levers and their operating mechanism, the lifting arms, springs for forcing the lower ends of the latter apart, and cushioned set bolts for regulating their throw with the cut-off valve and its hanger, and a spring for closing the valve when released by the lifting arms. 5th. The combination, with the trip frame and levers, of adjustable bolts passed through the trip frame for receiving the impact of the trip levers, as set forth. 6th. The combination of trip levers, with the valve and lifting levers, the lifting levers being independent of each other and of the valve stem, as set forth. 7th. The combination of the sleeve to which the pulley is