

shown and described with respect to Figs. 7 and 8. 5th. The combination of hinged plug, stopper, valve, or cover  $g$ , link  $g$ , collar  $g$  and tube  $g$ , substantially as herein shown and described, with respect to Figs. 9, 10, 11 and 12. 6th. Forming one or more small grooves or passages in the face of the plug, stopper, valve or cover  $g$ , or in the seat for the same, in lieu of forming a small passage through the centre of the plug, stopper, valve, or cover  $g$ , or through the tube  $g$ , substantially as herein described and for the purpose stated.

**No. 19,365. Means or Apparatus employed in the Manufacture of Iron and Steel.** (*Moyen ou Appareil employé dans la Fabrication du Fer et de l'Acier.*)

Thomas Griffiths, Abergavenny, Eng., 16th May, 1884; 15 years.

*Claim.*—1st. The employment of sliding valves or covers  $g$ , formed with or without central holes  $g$ , substantially as herein shown and described and for the purpose stated. 2nd. The combination of sliding valve or cover  $g$ , axis  $g$ , lever  $g$ , chains  $J$ ,  $J$ , weights  $J$ , guide rollers  $k$  and lever  $t$ , substantially as herein shown and described and for the purpose stated. 3rd. The employment of screwed sight tubes  $h$  for viewing the tuyeres, and, when required, forcing the valves  $g$  to their seats, substantially as herein shown and described. 4th. The peculiar construction of blast chamber  $e$ , and the method of facilitating repairs and renewals of the tuyeres  $e$ , and blocks  $i$ , substantially as herein shown and described. 5th. The tuyeres  $e$ , made longer than the blocks  $i$  receiving the same, and the small lateral openings  $e$  in the tuyere near their outer ends, substantially as herein shown and described and for the purpose stated. 6th. Constructing the converter with two or more small holes  $m$  at different levels for the removal of the cinder from time to time, substantially as herein shown and described.

**No. 19,366. Means or Apparatus employed in the Manufacture of Iron and Steel.** (*Moyen ou Appareil employé dans la Fabrication du Fer et de l'Acier.*)

William J. Clapp, Montglo, and Thomas Griffiths, Abergavenny, Eng., 16th May, 1884; 15 years.

*Claim.*—1st. The combination, with each tuyere  $d$  and blast box or chamber  $e$ , of a plug or stopper  $g$ , hollow piston rod  $g$ , double piston  $g$   $g$ , double cylinder  $h$   $h$ , and blast pipes  $f$ ,  $f$ ,  $i$ ,  $i$ , substantially as herein shown and described and for the purpose stated. 2nd. The combination, with plug or stopper  $g$ , of double piston  $g$   $g$ , double cylinder  $h$   $h$  and blast pipes  $f$ ,  $f$ ,  $i$ ,  $i$ , substantially as herein shown and described and for the purpose stated.

**No. 19,367. Safety Device for Locomotive Pilots.** (*Appareil de Sécurité pour Locomotives Pilotes.*)

Oscar Rothrock, Beech Creek, Pa., U.S., 16th May, 1884; 5 years.

*Claim.*—1st. The combination, with a locomotive truck, of a vertically adjustable pilot, and means for operating the same from the cab of the engine, as set forth. 2nd. The combination of a vertically adjustable locomotive-pilot, having spaces  $u$ ,  $u$ ,  $u$ , for receiving the draw-head and bumpers, with the mechanism consisting of the links  $f$ ,  $f$ , rock-shaft  $E$ , lever  $h$  and rod  $g$ , substantially as and for the purpose set forth. 3rd. The combination, with a locomotive truck having posts  $p$ ,  $p$ , of a vertically adjustable pilot attached to said posts, and means for operating said pilot at the will of the operator, as described. 4th. The combination, with a locomotive truck having posts  $p$ ,  $p$ , at its forward end, said posts having guides  $o$ ,  $o$ , of the vertically adjustable pilot, constructed as described, and the means, substantially as herein set forth, whereby the same is operated from the cab of the engine. 5th. The combination, with a locomotive truck having suitable guides at its forward end, of a vertically adjustable pilot moving in said guides, and means for raising and lowering the same, substantially as described.

**No. 19,368. Woven Wire Seat.**

(*Siège en Toile Métallique.*)

Henry Roberts, Hartford, Ct., U.S., 17th May, 1884; 5 years.

*Claim.*—The combination, in a seat, of the top woven-wire fabric, the strands of which run across the seat, and a side woven-wire fabric, the strands of which run lengthwise of the seat, and one or more spiral springs under the top fabric, all arranged substantially as described.

**No. 19,369. Heating Water by Means of Gas.**

(*Chauffage de l'Eau par le Gaz.*)

Thomas Fletcher, Warrington, Eng., 17th May, 1884; 5 years.

*Claim.*—1st. In an apparatus for heating water by means of gas, a casing, a dash plate, a shallow tray  $a$  and an annular water vessel  $g$  surrounding the opening  $p$ , in combination with a suitable gas burner, substantially as and for the purposes described. 2nd. The within described process of heating water, or other liquids, consisting in forcing it up through a jet pipe against a dash plate, arranged within a suitable casing from which it falls downward directly through the heated products of combustion, and is gathered into an annular vessel, substantially as and for the purpose described.

**No. 19,370. Manufacture of Pottery.**

(*Fabrication de la Poterie.*)

Francois A. Magowan, Trenton, N.J., and Royal M. Bassett, Birmingham, Ct., U.S., 17th May, 1884; 5 years.

*Claim.*—1st. In combination with the moulds for pressing clay goods, a lining of sheet metal or equivalent rigid material introduced into the mould and upon which the clay is pressed, substantially as

set forth. 2nd. In combination with heated dies and mechanism for applying a pressure to such dies, the movable metallic lining that becomes heated by such dies and acts to warm and dry the clay article pressed to such movable lining, substantially as set forth. 3rd. The method, herein specified, of pressing clay goods and discharging the same from the moulds, consisting in placing a sheet metal form upon the lower die, and a thin sheet of elastic material between the clay and the upper die to prevent the adhesion of the clay to the die, and itself to become easily separated from the clay article after pressure by the dies, the sheet metal form supporting the article until it is set, substantially as set forth.

**No. 19,371. Grain Binder.** (*Lieuse à Grain.*)

A. Harris, Son & Co., Brantford, Ont. (Assignees of James Wedlake, Brantford, Ont., and Lyman M. Jones, Winnipeg, Man.), 17th May, 1884; 5 years.

*Claim.*—1st. In a grain-binding machine, tension mechanism for controlling the twine during the period that the grain is being packed, compressed and bound, located near the needle and operated by mechanism connected to the needle-shaft, substantially as and for the purpose specified. 2nd. In a grain binding machine, tension mechanism for controlling the twine during the period that the grain is being packed, compressed and bound, and operated by mechanism deriving motion from the needle-shaft, and arranged to take up the slack twine from the needle simultaneously with the application of the tension. 3rd. The tension bracket  $F$ , secured to the frame  $A$ , and having a hole  $e$  through which the twine  $E$  is threaded, and a ledge  $b$  to support the twine, in combination with the pivoted tension-arm  $G$ , actuated by the spring  $K$ , and arranged to hold the twine  $E$  against the ledge  $b$ , substantially as and for the purpose specified. 4th. The tension bracket  $F$ , formed substantially as specified, the pivoted arm  $G$ , having a projection  $d$  formed on it and actuated by the spring  $K$ , in combination with the rod  $I$ , operated by the motion of the needle-shaft, and arranged to actuate the tension arm  $G$ , substantially as and for the purpose specified. 5th. The tension-bracket  $F$ , secured to the frame  $A$ , the holes  $e$ ,  $f$  and  $h$ , through which the thread  $E$  is threaded, as specified, the pivoted arm  $G$  provided with a projection  $d$ , and arranged to rest on the ledge  $b$ , the rod  $I$ , having a looped end  $i$  through which the thread  $E$  is threaded, in combination with its pivoted arm  $K$ , one end of which is connected to the rod  $I$ , and its other end to the crank-pin  $p$ , which is attached to and works with the needle-shaft  $C$ , substantially as and for the purpose specified. 6th. In a grain-binding machine, an arm  $K$  pivoted to the frame  $B$ , having an oblong hole  $o$  formed in it through which the crank-pin  $p$  passes, which crank-pin is attached to the needle-shaft  $C$ , in combination with the rod  $I$ , supported by the pivoted arm  $K$ , and having a loop  $i$  through which the twine  $E$  is threaded, the whole being arranged and operating substantially as and for the purpose specified.

**No. 19,372. Match Splint Cutting Machine.**

(*Machine pour Tracer les Allumettes.*)

Alfred G. Jones, Rochester, N.Y., 17th May, 1884; 5 years.

*Claim.*—The combination, in a machine for cutting match splints of two feeding and cutting heads, as described, at opposite ends of the bed, of the bed of the machine and an intermediate double acting horizontal steam cylinder, having a single piston and through piston rod connected directly to the knife-heads, as set forth.

**No. 19,373. Buffer for Railway Cars.** (*Appareil de Choc pour Chars de Chemin De fer.*)

Thomas L. McKeen, Easton, Pa. U.S., 17th May, 1884; 5 years.

*Claim.*—1st. As an improvement in buffers or bumpers for railway cars, the rectangular buffer-plate  $E$  having bevelled sides  $e$ ,  $e$ , substantially as set forth. 2nd. The combination, in a buffer or bumper for railway cars, of the buffer-spring  $B$ , stem  $B$  and rectangular plate  $E$  having bevelled  $e$  and hinged or pivoted upon the outer end of the buffer-stem, substantially as and for the purpose shown and set forth.

**No. 19,374. Reciprocating Valve Oiler.**

(*Graisneur Alternatif de Soupape.*)

Samuel D. Mershon, Rahway, N.J., U.S., 17th May, 1884; 5 years.

*Claim.*—1st. An oiler, constructed substantially as herein shown and described, and consisting of the oil reservoir provided with a tube having an opening in one side, and a jointed discharge-rod having a recess in one side, and moved forward and back by a wrist-pin in the side of the ratchet-wheel, spring pawl and vibrating pendulum, or lever, as set forth. 2nd. In an oiler, the combination, with the oil reservoir  $A$ , and the tube  $B$  having side opening  $E$ , of the jointed extensible sliding rod  $G$ , having oil-receiving recess  $F$  between the main part of said rod and the shoulder, of the extensible part  $G$ , whereby the size of the recess  $F$  may be regulated, and the driving mechanism, as set forth. 3rd. In an oiler, the combination, with the jointed extensible sliding rod  $G$ , of the shaft  $J$ , the ratchet-wheel  $L$ , spring  $N$ , substantially as herein shown and described, whereby the said recessed rod will be operated at regular intervals to discharge oil, as set forth. 4th. In an oiler, the oil-discharging rod  $G$ , made, substantially as herein shown and described, in two parts halved to each other, connected adjustably by screws, and having a recess  $F$  between the end of one part and the shoulder of the other part, whereby the size of the said recess can be readily regulated, as set forth.

**No. 19,375. Fire-Escape.** (*Sauveteur d'Incendie.*)

Ezra R. Johnson, Buchanan, Mich., U.S., 17th May, 1884; 5 years.

*Claim.*—1st. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame provided with a center opening, a table sliding in said opening, the ladders connecting with the table and mechanism for operating the table, as set forth. 2nd. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame provided with a center opening, a table sliding in said opening, the ladders connecting with the table and mechanism for raising and lowering the ladders, means for adjusting the inclination of the same, and devices for tightening the ladders, as