

nation, in a burner, of a gas and air mixing tube B B, apertured at b at its inner part, and a surrounding casing A having an open outer end admitting air, and fitted adjustably at its closed inner end by a screw joint to the mixing tube beyond or outside of its apertures b, substantially as described for the purpose set forth. 7th. The combination, in a burner, of a gas and air mixing tube B B, apertured at b at its inner part, a flame-cup H held to the outer end or part of the mixing tube, a casing A fitted at its inner closed end to the mixing tube beyond or outside of its apertures b, and extending outward from the tube to form an air superheating and conducting chamber F, and extending also around the flame-cup to form an air superheating passage I, all arranged for operation, substantially as herein set forth. 8th. In a burner, the combination, with the tube B B, apertured at b and communicating with a fuel feed pipe, of a body or casing A fitted to the tube back of its aperture, and having a part a' surrounding the tube, and an upper part a of a flame-cup H held to the tube, and providing a passage I between the part a' of the body and the side walls of the cup, and a pendent wall J forming an air inlet, and heating chamber K outside the part a' of the body which surrounds the flame-cup, substantially as herein set forth. 9th. The combination, in a burner and with a fuel supply pipe forming also a gas and air mixing tube, having an air inlet at its inner part, and a body or casing fitted to the pipe behind its air inlet and surrounding the pipe to form an air superheating chamber, of a fuel feed pipe coupling to which the burner pipe is threaded, and a lock nut on the burner supply pipe at the coupling, substantially as herein set forth.

No. 33,017. Oil Cup for Lubricating Locomotive and other Engines.

(*Godet à huile pour graisser les machines locomotives et autres.*)

Edwin D. Bangs, Milwaukee, Wis., U. S., 4th December, 1889; 5 years.

Claim.—1st. In an oil cup, the combination of the cylinder with a vertical column having a channel therethrough adjacent to the wall of said cylinder, and a curved guide for directing the course of the oil to said channel. 2nd. In an oil cup, the combination of the cylinder with a vertical column having a channel therethrough adjacent to the wall of said cylinder, the top of said column being below the top of said cylinder, and a cap having a feed hopper projecting down into said cylinder below the entrance to the said channel, whereby the said channel can only receive oil when the oil is forced above said channel entrance as by the motion of said cup. 3rd. In an oil cup, the combination of the cylinder with a vertical column having a channel therethrough adjacent to the wall of said cylinder, the top of said column being below the top of said cylinder and a cap having a passage leading to said cylinder closed by a perforated plug, whereby there is always an air cushion above the oil in the cup. 4th. In an oil cup, the combination of the cylinder with a vertical column having a channel therethrough adjacent to the wall of said cylinder, an adjustable plate having an opening registering with said channel and surrounded by walls forming a funnel around said opening, said plate being adapted by change of position to more or less close said channel, and a curved guide for directing the course of the oil into said funnel. 5th. In an oil cup, the combination of the cylinder with a vertical column having a channel therethrough adjacent to the wall of said cylinder, and a curved guide for directing the course of the oil, with a cap having a central feed hopper, and a central neck rising above said feed hopper and communicating therewith, and a vent or passage between said neck and the cylinder below, and a perforated plug filling the upper part of said neck.

No. 33,018. Grain Door for Cars.

(*Porte de char à grain.*)

Edward A. Hill, Chicago, Ill., U. S., 4th December, 1889; 15 years.

Claim.—The combination of a door, pivots attached thereto, a guide-rod at each side of the doorway, and a ring encircling each of said guide-rods and said pivots at their intersection, substantially as described.

No. 33,019. Wheel of Vehicle. (*Roue de voiture.*)

James Arnott, Leeds, Eng., 4th December, 1889; 5 years.

Claim.—1st. The formation of the naves or hubs or wheels of vehicles of an elastic construction, substantially in the manner hereinbefore described. 2nd. The construction of the nave in opposite parts 3, 4, adapted to form an annular recess for internally and laterally supporting an annular elastic cushion 6, the inner projecting part 5 and the cushion 6 being correspondingly mortised for the reception and support of the inner ends of the spokes, substantially as hereinbefore described. 3rd. The construction of the nave in one piece in an ordinary manner, with peripheral recesses 10 adapted to support independent elastic cushions or seatings 6x, the nave and the said cushions being correspondingly mortised for the reception and support of the inner ends of the spokes, substantially as hereinbefore described. 4th. In combination with the nave of a wheel formed of an elastic construction, substantially as hereinbefore described, an axle-box 13 fitted with a surrounding elastic cushion 15, substantially as and for the purpose hereinbefore described.

No. 33,020. Apparatus for Filing Saws.

(*Appareil pour limer les scies.*)

Daniel G. Aber, Charleston, N. C., U. S., 4th December, 1889; 5 years.

Claim.—1st. In an apparatus for filing saws, the combination of the bar D, the books H, H, and the adjusting screws E, E, E, E, all substantially as shown. 2nd. In an apparatus for filing saws, the combination of the bar D, books H, H, H, and screws E, E, E, E, with sliding saddle m, adjusting screw I, and descending lug J,

substantially as and for the purposes set forth. 3rd. In an apparatus for filing saws, the combination of the bar D, hooks H, H, H, screws E, E, E, I, saddle m, lug J, with guide bars a, c, block B, and file F, substantially as and for the purposes represented.

No. 33,021. Shoe Vamp. (*Empeigne de chaussure.*)

Jean L. Peltier, Montreal, Que., 4th December, 1889; 5 years.

Résumé.—Un nouvel article de manufacture, une empeigne de chaussure, composée de deux portions distinctes et symétriques en elles-mêmes, dont une A est décourcée de manière à donner la courbe extrême c, les grandes courbes rentrantes p, g', d', les pointes h, h, les courbes aussi rentrantes d, m, m', g'', et l', l', l'échancrement e et l'autre B ayant la forme indiquée dans la fig. 2 des dessins, et ayant les courbes extérieures d', m', m', g'', le tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 33,022. Dynamo. (*Dynamo.*)

Elmer A. Sperry, Chicago, Ill., U. S., 4th December, 1889; 5 years.

Claim.—1st. In a dynamo-electric machine, the combination of a rotating spider, with a series of bolts projecting therefrom and secured thereto, and an armature secured on such bolts independently of the spider. 2nd. In a dynamo-electric machine, the combination of a rotating spider, with a series of bolts projecting therefrom, and secured thereto by a collar and nut on opposite sides of such spider, arms with an armature secured to such bolts independently of the spider. 3rd. In a dynamo-electric machine, the combination of a rotating spider, with a series of bolts secured thereto and projecting therefrom, and an armature secured on such bolts between a flange and a nut on each side of said bolts. 4th. In a dynamo-electric machine, the combination, of a rotating spider, with a series of bolts projecting from the arms thereof, each secured thereto by a flange and nut on opposite sides of each spider arms, with an armature secured on such bolts between a flange and a nut on each of them. 5th. In a dynamo-electric machine, the combination of a rotating spider, with an annular armature and bolts which project from and are secured to the spider, and to which in turn is secured the armature independently of the spider.

No. 33,023. Earth Boring Apparatus.

(*Appareil à percer la terre.*)

Emanuel Przibilla, Cologne on Rhine, Prussia, 4th December, 1889; 5 years.

Claim.—1st. In earth boring apparatus, the combination of head piece a, piston d', spring d, and peg e, substantially as and for the purpose described. 2nd. The combination of cylinder b, with slit e, and peg g, substantially as and for the purpose hereinbefore set forth. 3rd. In earth boring apparatus, the tube i, with slits n and l. 4th. In earth boring mechanism, the combination, with a tube having guide slits formed in it, and the boring mechanism enclosed by said tube, of pegs inserted in such boring mechanism and adapted to fit and slide in such slits, for the double purpose of turning the boring mechanism and of attaching or detaching the working parts. 5th. In earth boring apparatus, a spring adapted to increase the striking action of the boring tool. 6th. In earth boring apparatus, the tube k having extension k', as shown and for the purposes set forth. 7th. In earth boring apparatus, the combination, with the actuating crank of the overground working appliances, of a self-acting set-screw ending in a swivel and working in a rocking screw nut fixed to said crank, substantially as shown and for the purpose hereinbefore described.

No. 33,024. Contrivance for Guarding Cattle while Pasturing.

(*Appareil pour garder les bestiaux en pâturage.*)

William H. Perrin, Montague, Ont., 4th December, 1889; 5 years.

Claim.—The combination of the wire A, the rings B, B, and the rope C, C, together with the fences D, D, substantially as and for the purposes hereinbefore set forth.

No. 33,025. Mitering Machine.

(*Machine à onglet.*)

William Murphy, St. John, N. B., 4th December, 1889; 5 years.

Claim.—1st. In combination with a V-shaped knife and mechanism for reciprocating it, a gauge of similar shape arranged behind it, and adjusting devices for setting said gauge toward or from said knife to regulate the depth of cut, substantially as set forth. 2nd. In combination with a vertically reciprocating V-shaped knife, a gauge for regulating the depth of cut, a hand wheel and screw-threaded shaft for adjusting said gauge toward or from said knife at will, a carriage supporting said knife gauge and adjusting devices, and a treadle, and connections for reciprocating said carriage and the parts supported thereon, substantially as set forth. 3rd. In combination with a knife and gauge, and devices for reciprocating them, a hand wheel, and shaft for adjusting said gauge, a feed table, and an additional gauge on said table, which is fixed relatively to the motion of said knife, substantially as set forth. 4th. In combination with a reciprocating laterally inclined knife, a gauge in front of said knife having a fixed part, and a pivotal part or parts adjustable to varying degrees of inclination, for the purpose set forth. 5th. In combination with a V-shaped reciprocating knife, and a V-shaped gauge adjustable toward or from it at right angles to its line of travel, an additional gauge consisting of a fixed middle part and two wings hinged thereto, and adjusting devices for holding said wings inclined more or less, substantially as set forth. 6th. In combination with a reciprocating V-shaped knife, a gauge L consisting of a fixed middle part L and two hinged wings L', provided with rearwardly extended curved rods, fixed perforated lugs through which the said rods pass, and screws binding said rods independently, whereby either wing may be adjusted to any angle without adjusting the other, substantially as set forth.