nation of the needle operating arm, the spring actuated lever, and means for connecting the said lever and arm, substantially as described. 7th. The combination of the needle operating arm, the spring actuated lever, and the link connection between the said arm and lever, substantially as described. 8th. The combination of the needle operating arm, the spring actuated lever, means for connecting said lever and arm, the guide rod for the lever, substantially as described. 9th. The combination of the hand piece, the air jet tube and pipe for supplying air through said tube to the needle, and the needle passing down from the upper part of the hand piece and connected with the plate carrying the needle, so as to adjust the same, substantially as described. 10th. The combination of the pigment receptacle, the tapering needle, the pipe for supplying an air jet to the needle, and means for projecting and guiding the needle in a straight line, substantially as and for the purpose set forth. 11th. The combination of the pigment receptacle, the bow-needle, a support for holding the pigment-carrying portion of said needle from contact with the pigment receptacle, a pipe supplying an air jet to the needle, and means for projecting the needle, substantially as described. 12th. The combination of the wind wheel, the needle operating arm, the pitman connecting the said arm and wind-wheel, the needle having an eye connection with said operating arm, an inclined rest for said arm, and the lever for varying the stroke and throw of the needle, substantially as described. 13th. The combination of the wind wheel, the needle operating arm, the pitman connection between said arm and wheel, the needle connected to said arm, and the support for the needle extending beyond the pipe for supplying an air jet to the needle, substantially as described. 14th. In a paint distributer, the bow needle having its shank flattened at an angle to the bow, substantially as described.

No. 18,988. Car Roofing (*Toiture de Wagon.*)

Albert W. Gilmore, Chicago, Ill., U. S., 1st April, 1884; 5 years.

Claim.—1st. The ridge-plate G, provided with two horizontal grooves g, one in each side, substantially as and for the purpose described. 2nd. The sheet metal covering described, held in position above by the pinching action of the grooves in the ridge plate, and below by the stop blocks s, substantially as described. 3rd. The ridge-plate G having side grooves g, provided with cross grooves e_1 at proper intervals corresponding to the ridges and grooves made by the corrugations of the metal sheets E, as described.

No. 18,989. Railroad Switch Point Mover.

(*Appareil pour Manœuvrer les Aiguilles de Chemin de Fer.*)

George W. Horne, New York, N. Y., U. S., 1st April, 1884; 5 years.

Claim.—1st. In a switch mover, with a spiral slot or grooved channel, with rotary and travelling nut or hub B, with projecting lug m and protruding lugs or ears n, n, embracing the sleeve c and moving the same in either direction, substantially as and for the purpose described. 2nd. In a switch mover, the case A with a spiral guide, the nut or hub B with lug or projection m, protruding ears n, n, the adjustable sleeve c and guide rod D, the whole combined and operated in the manner, substantially as and for the purpose described.

No. 18,990. Locomotive Lubricator.

(*Graisseur de Locomotive.*)

Clarence B. Hodges and Charles H. Hodges, Detroit, Mich,, U. S., 1st April, 1884; 5 years.

Claim.—1st. In a locomotive lubricator, the combination, with the visible feed chamber G, and the condensing chamber E1, of an exterior steam-pipe connection between the upper portion of the condenser, the top of the visible feed-chamber and the steam space of the locomotive boiler, substantially as described. 2nd. The combination, with a locomotive, of a lubricator having a steam inlet pipe connected with the steam space of the boiler, an oil exit pipe leading from the top of visible feed-chamber into the tallow pipes, and a steam conduit connecting the top of the visible feed chamber with the steam inlet pipe or steam space above the water-lever of the condenser, substantially as described. 3rd. A lubricator combining the following elements: first, an oil reservoir, a condenser, a steam inlet pipe, a visible feed-chamber in which the oil rises through the water, a conduit connecting the top of this chamber with the steam inlet or steam space above the water level of the condenser, and oil exit pipe leading from the top of the feed chamber, and a throttling valve located in the said oil exit pipe, substantially as described. 4th. In a locomotive lubricator, the combination with the condenser E1 and visible feed chamber G, of an exterior steam pipe connection between the upper end of the visible feed chamber and the steam-space of the boiler, and a connection between the upper part of the condenser and the said steam pipe connection, substantially as described. 5th. The metallic extension I2, adapted to maintain the packing at the top of the visible feed chamber always in contact with water, and out of contact with oil, substantially as described.

No. 18,991. Horse Shoe Nail Machine.

(*Machine à Clou à Cheval.*)

George J. Capewell, Cheshire, Ct., U. S., 1st April, 1884; 5 years.

Claim.—1st. In a machine for making horse-shoe nails or other metallic articles, a set of compressing rolls arranged in pairs, each pair having die-grooves which are formed with a very gradual inclination or shallowing at their small ends, to adapt them to reject any blank which may be presented to the small ends of the grooves, substantially as set forth. 2nd. In a machine for making horse-shoe nails, or other metallic articles, a set of rolls for compressing the blanks, each of these rolls having dies set into its periphery or fastened thereon, these dies having die-grooves in their faces, the line of junction or contact of the dies passing through the point in the groove where the pressure or pinch begins, or at any point between it and the large end of the pocket which receives the head of the blank. 3rd. A pair of compressing rolls provided with die-grooves, having at their large ends pockets which are deeper than the remaining parts of said grooves and larger than the heads of the blanks. 4th. In a machine for making horse-shoe nails or other metallic articles, a clutch for engaging the driving wheel and thereby turning the driving shaft, in combination with a device for disengaging said clutch from said wheel, a dog or detent which normally prevents this disengagement, and devices which automatically remove said dog or detent when the blanks become clogged in the guide-way. 5th. In combination with a series of compressing die-grooved rolls and a guide-way which conducts the blanks to and from each pair of said rolls, a series of slides working into and out of the said guide-way between each pair of said rolls and a series of cams and levers actuating said slides, each one of these levers being made in two sections which are adapted to yield on encountering a blank or other obstacle, substantially as set forth. 6th. In combination with a series of compressing die-grooved rolls and a guide-way, which conducts the blanks to and from each pair of said rolls, a series of slides working into and out of the said guideway between each pair of said rolls, a series of sectional yielding levers for operating said slides, and devices which permit the automatic unshipping of the clutch which drives the machine when a shaft or bar forming part of said devices is engaged by a shoulder on any one of said levers in the act of yielding, as aforesaid. 7th. In combination with the driving wheel, driving shaft and the clutch for connecting and disconnecting them, the shipping levers and notched connecting rod or bar for operating said clutch, the retracting spring for unshipping the same, the spring-pressed dog which engages with said notch to lock said clutch against the action of said unshipping spring, and a lever and a shaft and arm operated by said lever for removing said dog from said notch, substantially as set forth. 8th. In combination with a set of compressing devices for acting on metallic blanks, a pair of feed rolls which are grooved peripherally and have the bottoms of their grooves cut away except at two opposite parts thereof, the parts not cut away forming two pairs of bearing faces which will feed the metal twice during each rotation of said feeding rolls, substantially as set forth. 9th. In combination with the feeding rolls and compressing rolls, an interposed cutting-blade and sliding plungers, a pendant arm carrying a piece arranged to be forced against the outer end of said plunger, and a shaft carrying two horns or cams which act on said pendant arm, substantially as set forth. 10th. In combination with a pair of feed rolls, a set of compressing devices and a cutting blade or blades, operated as set forth, an adjustable finger which supports the end of the wire or bar and regulates the length of the blanks, substantially as set forth. 11th. A circular plate or wheel provided with cross passages having four equidistant openings in its periphery, in combination with compressing-rolls and a guideway discharging into said passages as they successively assume a vertical position, and devices which give said wheel a step-by-step motion of one-fourth of a circle at each step, for the purpose set forth. 12th. A rotary wheel and devices for giving it a step-by-step motion of one-fourth of a circle at each step, in combination with devices for bevelling, pointing and heading the blanks carried by said wheel, as they successively reach the points where said devices are respectively located. 13th. In combination with the two wheels which carry the blanks, as stated, a reciprocating plunger which enters the first wheel and forces the blanks into the dies of the other wheel, substantially as set forth. 14th. A wheel rotating with a step-by- step motion and adapted to carry the blanks with their end protruding, as stated, in combination with a bevelling anvil and punch or plunger which bevel the end of the blank, substantially as set forth. 15th. A wheel rotating with a step-by-step motion and adapted to carry the blanks with their ends protruding, as stated, in combination with a stationary blade or stop and a plunger or blade, whereby the surplus metal is trimmed from the point after the latter has been bevelled, as set forth. 16th. A wheel provided with heading dies, which receive the blanks of metal and carry them around in a step-by-step motion, in combination with a heading die and a clamping die which are carried against said blanks, substantially as set forth. 17th. A wheel provided with heading dies which receive the blanks of metal, in combination with a slide carrying a heading die and a clamping die, and devices which give to said slide a compound lengthwise, and upward and downward motion, substantially as set forth. 18th. A set of bevelling devices, a set of trimming devices, and a set of heading devices, in combination with the compressing rolls and guideway, and devices for transferring the blanks from said guideway to the bevelling, trimming and heading devices, substantially as set forth. 19th. A feeding plunger which operates on the blanks after they have left the compressing rolls, in combination with unclutching mechanism for stopping the machine, a detent which prevents the operation of said uncluteching mechanism and a device connected to said feeding plunger which removes said detent when said plunger meets with an obstruction, substantially as set forth. 20th. A feeding plunger and its operating lever, the latter being in two normally rigid sections which are adapted to yield and separate the upper end of the lower section when said plunger meets with resistance, in combination with a clutch and its unshipping spring, and devices for allowing said spring to operate, the latter devices being operated by the engagement of the lower section of said lever therewith when its upper end separates from the upper section, substantially as set forth. 21st. The compressing rolls, each having two die-grooves, in combination with cutting, feeding, bevelling, trimming and heading devices, and the cams and cam-grooves arranged to operate all of said devices twice during oach rotation of the rolls, substantially as set forth. 22nd. The wheels P and T and the shafts which operate them, in combination with the notched and toothed collar carried by one of said shafts, the retaining pawls which catch into the notches of said collar, the feeding dog and its actuating devices, whereby said collar and shaft are advanced a quarter of a circle at each forward movement of said dog, and the stud or pin which moves with said dog and lifts as the latter reaches the end of its rearward motion, the pawl which prevents the forward motions of said shaft, substantially as set forth. 23rd. A pair of compressing rolls, which are provided with die-grooves that gradually shallow at the small ends of said die-grooves in order that they may expel or refuse blanks which are presented to the small ends of said die-grooves, substantially as set forth. 24th. The combination of a pair of feed rolls, and a spring or springs for allowing them to yield, with a guideway for metal and a set of compressing rolls and cutting devices for the purpose, substantially as set forth. 25th. In combination with a set of compressing rolls, a