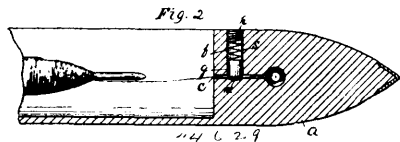
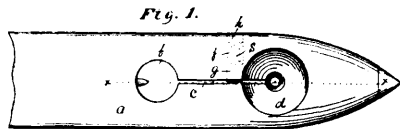


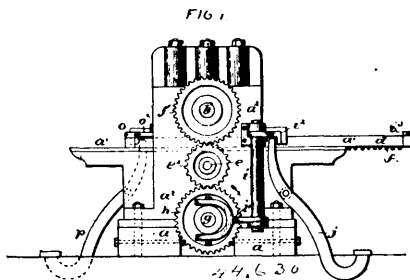
necting with the delivery eye thereof, and having a horizontal threadway in line with the spindle, connecting said opening with an opening in the side of the spindle cavity, and having a vertical open-



ing connecting said thread way in the track of the thread from the bobbin, a wright fitting loosely in said vertical opening and adapted to pass on said thread, a screw threaded plug adapted to close the outer end of said vertical opening, and be advanced therein at certain time, and a compressible spring interposed between said screw threaded plug and said wright, whereby when the screw threaded plug is advanced or retracted in said vertical opening the wright is caused to bear with greater or less force on the thread and then give the required tension, substantially as shown and for the purpose described.

No. 44,630. Machine for Forming Horse-shoe Blanks.

(Machine pour faire les ébauches de fers à cheval.)

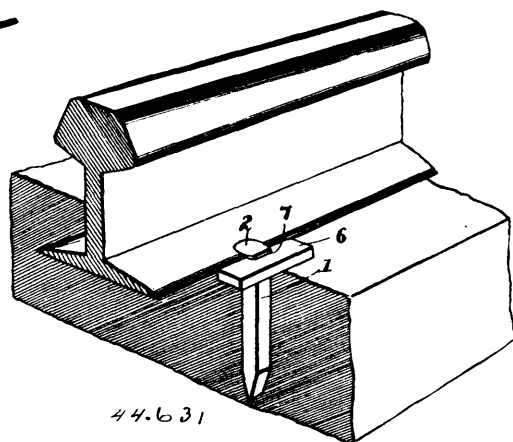


John D. Billings, New York, State of New York, James H. Ruddell and George W. Alexander, both of Detroit, Michigan, all in the U.S.A., 4th November, 1893; 6 years.

Claim.—1st. A machine for forming bars into horse-shoe blanks provided with a positively driven counter shaft having two gear-wheels, whereof one imparts motion to a rack attached to a reciprocating table provided with a die, and whereof the other drives a gear-wheel attached to a revoluble drum or cylinder provided with a die, the construction and arrangement being such that the dies are each driven by the counter shaft through separate gearing, whereby lagging of one of the dies in respect to the other is obviated, substantially as and for the purposes set forth. 2nd. A machine for forming bars into horse-shoe blanks provided with a reciprocating table having a rack and a die, a revoluble cylinder or drum having a gear-wheel and a die, a counter shaft provided with a pinion meshing with said rack, and with a gear as c^2 , meshing with the gear-wheel of the cylinder, a main shaft provided with a gear-wheel for driving the gear c^2 , and means for operating the main shaft, substantially as and for the purposes set forth. 3rd. A machine for forming bars into horse-shoe blanks provided with a reciprocating table having a rack and a die, a revoluble cylinder having a gear-wheel and a die, a counter shaft provided with a pinion meshing with said rack, and with a gear as c^2 , meshing with the gear-wheel of the cylinder, a main shaft provided with a gear-wheel as h , for driving the gear c^2 , and a friction clutch and starting lever for connecting and disconnecting the gear-wheel h , and the main shaft, substantially as and for the purposes set forth. 4th. A machine for forming bars into horse-shoe blanks provided with a reciprocating table having a die, a revoluble cylinder having a die, a main shaft, a counter shaft operated by the main shaft for driving said table forward through the intervention of a rack and pinion, and for driving said cylinder in a corresponding direction through the intervention of the gears c^2 and f^1 , a crossed belt and its complementary pulleys for imparting motion of the main shaft to said dies to drive them in a reverse direction, and friction clutches and their complementary reversing levers, substantially as and for the purposes set forth. 5th. A machine for forming metal bars into horse-shoe blanks provided with a reciprocating table having a die, a revoluble cylinder having a die, a gear-wheel c^2 , for driving said table in one direction through the

instrumentality of a rack and pinion, and for driving said cylinder in a corresponding direction through the instrumentality of a gear-wheel f^1 , a gear-wheel h , for driving the gear-wheel c^2 , a crossed belt and pulleys for driving said cylinder in a reverse direction, whereby the table is driven through the gear-wheel f^1 and c^2 in a similar direction, and tappet arms and their complementary link work and friction clutches for throwing said belt and gear h out of and into engagement with the main shaft at a predetermined point in the travel of the dies, substantially as and for the purposes set forth. 6th. A machine for forming bars into horse-shoe blanks provided with complementary reciprocating and rotating dies, a driving shaft, mechanism adapted to move the dies in one direction, and comprising gear-wheels h , c^2 , and f^1 , and a counter shaft c , a rack f , and a pinion c^1 , a crossed belt n , and pulleys m , and k , for driving said dies in a reverse direction, friction clutches for connecting and disconnecting the gear-wheel h , and the driving pulley with a positively driven main shaft, and tappet arms operated by the reciprocating die and adapted to throw the clutch of the wheel f^1 , out of action at one end of the stroke of the dies and to throw the clutch of the driving pulley out of action at the other end of the stroke, and starting levers for throwing said clutches into action, substantially as and for the purposes set forth. 7th. The combination, in a machine for forming metal bars into horse-shoe blanks, of complementary reciprocating and revoluble dies, a counter shaft, gear-wheel c^2 and f^1 , interposed between the counter shaft and revoluble die, a rack and pinion interposed between the reciprocating die and counter shaft, a main shaft provided with a loose gear-wheel meshing with the gear-wheel c^2 , and with a friction clutch for the loose gear-wheel, a driving pulley loose on the main shaft and connected by a crossed belt with the revoluble die, a friction clutch for said driving pulley, and means for operating said friction clutches, substantially as and for the purposes set forth. 8th. The combination, in a machine for forming metal bars into horse-shoe blanks, of a revoluble die cylinder provided at one extremity with a gear-wheel, and at the other extremity with a pulley, a reciprocating table provided with a rack and a die, a driving shaft provided with a loose pulley connected with the pulley on the cylinder by a crossed belt, a counter shaft provided with a pinion engaging said rack, a gear-wheel loose on the main shaft, an intermediate gear-wheel keyed to the counter shaft and meshing with the gears on the main and cylinder shafts, and means for operating said friction clutches, substantially as and for the purposes set forth. 9th. In a machine for forming bars into horse-shoe blanks, a rotating die, a reciprocating table provided with a die, a driving shaft, spur gearing for actuating the rotating die and table in one direction, a crossed belt and complementary pulleys for actuating the rotating die and table in a reverse direction, friction clutches, rock shafts provided with arms engaging said clutches and with tappet arms, tappet lugs, stops or projections at the respective extremities of the table for automatically operating the tappet arms, and starting and reversing levers, substantially as and for the purposes set forth.

No. 44,631. Spike. (Chevillette.)



William R. Funk, of Lexington, and Lawrence Doering, Plattsmouth, Nebraska, U.S.A., 4th November, 1893; 6 years.

Claim.—1st. In combination, with a spike having an enlargement formed under the head thereof, a transverse brace provided with a side recess that is fitted over said enlargement on the outer side of the spike below the head and transversely inseparable therefrom, and extending the bearing surface of the same, substantially as described. 2nd. In combination, with a spike having an enlargement under the head thereof, with grooves in opposite edges of the same, a brace having a recess therein with inwardly projecting tongues at the mouth or entrance of said recess arranged to movably fit the said grooves in the enlargement, substantially as described.