(No Model.)

J. A. N. RASMUSSEN.

MACHINE FOR PUNCHING HORSESHOE BARS.

No. 428,949. Patented May 27, 1890.

FIG. 1.

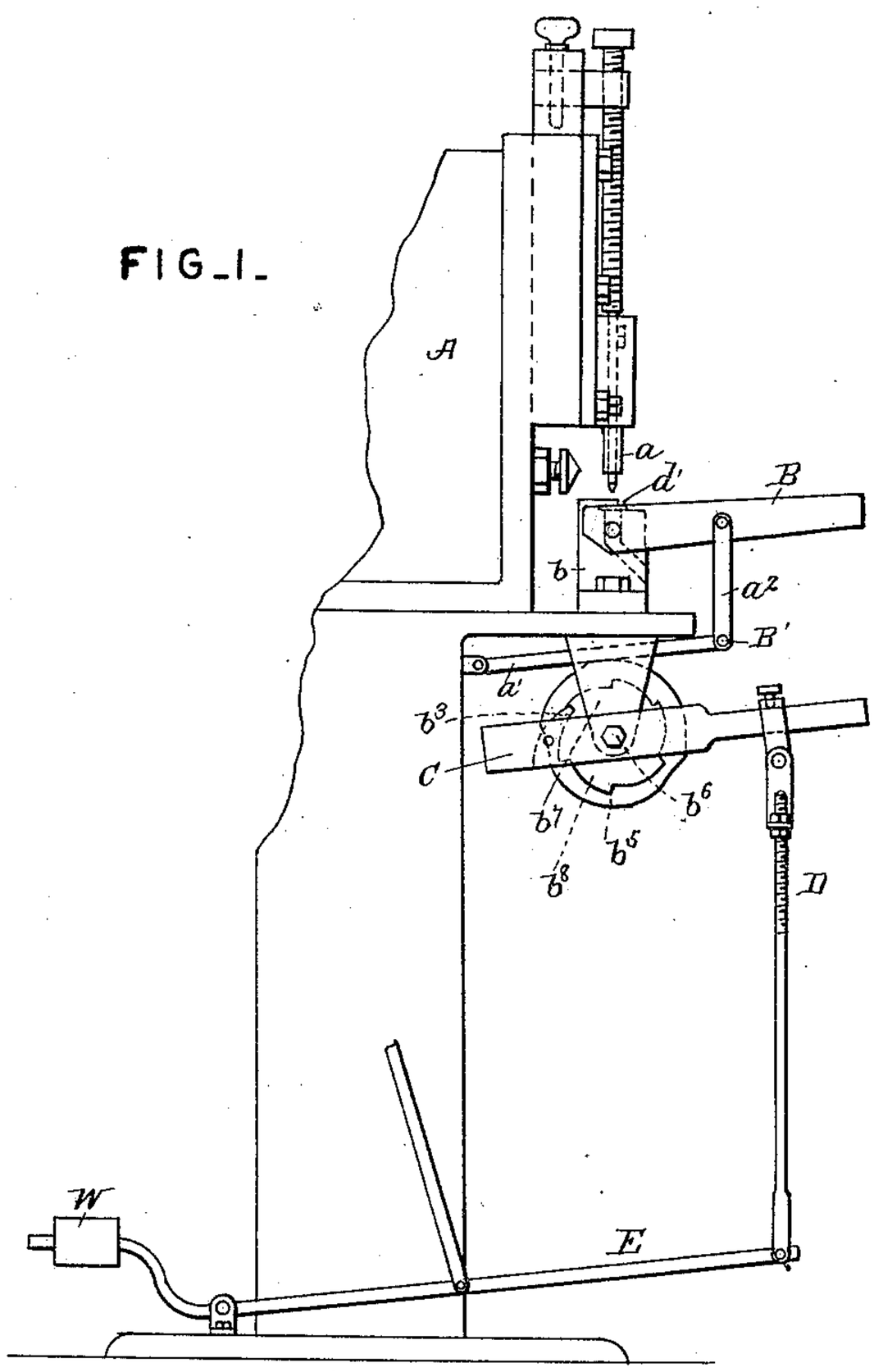


FIG. 3.

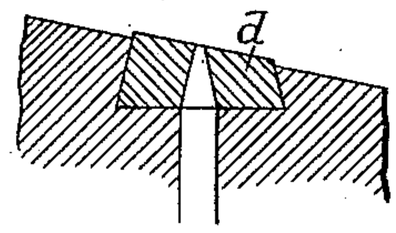


FIG. 4.

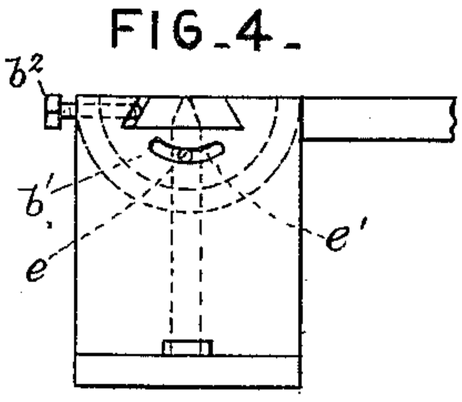


FIG. 5.

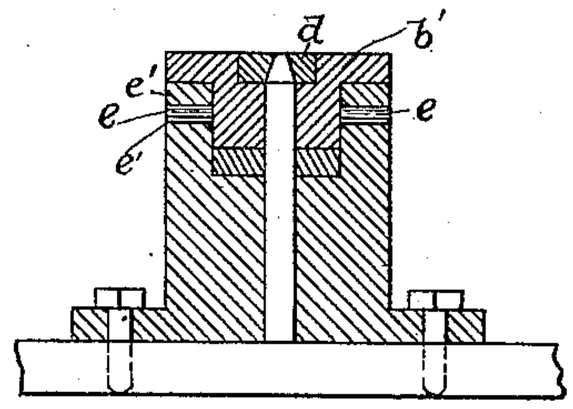


FIG. 2.

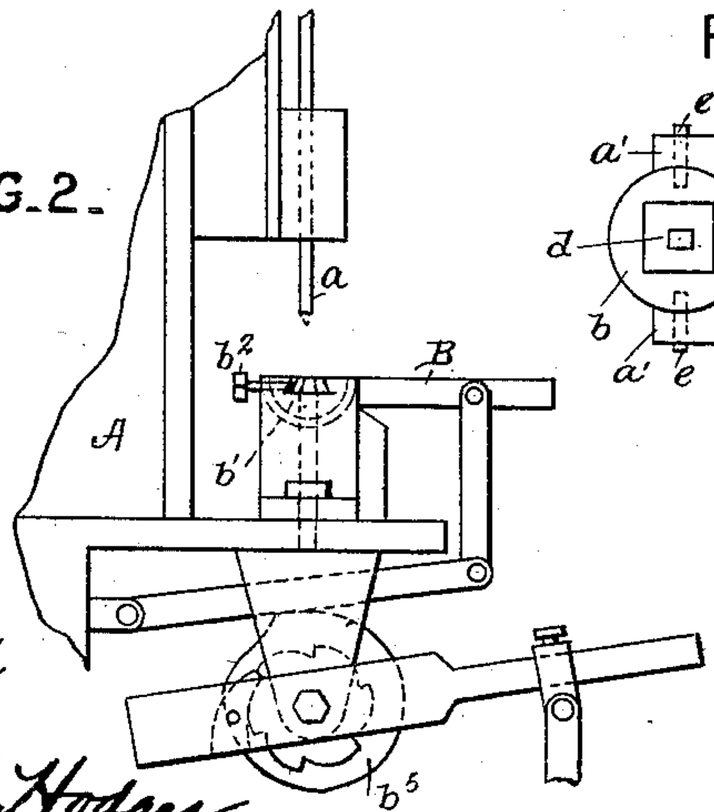


FIG. 7.

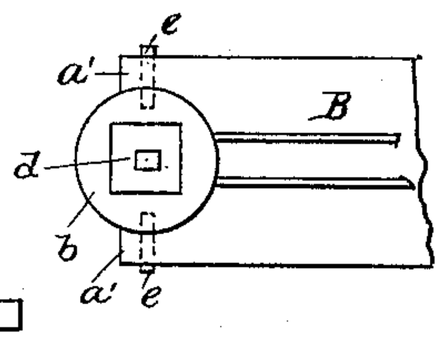
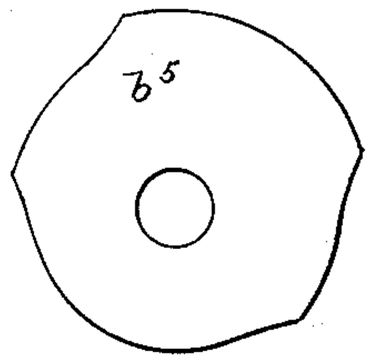


FIG. 6.



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UNITED STATES PATENT OFFICE.

JULIUS ALEXANDER NICOLAJ RASMUSSEN, OF COPENHAGEN, DENMARK.

MACHINE FOR PUNCHING HORSESHOE-BARS.

SPECIFICATION forming part of Letters Patent No. 428,949, dated May 27, 1890.

Application filed April 16, 1889. Serial No. 307,519. (No model.) Patented in Denmark February 9, 1888; in England January 1, 1889, No. 1,177; in Germany March 12, 1889, No. 50,066; in Austria-Hungary March 12, 1889, No. 11,692 and No. 40,115; in France March 16, 1889, No. 196,756; in Belgium March 16, 1889, No. 85,413, and in Canada April 17, 1889, No. 31,250.

To all whom it may concern:

Be it known that I, JULIUS ALEXANDER NICOLAJ RASMUSSEN, Director Royal Danish Gun Factory, a subject of the King of Denmark, residing at Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Punching Horseshoe-Bars, (for which I have obtained patents as follows: in Denmark February 9, 1888, no number; in Germany March 12, 1889, No. 50,066; in France March 16, 1889, No. 196,756; in Belgium March 16, 1889, No. 85,413; in Austria-Hungary March 12, 1889, Nos. 11,692 and 40,115; in Canada April 17, 1889, No. 31,250, and in England January 1, 1889, No. 1,177;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a new and improved punching-machine, more particularly designed for forming nail-holes in a horseshoe-bar; and the object of the invention is to secure simple and highly-efficient means whereby the several holes of a horseshoe may be formed at different angles or inclinations.

The invention consists, briefly, in a work-table upon which the metal bar is placed, and which is continuously changing its position throughout the stamping operation, the movement of the table corresponding with the operation of the hole-punching mechanism, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a portion of a punching-machine with the lower stamp independent of the pivoted table, and showing the mechanism for operating the latter. Fig. 2 is a similar view showing said stamp located in the said table. Fig. 3 is a sectional detail view on an enlarged scale of the lower stamp when secured as in Fig. 1, parts being broken away. Figs. 4 and 5 are views thereof when secured as in Fig. 2, the latter figure being a transverse section of the former. Fig. 6 is a detail view of the operating cam-like wheel or disk. Fig. 7 is a detail plan view of the table shown in Fig. 1.

Referring to the drawings, A designates a punching-machine of any preferred form, having an upper punch or die *a*. Since the machine proper and the mechanism for operating the same form no part of my invention, further reference thereto will not be here made.

B is an adjustable work-table, which, as shown in Fig. 7, may be provided with end arms *a'*, pivoted to a stand *b*, secured fast to the front of the punching-machine; or, as shown in Figs. 2, 4, and 5, said table may have a lower semi-cylindrical portion *b'* secured in a corresponding groove of said stand.

In Figs. 1, 3, and 7 I have shown the lower stamp *d* rigidly secured in the upper end of stand *b*, the top face of said stamp being inclined or beveled, as shown in an exaggerated form in Fig. 3, while in Figs. 2, 4, and 5 I have shown the same secured directly in table B by a screw b^2. An arm a^2 of a lever B' is secured at one end to the under side of table B, its other arm *a'* being fulcrumed to the machine A. This latter arm bears upon the irregular periphery of a cam-like disk or wheel b^5, whose pivotal bearing b^6 is secured in depending arms b^7. With a ratchet b^8, formed on one side of wheel b^5, engages a pawl b^3, secured to a lever C, fulcrumed on the pivotal bearing b^6. To this lever is connected a pitman D, leading from a pedal E, the outer end of which has a counter-weight W, as shown in Fig. 1. The periphery of the cam-like wheel b^5 is made, preferably, as shown in Fig 6, so that table B is adjusted according to the different slanting positions to be given the nail-holes.

When the table is provided with a semi-cylindrical portion, the latter is secured within the stand *b* by having lateral lugs or pins *e e* thereof working between parallel arched or curved ribs *e' e'* on the inner surface of said stand.

In practice the operator places the previously-marked metal bar on the table B so that the first mark will be above the bottom

stamp. The foot-pedal E is then worked by the operator, and the work-table assumes a position corresponding with the slant to be given the first nail-hole, and the top stamp is made to move down, and after making the hole is retracted. The operator then pushes the metal bar forward so that the second mark will be over the lower stamp. The pedal is again operated, the work-table assumes its new position, and the top stamp is operated as before. This operation is continued until the desired number of holes has been formed in the metal bar, said holes being each at its proper angle or inclination. Upon the cessation of the punching operation the work-table is brought back to its initial position by a counter-weight W, secured to one end of the foot-pedal.

I claim as my invention—

1. In a punching-machine, the movable table automatically adjustable, so as to present the bar thereon at different angles to the punch, substantially as set forth.

2. In a punching-machine, the combination, with the upper punch or die and the operating mechanism therefor, of the movable table operated by said mechanism and having a relative movement with said punch or die, substantially as set forth.

3. In a punching-machine, the combination, with the upper punch or die and the operating mechanism therefor, of the movable table, the irregular or cam-like wheel or disk, and the operating-pedal, substantially as set forth.

4. In a punching-machine, the combination, with the upper punch or die and the operating mechanism therefor, of the stand, the movable table secured thereto, the lever connected to said table, the cam-like wheel or disk upon which said lever rests, the lever C, the connection between the same and said wheel or disk, the pitman, and the foot-pedal, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JULIUS ALEXANDER NICOLAJ RASMUSSEN.

Witnesses:

ANDERS ANDERSEN,

CH. VAJAAN.