2 Sheets--Sheet 1.

D. I. PRUNER.

Improvement in Horseshoe Machines.

No. 115,520. Patented May 30, 1871.

Fig.1

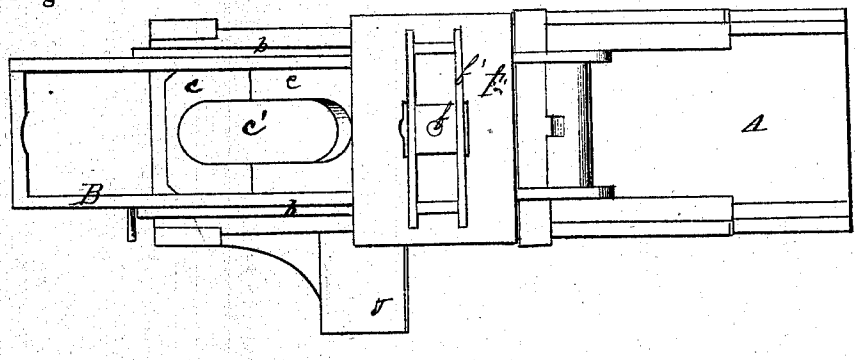
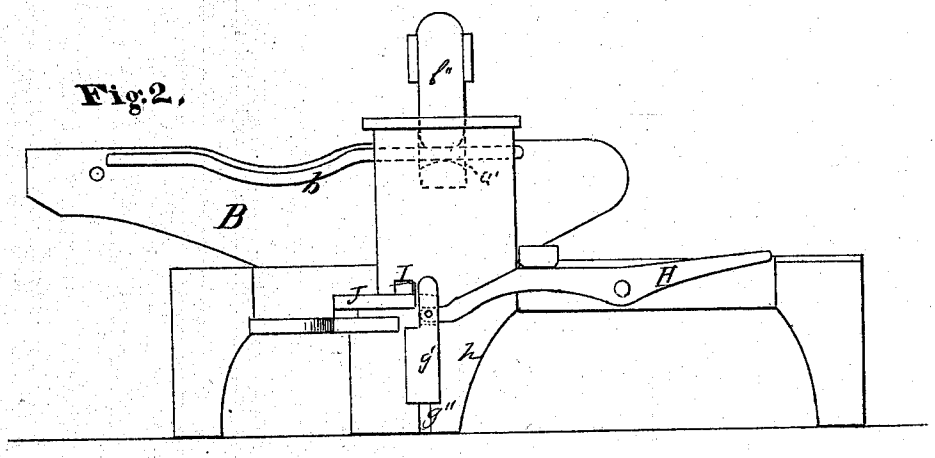


Fig.2.



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Fig. 3.

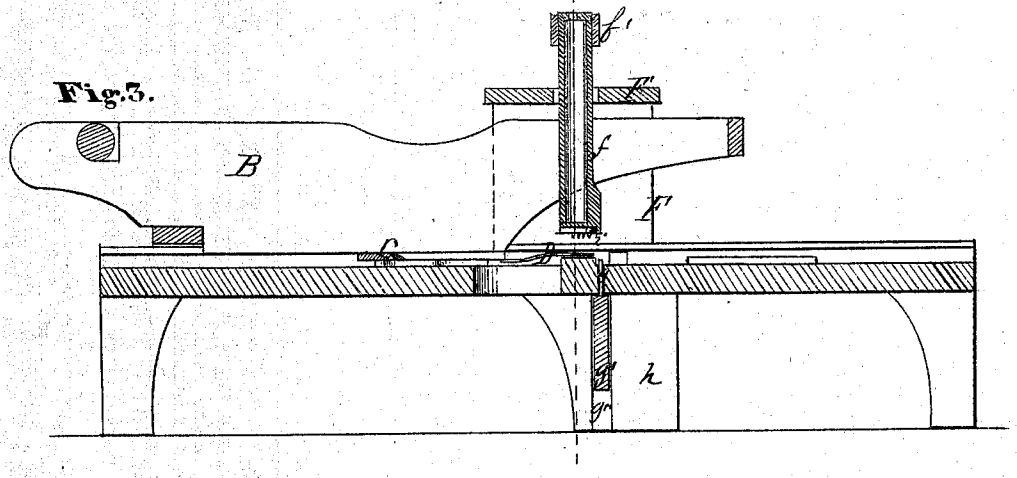


Fig. 4.

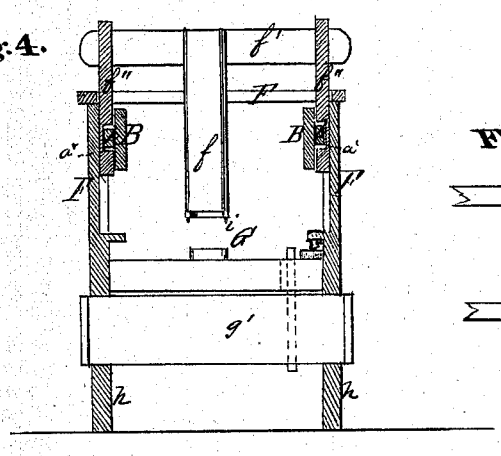


Fig. 6.

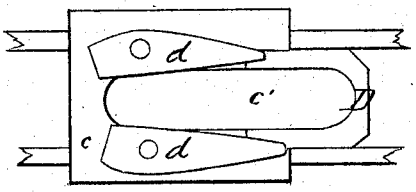
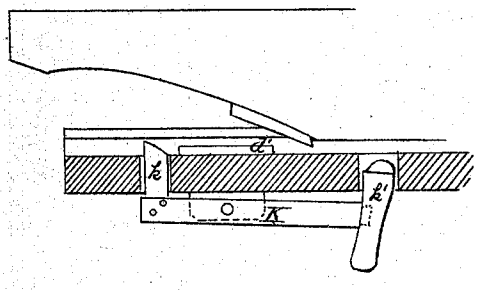


Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID I. PRUNER, OF BELLEFONTE, PENNSYLVANIA.

IMPROVEMENT IN HORSESHOE-MACHINES.

Specification forming part of Letters Patent No. 115,520, dated May 30, 1871.

To all whom it may concern:

Be it known that I, DAVID I. PRUNER, of Bellefonte, in the county of Centre and State of Pennsylvania, have invented a new and valuable Improvement in Machine for Making Horseshoes; and do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a plan view of my improved apparatus. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal section. Fig. 4 is a vertical transverse section. Fig. 5 is a vertical longitudinal section of part of one end of my improved horseshoe-machine. Fig. 6 is a detached plan view, showing part of under side of movable bending-frame.

This invention has for its object certain improvements in machines for making horseshoes wherein the shoe is constructed from a bar of wrought-iron inserted transversely in the machine, and by a single movement of a sliding table is bent and pressed into the proper shape and pierced with nail-holes.

In the accompanying drawing illustrating this invention, A denotes a rectangular stationary frame supporting all the working parts of a horseshoe-machine embodying my improvements. B represents a moving frame constructed with sides having their upper edges curved, as clearly shown in the drawing, with lateral curved flanges *b b* and a projecting case-plate, *c*. *c'* indicates a longitudinal opening with semicircular ends. This opening is formed by the base-plate and the combined thinner-plate D. On either side of this opening, and pivoted to the plate *c*, are two buttons or cams, *d d*, which are operated upon at different points, as the frame B is moved to and fro along the frame A by the oblique-sided projections *d' d''*. The edges of the base-plate *c* extend laterally beyond the sides of the frame B so as to slide under the flanged edges of the frame A. F indicates side standards, and F' the top part of an upright die-frame, in which slides vertically a die or punch for piercing nail-holes in the horseshoes. This die or punch consists of a ram, *f*, connected with a cross-head, *f'*, which is supported by two side bars, *f''*, sliding in suitable grooves formed in the standards F. The lower end of the ram *f* is shaped like a horseshoe, and provided with a number of sharpened studs, *i*, to pierce at one operation the full number of nail-holes. G designates a lower die, which is supported in the face of the frame A directly underneath the ram *f*, and is shaped like the inner curve of a horseshoe. *g g* are movable pins set in a transverse bar, *g'*, which is under the control of levers H, and when moved by them raises the pins to the surface of the die G or lowers them to the surface of the frame A. This transverse bar slides in slots *g''* cut in the middle supports *h* of the frame A. In each of the side bars *f''* there is cut an irregular recess, *a'*, near their lower ends, and through such recesses the curved flanges *b b* pass when the frame B is moved, and either raise or lower the ram, according to the direction of the movement. I shows an orifice in the side of the machine on the same plane horizontally with the curved end of the die G, intended for the insertion of the bar of iron from which the horseshoe is to be formed. J represents a table extending from the orifice I, and designed to hold the bar of iron to be placed in the machine. K indicates a double-headed lever, the ends *k k'* of which project upward through slots in the face of the frame A. The end *k'* is on a line with the orifice I, and is raised up when the rear end of the frame B passes over the beveled end *k* and falls of its own gravity when the frame is moved in the opposite direction. The object of this lever is to act as a gage to the bar of iron in order to have it the proper length, and to this end should be so arranged as to gage for different-sized shoes. The ram *f* is made hollow and kept filled, when in use, with cold water, to prevent it from becoming too highly heated.

This machine operates as follows: The frame B is drawn back a sufficient distance to allow a bar of iron to be properly inserted before the cams *d d*, the forward ends of which are thrown outward by the projections *d'*, while the ram is raised by the curved flanges *b b*. The movement of the frame B is then reversed, whereupon the forward ends of the cams *d d* approach each other, and, pressing the iron against the lower die, bend it into the proper

shape. The ram then is brought down with force, and with a single stroke pierces the holes, and then rises, after which the levers H are called into action, raising the completed shoe through the medium of the pins *g g*. The shoe is finally taken up by the plate D and cast through an opening to the ground.

I claim as my invention—

1. The reciprocating frame B, with curved flanges *b*, ram *f*, slotted bars *f''*, in combination with the frames A and F, as arranged, and for the purpose specified.

2. In combination with the subject-matter of the first claim, the cams *d d*, projections *d' d''*, die G, lever H, and pins *g*, arranged to operate substantially as and for the purpose specified.

3. The table J, orifice I, and lever K having stub *k* and gage *k'*, in combination with the frame B, constructed and arranged substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

D. I. PRUNER.

Witnesses:

D. D. KANE,

FRANK B. CURTIS.