2 Sheets—Sheet 1.

H. H. GILMORE.

MACHINES FOR MAKING HORSESHOES.

No. 177,392. Patented May 16, 1876.

Fig. 1.

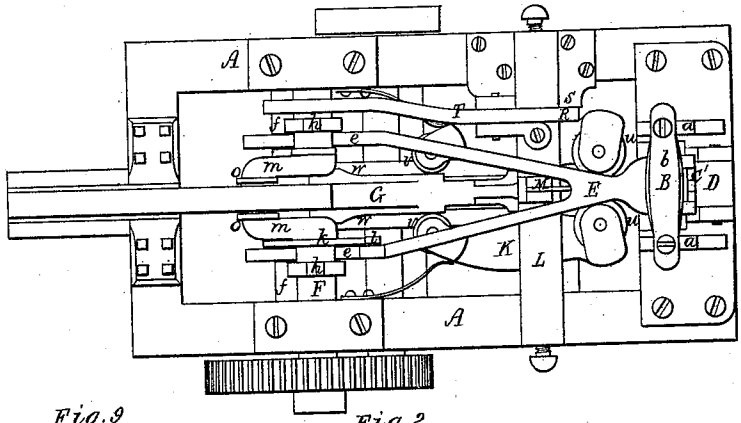


Fig. 9

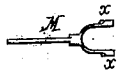


Fig. 10.

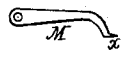
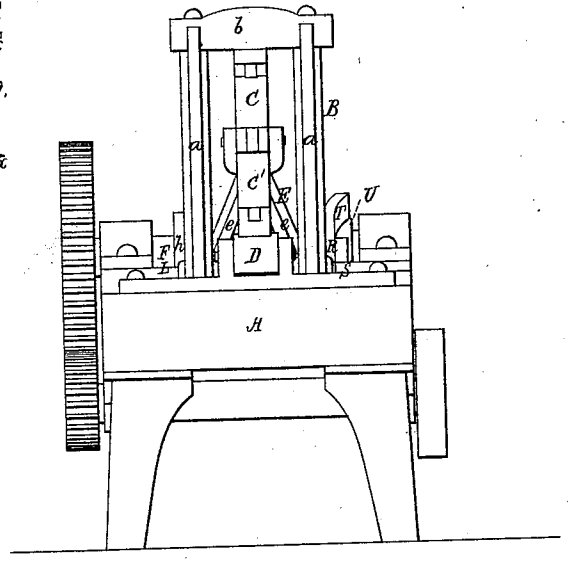


Fig. 2.



Witnesses.
S. N. Piper
L. M. Miller

Henry H Gilmore
by his attorney.
R. H. Eddy

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

H. H. GILMORE.

MACHINES FOR MAKING HORSESHOES.

No. 177,392. Patented May 16, 1876.

Fig. 4.

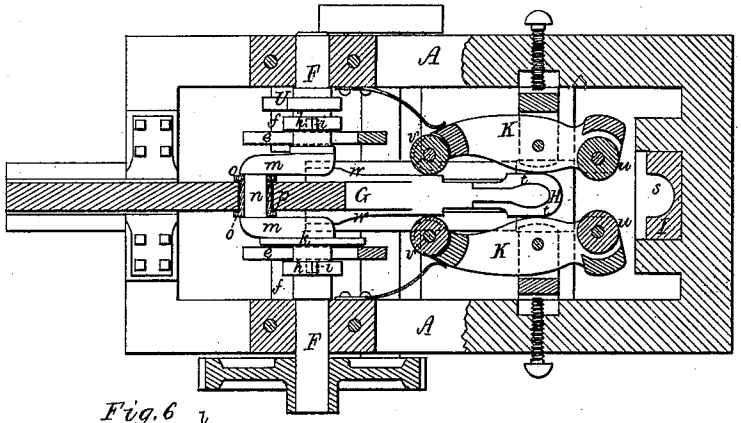


Fig. 6

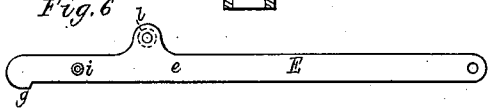


Fig. 3.

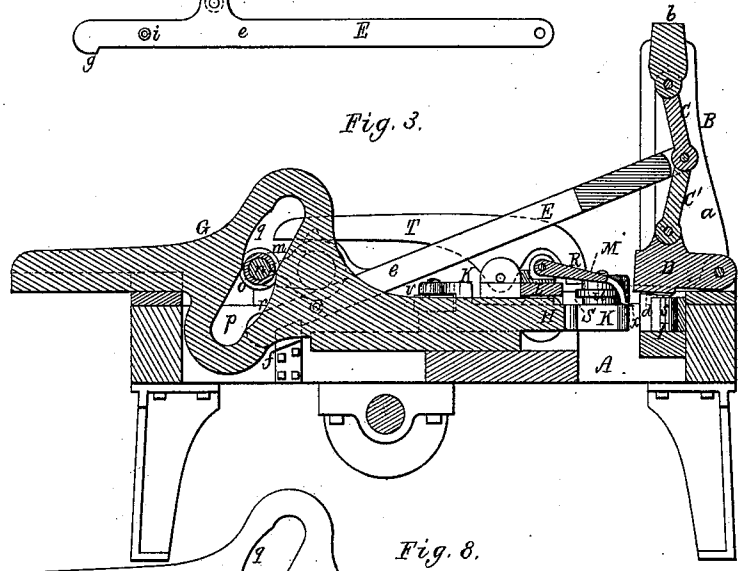


Fig. 8.

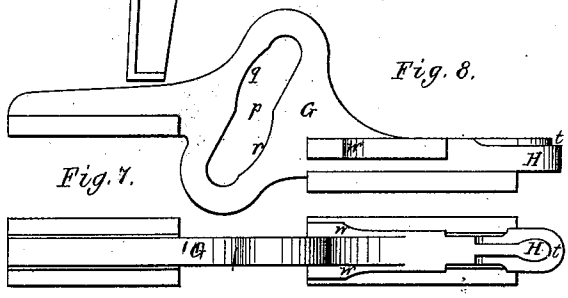
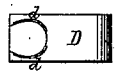


Fig. 7.

Fig. 5.



Witnesses.
S. W. Piper
L. A. Miller.

Henry H. Gilmore
by his attorney.
R. H. Eddy

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY H. GILMORE, OF CAMBRIDGEPORT, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND WILLIAM R. ELLIS, TRUSTEE, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR MAKING HORSESHOES.

Specification forming part of Letters Patent No. **177,392**, dated May 16, 1876; application filed December 1, 1875.

To all whom it may concern:

Be it known that I, HENRY H. GILMORE, of Cambridgeport, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Machinery for Making Horseshoes; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a front elevation, Fig. 3 a longitudinal section, and Fig. 4 a horizontal section, of a machine embodying my invention, which relates to the combination of a shoe lifter and discharger with a stationary former-receiver and a movable rabbeted former, a creaser, and a pair of benders, all provided with mechanism for operating them, as hereinafter described. My invention further relates to mechanism for actuating the movable former.

In the drawings, A denotes the frame of the machine, it being provided at or near its front end with a "gallows-frame," B, or two standards, *a a*, and a cap, *b*, thereto. Within the said frame B, and pivoted to its cap at the middle thereof, is a pair of toggles, C C′, the lower of which is hinged to a creaser, D, which, in turn, is hinged to the frame A, and provided with tools *d d*, for creasing a horseshoe and indenting it for its nail-holes. An underside view of the said creaser is shown in Fig. 5. The toggles, at their junction, are hinged to the front end of a furcated pitman, E, whose prongs *e e* rest in projections *f f* from the frame A. Each of the said prongs, at its rear end, is hooked or provided with a shoulder, *g*. (See Fig. 6, which is an edge view of the pitman.) The said projections, besides serving to support the prongs of the pitman, operate, with the shoulders, to limit the forward movement of the toggles. The driving-shaft F of the machine extends across the prongs of the pitman, and carries two cams, *h h*, to operate against rollers *i i*, fixed to the prongs, such cams being to force the pitman backward. For advancing it, and allowing it to stand at rest at the proper periods of time, there is another cam, *k*, fixed to the driving-shaft. This cam *k* operates against a roller, *l*, projecting from the side of one of the prongs. Furthermore, the driving-shaft at its middle has a bell-crank, *m*, whose wrist *n* carries a friction-roller, *o*, and goes through an inclined slot, *p*, made in a slide or former-carrier, G, supported to move rectilinearly in the frame A. The said carrier has at its front end the shoe-former H, a top view of which is given in Fig. 7, a side view of such former and its carrier being shown in Fig. 8. Opening out of the inclined slot *p* are two recesses, *q r*, each of which, in vertical section, is the segment of a circle, they being arranged as shown. Each recess has for its curve or arc a radius equal to or a little greater than the distance from the front edge of the roller *o* to the axis of the driving-shaft.

From this it will be seen that, during each revolution of the driving-shaft, an intermittent, reciprocating, rectilinear motion will be imparted to the carrier G. Also, that while the roller *o* may be passing through either of the segmental recesses *q r*, the carrier will be at rest. While the roller is passing through the lower recess, the former H, with the shoe-blank on it, is within the stationary receiver I, which is recessed to receive the said former H, the latter, when in the recess *s*, resting on its bottom. Such former H is rabbeted around its edge, as shown at *t*, to receive and support the shoe-blank, and with the benders to bend and give form to it. These benders are two levers, K K, arranged as shown, and provided at their ends with friction-rollers *u v*, those of the rear arms of said levers resting against cams *w w*, projecting from the opposite sides of the carrier G, in manner as shown. There is extended across the frame A a bar, L, it being arranged as represented. To the middle of this bar is hinged the shoe lifter and discharger M, formed as shown in top view in Fig. 9, and in edge elevation in Fig. 10. This discharger has two thin prongs, *x x*, which, while the shoe is being drawn back by the former H, pass into the rabbet of the said former and underneath the heels of the shoe, and raise the shoe out of the rabbet, the front end of the discharger holding the shoe, so that it may be discharged from the former H during retraction of the latter.

The cutters for cutting a blank from a bar

are shown at R S, the stationary one being fixed to the frame A, and the movable one to a lever, T, there being on the driving shaft a cam, U, for actuating such lever.

The former H having been fully retracted, a bar of iron is to be introduced between the cutters the proper distance, and against the front rollers of the benders. This having been done, the upper cutter will be depressed so as to sever a blank from the bar, such blank at its middle resting in the rabbet of the former H. Next, the said former will be advanced, and with the benders will cause the blank to be bent around in the rabbet or groove of the said former, after which the former, with the shoe thus made, will be moved into the receiver I. The creaser will next be depressed to crease or groove the shoe, after which such creaser will rise upward, and the shoe, by means of the former H, will be drawn back against the lifter and discharger M, by which it will be raised out of the former and ejected therefrom, as hereinbefore described.

While the roller *o* may be passing through the upper of the two recesses *q r*, there will be no endwise motion of the carrier G, which will thus be at rest during the time required to insert the bar into the machine, and cut a blank from such bar.

What I claim as my invention in the above-described machine is as follows, viz:

1. The combination of the shoe lifter and discharger M, as described, with the stationary recessed former-receiver I, and the movable rabbeted former H, creaser D, and the pair of benders K K, all arranged and provided with mechanism for operating them, substantially as specified.

2. The combination for operating the creaser, such consisting of the toggles C C′, furcated pitman E, projections *f f*, and the cams *h h k*, the latter being fixed on the driving-shaft, and all being arranged as specified.

HENRY H. GILMORE.

Witnesses:
R. H. EDDY,
S. N. PIPER.