U. BILLINGS.

MAKING HORSESHOE BLANKS.

No. 36,390. Patented Sept. 9, 1862.

Fig 1.

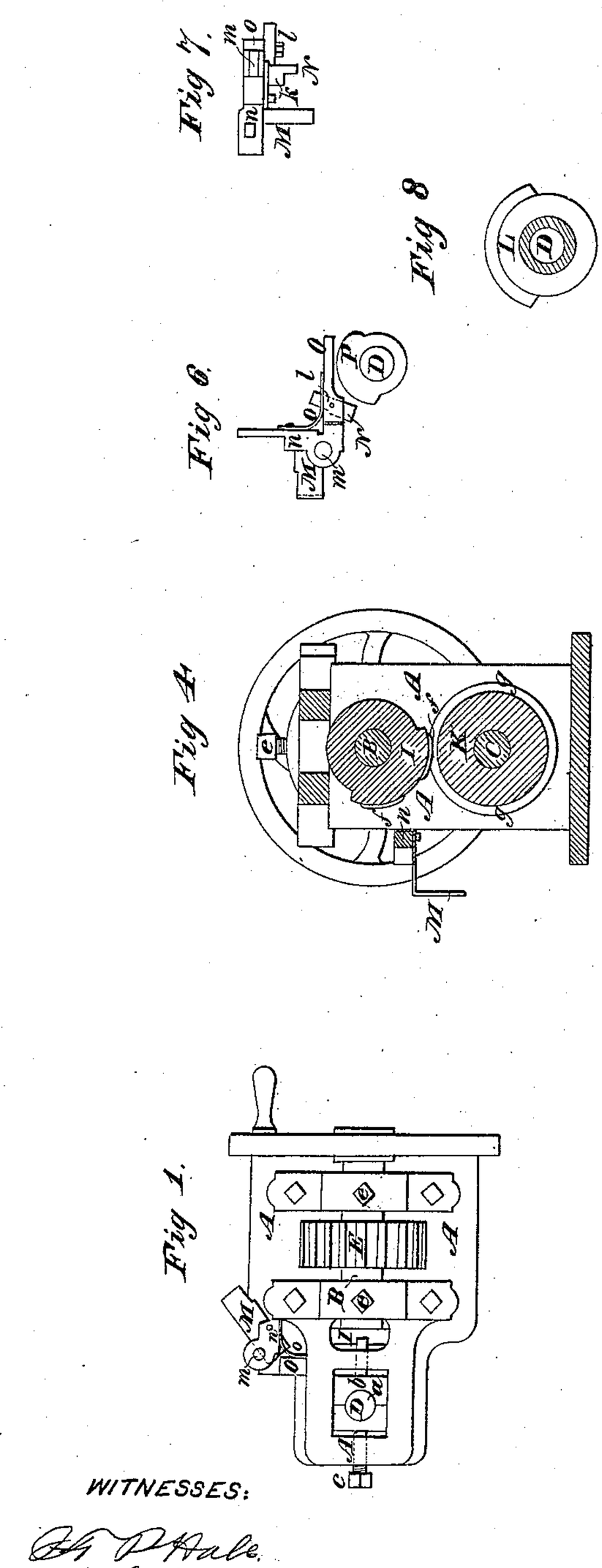

Fig 2.

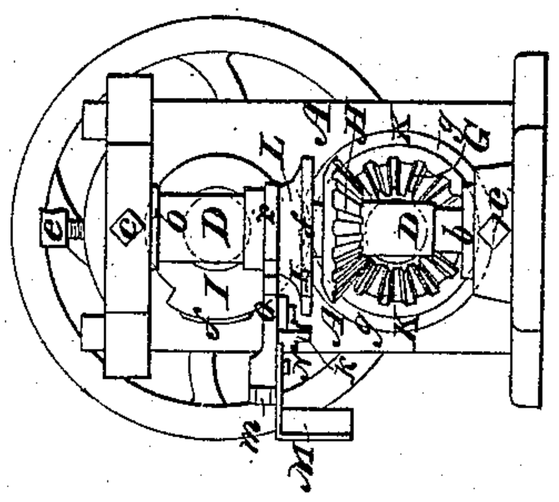

Fig 3

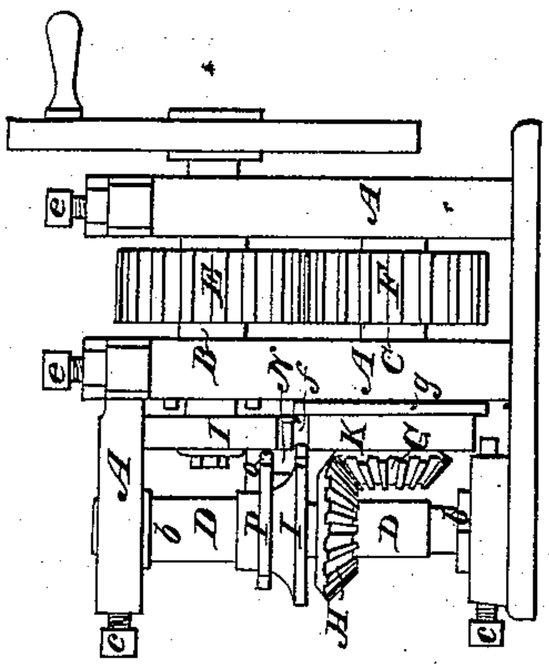

Fig 4

Fig. 5.

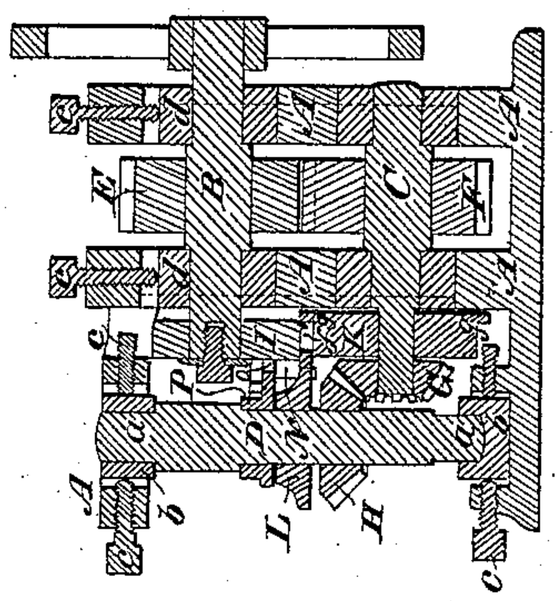

Fig 6.

Fig 8

WITNESSES:

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URIAH BILLINGS, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR MAKING HORSESHOES.

Specification forming part of Letters Patent No. **36,390**, dated September 9, 1862.

To all whom it may concern:

Be it known that I, URIAH BILLINGS, a citizen of the United States of America, and a resident of New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and useful or Improved Machine for Swaging or Forming Blanks for Horseshoes; and I 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, and Fig. 3 a side elevation, of it. Fig. 4 is a vertical section taken through the upright reducing and curving rollers. Fig. 5 is a vertical longitudinal and central section of the machine. Fig. 6 is a top view, and Fig. 7 a rear view, of the movable buttress to be hereinafter described, the cam and spring for operating the buttress being shown in Fig. 6; Fig. 8, a horizontal section of the central or lateral reducing cam or roll.

The nature of my invention consists in an improved horseshoe-blank former or combination of adjustable swaging and creasing rolls, and a movable buttress arranged together, and with mechanism for operating them, substantially as hereinafter described.

In the drawings, A exhibits the frame of the machine. Within this frame are placed two shafts, B C, arranged with their axes parallel and perpendicular to a third shaft, D, which is also placed within the frame and has its journals *a a* supported in boxes *b b*, provided with adjusting-screws *c c*, and so applied to the frame A as to be capable of being moved in a direction toward the two shafts B C. The boxes *d d* of the upper shaft, B, are also provided with adjustable or stop screws *e e*, and are so applied to the frame A as to be capable of being elevated within the same as circumstances may require, the said two shafts B and C being geared together by two spur-gears, E F. Furthermore, there is a beveled pinion, G, fixed to one end of the shaft C and made to engage with a beveled gear, H, applied on the vertical shaft D, the whole being arranged as shown in the drawings.

Two swaging-rolls, I K, are carried respectively by the shafts B and C, these rollers being so formed as not only to impart to a bar of iron, while they may be in operation thereon, the proper variable thickness of a shoe-blank, but in the meantime to suitably crease or groove it, the parts for creasing it being shown at *f f* as extended from the periphery of the upper roll. The creases that are formed are those which, upon the shoe being attached to a horse's foot by nails, receive the heads thereof. The lowermost of the rolls is made with a flange, *g*, extending from one side of it and lapping over the upper roll. The lateral or central roll, L, carried by the shaft D, acts in conjunction with the said flange in determining the variable width of the shoe-blank while the bar from which such blank is to be formed may be passing between them and the vertical rolls.

In rear of the bite of the rolls there is an adjustable stop, M, against which the end of the metallic bar is forced preparatory to its reduction by the rolls. Furthermore, the movable buttress N is placed between the stop M and the rolls, and is constructed with a right-angular notch, *k*, to receive the blank bar and bear against one edge, as well as the upper side of it. This buttress is carried by a lever, O, to which it is fastened by a clamp-screw, *l*. The said lever has its fulcrum *m* at one end, and in an arm, *n*, projected from the frame of the machine. A spring, *o*, serves to press the lever toward and against a cam, *p*, which is fixed on the shaft D. The object of the buttress N is to prevent the shoe-blank from curling or bending laterally while being formed.

The rolls are so made that while they may be revolving they will allow the shoe-blank rod preparatory to its reduction to be passed between and against the stop M. Soon afterward the rolls seize it, retract it, and compress it into the required form, the blank so made being subsequently separated from the rod. I would remark that during this action of the rollers the metallic rod is supposed to be at a red heat. While the rolls may be moving into positions to allow of the introduction of the blank-rod between them and against the stop the buttress will also be moved outward by the spring *o* far enough to be sufficiently out of the way of the proper path of the rod. Such buttress prior to the reduction of the rod by the rollers will be moved by the cam *p* close up to and against the outer edge and up-

per surface of the rod, and while in such position it will effectually prevent the blank from canting or bending under the action of the rollers.

I am aware that rolls have been used for swaging metal into various shapes, both in its width and thickness, therefore I do not claim such as my invention; but

I claim—

My improved horseshoe-blank former, or combination of the adjustable swaging and creasing rolls I K L, and a movable buttress, N, constructed, applied, and arranged together and with mechanism for operating them, substantially as hereinbefore described.

URIAH BILLINGS.

Witnesses:
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