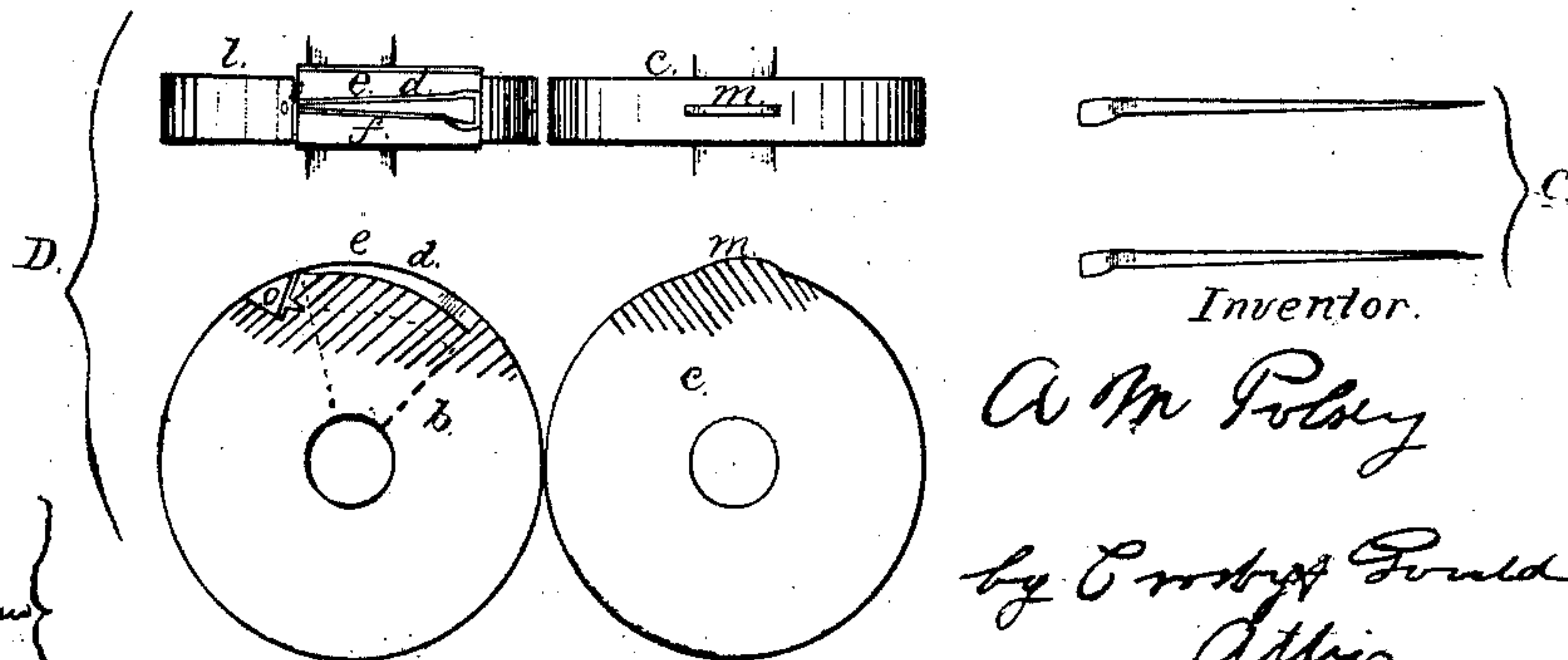
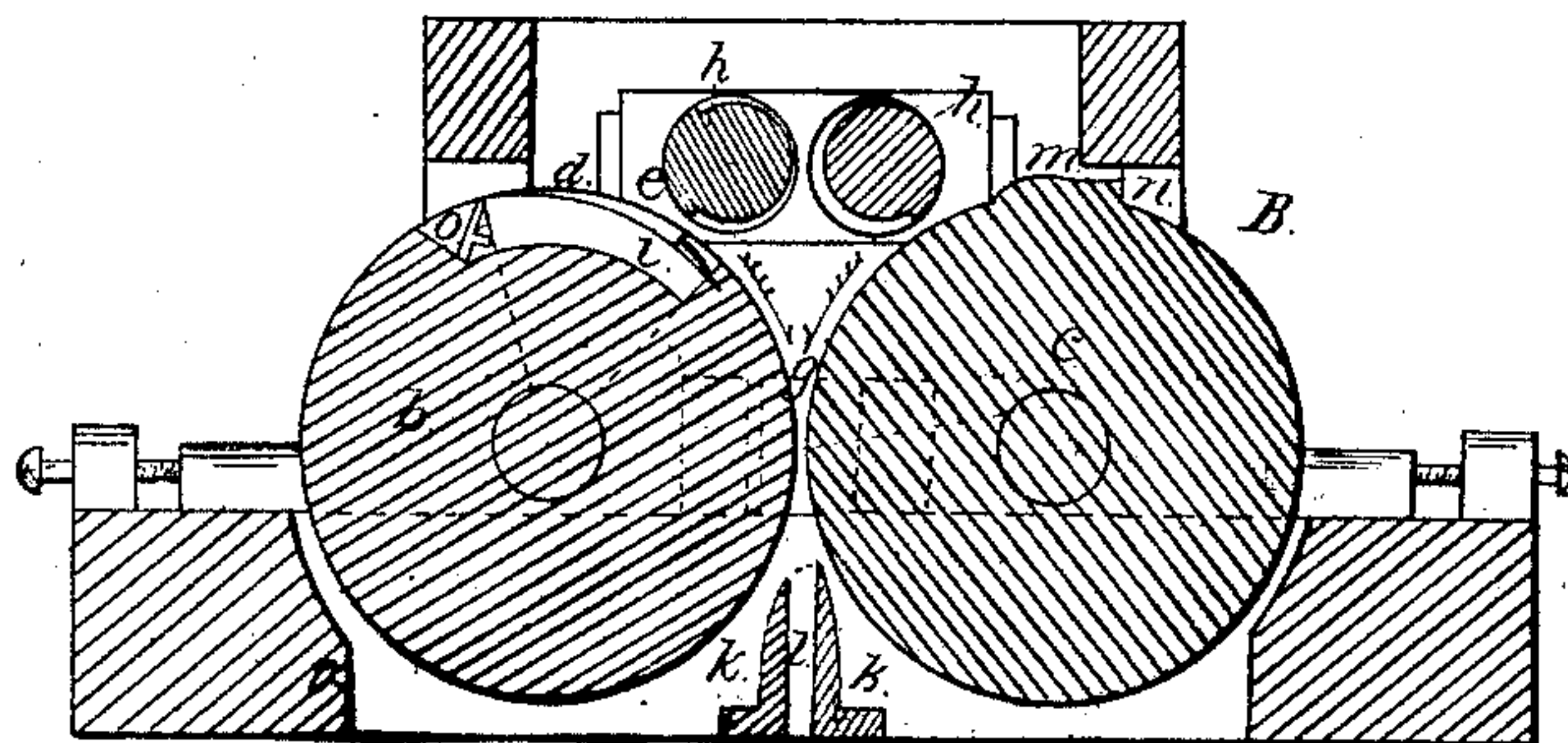
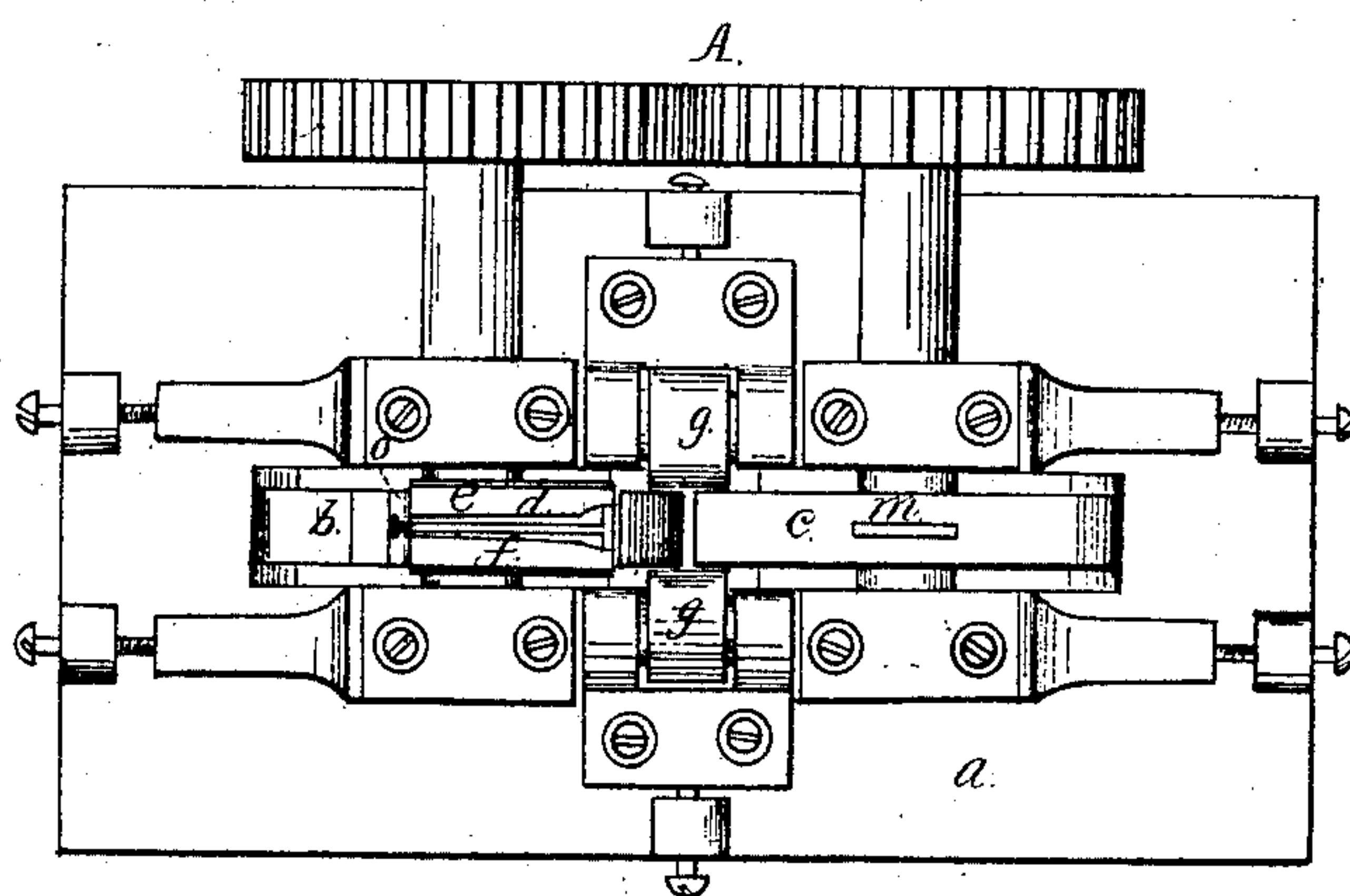


A. M. Polsey
Machine for Making Nails.
No. 62,682. Patented Mar. 5, 1867.



Witnesses:
J. B. Kidder
M. W. Frothingham

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UNITED STATES PATENT OFFICE.

ARLON M. POLSEY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO T. H. FULLER.

IMPROVEMENT IN MACHINES FOR MAKING NAILS.

Specification forming part of Letters Patent No. 62,682, dated March 5, 1867.

To all whom it may concern:

Be it known that I, A. M. POLSEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in the Manufacture of Horseshoe-Nails; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates particularly to straightening, pointing, and finishing that class of horseshoe-nails which are produced by cutting each blank from a sheet of metal, and drawing down the shank of said blank to form and toughen the point by a series of roller-dies or die-grooves. As the action of these dies leaves the blanks more or less bent, and somewhat imperfect at or near the points, they require a slight trimming and a setting of the finished point to give it a sort of chisel-termination.

My invention consists in effecting the straightening of the edges of the nail by the action of rolls, between which the nail is passed, and movable blocks in one of the rolls, that are pressed up against and straighten out the edges of the nail, and in combining with these rolls a guide or throat-piece, through which the nails are fed from the rolls, the action of this guide, in connection with the action of the rolls, straightening the broad faces of the nail; also, in the mechanism for chamfering the nail at the point; also, in combining with the straightening and pointing mechanism, a cutter to trim the end of the nail; also, in so arranging a straightening and pointing mechanism, with reference to the roller dies which roll the blank into general shape, that the nails are automatically delivered from the die-rolls to the straightening mechanism.

The drawings represent a mechanism embodying the invention, A showing a plan, and B a vertical central longitudinal section of the same.

On a bed-piece, *a*, are supported housings for the shafts of a pair of rolls, *b c*. In the surface of one of these rolls is a groove, *d*, said groove being made up from two blocks or halves, *e f*, which in their normal position

are held slightly apart, as seen at A, but with a capability of movement toward each other so as to bring the two parts into contact. When thus in contact the die-groove corresponds in width at all points to the width of the finished nail, while when open the groove is of a width sufficient to receive the nail, with all the crooks left in it by the action of the shaping and drawing die grooves. On the opposite sides of the rolls, where they come together, are two presser-rolls, *g*, placed at such distance apart that, as the rolls *b c* revolve, the adjacent surfaces of the presser-rolls act upon the sides of the rolls *b c* opposite the groove, and force the parts *e f* together.

The rolls *b c* rotate in the direction of the arrows seen at B, and the movement of these rolls is made in correspondence with the movement of the pair of die-rolls *h* above. These die-rolls represent the last pair of the suit of die-rolls which form the nail from the blank or draw down its shank, and the conjoint movement of the rolls *h* and the rolls *b c* is such that, as the head of the nail drops from these die-grooves, it enters the head in the die-groove *d*, and is carried in the groove *d* by the straightening-rolls, the lower face of the groove in the roll *b* and the face of the roll *c* acting upon and reducing any crooks in the opposite sides of the nail, while the opposite sides or walls of the groove, forced inward as they pass with the nail between the rolls *g*, act upon and straighten the opposite edges of said nail. At the head of the groove *d* is a spring, *i*, against which the head of the nail lies as it enters the groove. Just beneath the die rolls, and extending up between them, is a guide-piece, *k*, having a vertical throat or tube, *l*. As the head of the nail passes beyond the action of the rolls *b c*, where they come together, the spring *i* throws out the head, and it enters the throat *l*, and as the rolls *b c* continue their rotation, they press the nail down through this throat, the position of which compels the nail to assume a straight form, taking out the long uniform curve left in it by the action of the surfaces of the rolls *b c*. Near the point of the nail there are apt to be fin-pieces upon its opposite edges, and some other general imperfections or roughness of edge left by the

drawing and shaping dies. To remedy this there is placed on the roll not grooved a male die or projection, *m*, which, as it comes into connection with the groove on the opposite roll, presses the nail into the groove, shearing or clipping off any undue projections or fins from these edges, leaving them clean and smooth.

In the use of horseshoe-nails it is usual to have upon the point of each a chamfer or chisel-edge, which shall cause the nail to turn as it is driven, and cause its point to come out upon the hoofs at a short distance above the sole. This chamfer is placed sometimes on one side and sometimes on the other, as seen at C, in accordance with the side of the nail which is presented outward as it is driven. To effect this chamfer an enlargement or extension is given to the die-projection *m*, as seen at *n*, and as the dies bite and pass upon the end of the nail they draw down its end into this chamfer. Finally, the extreme end of the die-projection presses the end of the shank against a cutter, *o*, and thus finishes the point and the nail. Where the chamfer is to be made in the opposite direction, the surface of the die-projection at the end retreats, as seen in the modification shown at D. In this modification the sides only of the die-grooves are made capable of lateral movement, to straighten the edges of the nail, the bottom being made integral with the roll.

I claim—

1. In combination with the drawing and

shaping die rolls, and with the rolls *b c*, between which the nail is passed, the movable blocks or pieces *e f*, arranged to operate against and straighten the opposite edges of the nail, substantially as set forth.

2. In combination with the rolls *b c*, and the edge-straightening blocks *e f*, the throat *l*, operating in connection with the rolls to straighten the broad faces of the nail, substantially as set forth.

3. In combination with the rolls *b c* and the straightening mechanism, the die-projection *m*, operating in connection with the edges of the groove *d*, to shear or clip off the rough edges of the nail near the point, and also so formed as to chamfer the end of the nail, substantially as set forth.

4. In combination with the rolls *b c* and straightening mechanism, the cutter *n*, for pointing or finishing the point of the nail, substantially as described.

5. In combination with the rolls *b c* and straightening mechanism, the spring *i*, for throwing the head of the nail from the groove, substantially as described.

6. The arrangement of the straightening, chamfering, and cutting mechanism described, so as to automatically co-operate with the shaping and drawing die rolls *h*, substantially as set forth.

ARLON M. POLSEY.

Witnesses:

F. GOULD,

M. W. FROTHINGHAM.