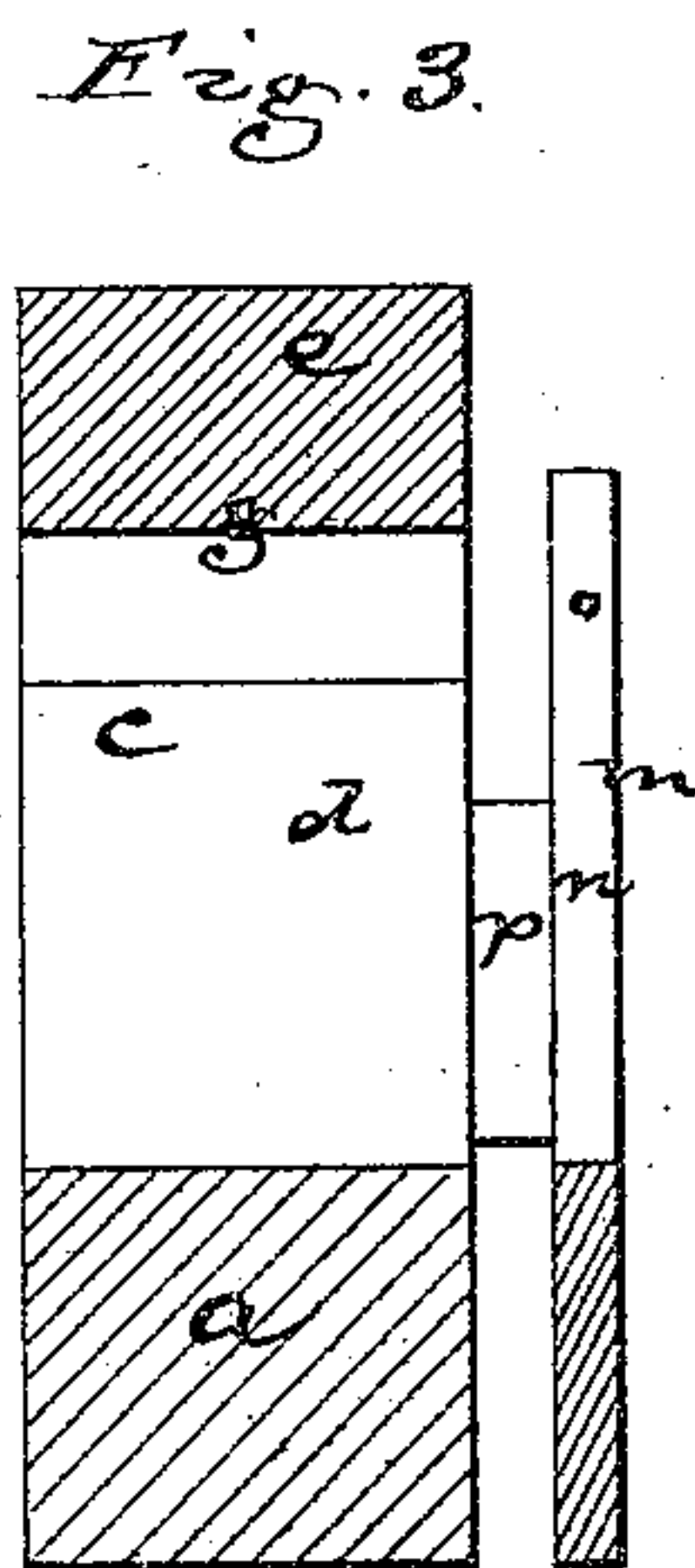
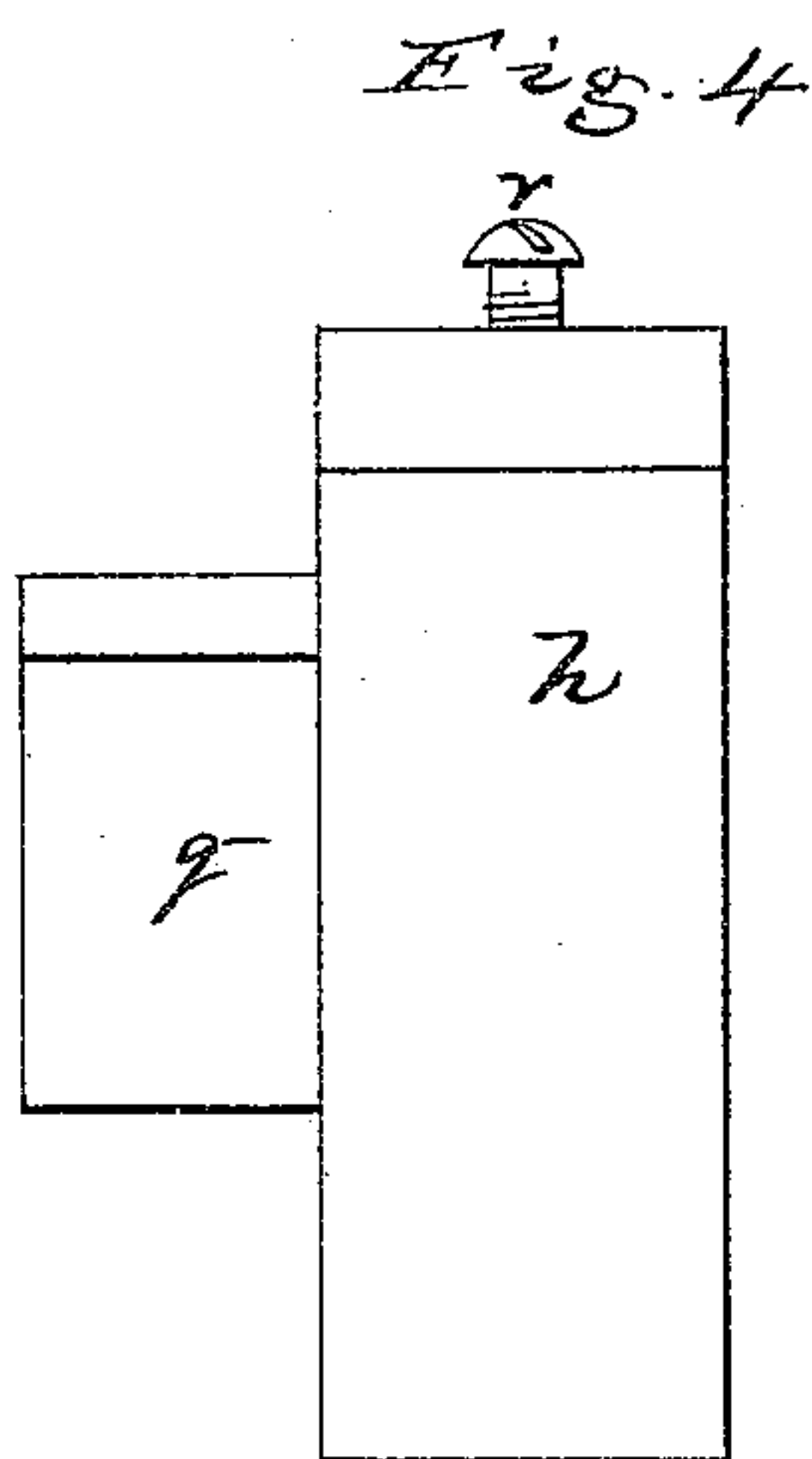
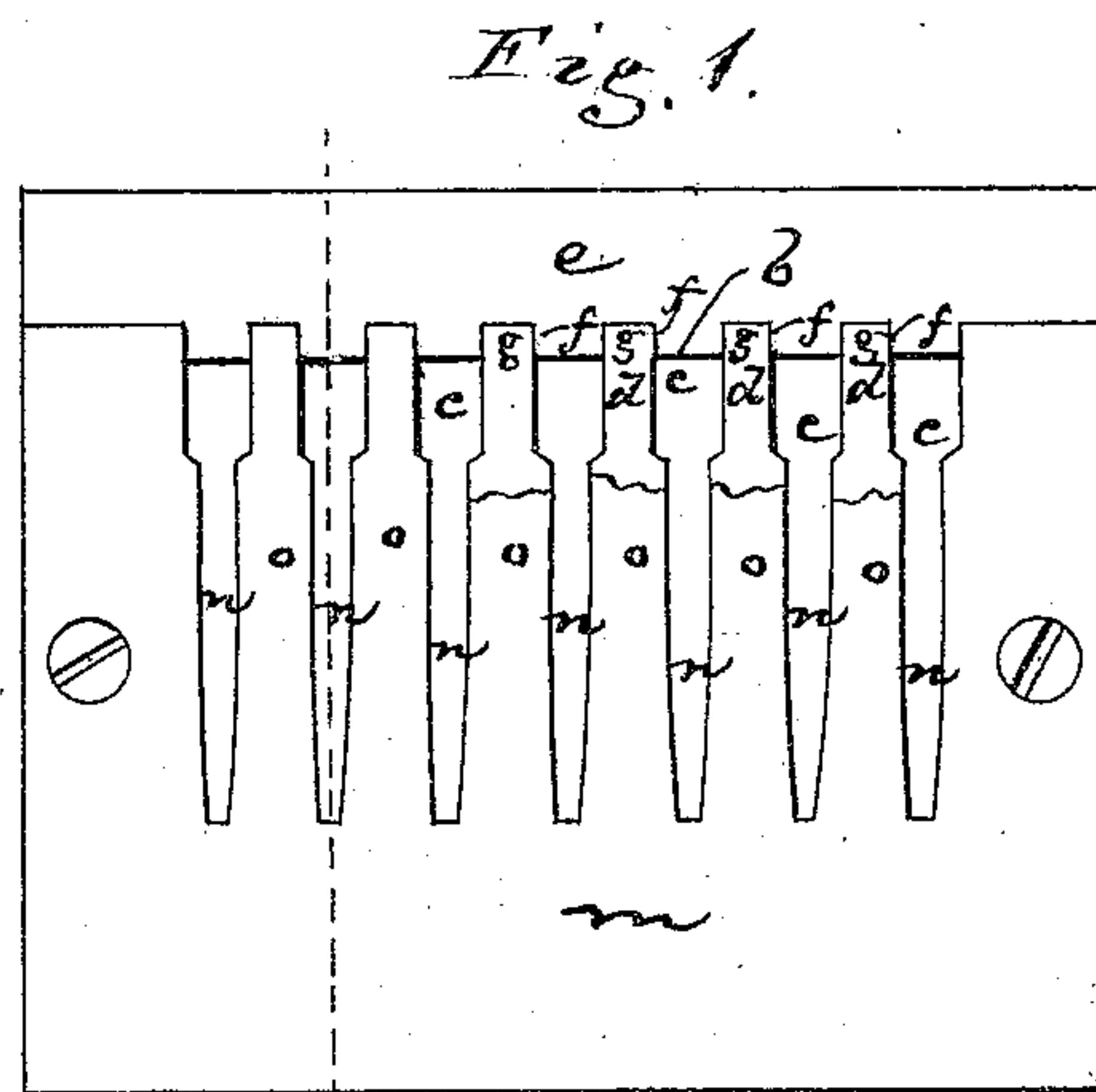
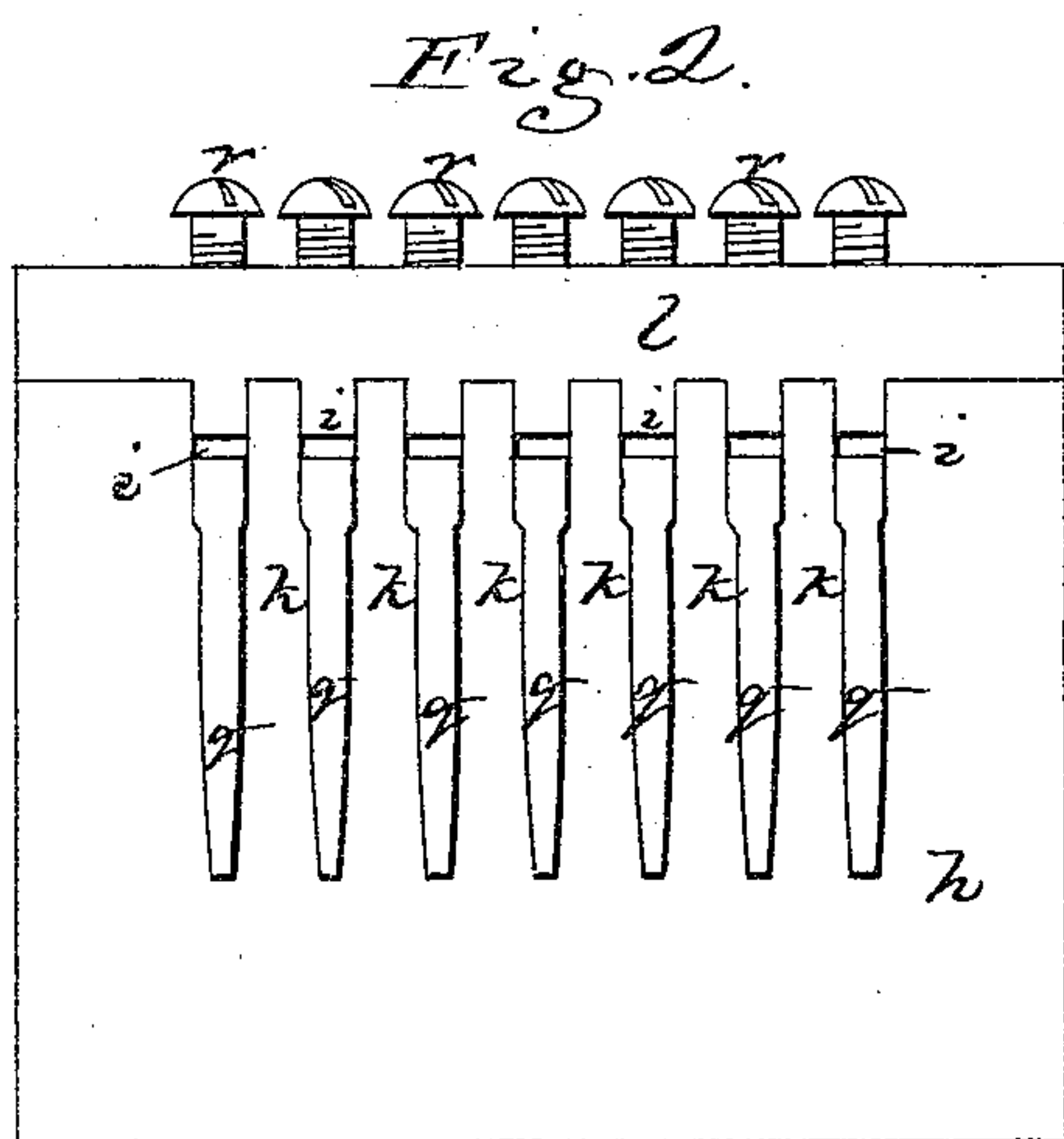


A. H. CARYL.

Dies for Punching Horseshoe Nails from Plates.

No. 142,678.

Patented September 9, 1873.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

ALEXANDER H. CARYL, OF FORGE VILLAGE, MASSACHUSETTS.

IMPROVEMENT IN DIES FOR PUNCHING HORSESHOE-NAILS FROM PLATES.

Specification forming part of Letters Patent No. **142,678**, dated September 9, 1873; application filed June 6, 1873.

*To all whom it may concern:*

Be it known that I, ALEXANDER H. CARYL, of Forge Village, in the county of Middlesex and State of Massachusetts, have invented an Improved Punch and Die for Punching Horseshoe-Nails or Nail-Blanks; 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.

My invention relates, particularly, to the construction of a gang punch and die for punching horseshoe-nails from plates which are rolled with head-forming projections.

In my invention I make the punch-holder, the dies, and the take-off or stripper-plate, each in one piece, and of such form that the work of cutting the dies and the slots to receive the punches, and the punch-entering slots in the stripper-plate, may be all made by the action of a planer; the same tool that forms the dies also forming the slots in the punch-holder to receive the punches and the slots in the stripper-plate.

The drawing represents a die-block, punch-holder, and stripper-plate embodying my invention.

Figure 1 shows an inner-side view of the plate; Fig. 2, an inner-side view of the punch-holder and punches; Fig. 3, a sectional view of the die-plate; Fig. 4, an end view of the punch-holder.

*a* denotes a block formed of wrought-iron—steel-faced—which may be re-enforced by a strap extending around, or partially around, it. From one face, *b*, of this block a series of slots, *c*, are cut, these slots being alike, and each being of the exact form to be possessed by each nail or nail-blank to be cut by the dies. Between these slots are left the partitions *d*; and to the side of the block from which the slots are cut is screwed a steel plate, *e*, having slots *f*, into which enter the ends *g* of the partitions *d*, the plate *e* and its slots preventing the partitions *d* from springing. The punch-holder block *h*, or plate, is made of cast-iron, similarly formed, having slots *i*, partitions *k*, and a cap-plate, *l*; and the stripper-

plate *m*, formed of steel, has corresponding slots *n* between the bars *o*, all these slots being cut through the three pieces in a plane, at the same time the pieces being all clamped together, and the slots being fac-similes in every respect, cut by the same tool or tools. The stripper-plate is fastened to the die-block *a* by screws passing through chocks *p*, that keep the block and plate at a suitable distance apart for the entrance between them of the plate to be cut into blanks. In the slots of the punch-holder are inserted the shanks, or inner ends, of the gang of punches *q*, formed of steel, and fastened by screws *r*, the wedge form of the punches and corresponding form of the slots into which they fit enabling them to be tightly held by the pressure of the screws *r*.

It will thus be seen that the die and punch plates are not sectional, but that each is made of a single plate or block of cast metal; and that, by forming the slots as described the work is very quickly and accurately performed.

I claim—

1. The punch-holder block or plate *h*, for making horseshoe-nails, formed of a single piece, and having the slots cut in it, substantially as described.

2. The die-block *a* for making horseshoe-nails, formed of a single piece, and having the slots cut in it, substantially as described.

3. The stripper-plate *m* for a horseshoe-nail die-plate, formed of a single piece having the slots cut therein, substantially as described.

4. In combination with the die-plate *a*, slotted as described, the cap-plate *e* fastened thereto, substantially as shown and described.

5. In combination with the punch-block *h*, slotted as described, the cap-plate *l* fastened thereto, substantially as shown and described.

6. In combination with the slotted plate *h*, the punches *q*, held in place substantially as shown and described.

A. H. CARYL.

Witnesses:

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