

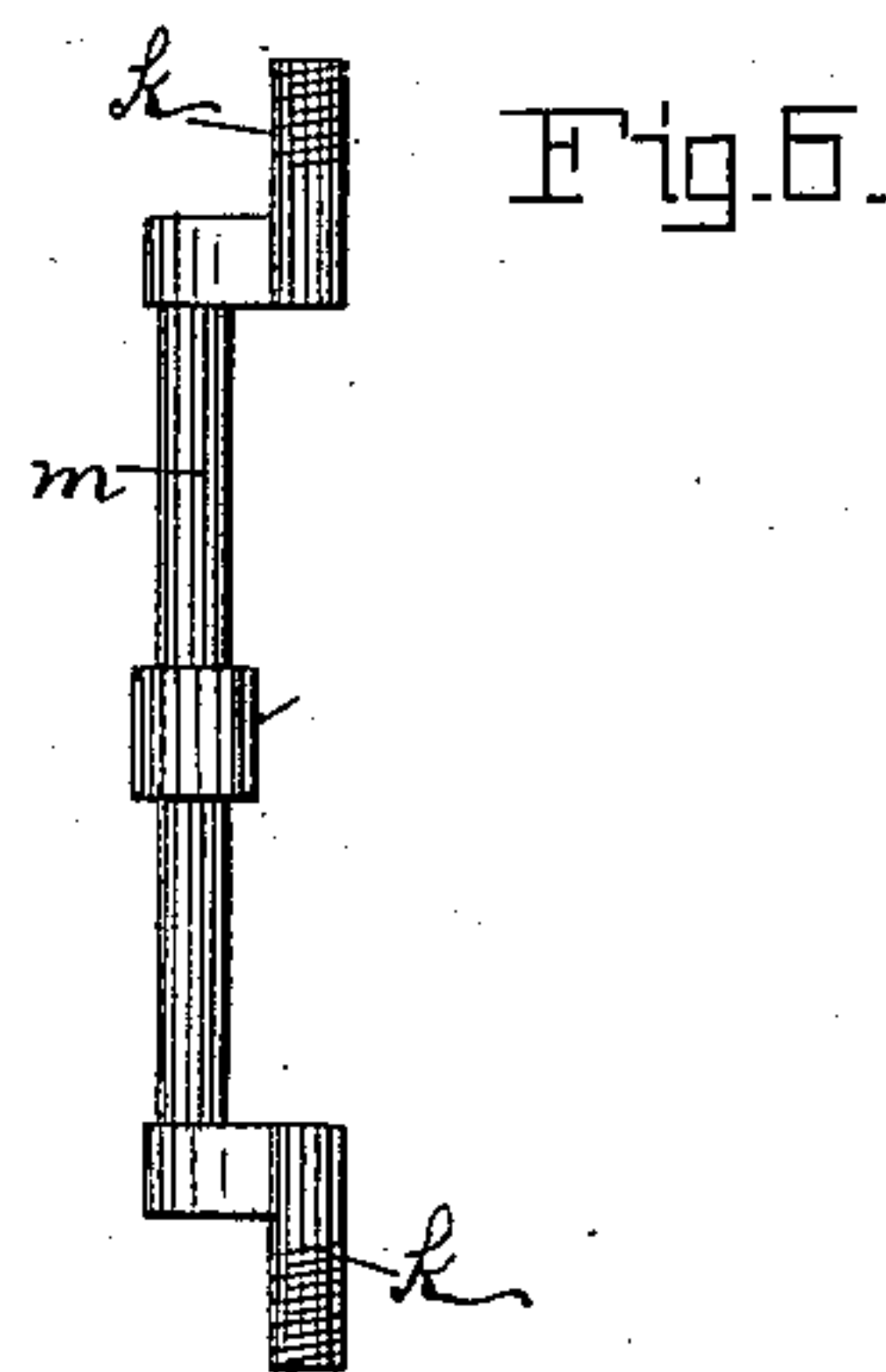
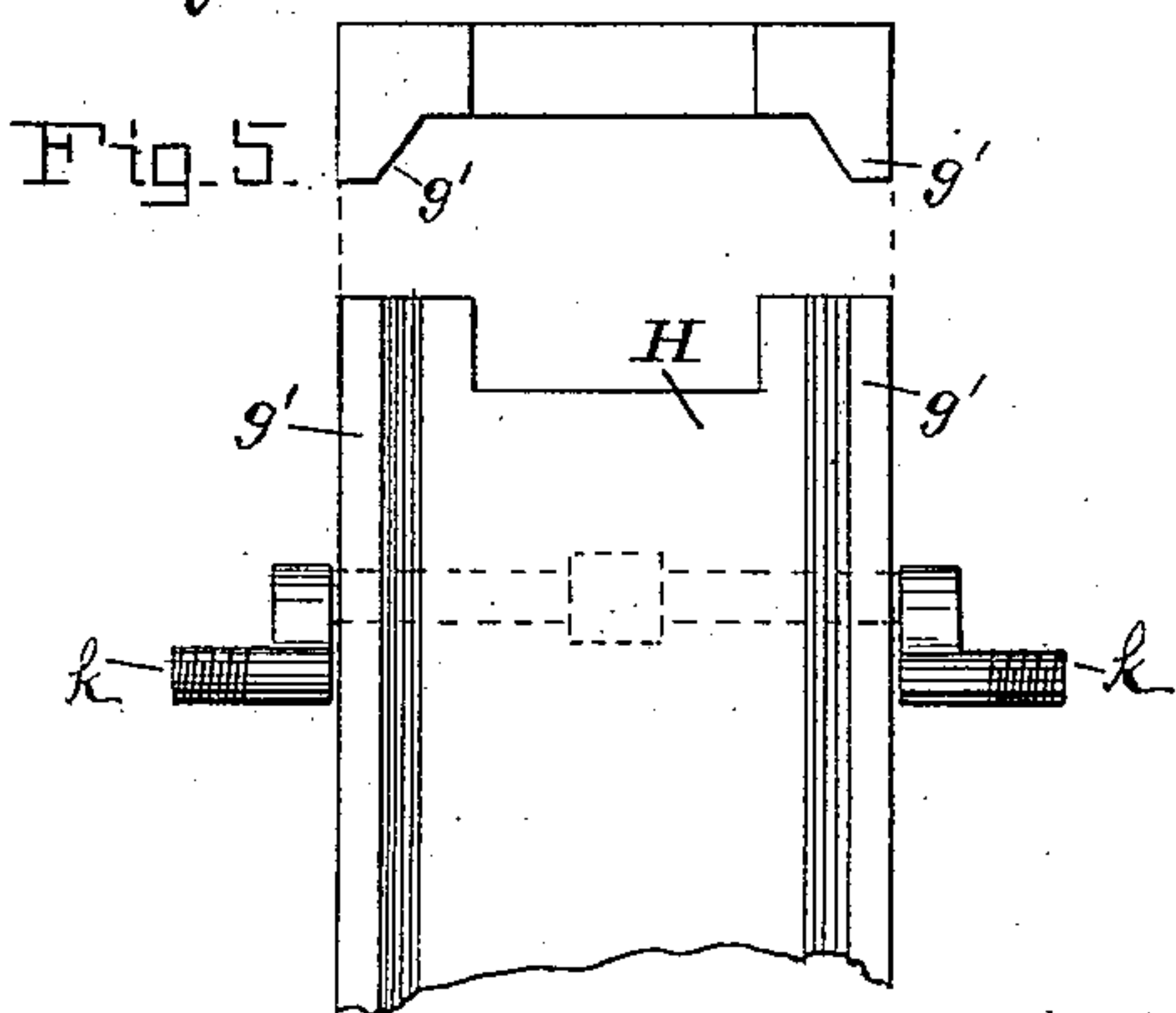
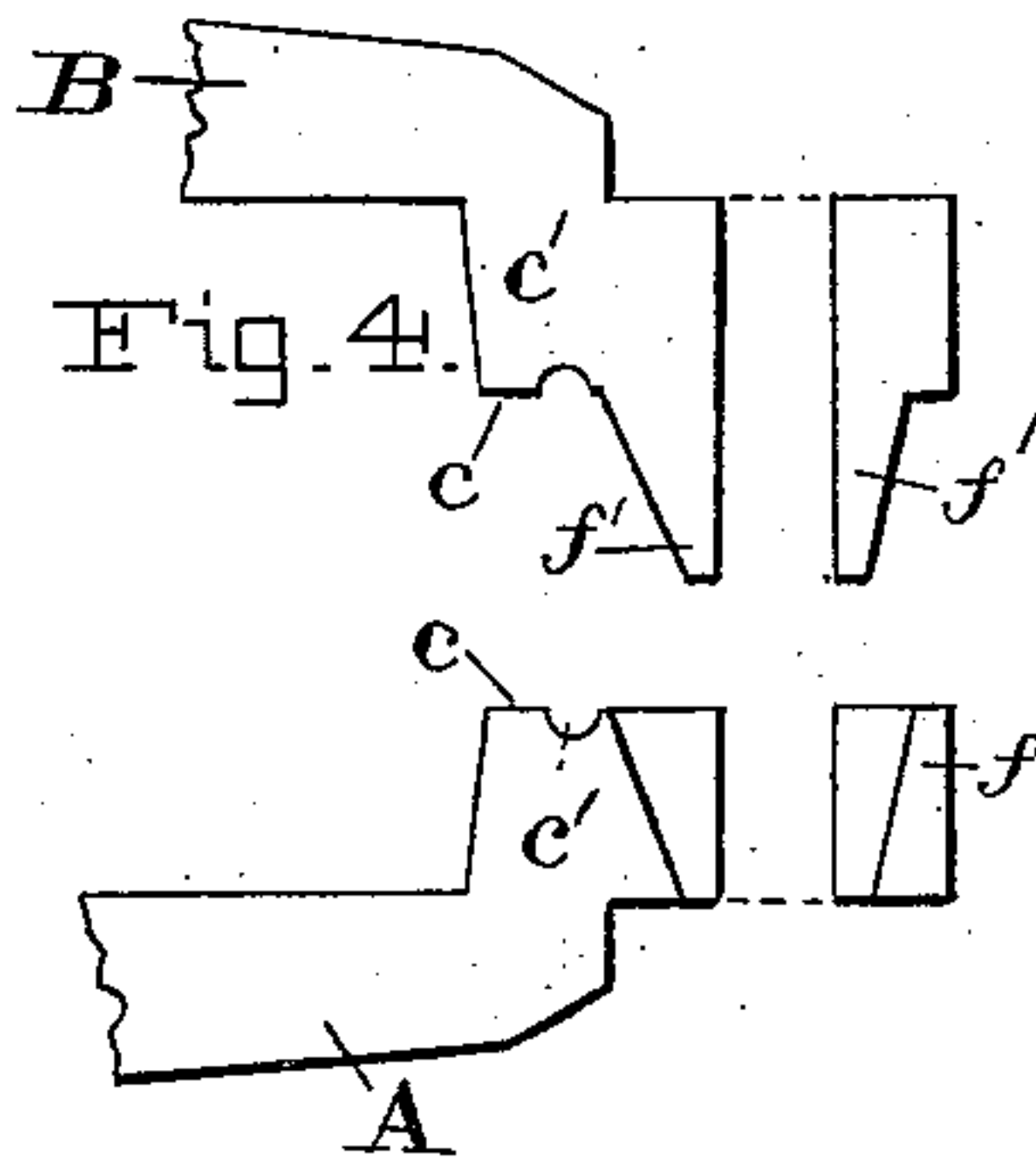
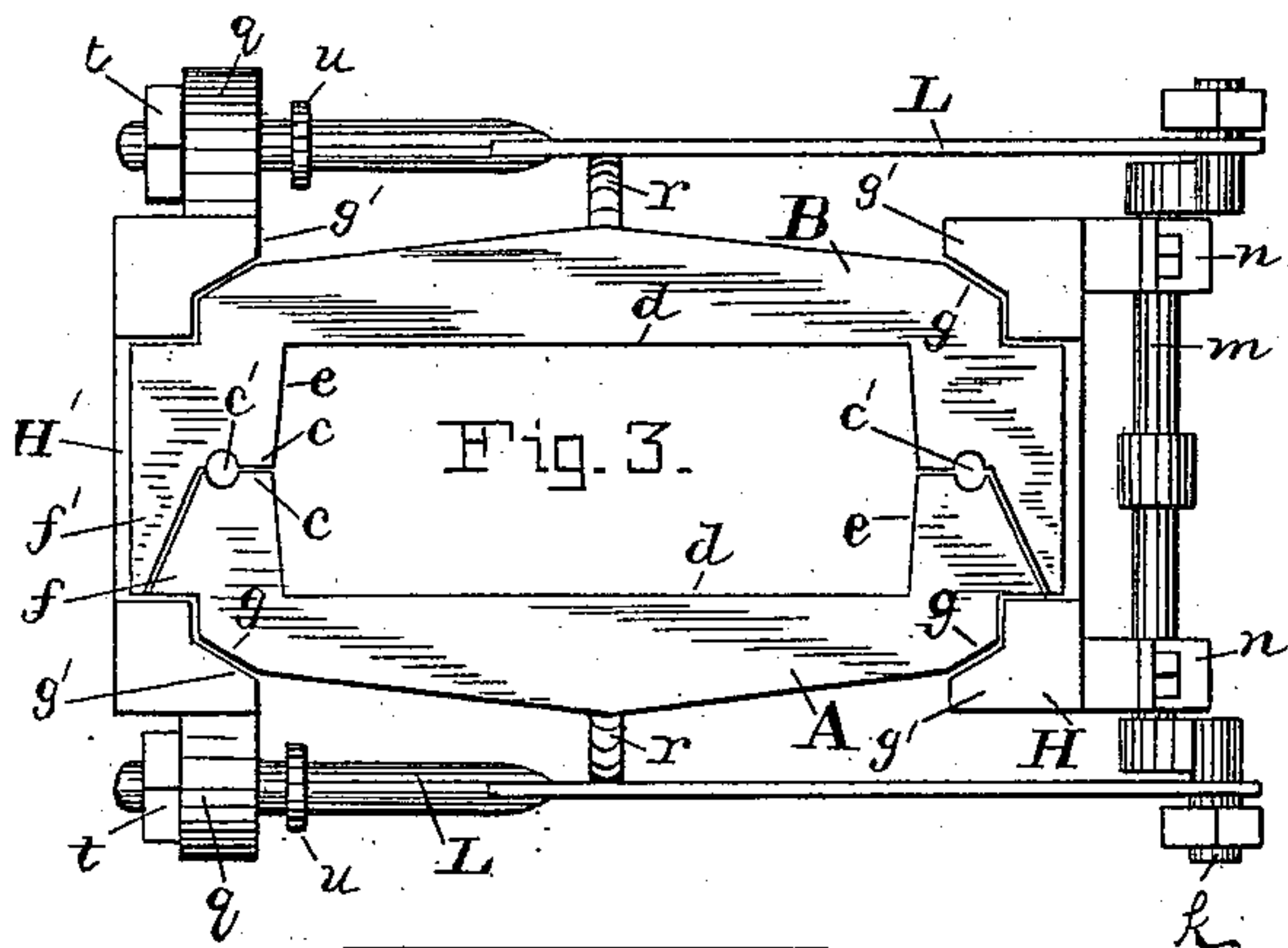
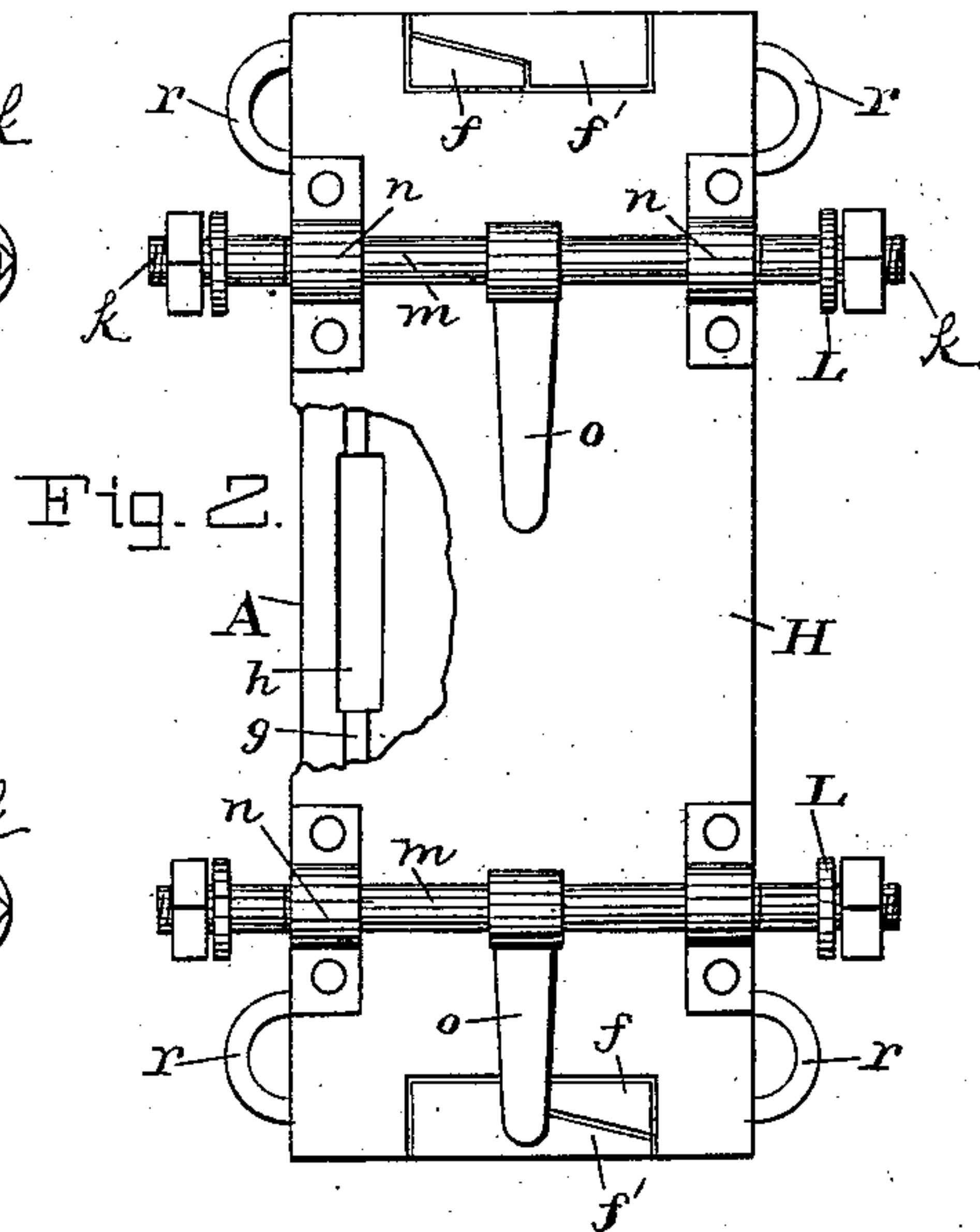
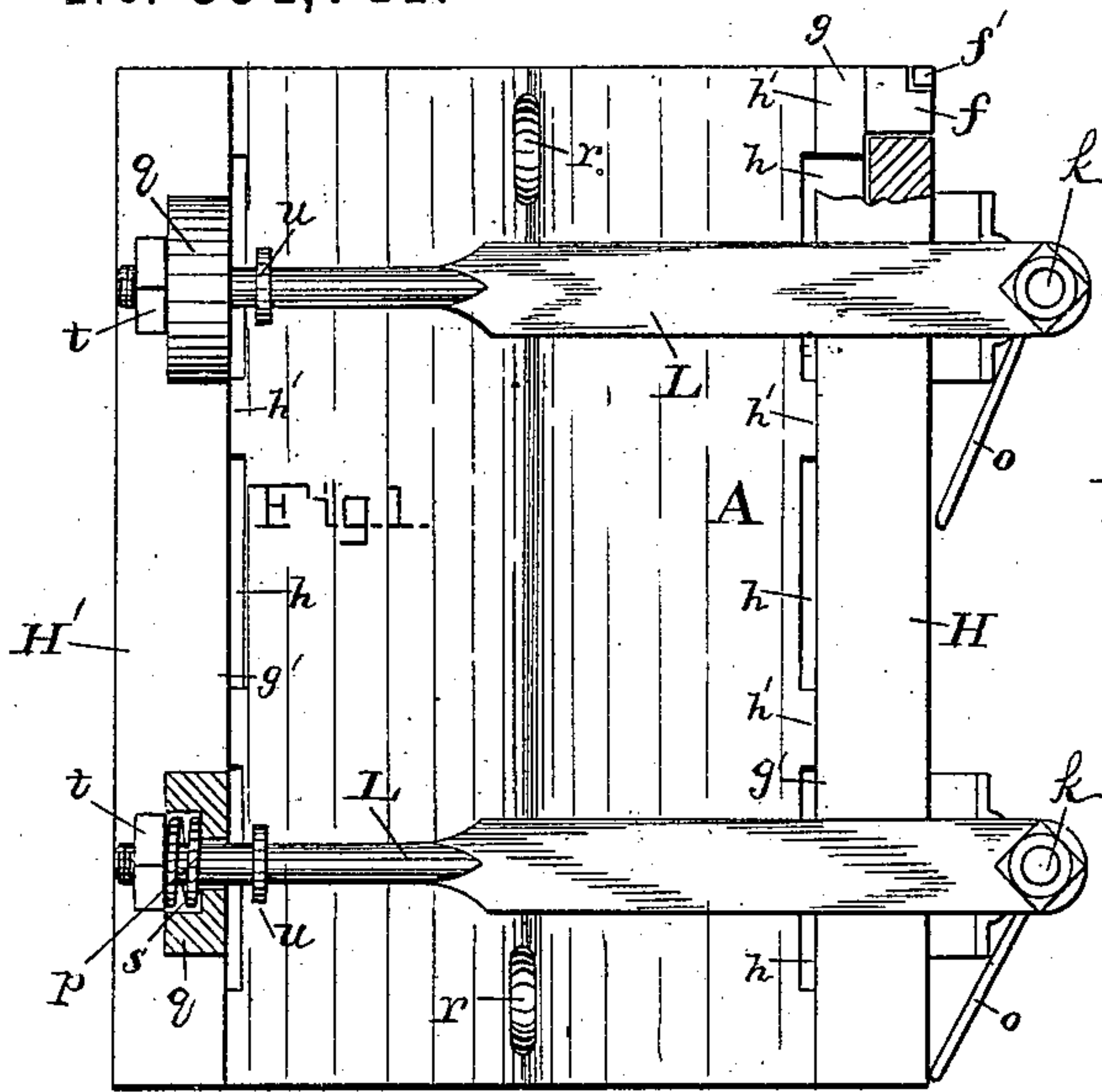
(No Model.)

J. SABOLD.

INGOT MOLD.

No. 354,741.

Patented Dec. 21, 1886.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN SABOLD, OF LITTLE OLEY, PENNSYLVANIA.

## INGOT-MOLD.

SPECIFICATION forming part of Letters Patent No. 354,741, dated December 21, 1886.

Application filed July 22, 1886. Serial No. 208,710. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SABOLD, a citizen of the United States, residing at Little Oley, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Ingot-Molds, of which the following is a specification.

My invention relates to a mold for casting metal into ingots, and has for its object to provide an improved sectional mold provided with special clamps, as hereinafter specified.

In the accompanying drawings, which illustrate the invention, Figure 1 is a front broad side view of the mold and clamps. Fig. 2 is an edge or narrow side view of the mold and clamps. Fig. 3 is an end view of the mold and clamps, showing the two mold-sections ready for filling. Fig. 4 is a partial end view of the two mold-sections, showing them loosened or separated, and also showing a side view of the guide-tongues. Fig. 5 is an inner side and end view of one of the clamp-plates. Fig. 6 is a view of the eccentric tightening-shaft.

The letter A designates one section, and B the other, of a metal mold. These two sections unite at the narrow sides, which are opposite, and said sections are separable at the uniting-edges *c* on said narrow sides. An important feature is the straight groove *c'* in the confronting faces of the said uniting-edges. This groove *c'* extends along the entire length of the uniting-edges, and when the edges of the two sections are in contact the grooves *c'* are coincident and form a bore or passage, as shown in Fig. 3.

When the mold is being prepared for the molten metal, this bore or passage is to be filled and packed with sand, clay, or any other suitable packing, whereby the joint at the uniting-edge will be made impervious to the passage of the molten metal.

The shape of the interior of the mold is shown in Fig. 3. The interior broad sides, *d*, are smooth, flat, and parallel with each other, and the narrow sides *e* are a little concave, or, in other words, commencing at each broad side, they spread or flare slightly toward the center uniting-edge, *c*. This shape of the interior, it will be seen, facilitates the release or discharge of the ingot upon the two sections A B being loosened or unclamped.

Each outer corner of the two mold-sections is beveled, as at *g*, and two clamp-plates, H H', are employed on the narrow sides—one opposite the other—to bind the sections. Each clamp-plate has two beveled flanges, *g'*, and these flanges are on opposite edges and extend parallel with each other. Each beveled flange *g'* is in contact with an outer beveled corner, *g*, and the flanges of each plate bear against the outer corners of different mold-sections. It will thus be seen that when the two clamp-plates H H' are drawn or pressed toward each other the effect of the beveled flanges is to bind the two mold-sections A B together. To facilitate the beveled flanges in being pressed upon, or against the beveled corners *g* in case they become warped by heat, said beveled corners are provided with cutaways *h*, (see Figs. 1 and 2,) which are spaced apart to leave bearings *h'*, which latter only come in contact with the beveled flanges.

In order to guide the two sections A B, when bringing them together, so they will have the proper relative position, I provide the narrow sides of the sections with a stop-block, *f*, and a tapered tongue, *f'*, the stop-block being on one section and the tapered tongue on the other section. The shape of the stop-block and tapered tongue is shown in the drawings; but this shape may vary. In addition to the function already specified as performed by the stop-block and tongue, these parts are so arranged and combined with respect to the clamp-plates H H' as to perform another function, which will now be described. A block, *f*, and tongue *f'*, which for the present purpose may be termed "laterally-projecting lugs," are secured to each narrow side of the mold-sections both at the top and bottom thereof, as shown in Figs. 2 and 3, and the clamp-plates H H' are applied on the narrow sides between the said top and bottom "lugs." This construction of laterally-projecting lugs *f f'* and clamp-plates allows of the clamp-plates being loosened and the mold-sections to partly separate, as they must when the ingot is about to be discharged from the mold, and at the same time prevents the entire separation of the mold-sections from the clamp-plates, which is a desideratum, from the fact that the entire mold apparatus here shown is designed to be lifted



so as to discharge the ingot. In other words, the mold is lifted from the ingot.

To provide for lifting the mold, loops or eyes *r* are attached to each section both at the top and bottom. By this means the mold can be reversed or placed upside down and lifted from either end.

The two clamp-plates *H H'* are connected and drawn together by a device consisting of the rods *L* and eccentric tightening-shaft *m*. One clamp-plate has two eccentric or crank-shaped shafts, *m*, (see especially Fig. 6,) which partly turn in bearings *n*. This shaft *m* has at each end a wrist, *k*, and at the center a lever, *o*. Each wrist *k* has pivoted to it a rod, *L*, which extends across the mold-side and connects in a suitable manner with the other clamp-plate. By this arrangement of parts the eccentric shaft *m* may, by grasping the lever *o*, be partly turned one way—say up—to loosen the two clamps, and turned down to tighten them, as will be readily understood.

Each rod *L* may be provided with a spiral spring, *p*, where it is connected with one clamp-plate, in order to give some elasticity to the "draw" on the two plates, thereby to allow for the expansion of the heated parts due to the molten metal. The construction of the spring part is shown in Fig. 1. One clamp-plate has on each side two lugs, *q*, each of which has a hole for the passage of a rod, *L*, and also has a recess, *s*. A spiral spring, *p*, occupies the said recess, and the rod *L* passes through the hole in the lug and the spiral spring, and a nut, *t*, on the end of the rod bears on said spring. The rod *L* is also provided with a collar, *u*, rigidly fixed to it. When the clamp-plates are drawn tight, this collar has position near the lug *q*, as seen in Fig. 1. When the clamp-plates are loosened by turning the eccentric shaft one way, the collars *u* are forced up against the lugs *q*, thereby forcing the said plates asunder.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In an open-topped mold for ingots, the combination of two mold-sections separable on opposite sides of the mold and having outer beveled corners, two clamp-plates, each provided with two beveled flanges, and each plate having each of its said flanges bearing against

the outer corners of different mold-sections, and rods to connect and draw the clamp-plates together, as set forth.

2. In an open-topped mold for ingots, the combination of two mold-sections separable on opposite sides of the mold and having outer beveled corners provided with cutaways *h*, spaced apart, and bearings *h'* between the cutaways, two clamp-plates, each provided with two beveled flanges, and each plate having each of its said flanges bearing against the outer corners of different mold-sections, and means to draw the clamp plates together, as set forth.

3. In an open-topped mold for ingots, the combination of two mold-sections separable on opposite sides of the mold and having outer beveled corners and provided on the separable sides, at the top, with a laterally-projecting lug, two clamp-plates, each provided with two beveled flanges, and each plate having each of its said flanges bearing against the outer corners of different mold-sections and applied below the said laterally-projecting lugs, and rods to connect the clamp-plates, as set forth.

4. In an open-topped mold for ingots, the combination of two mold-sections separable on opposite sides of the mold and having outer beveled corners, two clamp-plates, each provided with two beveled flanges, and each plate having each of its said flanges bearing against the outer corners of different mold-sections, rods to connect and draw the clamp-plates together, and eccentric tightening-shafts *m*, as set forth.

5. In an open-topped mold for ingots, the combination of two mold-sections separable on opposite sides of the mold and having beveled corners, two clamp-plates, each provided with two beveled flanges, and each plate having each of its said flanges bearing against the outer corners of different mold-sections, rods to connect and draw the clamp-plates together, and a spring, *p*, bearing on each connecting-rod, as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN SABOLD.

Witnesses:

CHAS. B. MANN,  
EDW. RAINE.