

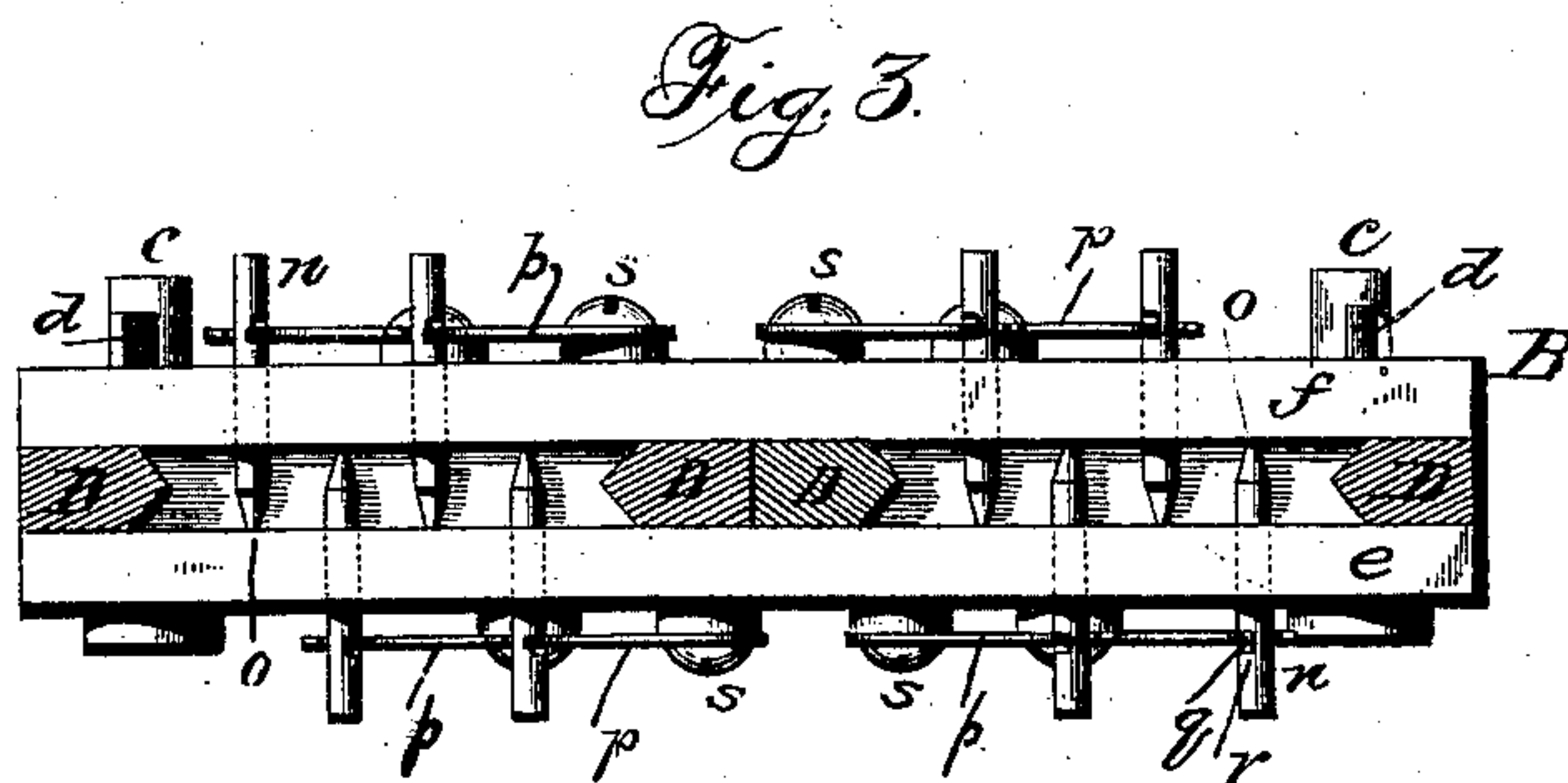
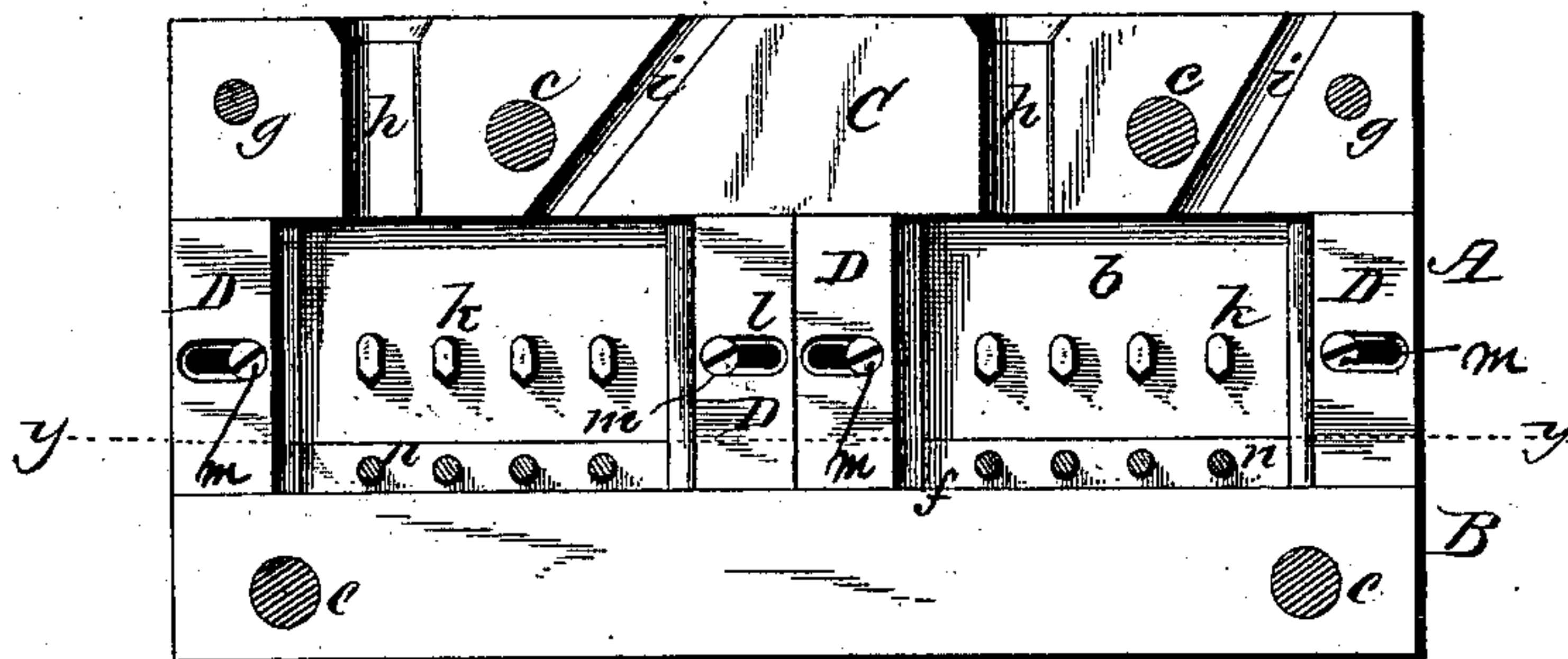
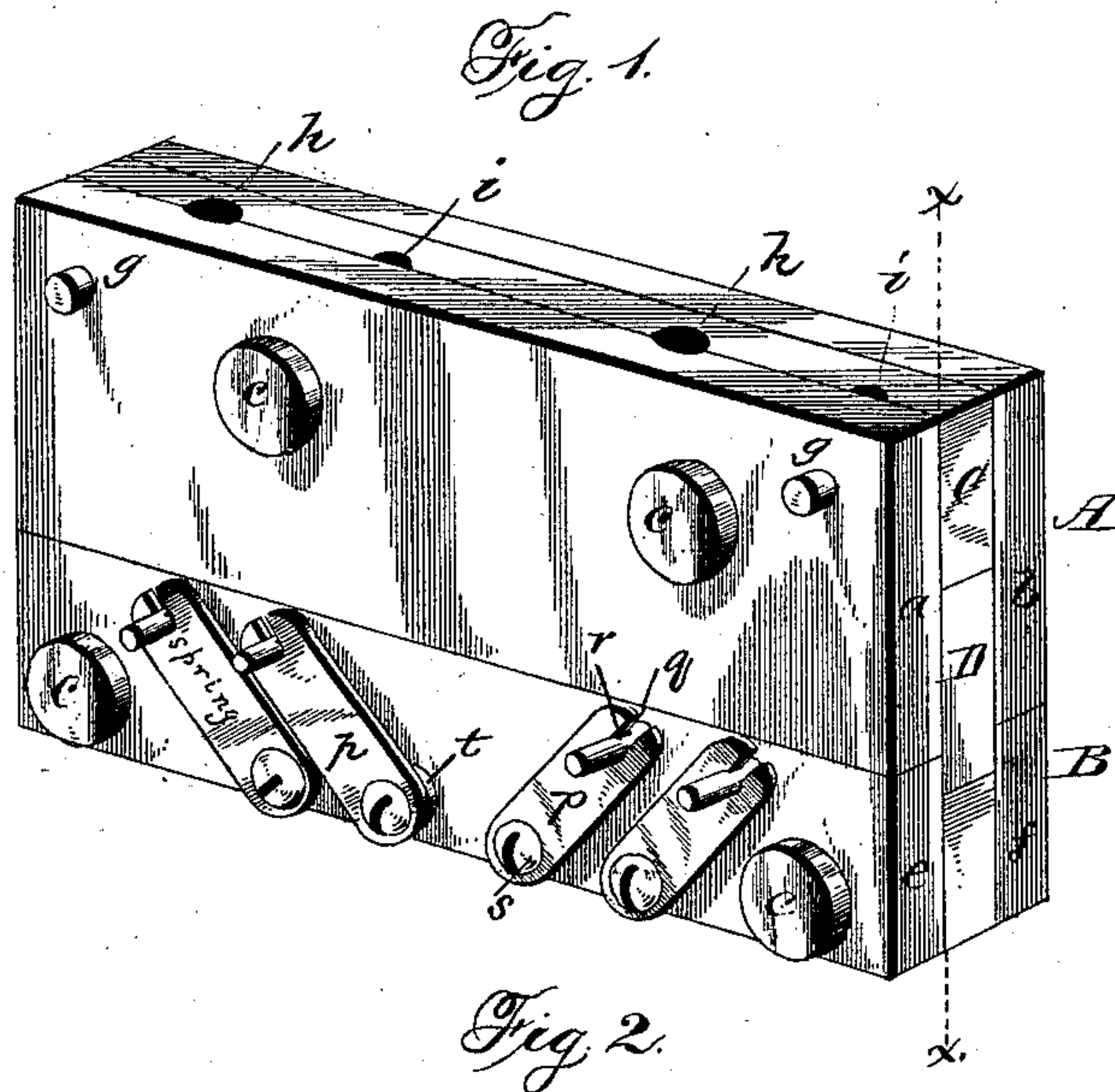
(No Model.)

T. A. JACKSON.

MOLD FOR CASTING TEETH OF DIAMOND SAWS.

No. 361,012.

Patented Apr. 12, 1887.



Witnesses:
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UNITED STATES PATENT OFFICE.

THADDEUS A. JACKSON, OF NEW YORK, N. Y.

MOLD FOR CASTING TEETH OF DIAMOND SAWS.

SPECIFICATION forming part of Letters Patent No. 361,012, dated April 12, 1887.

Application filed November 27, 1886. Serial No. 220,044. (No model.)

To all whom it may concern:

Be it known that I, THADDEUS A. JACKSON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Molds for Casting Teeth of Diamond Saws; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of my improved mold. Fig. 2 is an inner side elevation taken through the mold on line *x x*, showing the fastening-pins and steady-pins, also the diamond-clamps in section; and Fig. 3 a transverse section taken on line *y y* of Fig. 2.

The object of the present invention is to provide a simple and effective mold for casting the teeth for diamond saws, whereby the diamonds are securely held in position while the metal is cast around them to form the teeth, which are adapted to be inserted in the saw-blade; and the invention consists in the details of construction, substantially as shown in the drawings, hereinafter described, and subsequently pointed out in the claims.

In the accompanying drawings, A B represent the two sections comprising the mold, which may be held together by screws or any other well-known means usually employed for this purpose. The section A, which constitutes the upper section of the mold, consists of two plates, *a b*, the latter of which is provided with an inwardly-projecting wall, C, while the former one of the plates is used as a cap-plate. The two plates, as above described, are detachably connected together, preferably by pins *c* and keys *d*, entering slots in the ends thereof. The same means are also employed for holding together the two plates *e f* of the lower mold-section, B, whereby the plates may be disconnected and separated after the saw-teeth are formed.

The upper mold-section, A, as well as the lower mold-section, B, may be formed of any suitable length to adapt the mold for casting any number of teeth desired, and the two plates forming the upper section are further connected together by dowel or steadying pins

g, so as to bring the plates, when brought together, in the same relative position.

The inner side of the wall C is provided with gates *h*, through which the molten metal is poured, and vents *i*.

The inner side of the plate *b* of the upper mold-section is provided with cores *k*, arranged a suitable distance apart, which form the usual holes or openings through the sides of the saw-tooth above the diamonds, holes or sockets being formed in the plate *b* to receive the ends of the cores and enable them to be removed when required, as is common in this class of molds.

The mold-section A is provided with gages D, which are preferably V-shaped in cross-section upon their inner edges, whereby grooves are formed in the saw-tooth for the insertion of the tooth in the blade of the saw. These gages D are rendered adjustable by slots and set-screws *l m*, respectively, or by any other preferred means, whereby any desired length of tooth may be cast. The diamonds which are to be secured in the tooth are held in position by means of a series of spring clamping devices, one of such devices being employed for every diamond that is to be secured to the tooth, and are arranged substantially as shown in Fig. 3, so that the diamonds are held alternately against the plates *e f* of the lower mold-section.

Each clamping device consists of a pin, *n*, which loosely passes through one of the plates of the mold-section B, and has a tapering inner end, *o*, which bears against the diamond and presses it against one of the plates of the mold-section, thus holding it securely in position while the metal is cast partly around it, leaving a portion of the diamond projecting below the edge of the tooth, or, in other words, leaving so much of the diamond upon its sides and bottom bare or exposed as to form the cutting portion of the tooth, as is common in this class of saw-teeth.

The pin *n* has connected to it a spring, *p*, such spring consisting of a rectangular metal plate of spring-steel, slotted at its free end to embrace the notched portion *r* of the pin extending upon the outer side of the plate of the mold-section, the slot loosely embracing the notched portion of the pin, so as to not bind and to enable the pin to freely work in the

plate of the mold-section. The spring *p* is connected to the plate of the mold-section B by means of screw *s*, a washer, *t*, being interposed between the spring and mold-section plate. The action of the spring is to keep the point *o* of the pin *n* pressed against the diamond with sufficient force to hold it in position between it and the mold-section plate opposite to that through which the pin passes.

When a tooth is to be cast, the length thereof is regulated by means of the gages D, which are brought farther apart or nearer to each other, which is done by loosening the set-screws *m*, and when the gages are moved the required distance longitudinally to form the length of the tooth they are held in their adjusted position by screwing down the set-screws, after which the detachable cores *k* are placed in position by inserting them in sockets in the plate *b*, or by connecting them in any other preferred manner. The plate *b* is now ready for attaching thereto the cap-plate *a* by means of the steadying or dowel pins *g* and pins and wedges, hereinbefore described, thereby completing the upper mold-section, A. The two plates *e f* are secured together in a similar manner to those of the upper mold-section, except that no dowel or steadying pins are used, and the diamonds are placed between the plates by first releasing the pins of the clamping devices and placing the diamonds between the points of the pins *n* and the inner sides of the plates *e f*, the springs pressing the pins against the diamonds to hold them in position. The two mold-sections A B are now ready to be connected together, which may be done in any suitable manner, after which the molten metal is poured into the mold through the gates *h*, to form the saw-teeth. The metal as it passes into the mold also passes around the cores *k*, to form the holes through the sides of the teeth, and in contact with the diamonds which secure them to the tooth in the ordinary manner, so as to expose sufficient of the

diamond to form the cutting portion thereof. After the teeth are thus formed the plates *a e* are separated from the plates *b f* of the mold-section, the fastening-pins *c* and pins *g* being first withdrawn, thus leaving the plates *b f* connected together, as shown in Fig. 2. The screws *m* are now loosened and the gages D shoved back to lengthen the distance between them and admit of the tooth or teeth being lifted out.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mold for casting the teeth of diamond saws, the combination, with the gages D, having transverse slots *l*, of set-screws *m*, extending through the slots to hold the gages in their adjusted position, substantially as and for the purpose set forth.

2. In a mold for casting the teeth of diamond saws, the combination therewith of clamping devices consisting of the pins *n*, extending through the side walls of the mold, and the springs *p*, connected to the outer ends of the pins and to the outer side of the mold, substantially as and for the purpose specified.

3. In a mold for casting the teeth of diamond saws, the upper mold-section consisting of the plates *a b*, detachably connected to each other, and provided with adjustable gages D, and cores *k*, in combination with the mold-section B, having the plates *e f*, detachably connected to each other, and provided with clamping devices consisting of the pins *n* and springs *p*, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

THADDEUS A. JACKSON.

Witnesses:

L. L. MILLER,
M. P. CALLAN.