

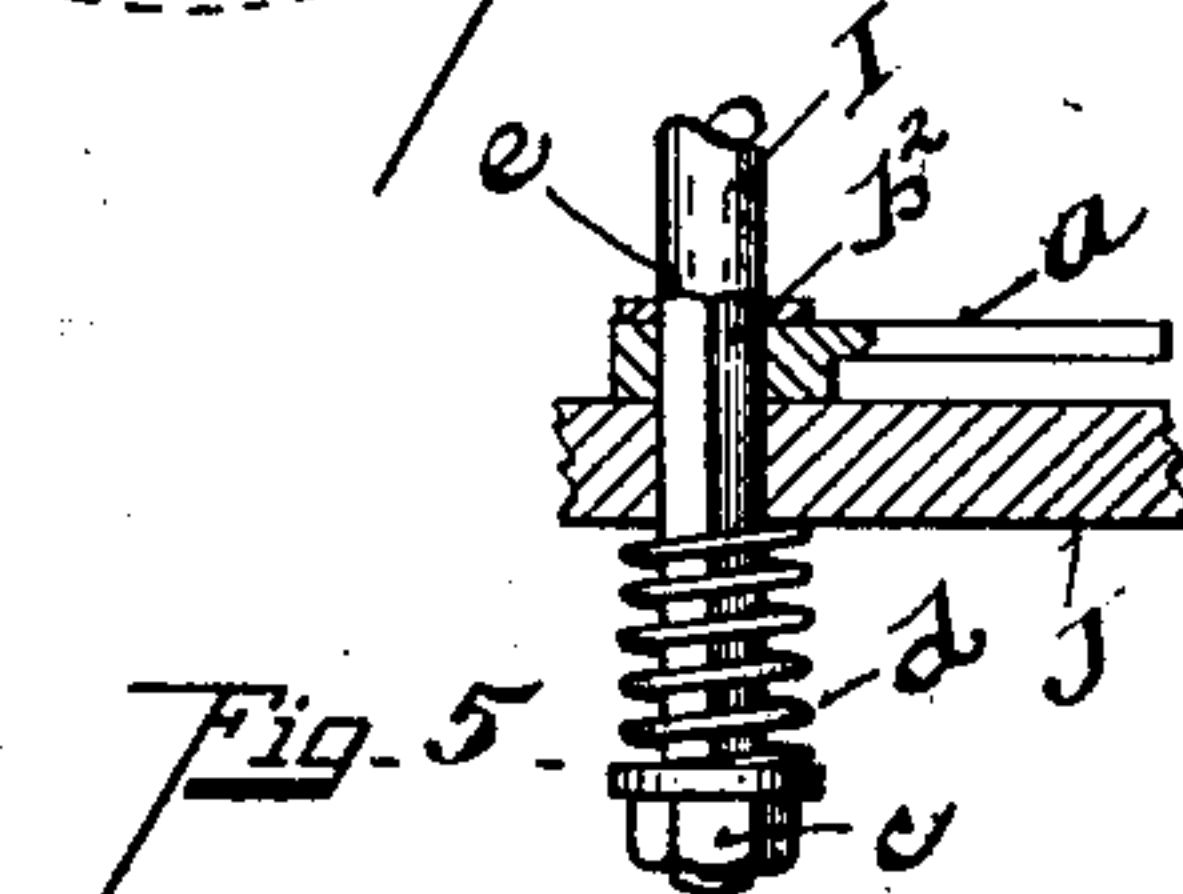
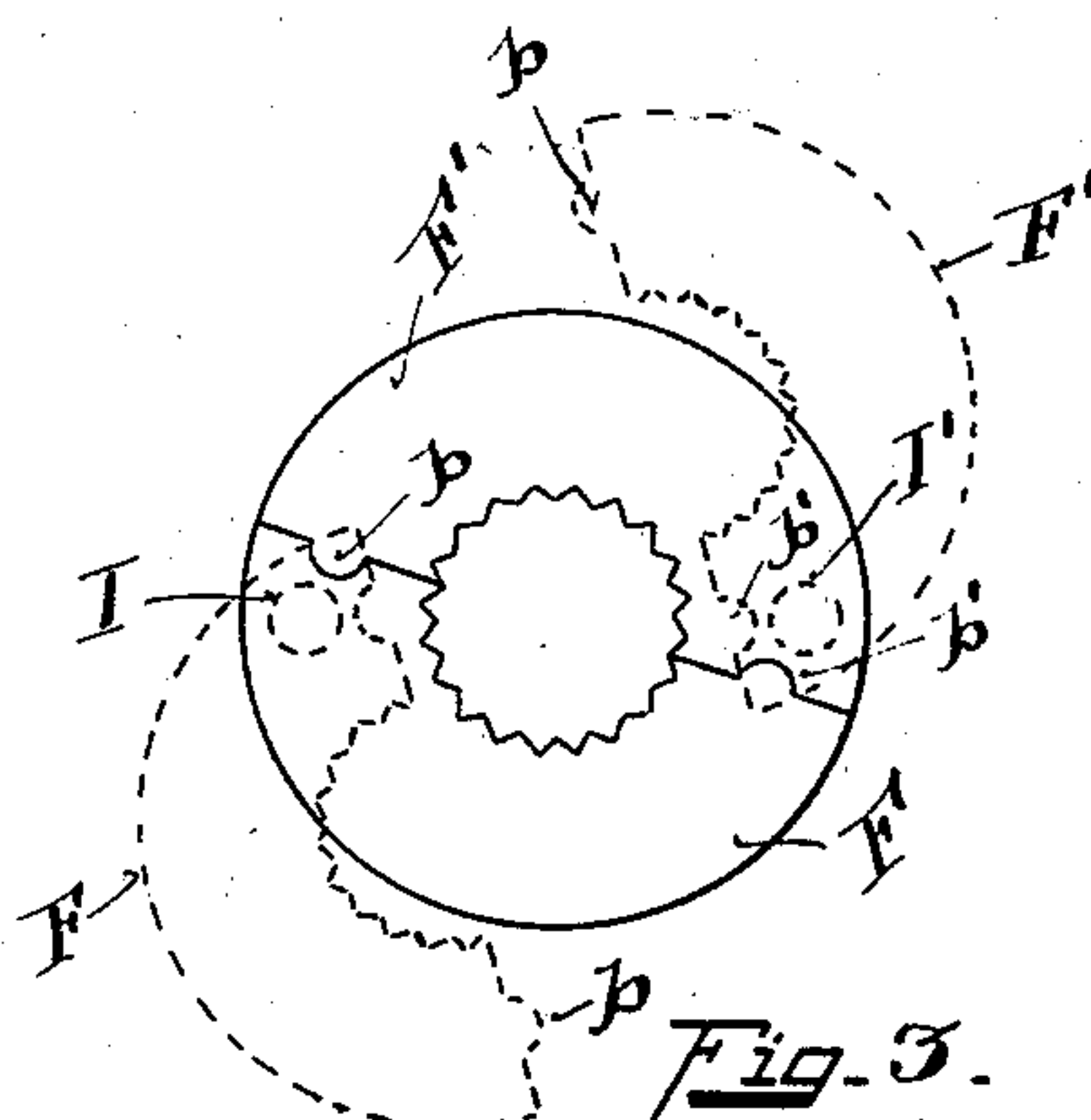
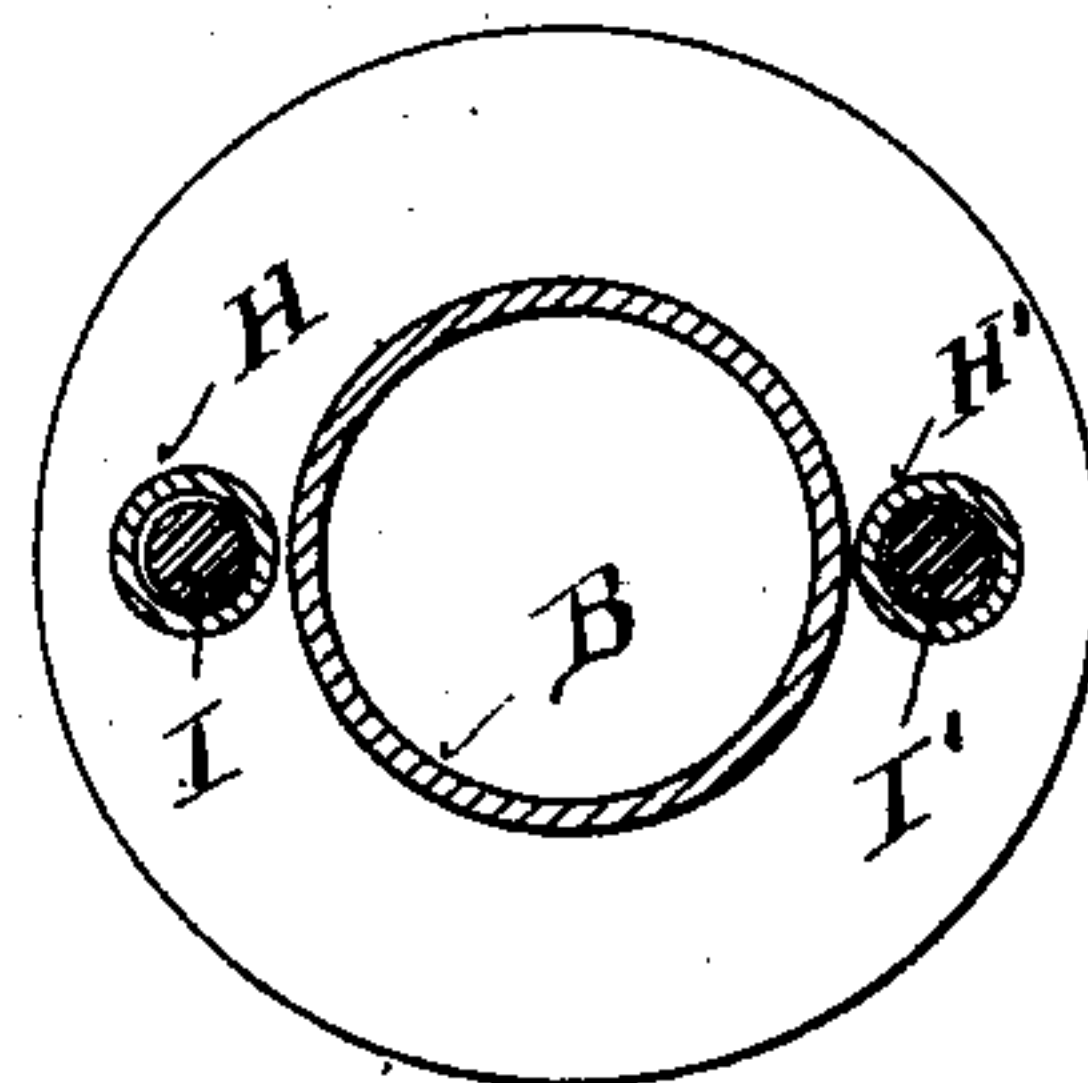
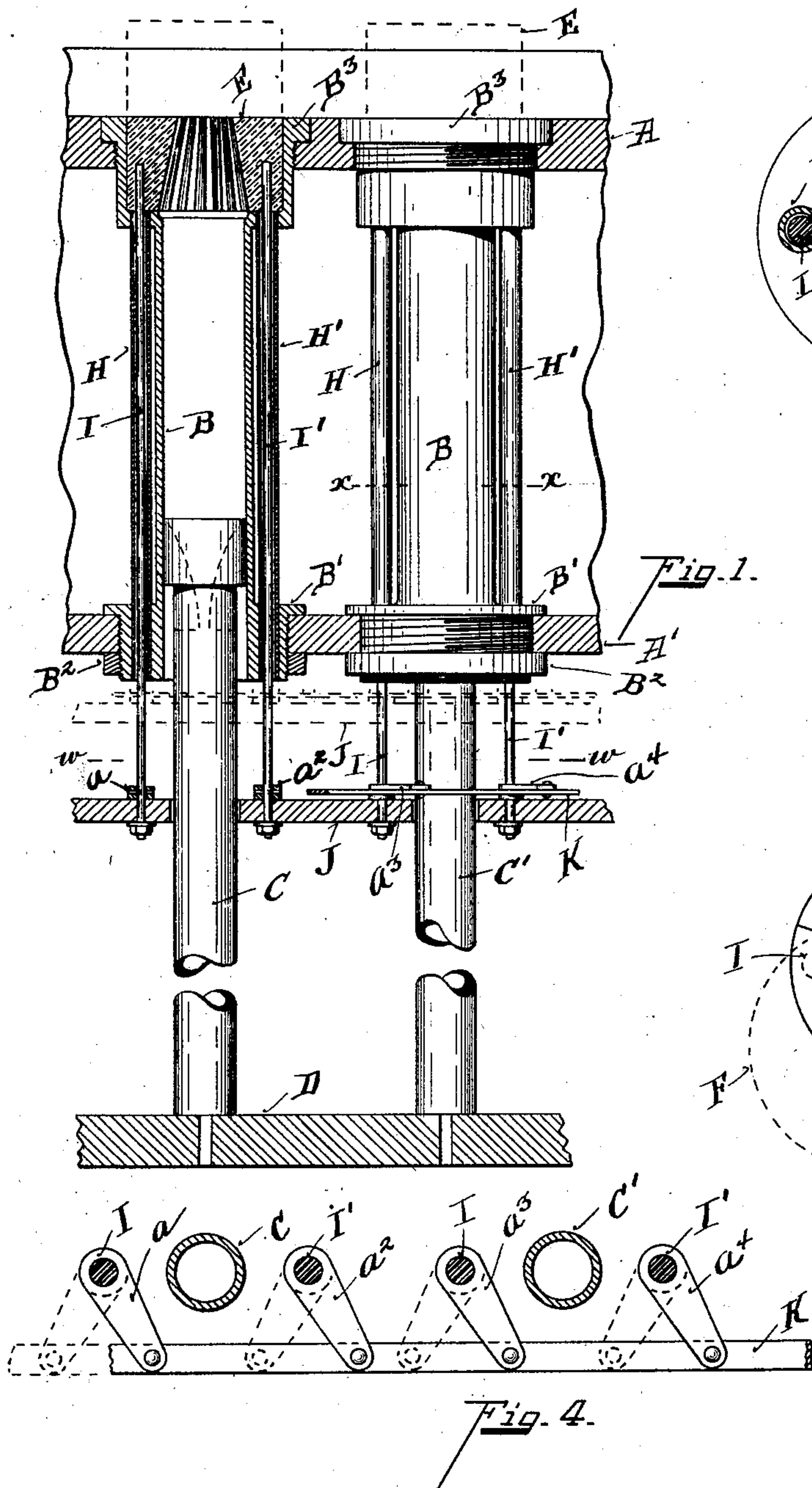
No. 755,892.

PATENTED MAR. 29, 1904.

S. H. LEAVENWORTH.
CANDLE MOLDING MACHINE.

APPLICATION FILED OCT. 22, 1903.

NO MODEL.



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SETH H. LEAVENWORTH, OF CINCINNATI, OHIO, ASSIGNOR TO HOMAN & COMPANY, OF CINCINNATI, OHIO, A FIRM.

CANDLE-MOLDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 755,892, dated March 29, 1904.

Application filed October 22, 1903. Serial No. 178,077. (No model.)

To all whom it may concern:

Be it known that I, SETH H. LEAVENWORTH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Candle-Molding Machines, of which the following is a specification.

My invention relates to a machine for forming wax candles, and more particularly those having a tapered base and known to the trade as "self-fitting-in" candles.

The features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a view of two molds, showing one in section and one in side elevation. Fig. 2 is a line on $x x$, Fig. 1. Fig. 3 is a plan view illustrating the release mechanism. Fig. 4 is a section on line $w w$, Fig. 1, showing the mechanism for actuating the release. Fig. 5 is a detail view, partly in section, of a modification of the mold lifting and depressing mechanism.

A represents the floor of the tray for receiving and feeding the molten material to the molds, and A' the bottom.

B represents the molds. Formed on the bottom are the supporting-caps B', having screw-threaded engagement with the floor A' of the machine.

B² represents nuts screw-threaded onto the under projecting portions of the parts B' to secure the molds in upright position.

CC' represent the plungers within the molds for expressing the candles therefrom. They are supported upon the vertically-moving cross-head D.

Seated upon or attached to the top ends of the molds B are the top supporting-caps B³, having screw-threaded engagement with the upper frame member A. These top caps B³ are provided with openings of greater diameter than the internal diameter of the molds B.

E represents the mold for forming the fancy base of the candle. These top molds fit within the openings of the caps B³. The top molds E are composed of the half-sleeves F F'. H H' represent vertical tubes, one upon each side of

the molds B, which tubes pass through the lower supporting-caps B' and which engage through the bottom sections of the upper supporting-caps B³. (See Fig. 1.) Through these tubes pass the actuating-rods I I', which rods are at their lower ends supported upon the vertically-movable cross-head J. The upper end of the actuating-rod I is fixed to one side of the half-sleeve F, the other rod I' being fixed to the other side of the cooperating half-sleeve F'. These top molds have a fancy pattern, that shown being of cone shape with peripheral corrugations. Whatever be the particular pattern of the top mold, whenever any of the mold-surface is opposed to the free upward discharge of the candles from the molds it is obvious that special means have to be provided for the release of the candles. This is primarily the object of my invention.

The actuating-rods I I' fulcrum in their respective tubes H H'. To the lower ends of these actuating-rods, above the cross-head J, are fixed the rocking arms $a a^2 a^3 a^4$, the other ends of said arms being pivoted to the operating-lever K. (See Figs. 1 and 4.) In stating that the actuating-rods are fixed to the sleeves at the top and the rocking arms at the bottom I mean they turn together.

In molding the parts are in the initial position (shown in the sectional view in Fig. 1,) the molten tallow or wax being introduced from the top in any approved manner. When the candle is formed, the cross-head J is raised, which lifts the top molds E from the supporting-caps B³ to a position above the top frame A. The lever K is then actuated to turn the rods I I', thereby pivotally swinging the half-sleeves on their respective pivots to the open position. (Illustrated in dotted lines, Fig. 3.) The candle can then be readily expressed by raising the cross-head D. By turning the lever K in the opposite direction the half-sleeves are again brought together and can be lowered into the openings of the supporting-caps B³ by pressing down on the cross-head J. It will be observed that the moving end of each half-sleeve engages and disengages the pivoted end of its cooperating half-sleeve. In order to give greater rigidity in the top molds when the

half-sleeves are coupled, I preferably employ some form of interlock between the meeting ends of said half-sleeves, preferably employing the dovetail formation $b\ b'$. (Illustrated in dotted lines, Fig. 3.)

The simplicity of this device and its full performance of the desired functions are obvious, and I do not desire to be limited to the precise form of actuating mechanism for actuating the half-sleeves where obvious equivalents may be substituted therefor.

In Fig. 5 I show a modification of the mounting of the actuating-rods I on the cross-head J. The arms a are provided with square orifices to receive the squared sections b^2 on the lower part of the rods I. This squared section of the rod I passes through and extends below the cross-head J and is provided with the adjusting-nut c on the lower end. d represents a coil-spring around the lower end b^2 of the rod I, one end of the spring engaging the nut c , the upper end of the spring engaging the under side of the cross-head J. The cutting out of the sides I to make the square portion b^2 produces the shoulders e . In raising the cross-head J it is evident that the arms a will engage the shoulders e of the rod I and lift the same. In depressing the molds E into the openings of the caps B^3 if any foreign substance or material should get lodged between the mold and the cap it is evident that when the cross-head J would be pressed it would carry downward uniformly all of the rods for raising and lowering the molds excepting the particular mold or molds that might happen to be caught up, the coil-springs d and the particular formation described and shown in Fig. 5 permitting one mold to remain elevated while the others are depressed. With this arrangement when any one mold gets clogged it does not hold them all up, as would result if the rods were rigidly attached to the cross-head. As only the particular mold which is clogged remains elevated it serves to indicate the source of the trouble as well as limiting the trouble to the particular mold involved.

Having described my invention, I claim—

1. In a machine for forming taper-base candles a mold formed of half-sleeves, the opposite ends of said sleeves being fulcrumed, and means for swinging said half-sleeves on their fulcrums, whereby the swinging end of one half-sleeve engages and disengages the fulcrumed end of its cooperating sleeve, substantially as specified.

2. In a machine for forming taper-base candles a mold formed of half-sleeves, the opposite ends of said sleeves being fulcrumed and means for swinging said half-sleeves on their fulcrum, whereby the swinging end of one half-sleeve engages and disengages the fulcrumed end of its cooperating sleeve, the said sleeve being formed with interlocking ends, substantially as specified.

3. In a machine for forming taper-base can-

dles a stationary mold for the uniform body-section thereof, a mold for the taper base consisting of half-sleeves, the opposite ends of said sleeves being fulcrumed and means for swinging said half-sleeves on their fulcrum, whereby the swinging end of one half-sleeve engages and disengages the fulcrumed end of its cooperating sleeve, substantially as specified.

4. In a machine for forming taper-base candles a mold formed of half-sleeves, an actuating-rod fixed to the opposite end of each half-sleeve and means for racking the said rods in opposite directions whereby the swinging end of one half-sleeve engages and disengages the fulcrumed end of its cooperating sleeve, substantially as specified.

5. In a machine for forming taper-base candles a mold formed of half-sleeves, an actuating-rod fixed to the opposite ends of each half-sleeve, a rocking arm fixed to the other end of each actuating-rod and a lever fulcrumed to the ends of the rocking arms whereby the swinging end of one half-sleeve engages and disengages the fulcrumed end of its cooperating sleeve, substantially as specified.

6. In a machine for forming taper-base candles, a stationary solid mold for the uniform section, and a superimposed detachable mold for the non-uniform candle-section, the detachable mold consisting of half-sleeves, axial rods upon which said sleeves are supported, means for turning said rods rotatively, for bringing together and separating said sleeves, means for raising and lowering said half-sleeves, and means for expressing the candle from the mold, substantially as described.

7. In a machine for forming taper-base candles, a receiving-tray, a stationary mold having an enlarged end dependent therefrom, a detachable mold seated in said enlarged end and registering with the stationary mold, means for raising the detachable mold above the floor of the tray, and for lowering it into the enlarged end of the stationary mold, the said detachable mold being formed of half-sleeves, a fulcrumed actuating-rod fixed to one end of each half-sleeve adapted to engage and disengage the swinging end of each half-sleeve with the fulcrumed end of its cooperating sleeve, when the detachable mold is in raised position, means for turning said actuating-rods, and means for expressing the candle from the mold, substantially as specified.

8. In a machine for forming taper-base candles, a receiving-tray, a stationary mold thereunder, having an enlarged upper end, a removable mold for the taper base fitted into the enlarged end of the stationary mold and registering therewith, the said removable mold being formed of half-sleeves, mounted on axial rods, fixed to the half-sleeves and a cross-head in which said rods are journaled for rotative movement, and means for holding said rods to the cross-head for longitudinal move-

ment, arms fixed to the bottom of said rods and a common actuating-lever pivoted to said arm for rotating the rods to open and close th said half-sleeves when in raised position, substantially as described.

9. In a machine for forming taper-base candles a stationary mold, a vertically-removable mold registering therewith, formed of half-sleeves, actuating-rods attached to said sleeves for opening and closing the same, and for raising and lowering the molds, a cross-head, a spring connection between said cross-head

and the ends of said actuating-rods, arms for rocking said actuating-rods, through which arms said rods pass, the arms being adapted to rock said rods but to permit vertical movement of the rods relative to the arms for the purposes described.

In testimony whereof I have hereunto set my hand.

SETH H. LEAVENWORTH.

Witnesses:

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LUISE BECK.