

G. A. STANLEY.

Candle Mold.

No. 26,797.

Patented Jan'y 10, 1860.

Fig. 3.

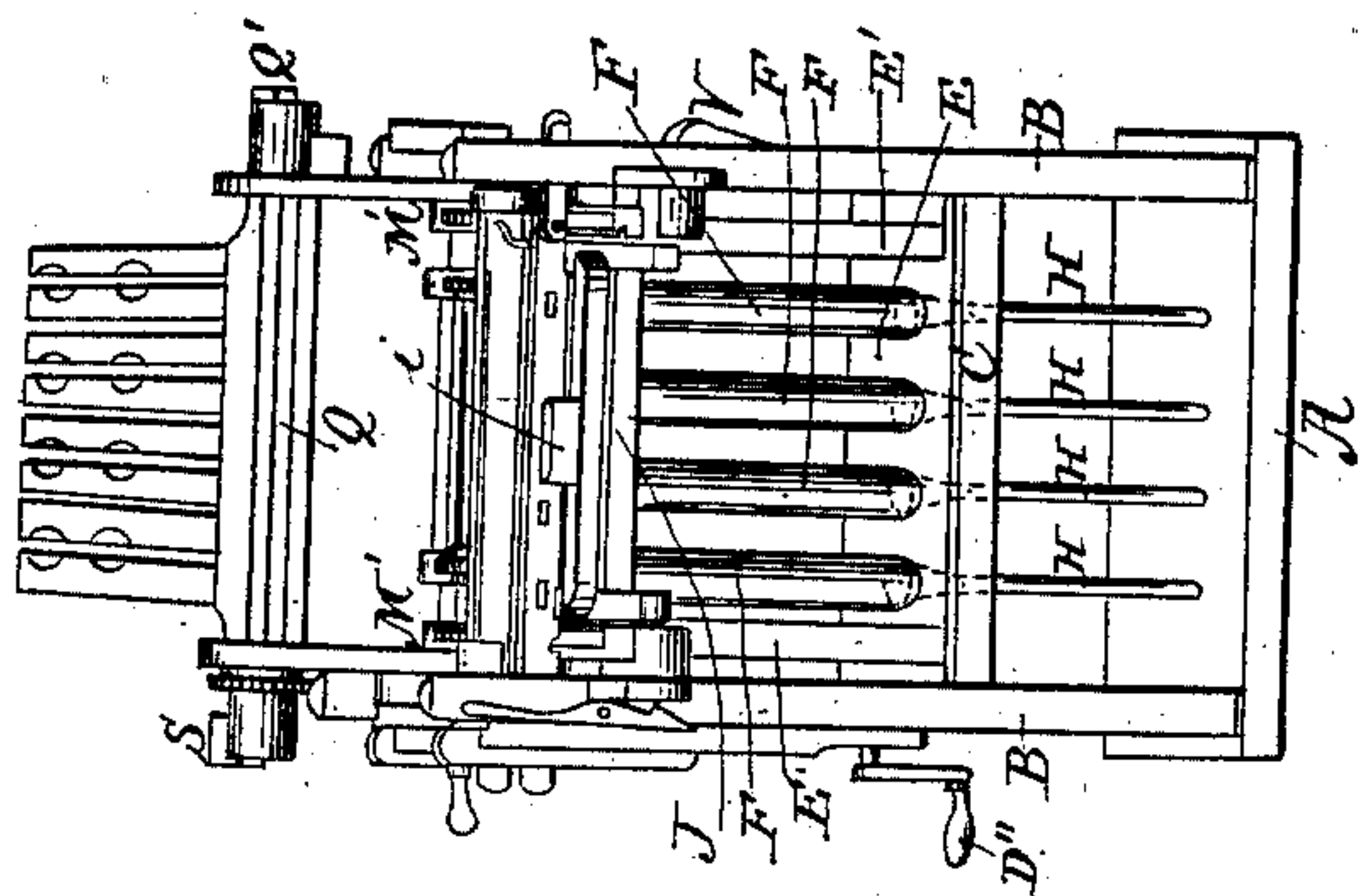


Fig. 2.

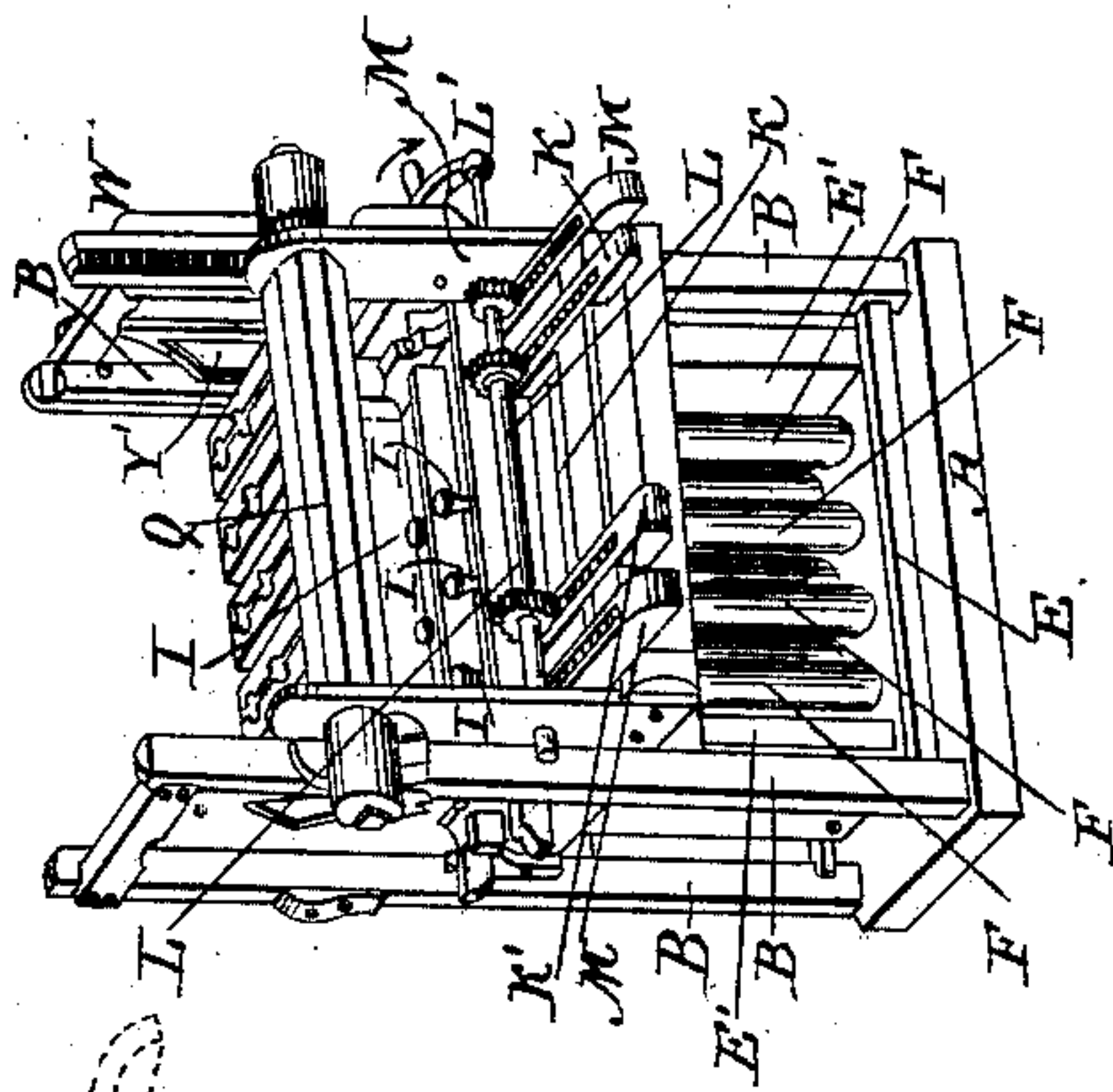


Fig. 1.

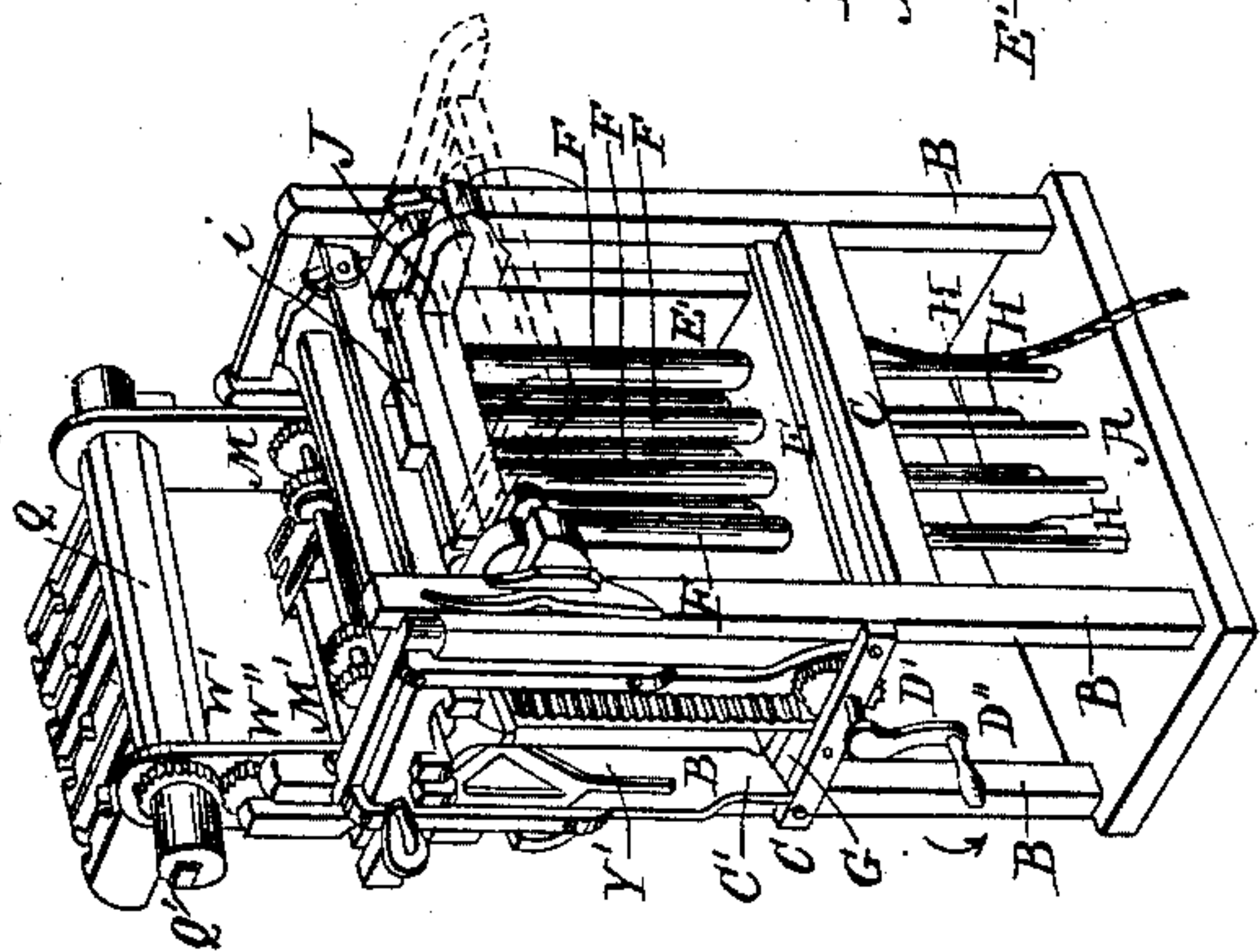


Fig. 7.

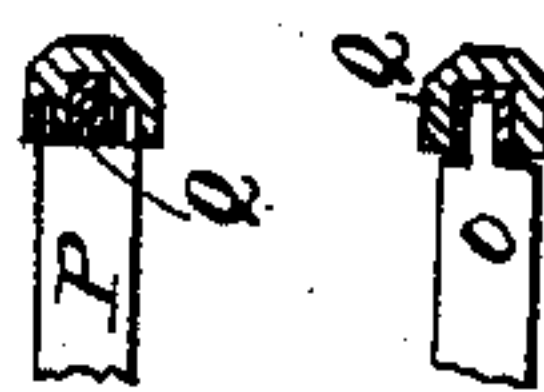


Fig. 6.

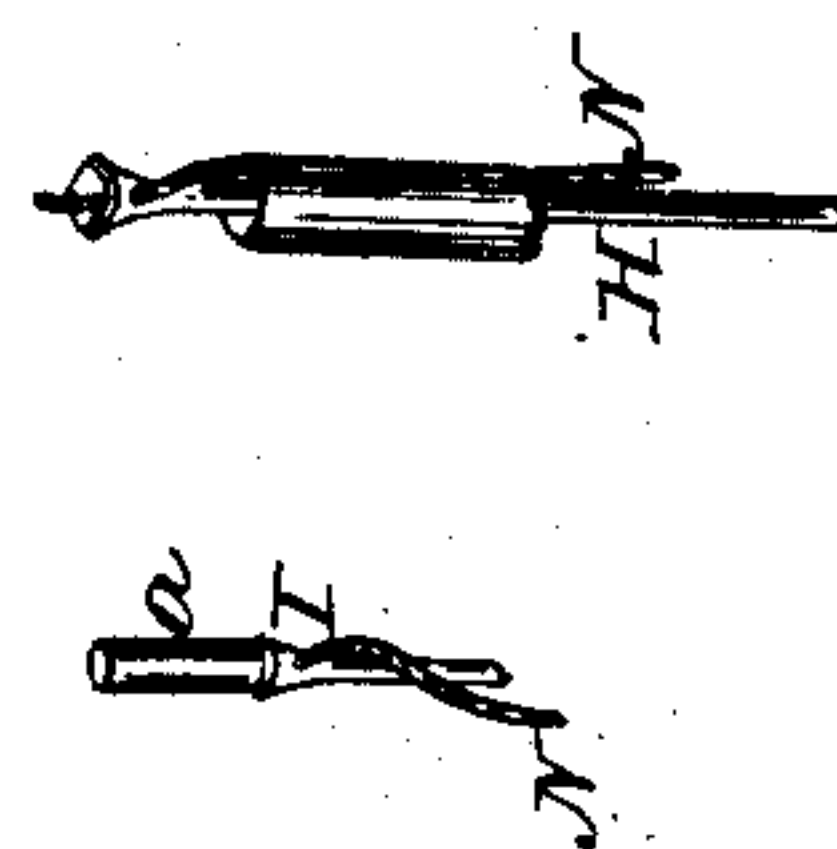


Fig. 5.

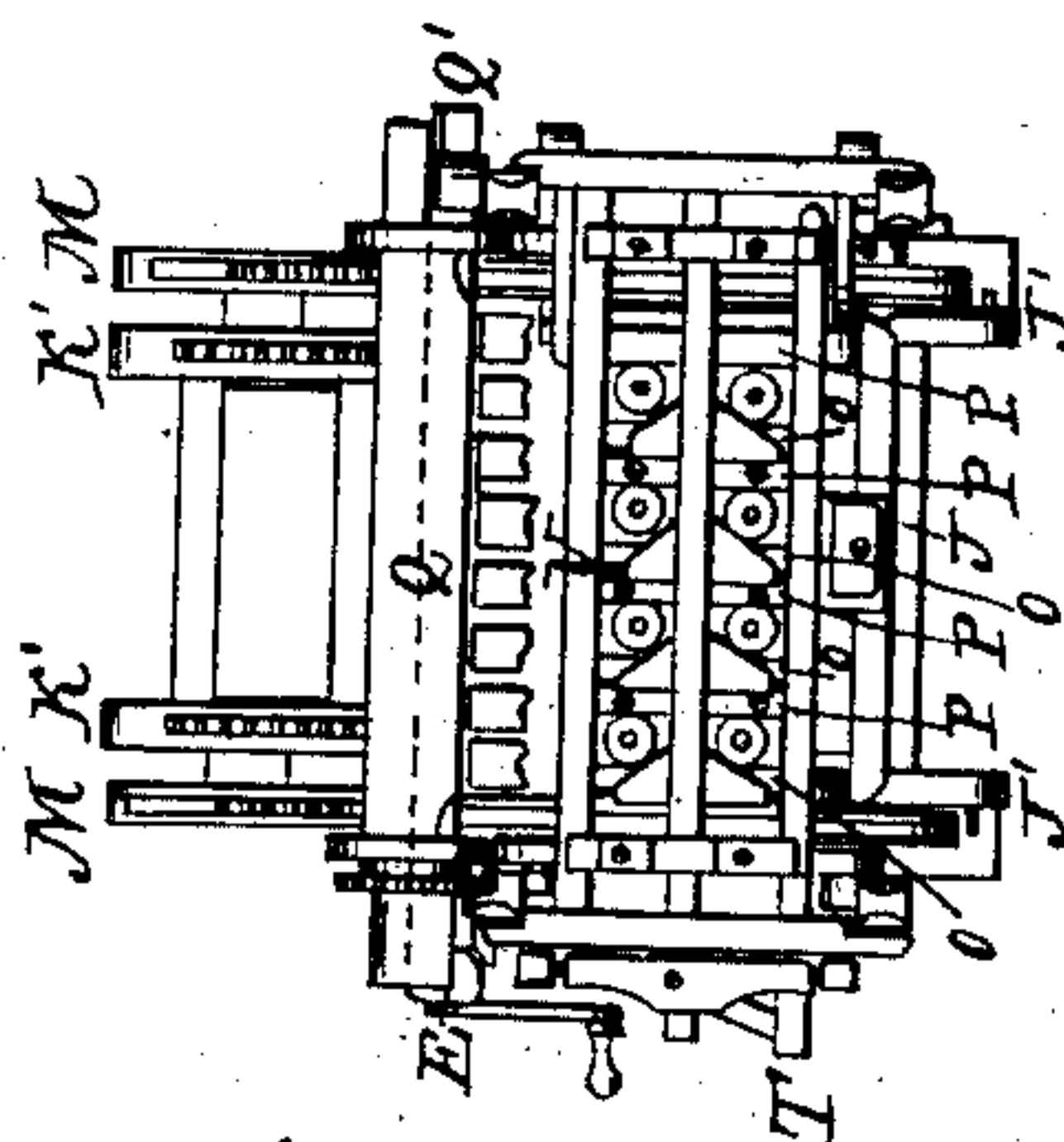
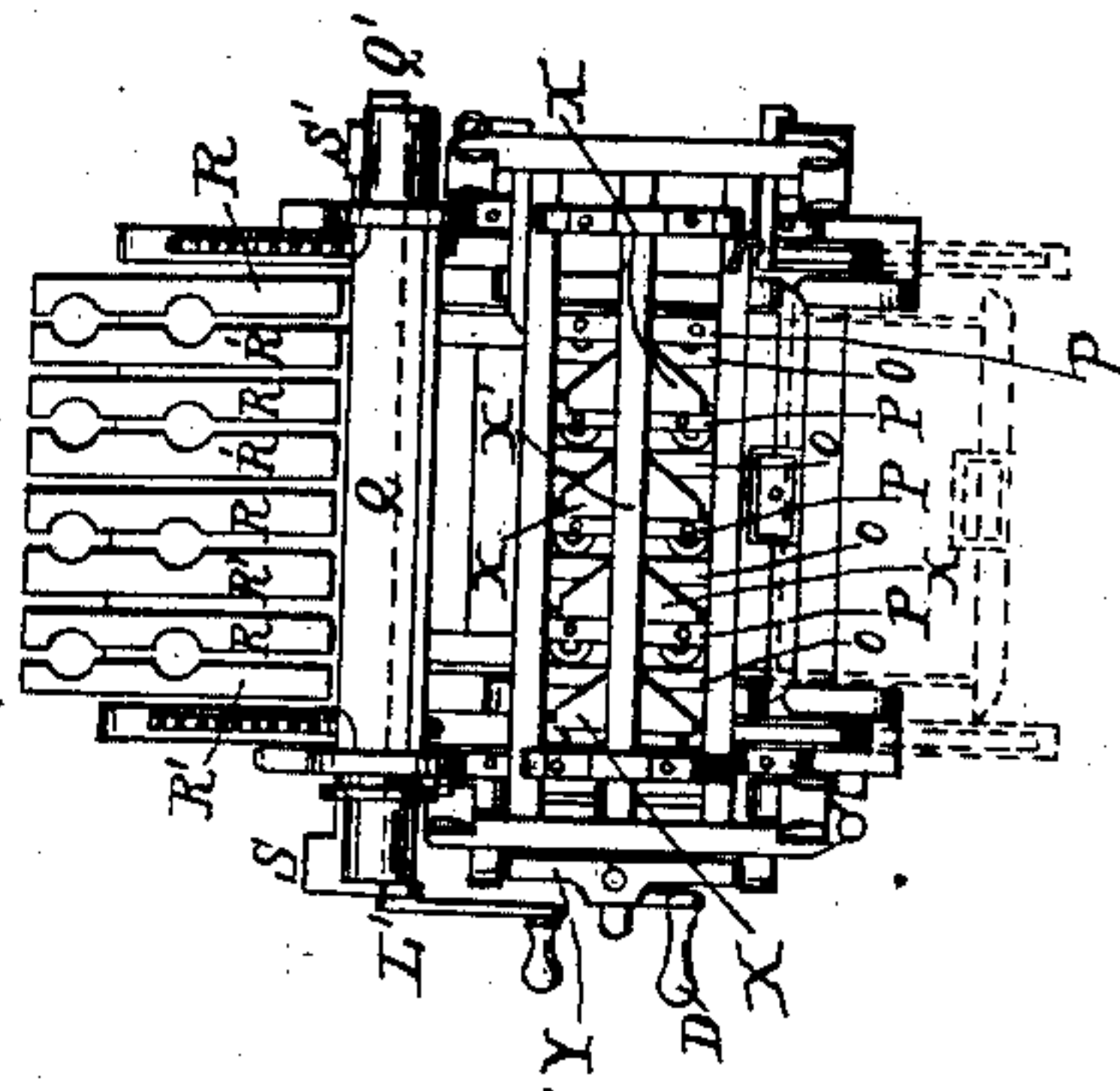


Fig. 4.



Witnesses.

J. Brainerd
H. H. Martin

Inventor.

G. A. Stanley

UNITED STATES PATENT OFFICE.

GEORGE A. STANLEY, OF CLEVELAND, OHIO.

MACHINERY FOR MOLDING CANDLES.

Specification of Letters Patent No. 26,797, dated January 10, 1860.

To all whom it may concern:

Be it known that I, GEORGE A. STANLEY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Machines for Molding Candles; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a perspective view, showing the front. Fig. 2, is a perspective view showing the back. Fig. 3, is a front view. Figs. 4 and 5 are top views.

Like letters refer to like parts.

The nature of my invention consists in the construction of an automatic machine, which by being operated by two cranks or handles, all its functions relating to the adjustment of the wick—molding the candles, and discharging the candles from the mold, are speedily and certainly performed.

The machine consists of a stationary frame, and a sliding frame, together with various other parts and devices.

A, represents the bottom board of the stationary frame, and B, the posts. These are supported about half way to the top, by girths C, C', C', the latter two of which serve to support the rack and pinion D, D'.

The sliding frame is represented by E, E', which carries the molds F. This frame is moved up and down by means of the rack and pinion D, D', the pinion D' being placed between the girths C', C', and the rack D, being supported upon its back by a roller G, Fig. 1.

H, represents stands, which support the tip molds, I, one of which is represented by Fig. 6. The lower end of the stands H, are firmly secured to the bottom board of the frame, and are in length, at least equal to the molds, so that when the molds are depressed or lowered to the bottom of the frame, the tip mold projects above the body mold, and in which position, the stand H, occupies the center of the mold. The wick passes through the opening I', and the spool from which it is taken, may be placed in any convenient position at the base of the frame A, B, the wick extending upward by the side of the stand H. The molds are formed in the usual manner, a little tapering

and open at both ends—the bore at the lower end being of the same diameter of the tip mold, which closely fits the bore, consequently, when the molds are elevated to the position shown in Figs. 1 and 3, the lower or smaller end is completely closed by the tip.

The upper ends of the molds terminate in a metallic plate not shown in the drawings, which plate is planed to an even and level surface, the open ends of the molds being exactly even with the plate. This metallic plate forms the bottom of the trough or sprue, into which the melted tallow is poured in filling the molds. The ends of this sprue trough, are formed by end pieces attached to the plate by screws from beneath. The front of the trough is formed by the piece J, Figs. 1 and 3. The back side of this trough is formed by the piece K, Fig. 2, the same being attached to the inner ends of the rack K' K'. This rack is moved by the pinions L upon the crank shaft L', Figs. 2 and 4. The office of this will be hereafter explained.

Upon the outside of the rack K' K', is placed another rack M M. The inner ends of these, carry a thin steel plate, which passes immediately beneath the piece K. The forward edge of this plate is made sharp by being beveled upon the upper side, so that the cutting edge will lie in contact with the plate that forms the bottom of the sprue box. This blade is operated by means of the pinions M' upon the crank shaft L, by turning the crank in the direction of the arrow, in Fig. 2, (the molds having been filled as hereinafter stated). This blade is first carried forward over the metallic plate that forms the bottom of the sprue box, by the rack M M, and in its passage, cuts off the large ends of the candles even with the molds, and separates the tallow from the sprue box. When the edge of the blade has reached the opposite side of the sprue box, the rack K', K', is brought into gear, with the pinions L L (the pinions M' M', at the same time leaving the rack-teeth of the rack M M,) and in this manner, the piece K is shoved forward in contact with the blade attached to the rack M M, carrying with it all the tallow in the sprue box, the front of the box (J) being hinged at J', is caused to fall by the operation of a cam, so that its upper edge is even with the bottom of the

sprue box. In this movement, the piece J describes a segment of a circle, thus removing the tallow which would otherwise adhere to it. By this action of the piece K, all the sprue tallow is removed and falls into a box placed to receive it.

Now, by reversing the action of the shaft L' the piece K first is drawn back to its original position, the piece J is elevated to form the front of the box, the rack M M is brought into gear, with the pinions M' M', and the blade is also drawn back to its original position. I now have a candle in each of the molds F, with the dry wick passing through the tip mold I and loosely down the stands H, to the spool as indicated in Fig. 6, the machine being in the position seen in Fig. 1. Now, by turning the crank D'' in the direction of the arrow in Fig. 1, the sliding frame E E' is lowered from its position in Fig. 1, to that shown in Figs. 2 and 5. The consequence is that the tip molds being supported by and upon the top of the stands H, by remaining stationary, the molds F pass down over the stands H, and wicks N, as seen in Fig. 6. In this movement the candles pass between the jaws O, P, O, P, O, P, O, P, as seen in Fig. 5.

For the purpose of removing the candles from their position in the tips, I provide the lifting rack Q, Q', R, R' &c.

Q Q' is a shaft placed horizontally upon the back side of the sliding frame, and rises and falls with it. This shaft is formed of two parts, shown in section in Fig. 7. That part of the shaft seen at Q' is adjustable lengthwise a little distance, by means of cams S S' upon each end, outside of the boxes. Into the part Q, is framed a series of pieces seen at R R &c. which form one half of the rack, and into the part Q' is framed another series R' R' which form the other half. These are caused to open to receive the candles between them, and to close upon the candles and hold them fast, as the sliding frame descends, by which the rack is brought into the position seen in Fig. 2. When the rack has thus seized the candles a, they are carried upward with the rising frame, the wicks being drawn through the tip molds, and between the jaws O, P, which are caused to close upon them by means of sliding bars T, U, into which the jaws are framed; the jaws O, being framed into the sliding bar T; and the jaws P, being framed into the sliding bar U. These pieces T and U, are both moved by means of cams placed upon the standing frame as seen at V V' Fig. 3. The jaws P, are each covered with a plate of steel, which forms one blade of shears, to cut the wick, and thus separate the candle that is held in the rack, from the wick

below, the wick being at the same time held firmly between the jaws O, P.

As the sliding frame rises, the rack is caused to perform half a revolution, by means of a stationary rack and two pinion wheels W' W'' the wheel W'' being introduced for the purpose of giving the candle rack, a motion in the right direction. It is first moved from its position in Fig. 2, to that seen in Fig. 3, and then to that seen in Figs. 1 and 4, and in this movement it carries the candles over, and releases its hold by means of the cam S, and the candles are dropped into a box below.

I will now go back and explain the adjustment of the wick in the mold preparatory to its being again filled with melted tallow. As soon as the jaws O, P, Figs. 4 and 5, seize the several wicks, they are cut from the candles by means of the blades X, which are attached to the slider X', seen in Fig. 1. These blades are carried to the right by means of a cross head Y, which is worked by the cam Y' and are caused to act like the blades of shears in connection with the plate of steel upon the jaws P. As soon as the wicks are severed, the blades X, are drawn back to their former position, but the jaws O, P, still hold the wicks secure and straight, until the molds are again filled with tallow.

Now, by turning the crank L as before described, the butts of the candles are cut off and the sprue tallow removed as before described. In this movement, the jaws O, P, are opened by a pin, at e, Fig. 3, operating upon an inclined surface in the sliding bar T, so that the wick that is cut off with the sprue is removed with the tallow.

In using this machine, the wicks are first adjusted, and the machine brought into the position seen in Fig. 1. The melted tallow is now poured into the receiving box i, and from thence into the molds, until they are all properly filled. The machine is then left at rest until the tallow is cold. The crank L, in Fig. 1, is then turned in the direction of the arrow in Fig. 2, by which operation the sprue is removed, and by reversing the crank, the several parts are returned to their original position. Now, by turning the crank D'' in the direction of the arrow in Fig. 1, the candles are discharged from the mold, by the descent of these to the position seen in Fig. 2, the candles being seized by the rack R R'. The motion of the crank being now reversed, the molds are thereby elevated to the position in Fig. 1; the wicks cut below the candles, the candles carried over in the rack and discharged and the new wick properly adjusted in the mold, ready for being again filled.

It will be observed, that the front and back of the sprue trough, is composed of adjustable parts, which perform other functions than those relating to receiving and retaining the melted tallow in filling the molds, which functions are herein before described.

What I claim as my improvement and desire to secure by Letters Patent, is—

10 1. The mold box or sliding frame E, E, in a stationary frame A, B, in combination with the tip stands H, at the base of the stationary frame, by means of which in the descent of the molds, the candles are discharged therefrom as specified.

15 2. I claim drawing the wick into the mold by means of the jaws O, P, and retaining the wick in its proper position in the mold as herein described.

20 3. I claim the blades X, in combination

with the plates upon the jaws P, for the purpose of severing the wick after it has been secured between the jaws O, P.

4. I claim the blade attached to the rack M, for the purpose of cutting off the butt end of the candles, and separating the sprue tallow from the bottom of the sprue box.

5. I claim the candle rack Q Q' and R R' arranged and operating substantially as described, for the purpose of removing the candles after they are discharged from the molds.

6. I claim the herein described sprue box of adjustable parts, 1st, to retain the tallow, and 2nd, to effect the removal of the sprue tallow as set forth.

GEO. A. STANLEY.

Witnesses:

J. BRAINERD,

S. H. MATHER.