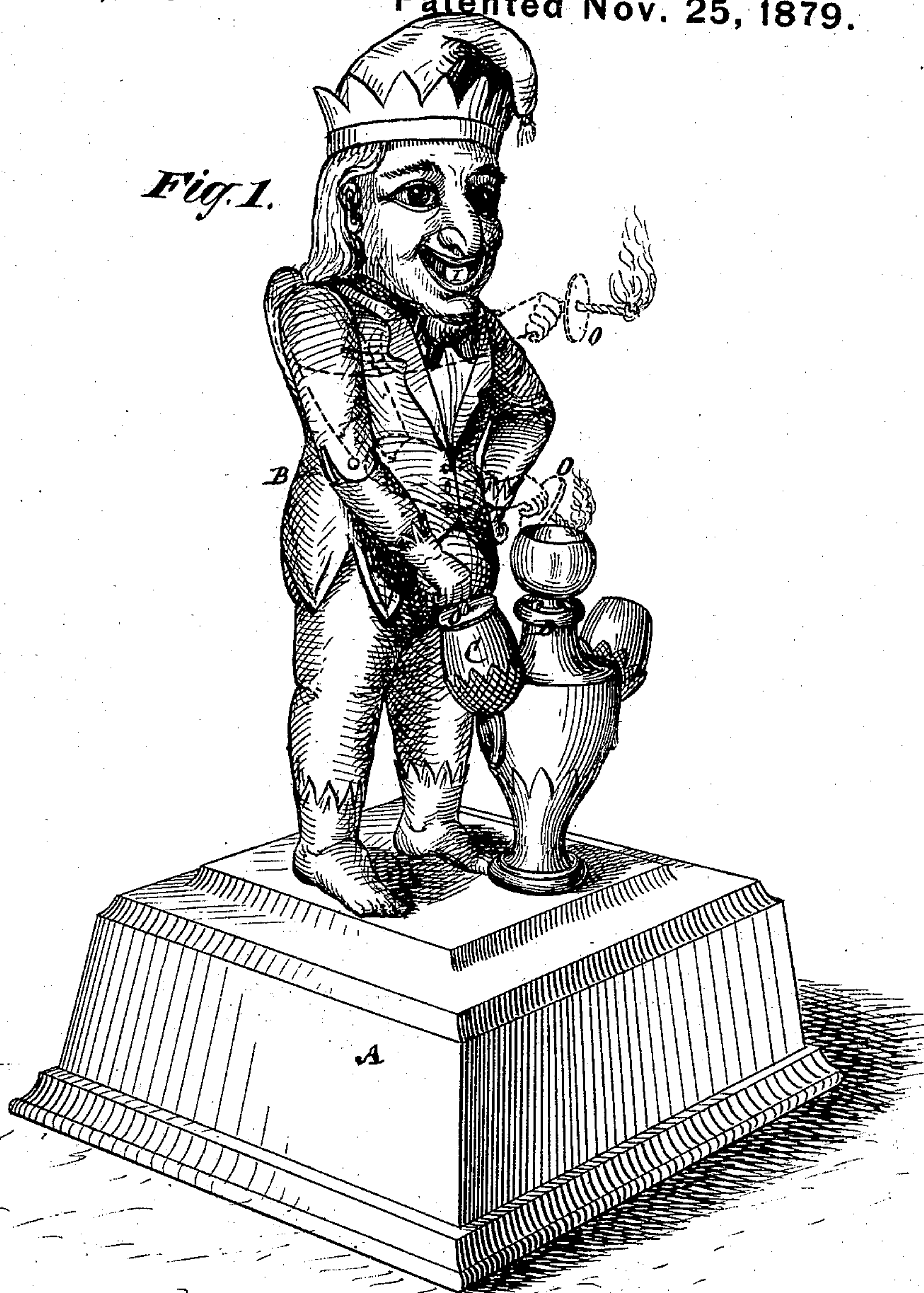


C. CROOK.
Automatic Cigar-Lighter.

No. 221,911.

Patented Nov. 25, 1879.

Fig. 1.



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Fig. 2.

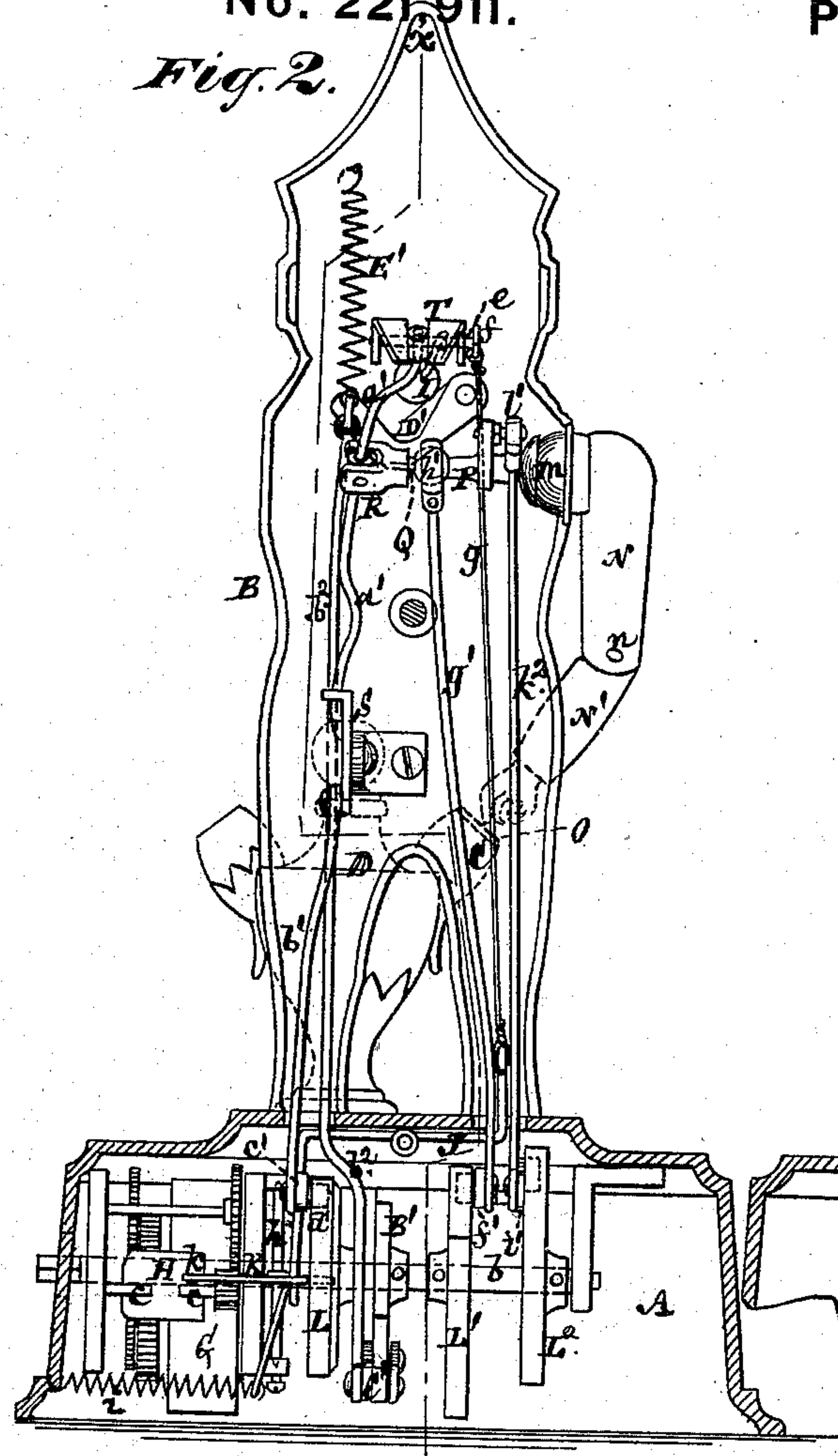


Fig. 3.

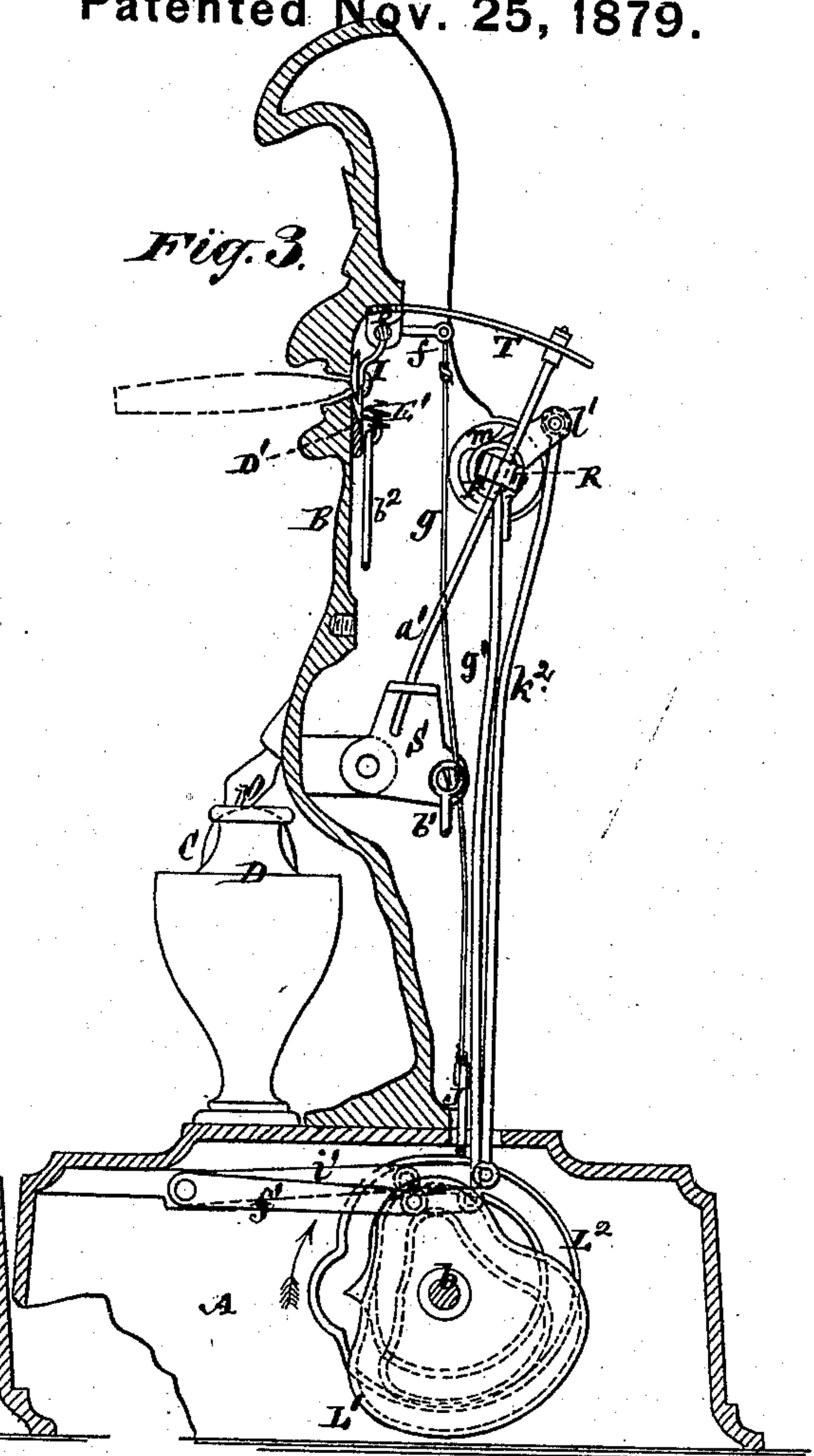


Fig. 6.

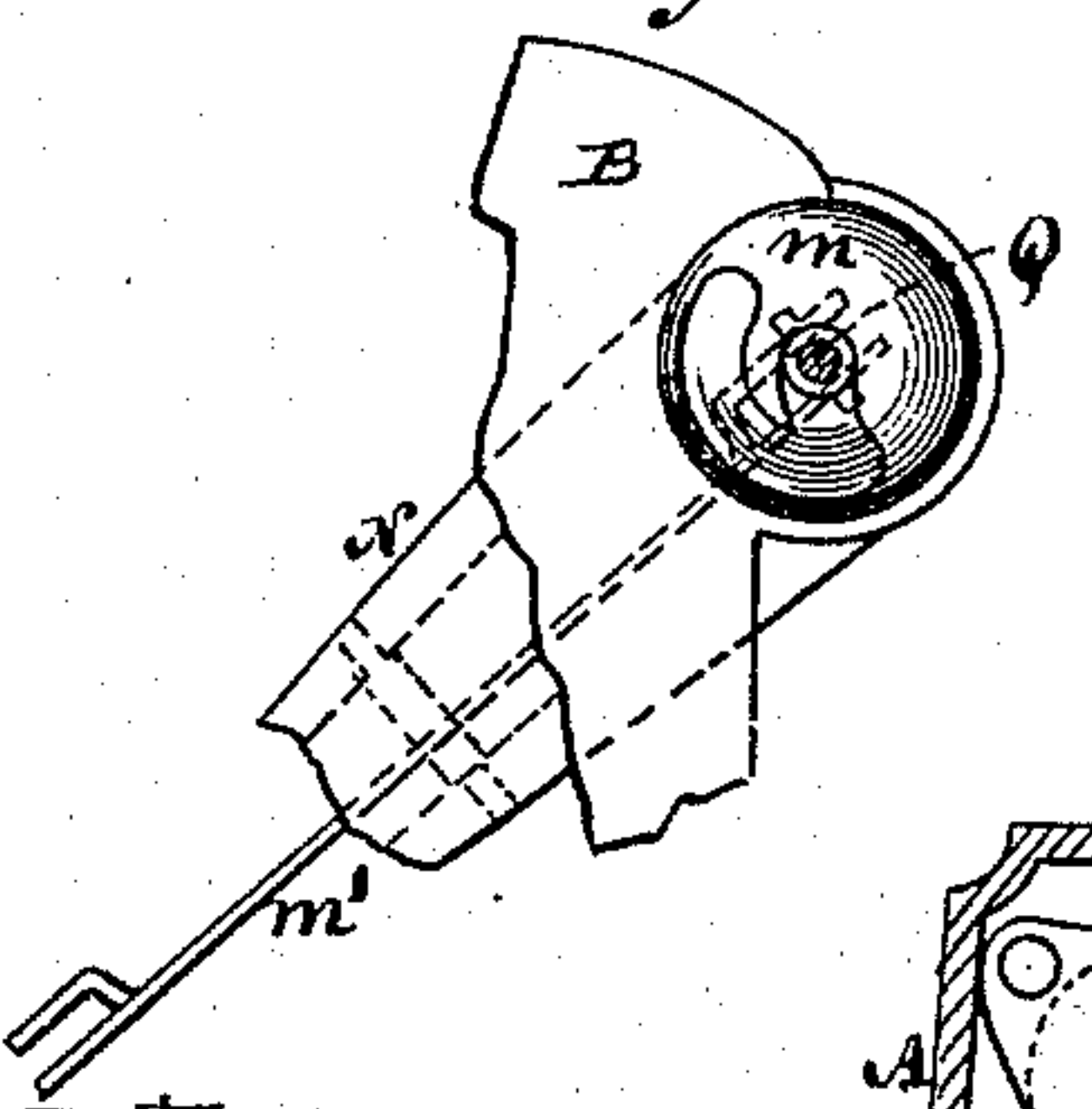


Fig. 4.

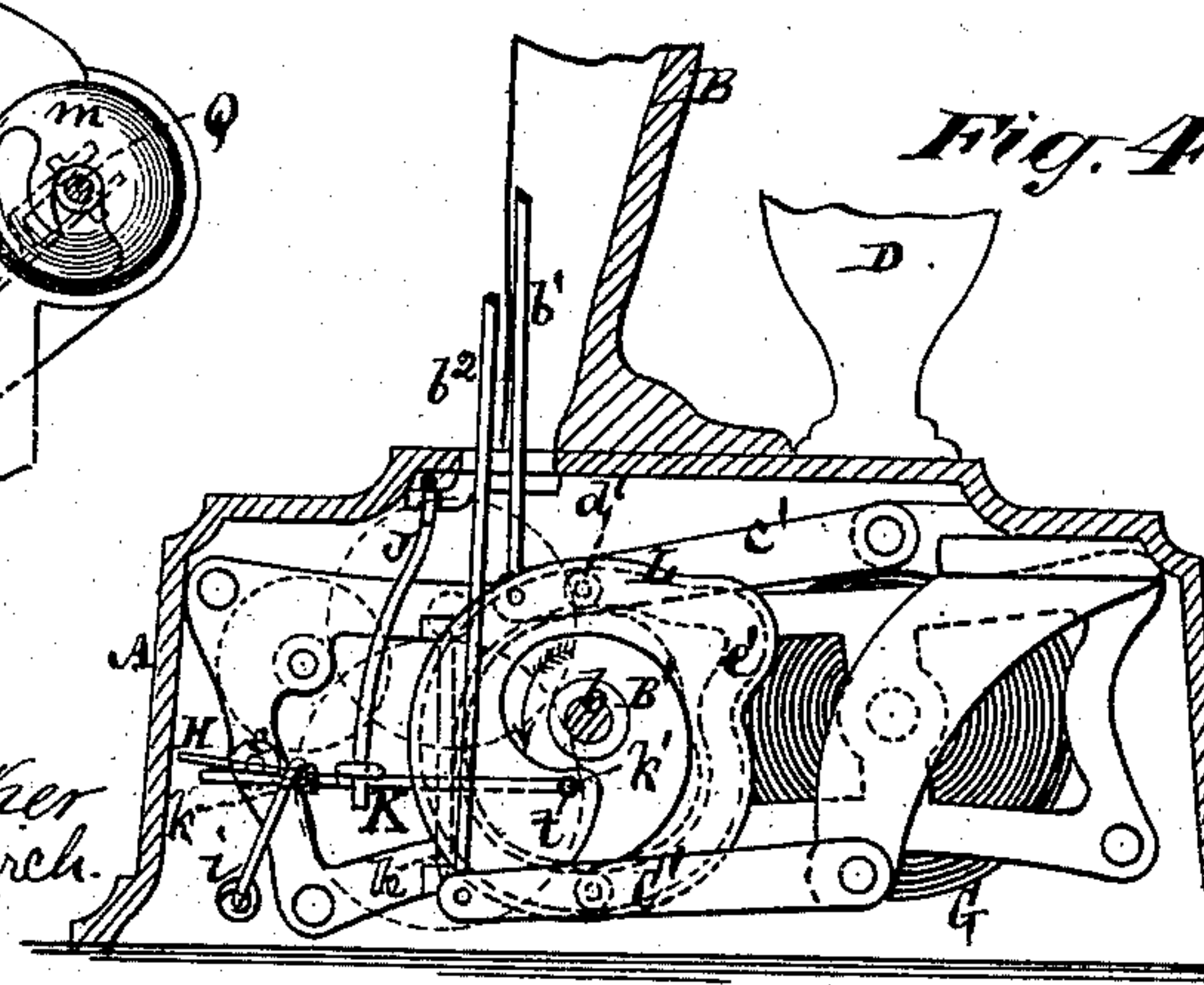
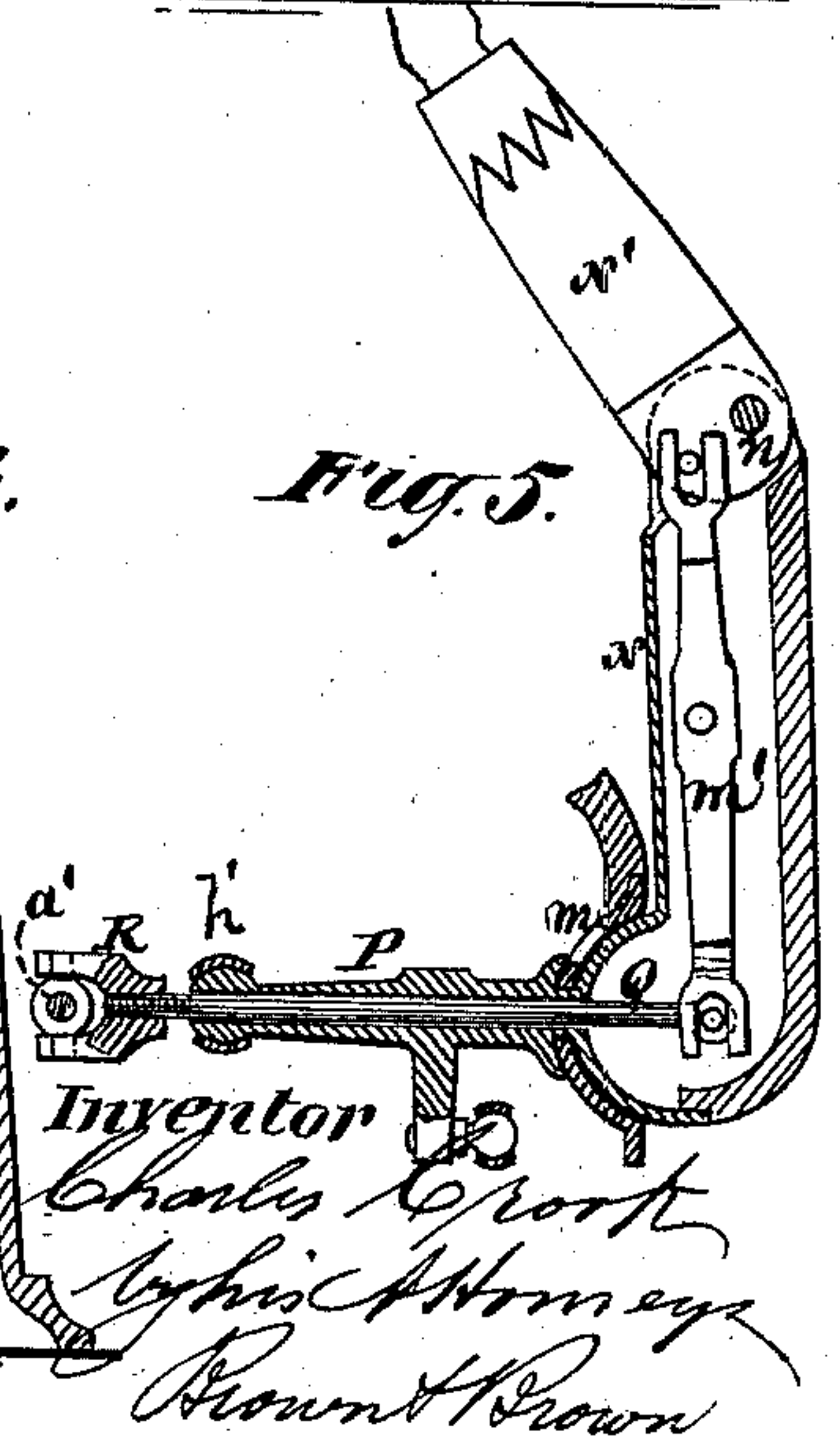


Fig. 5.



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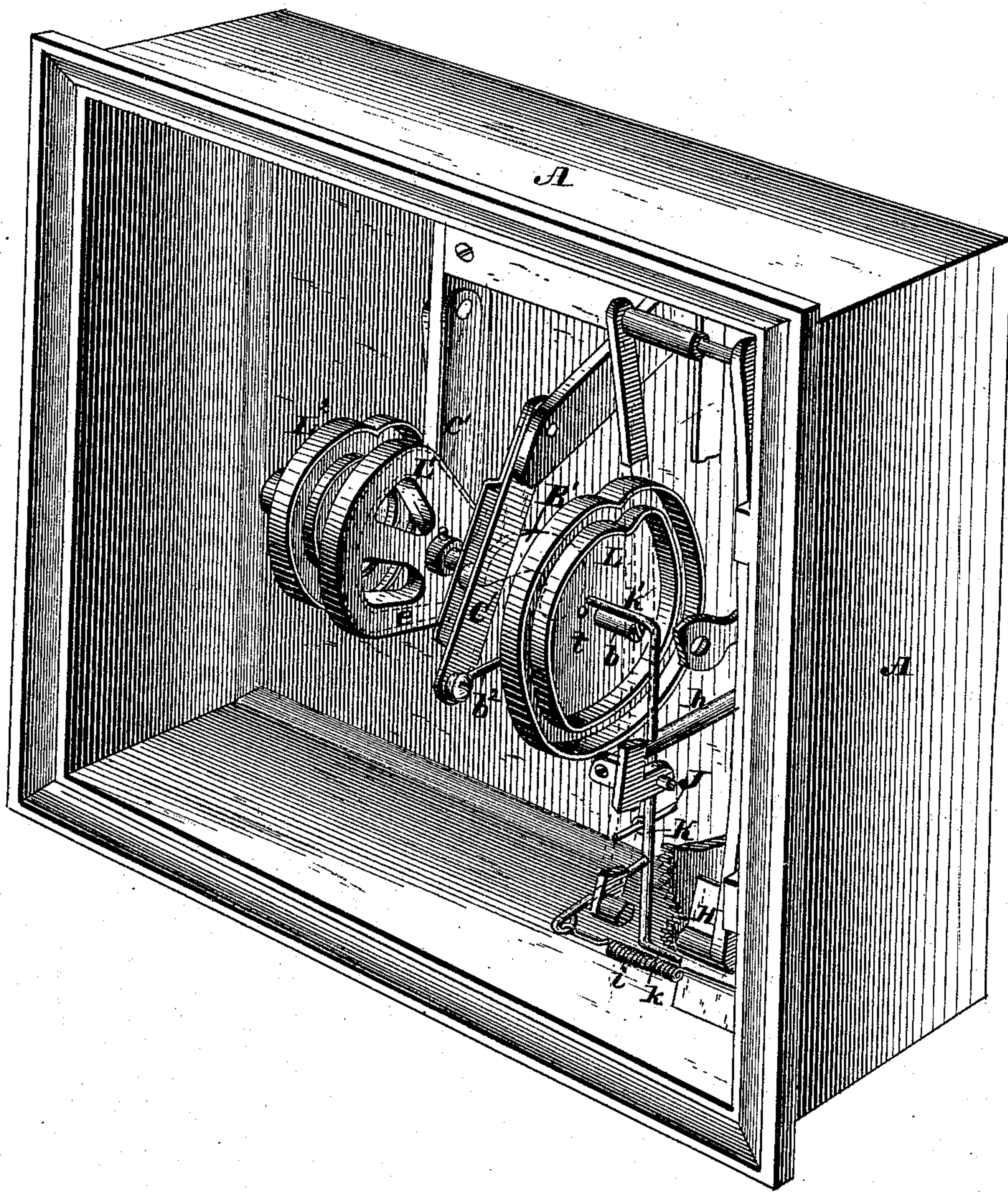
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Fig. 7.



Attest:

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UNITED STATES PATENT OFFICE.

CHARLES CROOK, OF BROOKLYN, ASSIGNOR TO CROOK, HERRING & CO.,
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IMPROVEMENT IN AUTOMATIC CIGAR-LIGHTERS.

Specification forming part of Letters Patent No. **221,911**, dated November 25, 1879; application filed June 21, 1879.

To all whom it may concern:

Be it known that I, CHARLES CROOK, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Automatic Cigar-Lighters, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

This invention has for its object the production of an automaton toy human figure for tobacconists' shops and other purposes, which shall prepare or reduce the tip end of the cigar to promote draft through the latter, and shall cause one of its arms, which is articulated and in the hand of which is a lighter, to be operated to first dip the lighter into a cup or receptacle containing alcohol or other suitable inflammable fluid, afterward to transfer the saturated lighter to a flame or lamp, and subsequently to extend the burning lighter into a position suitable for lighting the cigar.

The invention consists in an automaton toy human figure having combined with it clock-work or mechanism and means for accomplishing these several results or certain of them, and in special combinations of mechanism for producing the desired result or results.

Referring to the accompanying drawings, Figure 1 represents a view, in perspective, of an automaton toy human figure having the invention applied, and showing by dotted lines the articulated arm of said figure in different working positions. Fig. 2 is a vertical section in a plane parallel with the front and back of said toy figure. Fig. 3 is a vertical section on the irregular line *x x* in Fig. 2, looking in direction of the arrow *y y*; and Fig. 4, a vertical section, in part, on said line *x x*, looking in direction of the arrow *z*. Figs. 5 and 6 are views, in detail, of the working arm of the figure and devices connected therewith; and Fig. 7 is a perspective view, looking from the bottom of the base or stand.

A indicates a hollow base or stand, in which is arranged the clock-work or driving mechanism and certain of the operating devices by which the several motions of the automaton toy human figure are obtained; and B indicates

said figure, which is also hollow and mounted on said base. C is a cup or receptacle containing alcohol or other suitable inflammable fluid, and D a lamp or burner. G is a main coiled spring in the base A, by which spring, on being suitably wound up, power is imparted to give the several motions to the working arm of the toy figure and other devices or parts. This coiled spring serves, by a suitable train of gear or mechanism, to give motion to a cam-shaft, *b*, and a shaft, *c*, carrying a fly, H.

Back of the mouth or within the throat of the toy figure is a starting-lever, I, which serves, when forced inward, to set in motion the mechanism by which the several actions pertaining to said figure are effected. Said starting-lever, which also operates as a gage to determine the distance of cut, and the fulcrum of which is at *e*, is kept pressed outward by spring-pressure, and is forced inward to start the clock-work mechanism of the figure by projecting into the mouth of the figure the tip end of the cigar to be lit, as shown in Fig. 3.

An arm, *f*, having attached to it a wire or rod, *g*, forms a connection between the starting-lever I and the clock mechanism. This rod *g* is attached to a lever, J, in the base A, which lever is in its turn connected with a cross-bar or lever, K, fitted to rock upon an intermediate fulcrum, *h*. Said cross-bar or lever is bent at the opposite ends of its arms, and is controlled by a spring, *i*, which exerts a tendency to keep the one bent extremity, *k*, of said cross-bar projected so as to act as a stop to the fly H, and thereby arrest the motion of the clock mechanism as a hole, *t*, in a cam, L, on the shaft *b* comes round to receive within it the opposite bent extremity, *k'*, of the cross-bar, said extremity *k'*, at other periods, or during the rotation of the cam L, bearing against the face of said cam, which consequently makes one revolution before the clock mechanism is stopped. This automatic stopping action of the clock-power economizes or prolongs the work of the mainspring by making a single winding available for a number of operations in succession.

The introduction of the cigar into the mouth of the figure, by its action on the starting-le-

ver I, as hereinbefore stated, releases the stop from the fly to set the clock mechanism in motion.

B' is a cam on the shaft *b*, which, when in motion, actuates a lever, C', having attached to it a rod, *b*². This rod is extended upward within the body of the figure, and is connected above with a pivoted cutting-blade, D', arranged to shear upward across the inner end of the mouth-orifice, through which the tip end of the cigar is projected when the latter is inserted and caused to bear against and to move the starting-lever I. The cam B' depresses the cutter D' against the tension of a spring, E', which (on said cam by its shape) being abruptly released from its lowering action of the cutter, gives a sharp, quick, upward cutting action to the cutter, thereby severing the tip end of the cigar, which is then removed from the mouth of the figure ready for the lighter.

N N' is the articulated and working arm of the toy figure. Said arm, the upper limb, N, of which is hollow, is fitted by a ball-and-socket joint, *m*, to the body of the figure, and the lower limb, N', thereof is flexibly attached, as by an elbow-joint, *n*, to the upper limb, N. In the hand of said arm is a sponge or other lighter, O. Secured to the ball-and-socket joint *m* of the limb N is a hollow protuberance or sleeve, P, arranged to project within the body of the figure; and arranged to pass longitudinally within and through this sleeve is a shaft or rod, Q, one end of which has attached to it a universally-jointed slide, R, through which a bent rod, *a'*, passes. This rod *a'* is connected at its lower end with a bell-crank, S, pivoted to the interior of the body of the figure, and passes at its upper end through a fixed slotted guide, T. Said bell-crank has also attached to it a rod, *b'*, which is extended downward and connects with a lever, *c'*, in the base A. This lever has on it a stud or roller, *d'*, which fits within a cam-groove, *e'*, in the cam L. This cam, when in motion, serves to give a forward-and-backward movement to the arm—that is, toward and from the figure in an approximately horizontal direction—by or through the action of the bell-crank S, the rod *a'*, the universally-jointed slide attachment R, the sleeve P, and the fixed slotted guide T.

Another cam, L', on the shaft *b*, actuates a lever, *f'*, and rod *g'*, which latter is connected by a ball-and-socket joint, *h'*, with the sleeve P. This cam action serves to give what may be termed the "up-and-down motion" to the arm. A further cam, L², on the shaft *b*, actuates a lever, *i'*, and rod *k*², to give an oscillating motion to the arm at its ball-and-socket joint by the connection of said rod *k*² with a crank or arm, *l'*, on the sleeve P. Besides these several motions as obtained by the cams, the lower or outer limb, N', of the arm is rocked on its elbow-joint *n* by a lever, *m'*, arranged within the limb N, and connected with the rod Q. This rod is free to move longitudinally

within the sleeve P, so that as the slide R is moved up and down upon the bent rod *a'* an in-and-out or longitudinal sliding motion is communicated to the rod Q, and the limb N' is flexed at the elbow of the arm, as required.

In the operation of the toy figure, after the mainspring has been suitably wound up, it is only necessary to insert the tip end of a cigar into the mouth of the figure and press back the starting-lever I. This causes the cross-bar or stop K to be liberated from the clock mechanism and the cam-shaft *b* to be set going, whereby the cam B' actuates to release the cutter D' and the spring E' forces up the cutter to sever the tip of the cigar, after which the cigar is removed from the mouth of the figure, and the cam-shaft *b* continuing in motion, the other cams, L L' L², operate by their concerted actions upon the articulated arm to first remove the lighter O from the cup C, containing the inflammable fluid, to then transfer the saturated lighter to the flame of the lamp or burner D, afterward to remove the burning lighter from the latter, (see Fig. 1,) and subsequently to extend the arm holding the burning lighter toward the person having the cigar to be lighted, and to cause the arm to remain so extended during a short interval till the cigar is lighted. The continued motion of the cam-shaft *b* also first causes the cutter D' to be returned to its normal position, and after the articulated arm of the figure has gone through its several motions, as above described, causes the cams on it controlling said arm to draw the latter inward and downward, and to restore the lighter, which is provided with an extinguishing-disk, into the cup C, after which the stop K shoots into lock with the clock mechanism, arresting the further operation of the toy figure until the starting-lever I is again pressed back by the insertion of another cigar within the mouth of said figure.

I claim—

1. An automaton human figure for lighting cigars, in which is combined an articulated arm holding in its hand a cigar-lighter, a cup or receptacle for containing alcohol or other lighting-fluid, a lamp or burner, and mechanism for automatically transferring the lighter from the cup to the lamp to expose the burning lighter, and subsequently to restore it to the cup, substantially as specified.

2. The combination, in an automaton human figure operating as a cigar-lighter, of a cutter for severing the tip end of the cigar and a starting lever or device actuated by the exposure to the cutter of the cigar to be severed, essentially as described.

3. The combination, with a clock mechanism applied to the automaton figure, of a stop for arresting the motion of said mechanism, a starting lever or device controlling said stop, and a cutter arranged in front of said starting lever or device, substantially as specified.

4. The combination of the rotating cam B', the lever C', the rod *b*², the vibrating cutter

D', the spring E', and the starting-lever I, arranged to operate also as a gage to determine the cut, essentially as described.

5. The combination, with the articulated arm N N', of the lever m' , the rod Q, the slide R, the crooked rod a' , the fixed guide T, the bell-crank S, rod b' , and the cam L, substantially as described.

6. The combination, with the articulated arm N N', of the sleeve P, the universal joint h' , the rod g' , and the rotating cam L', substantially as specified.

7. The combination, with the ball-and-socket joint m of the articulated arm N N' and the

sleeve or hollow attachment P, of the crank or arm l' , the rod k^2 , and the rotating cam L², essentially as described.

8. The combination, with the articulated arm N N', of the lever m' , the rod Q, the slide R, the crooked rod a' , the fixed guide T, the bell-crank S, the rod b' , the sleeve P, the universal joint h' , the rod g' , the crank or arm l' , the rod k^2 , and the rotating cams L L' L², substantially as shown and described.

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