No. 683,004. Patented Sept. 17, 1901.

J. J. SCHERMACK.

CORK PULLER.

(Application filed Dec. 3, 1900.)

(No Model.) 5 Sheets—Sheet 1.

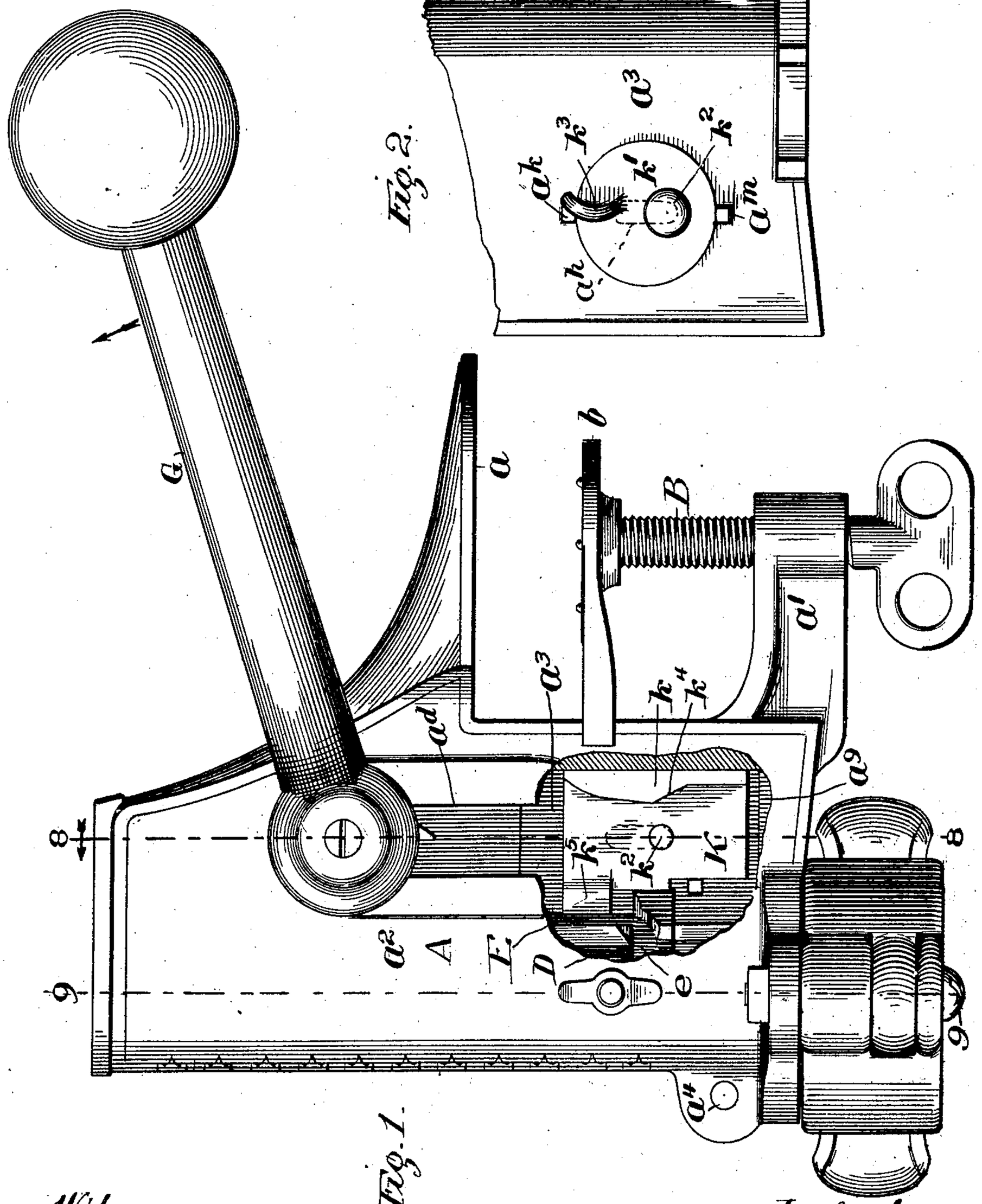

Fig. 1.

Fig. 2.

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S. Bliss.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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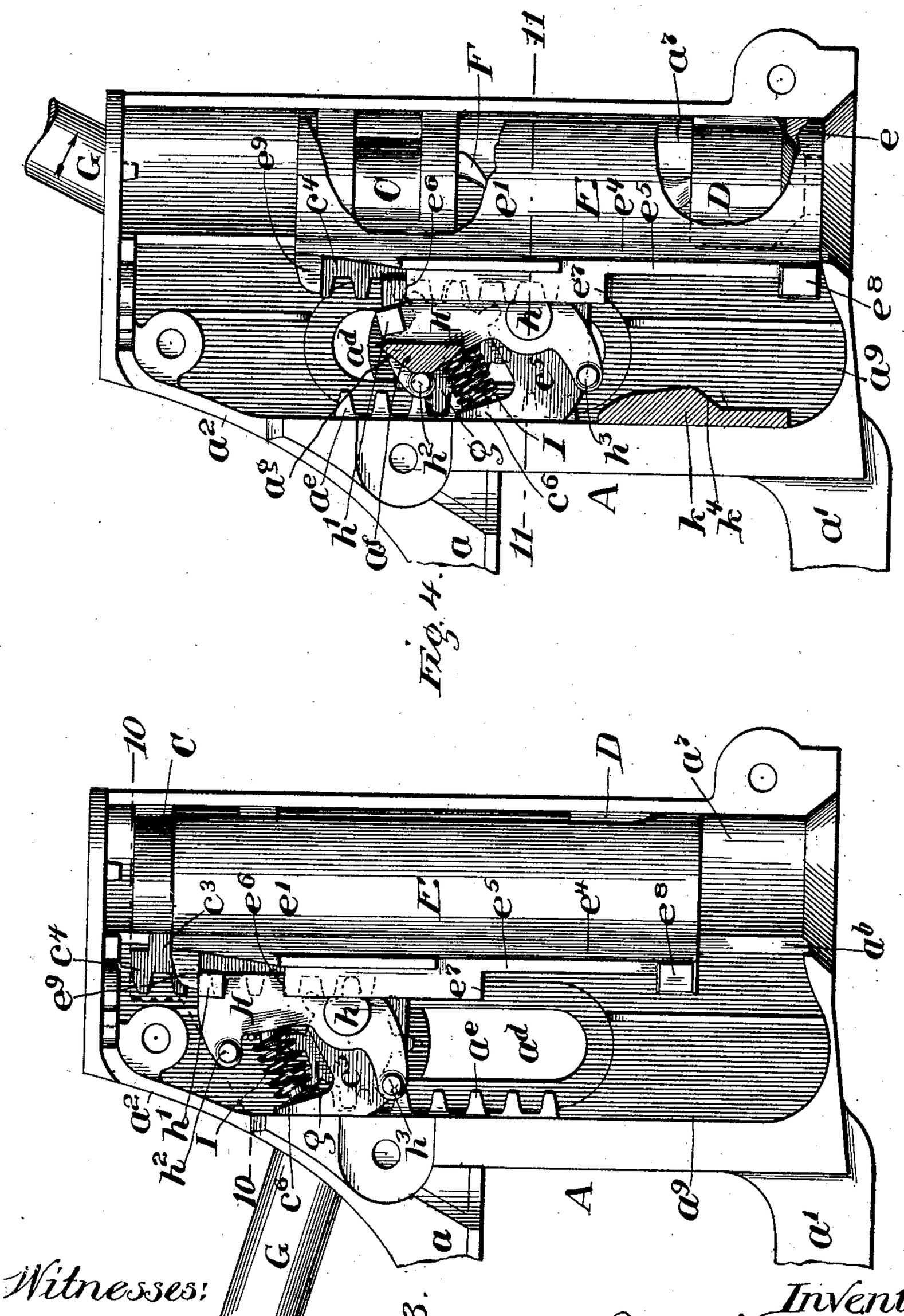

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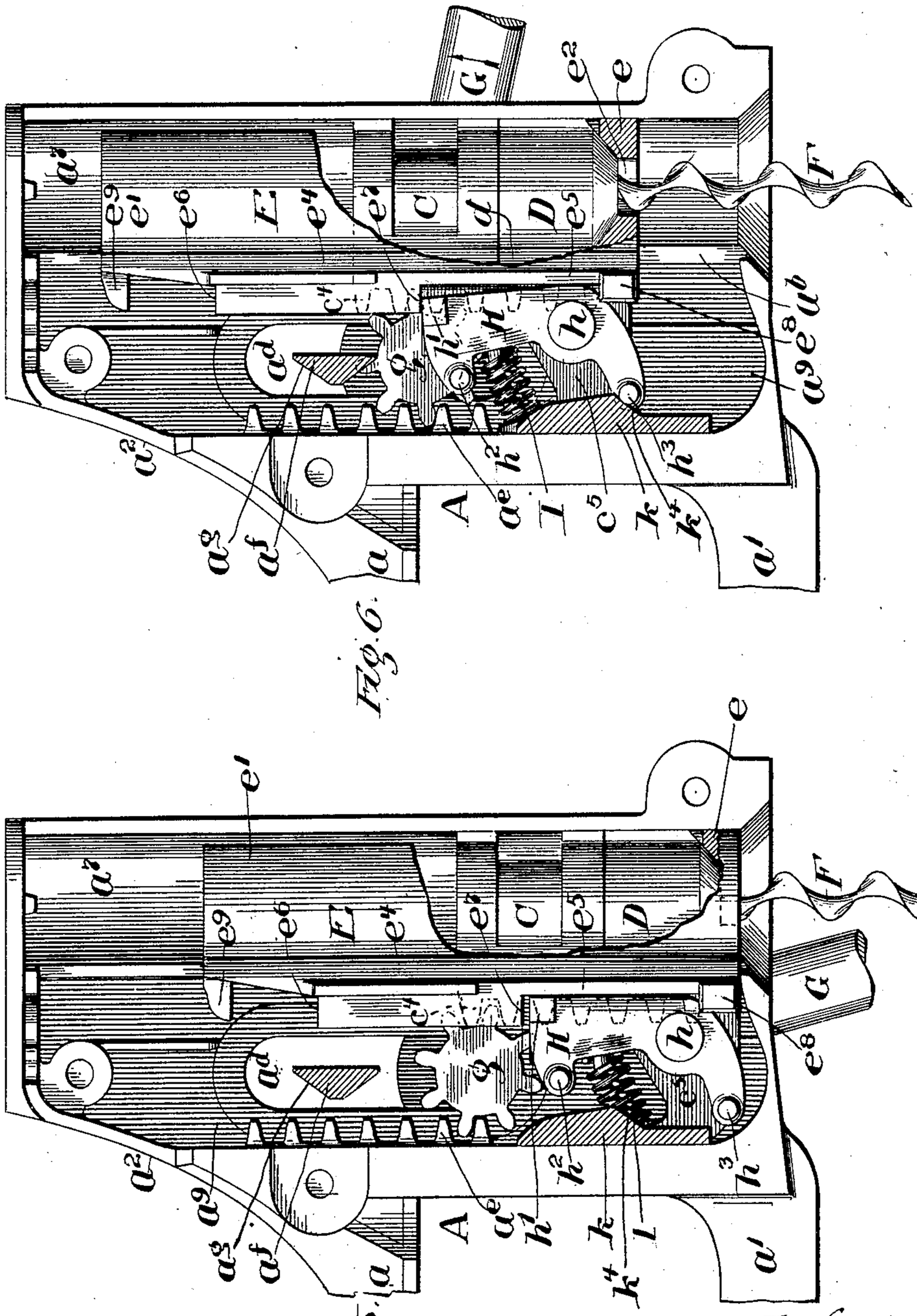

Fig. 6.

Fig. 5.

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(No Model.) 5 Sheets—Sheet 4.

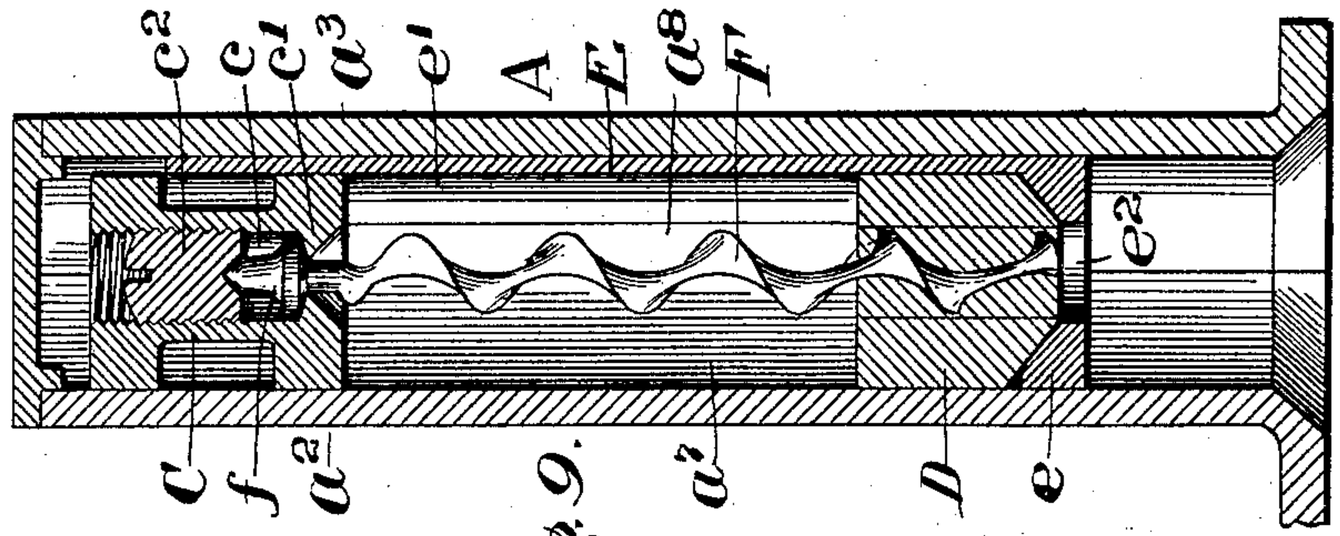

Fig. 9.

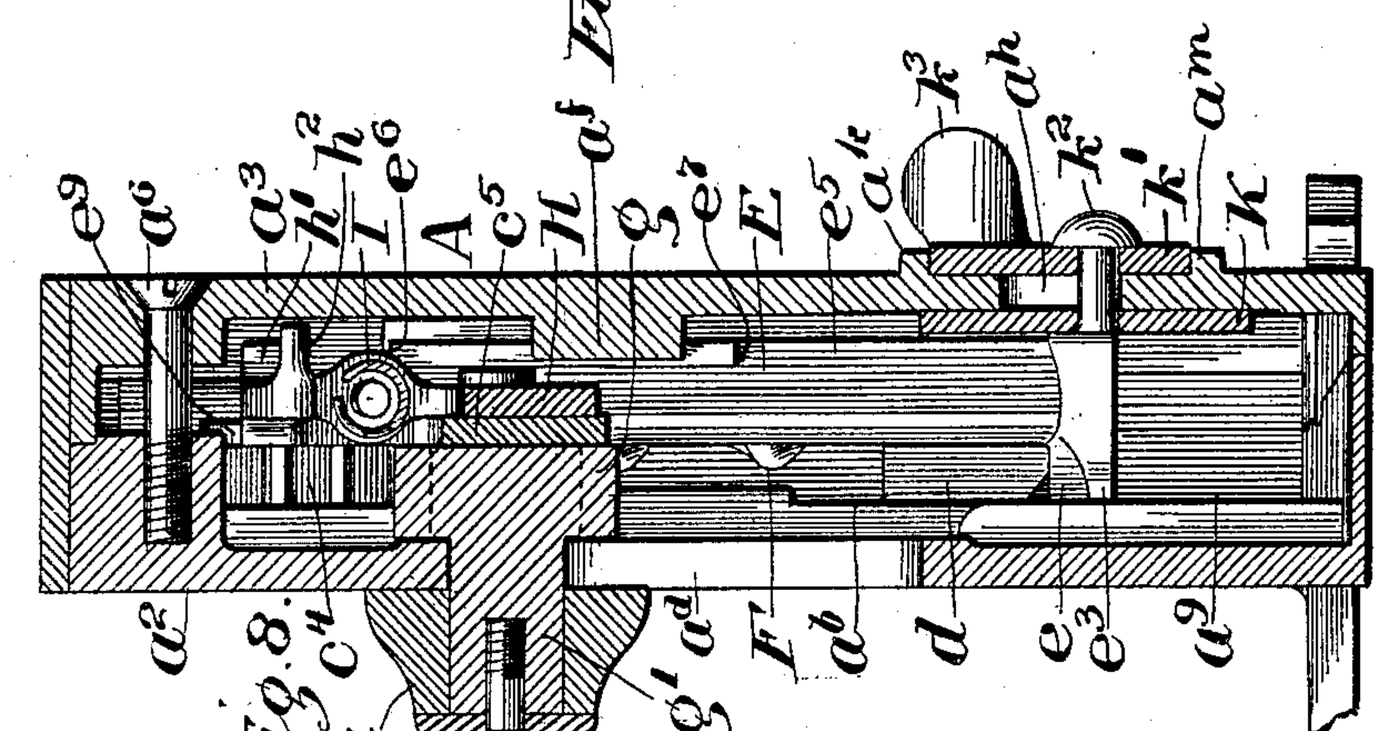

Fig. 8.

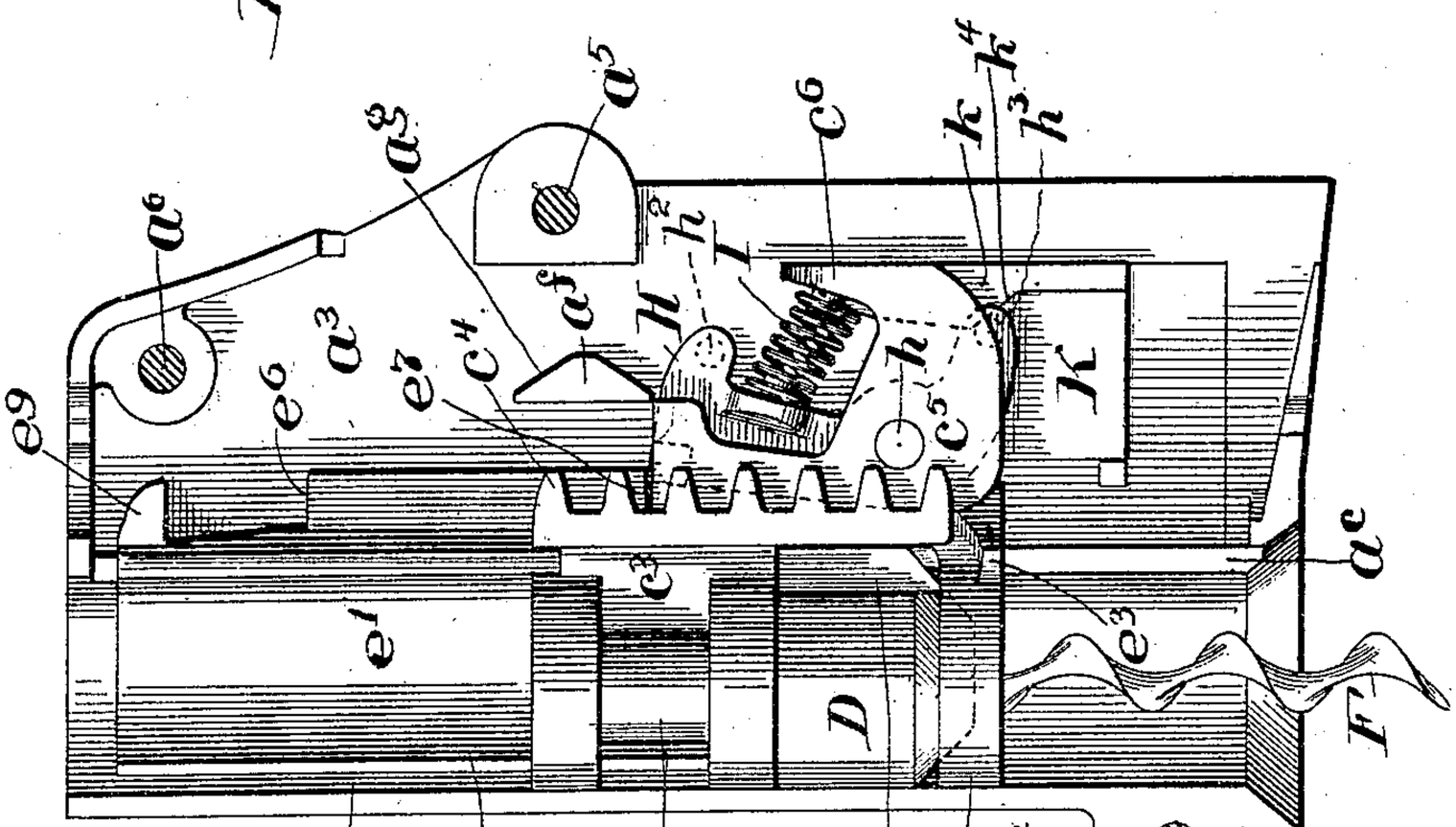

Fig. 7.

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Fig. 14.

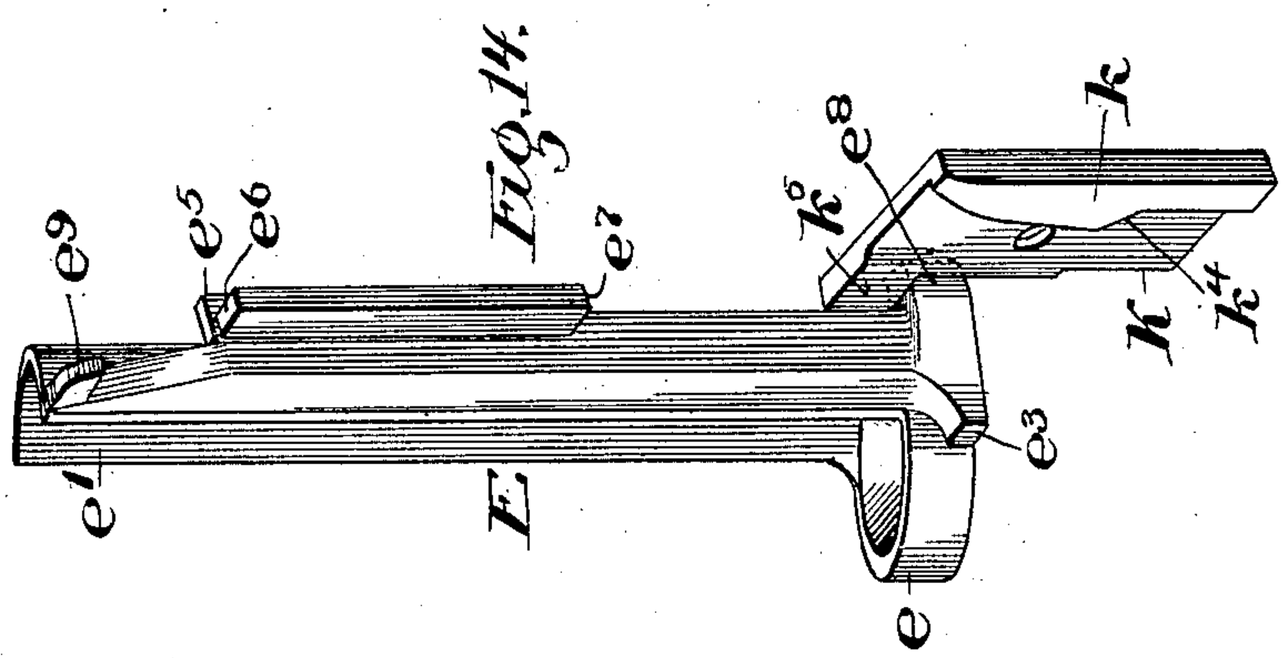


Fig. 12.

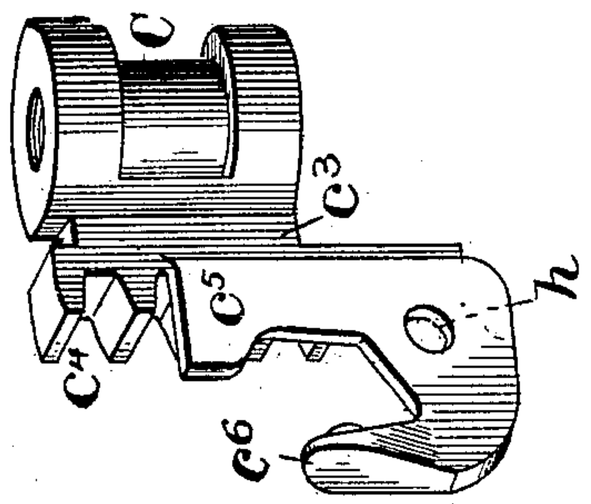


Fig. 13.

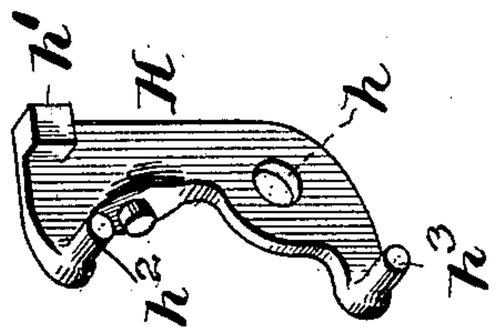


Fig. 10.

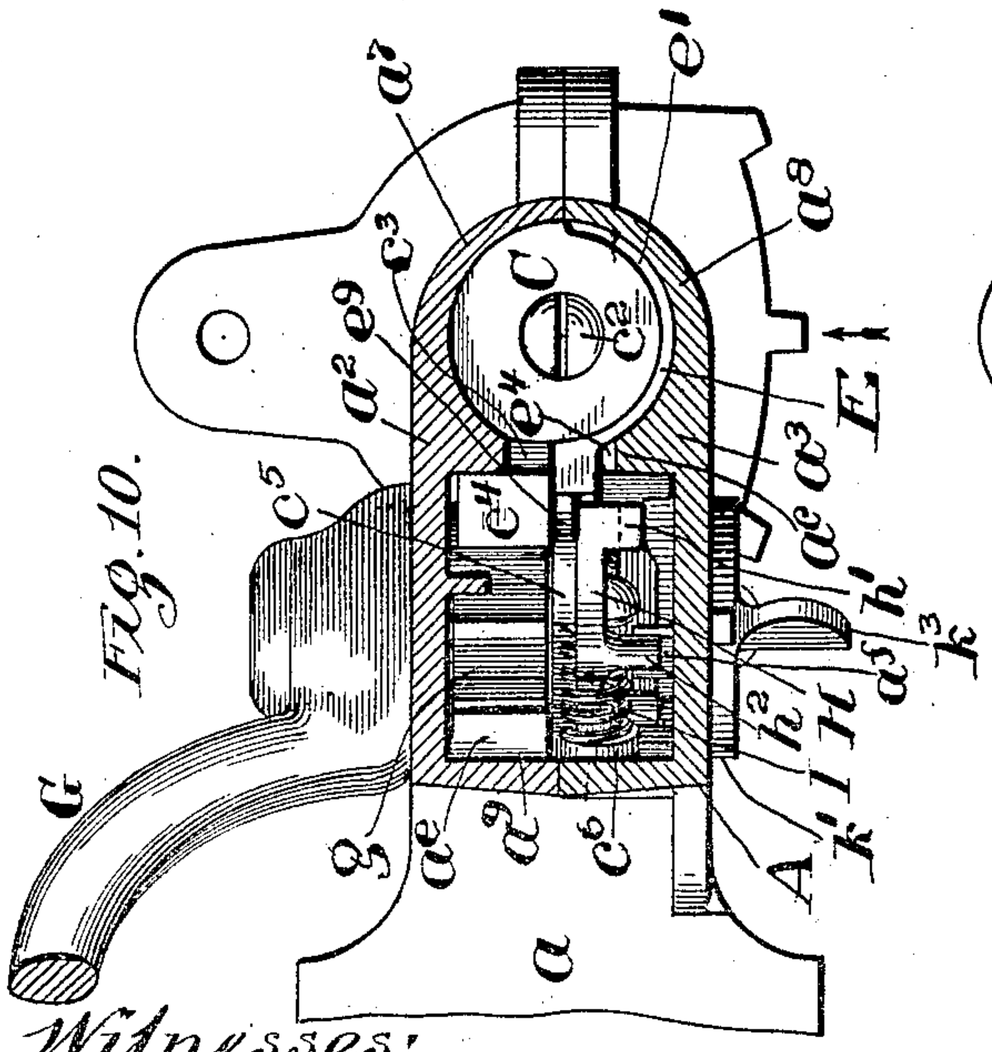
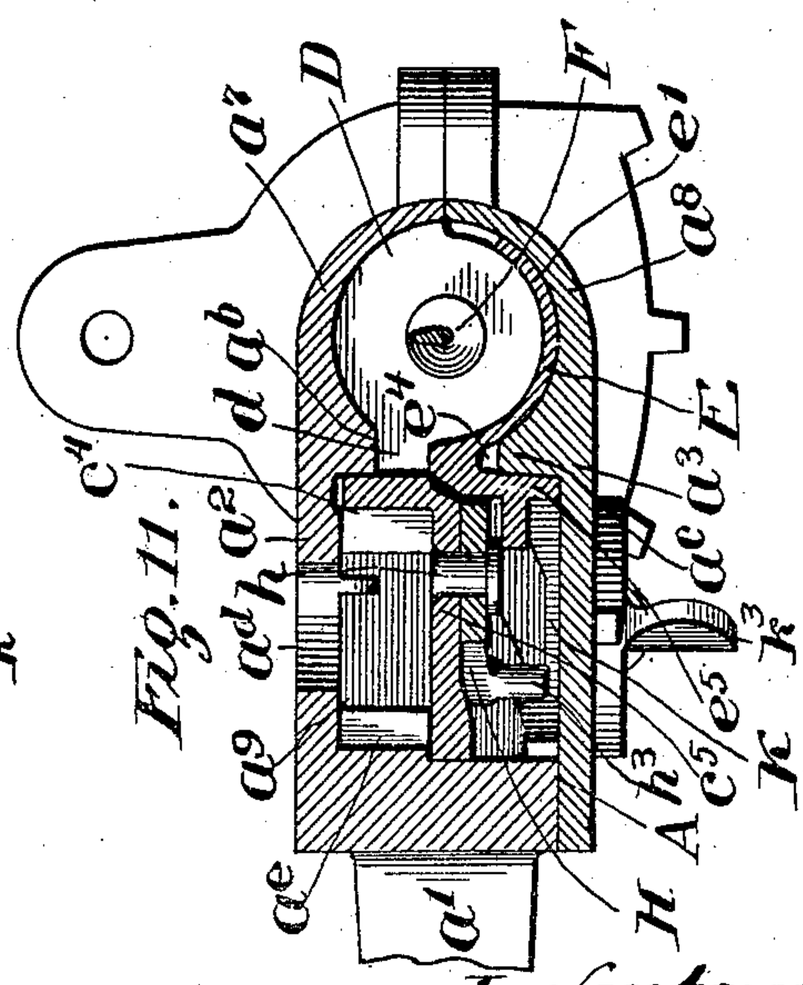


Fig. 11.



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UNITED STATES PATENT OFFICE.

JOHN JOSEPH SCHERMACK, OF FREEPORT, ILLINOIS, ASSIGNOR TO ARCADE MANUFACTURING COMPANY, OF SAME PLACE.

CORK-PULLER.

SPECIFICATION forming part of Letters Patent No. 683,004, dated September 17, 1901.

Application filed December 3, 1900. Serial No. 38,395. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOSEPH SCHERMACK, a citizen of the United States of America, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Cork-Pullers, of which the following is a specification.

My invention relates to certain improvements in cork-pullers, the object of said improvements being to provide a more convenient and effective device for transforming the reciprocating rotary motion of a handle into a longitudinal reciprocating movement of the corkscrew and also to make certain other improvements in the devices for operating the corkscrew and manipulating the cork.

To such end the invention consists in certain improved devices and novel arrangement thereof, the essential characteristics of which will be pointed out at the end of this specification.

In the drawings, Figure 1 is a side elevation of a cork-puller embodying my improvements, with a portion of the casing broken out to illustrate certain parts within the casing. Fig. 2 is a side view of a portion of the plate which forms the opposite side of the casing from that seen in Fig. 1. Fig. 3 is a side view of the working parts of the cork-puller and one of the plates which form the casing, the direction of the view being indicated by the arrow in Fig. 10, the working parts being in the normal position—namely, the one in which the corkscrew is in its uppermost position. Fig. 4 is a similar view with the operating parts in a different position—namely, the one in which the stripper has become disengaged from the nut-carrier. Fig. 5 is a view similar to Fig. 4, showing the corkscrew in its lowest position. Fig. 6 is a similar view of the working parts, showing another point of disengagement between the stripper and the carrier. Fig. 7 is a view of the operating parts and one of the casing-plates looking in the opposite direction from Figs. 3 to 6, inclusive, and shows their relative positions as the cork is wholly withdrawn from the bottle. Fig. 8 is a vertical cross-section taken in line 8 8 of Fig. 1. Fig. 9 is a similar section in line 9 9 of Fig. 1. Fig. 10 is a horizontal section in line 10 10 of Fig. 3. Fig. 11 is a similar section in line 11 11 of Fig. 4. Fig. 12 is a perspective view of the corkscrew-carrier. Fig. 13 is a perspective view of a pawl operating in connection with said corkscrew-carrier, and Fig. 14 is a perspective view of a stripper and adjustable plate. Figs. 1 to 6, inclusive, show the cork-puller arranged to pull the cork partially from the bottle, and Fig. 7 shows it arranged to draw the cork entirely therefrom.

Referring to the drawings, A is a suitable case intended to inclose the working parts and provide an ornamental exterior for the puller; also, to furnish means for the support within the same of various stationary elements of the operating mechanism. The case is shown as provided with a laterally-projecting fastening-plate a and a projecting bracket a', in which is threaded a thumb-screw B, carrying an opposing clamping-plate b, by means of which the puller may be fastened to a shelf or bar in the ordinary manner. The case preferably has two side plates a^2 a^3, secured together by screws a^4 a^5 a^6. Each plate is provided with a half-barrel a^7 a^8, in which are guided a corkscrew-carrier C, Figs. 7 and 12, a nut D, Figs. 7 and 9, and a stripper E, Figs. 7 and 14. The corkscrew-carrier is perforated longitudinally at c, the lower portion of the perforation being reduced in size by an inwardly-projecting flange or shoulder c' and the upper portion being threaded to receive an externally-threaded block c^2. A corkscrew or worm F, provided with a head f, is rotatably secured in the carrier by confining the head between the flange c' and the block c^2. The nut is babbitted to fit the corkscrew, and its function is to rotate said corkscrew as it enters the cork. It is prevented from rotating in the barrel by means of a laterally-projecting lug d, guided between the inner edge ab of the barrel a^7 and the stripper E. Said stripper E has a lower disk-shaped portion e, from which extends upwardly on one side an inwardly-concaved portion e', fitting over the nut and the carrier, which are reduced in radius about this portion of their periphery to accommodate the extension of the stripper. The disk-shaped portion of the stripper is perforated

at e^2 to allow the corkscrew to pass through, and the lower portion of the nut, as well as this perforation, is preferably coned downwardly, so that the nut may be given the maximum length in the space provided. A lug e^3 upon the stripper rides upon the edge *ab* of the barrel a^7, and the corresponding edge *ac* of the opposite barrel extends into a groove e^4 between the concave extension of the stripper and a laterally-projecting portion e^5 thereof. In this way the stripper is prevented from rotating in the casing, and is therefore adapted to assist in guiding the nut therein against rotation. Alongside of the barrel-shaped portion of the case is a box-like portion a^9, in one side of which is a vertical slot *ad*, Fig. 3. On the side of this slot opposite the barrel is a short rack *ae*, and the corkscrew-carrier C has an extension c^3 projecting toward the rack and itself being provided with an opposing rack c^4. Between the two racks and meshing with both of them is a pinion *g*, from one side of which projects a gudgeon *g'*, extending through the slot and having a handle G secured to it against rotation outside of the case. The rotary movement of the handle runs the pinion up and down the stationary rack *ae* and moves the carrier vertically in the case. This is a very simple and effective means of connecting the rotary handle with the reciprocating carrier and gives the necessary range of movement of the carrier. Upon the extension c^3 of the carrier is a projecting arm c^5, to which is pivoted at *h* a dog or pawl H, pressed by a spring I, confined between the dog and a tongue c^6 on the arm toward the stripper E. The dog is thickened at its bearing end by means of a lug *h'*, and said lug is adapted to engage alternately two shoulders e^6 e^7 on the stripper, the engagement with the upper shoulder e^6 being adapted to crowd the stripper positively downward and engagement with the lower shoulder e^7 being adapted to give it a positive upward movement. The disengagement of the dog is effected through two lugs h^2 h^3 on the dog by means of two lugs *af k*, the former being a portion of the case and having an inclined face *ag*, adapted to draw back the pawl as it moves downward, Fig. 4. The lug *k* is preferably a part of a slide K, guided vertically in the case and moved therein by means of an eccentric *k'*, connected to the slide by a pin k^2, moving in a slot *ah* in the case, said eccentric being provided with a handle k^3 and being confined vertically between two lugs *ak am* on the outside of the case. Two positions of the slide are shown in Figs. 1 and 7. The lug *k* has an inclined face k^4, which lifts the dog from behind the shoulder e^7 during the upward movement of the carrier, as seen in Fig. 6. Upon the opposite side of the slide is a lug k^5, which engages with a lug e^8 on the stripper, Fig. 14, to limit the upward movement of said stripper. This lug of course follows the adjustment of the slide and varies said upward limit to correspond with the variation in the time of the release of the pawl by the lug *k*. The normal position of the handle is shown in Fig. 1 and the corresponding positions of the parts within the case in Fig. 3. In this position a tongue e^9 of the stripper rests by gravity upon the arm c^5 of the corkscrew-carrier. The movement of the handle in the direction of the arrow in Fig. 1 starts the carrier downward, allowing the stripper and nut to drop by gravity to the position seen in Fig. 4, and if for any reason—as, for instance, the presence of a cork in the barrel—the stripper fails to move easily it is forced downward into this position by engagement of said lug with the shoulder e^6. When said position is reached, the lug *af* on the case disengages the pawl and the carrier moves onward alone, forcing the corkscrew through the nut and screwing it into the cork. As the limit of movement of the handle is reached the pawl snaps behind the shoulder e^7 and the reverse movement of the handle lifts the stripper and the nut, preventing rotation of the corkscrew in the cork until the lug h^3 of the pawl engages the incline k^4 of the lug *k*, disengaging the pawl from the stripper, which is at this moment checked in its upward movement by engagement of the lug e^8 on the stripper with the lug k^5 on the plate K. The further movement of the handle in the same direction draws the corkscrew through the stripper, compelling it to turn out of the cork, and while this is going on it should be noticed that the nut D is loose upon the corkscrew, running freely down the same as said corkscrew is unscrewed from the cork. There is an important advantage in stripping the cork from the corkscrew by means of a stripper intermediate between the nut and the cork instead of by means of the nut itself, as is the case in a great many prior pullers. This advantage will be easily recognized by those who are familar with the principle of the ordinary jam-nut or lock-nut. If two nuts threaded to the same screw be turned tightly together, it is quite difficult to remove the screw while holding stationary the nut on the side toward which the screw is to move, and, in fact, it is also comparatively difficult to unscrew either one of the nuts, as the two nuts exert a sort of wedging action upon each other, greatly increasing the friction upon the screw.

If in the operation of the puller of this application the cork were stripped from the corkscrew by means of the nut, the cork, which becomes a second nut upon the corkscrew, would be drawn up against the stripping-nut and become a sort of a jam-nut, increasing the friction of the corkscrew both in the stripping-nut and in the cork, whereas in the present construction the stripper forces the cork easily from a corkscrew while the latter rotates freely in the carrrier, and the nut runs loosely on the corkscrew.

It should be noticed that the handle is

placed in such angular relation to the pinion that the handle is pressed downward during the downward movement of the corkscrew into the cork and is pressed upward during the upward movement of the cork out of the bottle. The application of the power in the direction of the work exerts the force to the greatest advantage upon the working parts instead of upon the frame, as would be the case if the handle were arranged to move in the opposite direction to that taken by the working part.

The exact form and details of the construction I consider in certain respects wholly immaterial to the broad invention, and for that reason I do not limit my invention thereto.

I claim as new and desire to secure by Letters Patent—

1. In a cork-puller, the combination with a suitable supporting-frame and a longitudinally-reciprocating corkscrew guided therein, of a longitudinally-guided corkscrew-carrier in which the corkscrew is mounted, racks upon the case and carrier respectively, a pinion longitudinally guided in the case and meshing with said racks and a handle secured to the pinion and placed at such angular relation thereto as to move in substantially the same direction as the corkscrew while the latter is entering the cork; substantially as described.

2. In a cork-puller, the combination with a suitably-slotted inclosing case, of a longitudinally-reciprocating corkscrew-carrier therein, a corkscrew mounted in said carrier, racks within the case secured to the case and carrier respectively, a pinion between said racks and guided laterally by the walls of the case, and a handle secured to the pinion through the slot and arranged in such angular relation thereto that it moves bodily in substantially the same direction as the corkscrew while the latter is entering the cork; substantially as described.

3. In a cork-puller, the combination with a suitable supporting-frame, of a longitudinally-guided corkscrew-carrier, means for reciprocating said corkscrew-carrier, a corkscrew rotatably mounted in the corkscrew-carrier, a nut threaded to the corkscrew, and longitudinally guided against rotation, a stripper intermediate the nut and the cork, and devices operating to connect the stripper with the corkscrew-carrier, during the withdrawal of the cork and to disconnect the stripper and the carrier during the withdrawal of the corkscrew from said cork; substantially as described.

4. In a cork-puller, the combination with a suitable supporting-frame, of a longitudinally-guided corkscrew-carrier, means for reciprocating said corkscrew-carrier; a corkscrew rotatably mounted in the corkscrew-carrier; a nut threaded to the corkscrew and longitudinally guided against rotation, a stripper intermediate the nut and the cork, means for moving the stripper longitudinally with the carrier during the withdrawal of the cork and means for preventing such longitudinal movement during the stripping of the latter; substantially as described.

5. In a cork-puller, the combination with a suitable supporting-frame, of a longitudinally-guided corkscrew-carrier, means for reciprocating said corkscrew-carrier, a corkscrew rotatably mounted in the corkscrew-carrier, a nut threaded to the corkscrew, and longitudinally guided against rotation, a stripper intermediate the nut and the cork, and means for alternately connecting said stripper with the carrier and with the frame, thereby alternately effecting and preventing longitudinal movement of the stripper in unison with the carrier; substantially as described.

In witness whereof I have hereunto set my hand, at Freeport, in the county of Stephenson and State of Illinois, this 23d day of November, A. D. 1900.

JOHN JOSEPH SCHERMACK.

Witnesses:
FRED E. BOEDEKER,
BERT HERBIG.