

No. 646,938.

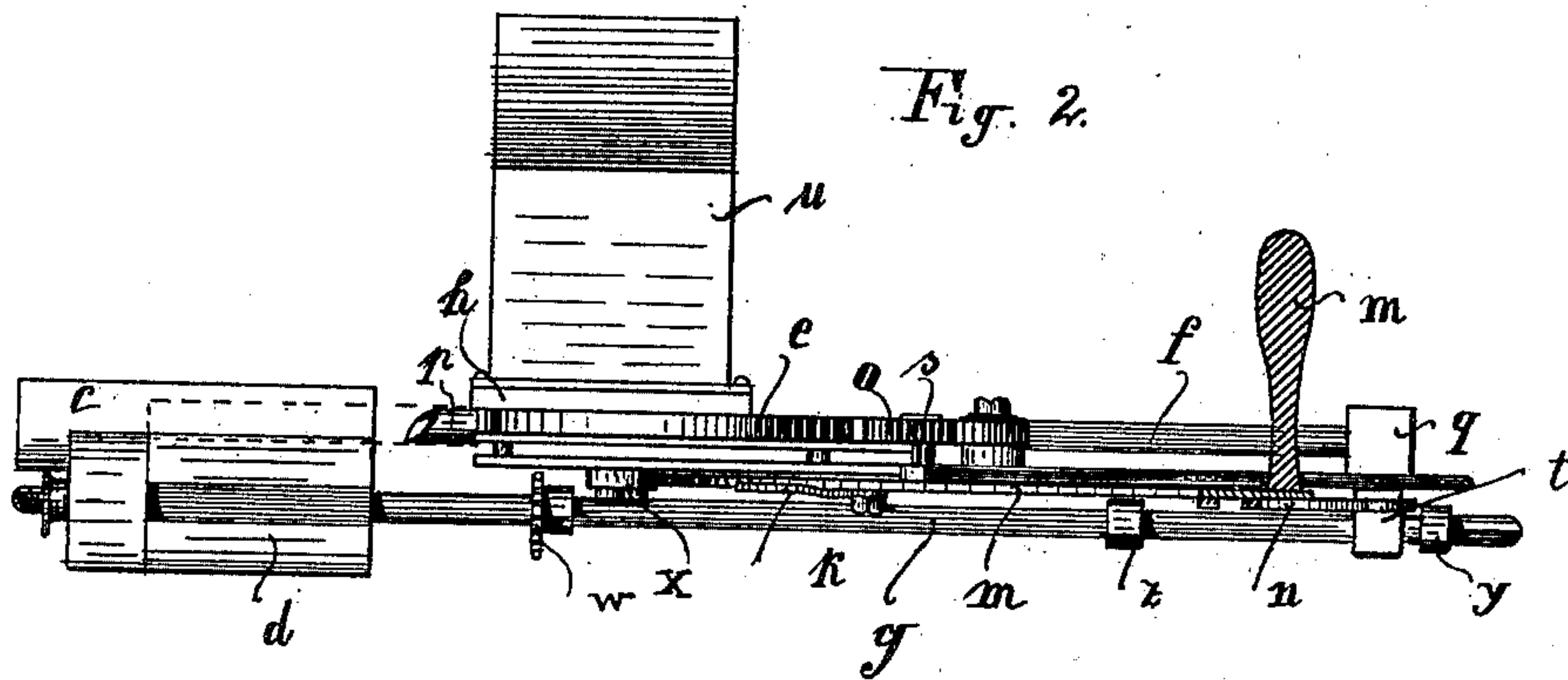
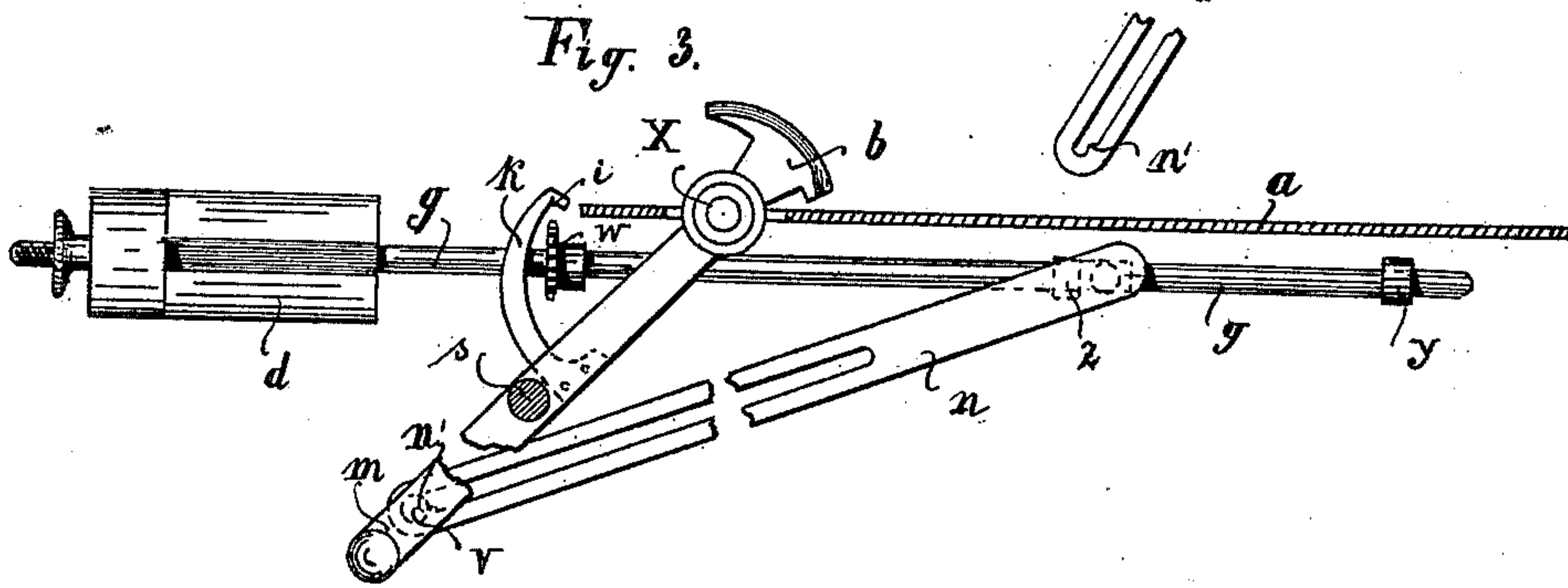
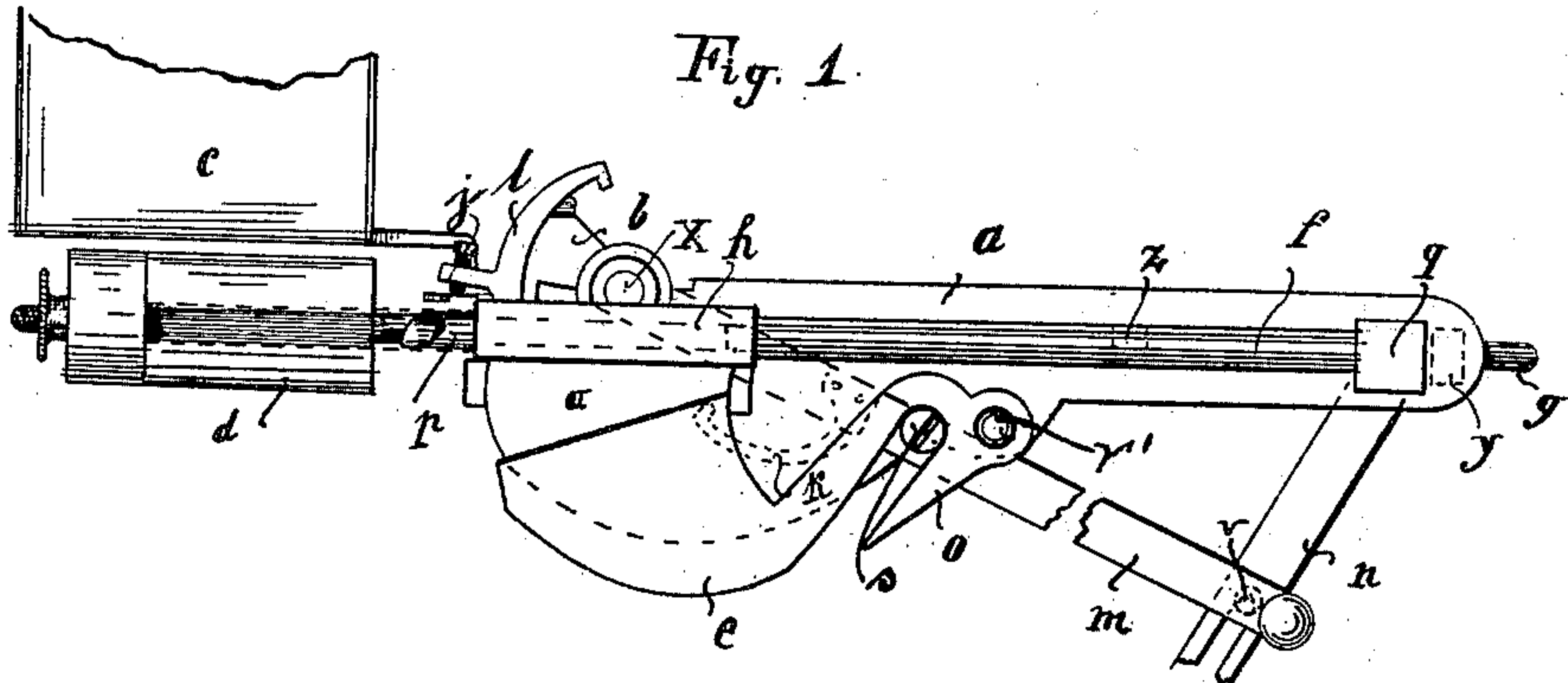
Patented Apr. 10, 1900.

W. ANDSTEM & G. A. HAGELBERG.  
CIGARETTE FILLING MACHINE.

(No Model.)

(Application filed May 14, 1898.)

2 Sheets—Sheet 1.



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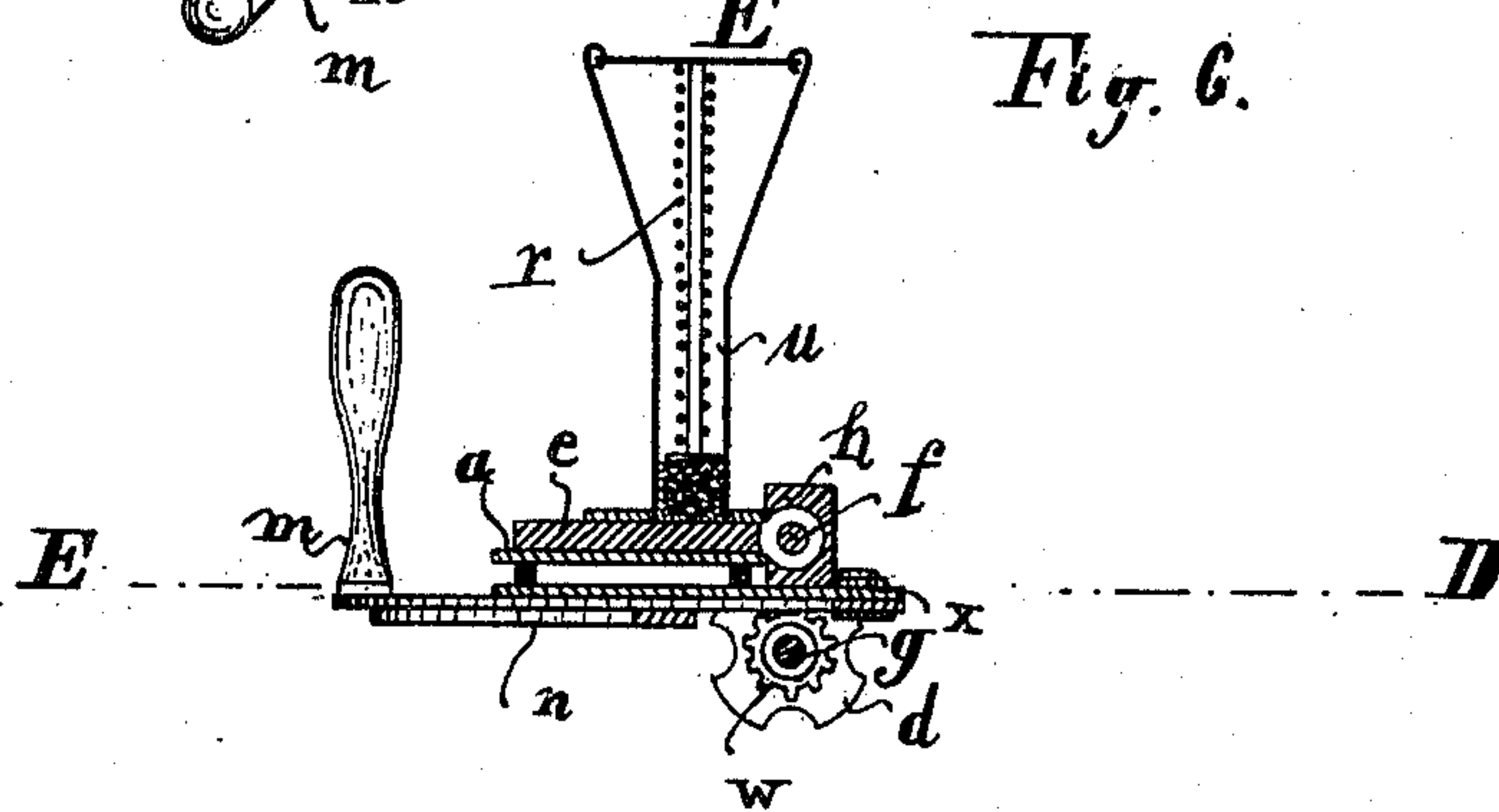
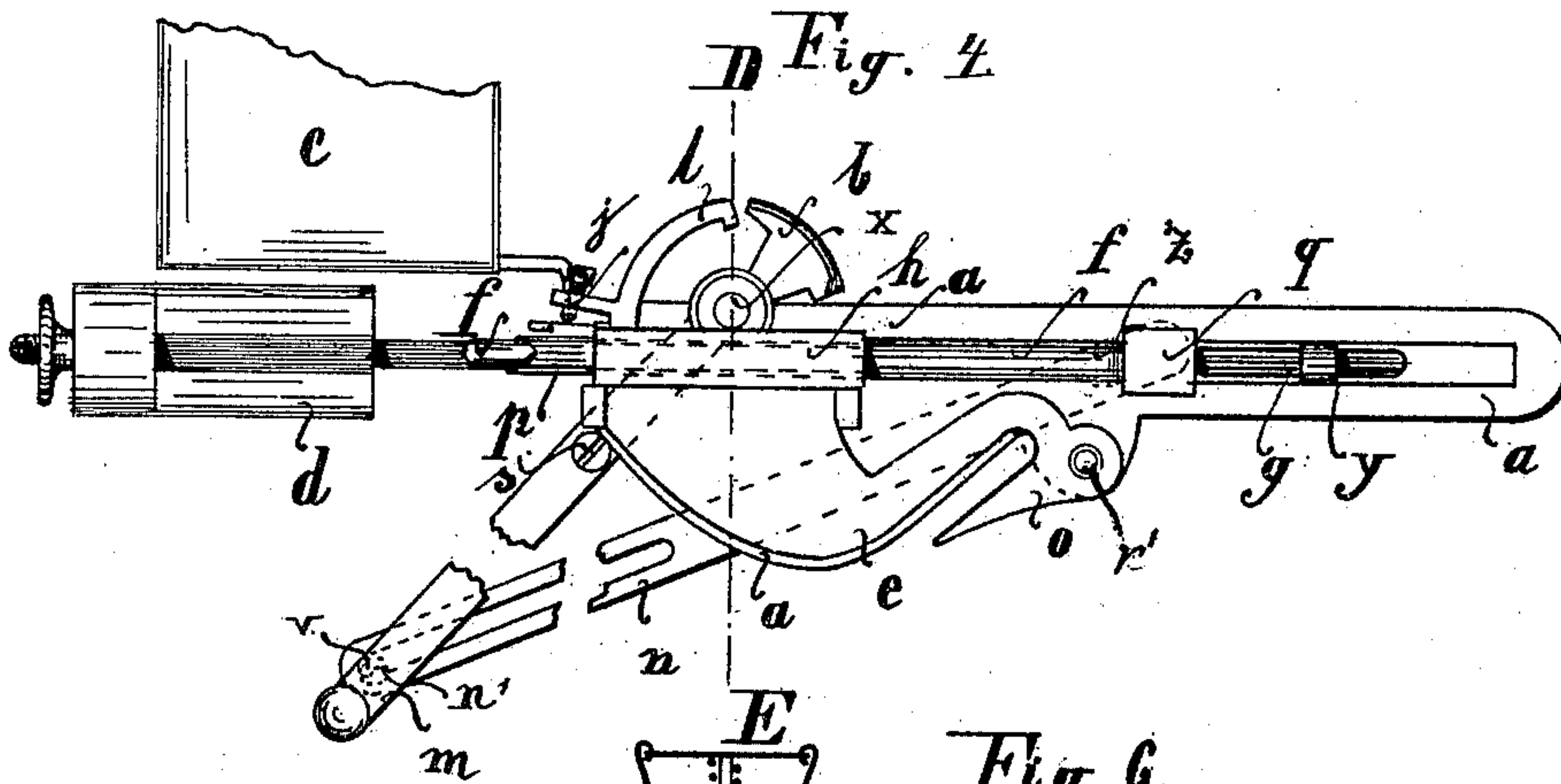
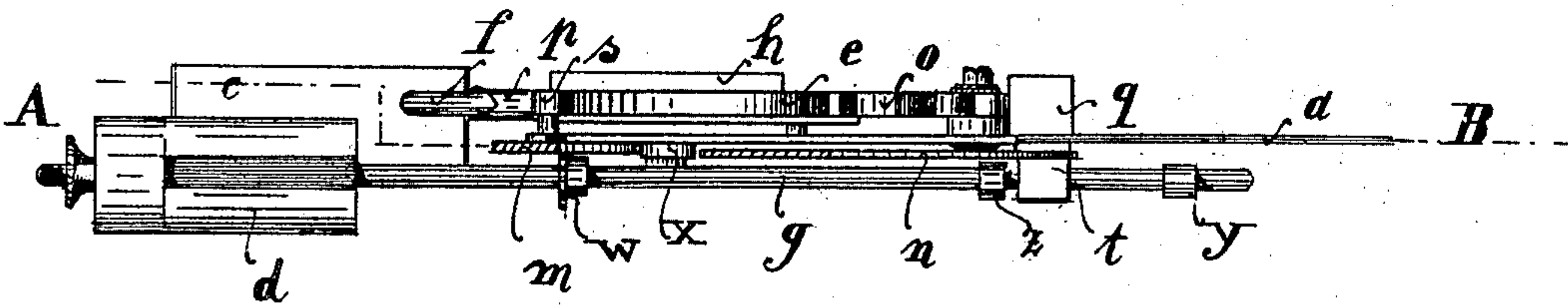


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM ANDSTEM AND GUSTAF ADOLF HAGELBERG, OF HELSINGFORS, RUSSIA.

## CIGARETTE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 646,938, dated April 10, 1900.

Application filed May 14, 1898. Serial No. 680,696. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM ANDSTEM and GUSTAF ADOLF HAGELBERG, subjects of the Czar of Russia, and residents of Helsingfors, Finland, Russia, have invented certain new and useful Improvements in Cigarette-Filling Machines, of which the following is a specification.

The present invention concerns a machine designed more particularly to be worked by hand and serving for filling prepared cigarette tubes or shells.

The invention is characterized in that a rotary drum arranged below the paper-shell holder and provided with grooves for holding these shells throws out the filled cigarette when actuated by a hand-lever, a crank, or a similar device. The drum also takes up an empty shell, carries it to the conically-beveled mouth of the filling conduit or channel, and places it over the same, where the shell is held until the rammer has pushed the tobacco into the shell. The tobacco is pressed by a spring provided in the feeding receptacle or hopper downward, and it is then cut by a knife pressed into the filling-channel arranged at the side of the hopper. After the tobacco is pressed into the shell the clamp or retaining device releases the shell and the drum returns to its initial position. The same operation takes place with each movement of the lever or the crank.

In the accompanying drawings the apparatus is represented in various working positions in diagram and side view.

Figure 1 is a top view with right-hand position of the lever *m*, omitting the tobacco-feeding hopper. Fig. 2 is a side view of Fig. 1 with the tobacco-hopper set on. Fig. 3 is a horizontal section along the line A B of Fig. 5. Fig. 4 is a top view of the apparatus, showing the extreme left-hand position of the lever *m*. Fig. 5 is a side view of Fig. 4, and Fig. 6 is a vertical section along the line D E of Fig. 4.

On the middle widened part of the frame *a* the feed-hopper *u*, with a funnel-shaped mouth, Figs. 2 and 6, is set to receive the tobacco. As is shown in Fig. 6, the transverse section of the feeding-receptacle *u* is considerably larger than that of the filling-channel

*h*, and the cross-section of the latter is again greater than the thickness of the knife *e*. The tobacco in the feeding-receptacle is pressed downward by means of a plate under the action of a spring *r*. The knife-blade *e* cuts a quantity of tobacco sufficient for filling one paper shell, when the knife is pressed into the feeding-hopper and then rests with its front edge against the filling-channel in such a manner that it closes its side during the filling process.

The paper tube or shell carrier *c* is arranged in front of the feeding-receptacle *u*, and the inclined bottom of said shell-carrier discharges over the drum *d*. This drum *d* carries the empty shells to the filling-channel by the rotation of the axle *g*, to which it is secured and which is extended backward, and it remains at the filling-channel until the filling is accomplished, thereafter returning to its initial position and revolving around its axis with the next actuation of the lever, thus delivering the filled cigarette and receiving an empty shell.

The actuating mechanism is represented in the drawings. The hand-lever *m* is arranged pivotally at *x* on the enlarged part of the carrier-plate *a*. By means of its button or knob *s* it gives a horizontal stroke to the knife-plate *e*, pivoted at *r'*, by sliding on the curved back of the latter when moving to the left and pressing it across the discharge end of the tobacco-hopper *u*. In the movement to the right the button or knob *s* strikes against the finger *o* and draws back the knife-plate. Moreover, a sector *k* (see Fig. 3) is fixed to the lever *m*, and this sector carries a tappet *i*, which acts upon a cog-wheel *w*, arranged on the axis *g* of the drum *d*, and makes the drum revolve through an angle of ninety degrees. The lever *m* catches into the groove or slit of the rod *n* with the knob *v*. The other extremity of the rod *n* is connected with the rear end of the filling-rod *f* by means of a cross-bar *q*.

At the extremity of the lever-bar *m* which projects over the pivot *x* a bent beak-like segment *b*, with two sliding surfaces, is arranged, against which the extremity of the angle-arm *l* bears for the purpose of pressing a springy clamp-block against the shell pushed



on the tube *p* or to release the same. The pressure of the clamp device can be regulated at will by means of a thumb-screw.

In order to make the apparatus serviceable for making cigarettes of various length, the drum-shaft *g* can be limited in its stroke by means of the nut *y*, arranged adjustably on said shaft, so that the carrying-drum *d* can only go back a distance equal to the length of the shell to be filled.

The operation of the apparatus is as follows: If the lever *m* is moved from its extreme position on the left, Figs. 4 and 5, to the right, Figs. 1 and 2, the shoulder of the angle-lever *l* glides over the segment *b* at the same time the sector *k*, Fig. 3, fixed to the hand-lever *m*, passes over the drum-shaft *g*, and the tappet *i* turns the drum *d* by striking the teeth *w* of the shaft *g*. The knob *v* of the lever *m* catches at this first movement against a shoulder *n'* of the rod *n*, whereby this rod moves the rammer or filler shaft *f* backward until its cross-bar *q* has struck against the nut *y* of the drum-shaft *g*. The latter is also carried along and the drum *d* is guided to the mouth *p* of the filling-channel *h*. As soon as the cross-head *q* has arrived at the closed end of the slotted part of the frame *a* the knob or button *v* jumps over the shoulder *n'* of the slotted rod *n* and the lever *m* is moved to the other extremity of the slit of the rod *n*. Neither the filling or ramming shaft *f* nor the drum-shaft participate in this movement of the lever *m*. The shoulder *b* actuates only the clamp device and presses the clamp-block against the paper shell pushed over the tube or mouth *p*. While the lever *m* moves to the right the button *s* has penetrated into the slit of the knife-plate *e*, formed by the finger *o*, and has withdrawn the knife by pressure on the finger *o*, so that the tobacco pile in the receptacle *u* under the influence of the spring *r* is pressed upon the bottom plate of the frame *a*. When the lever *m* turns back, its knob *s* engages again the curved back of the knife-plate *e* and moves the plate forward, whereby a suitable quantity of tobacco is cut out in the manner before referred to and pressed into the filling-channel *h*. Meanwhile the button *v* of the lever *m* has moved back again to the front

extremity of the slit of the rod *n* and pushes back the filling or ramming shaft in its further movement, thus completing the filling of the paper tube or shell. The tappet *t* of the cross-head *q* strikes the ring *z*, and thus effects the displacement of the drum-shaft *g*, and consequently the return of the drum *d* to its initial position. This finishes one complete operation, which is repeated with every reciprocating movement of the lever *m*.

We claim as our invention—

1. In combination with the mechanism for dividing the tobacco up into charges and forcing the same into tubes or shells, means for holding the supply of shells, a delivery-drum to receive the shells from the supply means, said drum having rotary movement and also movement parallel with its axis, and means for rotating the drum and for reciprocating it parallel with its axis toward and from the shell-filling mechanism, substantially as described.

2. In combination with mechanism for filling the tubes or shells with tobacco, a drum for the shells having rotary movement, a shaft upon which the drum is fixed, a toothed wheel on the shaft, a pivoted hand-lever, connections between said hand-lever and filling mechanism and a device connected with the lever and arranged to operate the toothed wheel, substantially as described.

3. In combination, the filling-mouth *p*, the channel *h* in line therewith, a rammer *f* working in line with the channel *h* and filling-mouth, a hand-lever *m*, a slotted link connection *n* between the hand-lever and the rammer, a tappet *t* moving with the rammer, a drum *d* for carrying the paper shells, a shaft *g* for said drum and the collars *z* and *y* thereon, the said tappet *t* operating between said collars and engaging the same at the ends of the movement of the rammer, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

WILLIAM ANDSTEM.

GUSTAF ADOLF HAGELBERG.

Witnesses:

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O. LOUNBERG.