

No. 671,578.

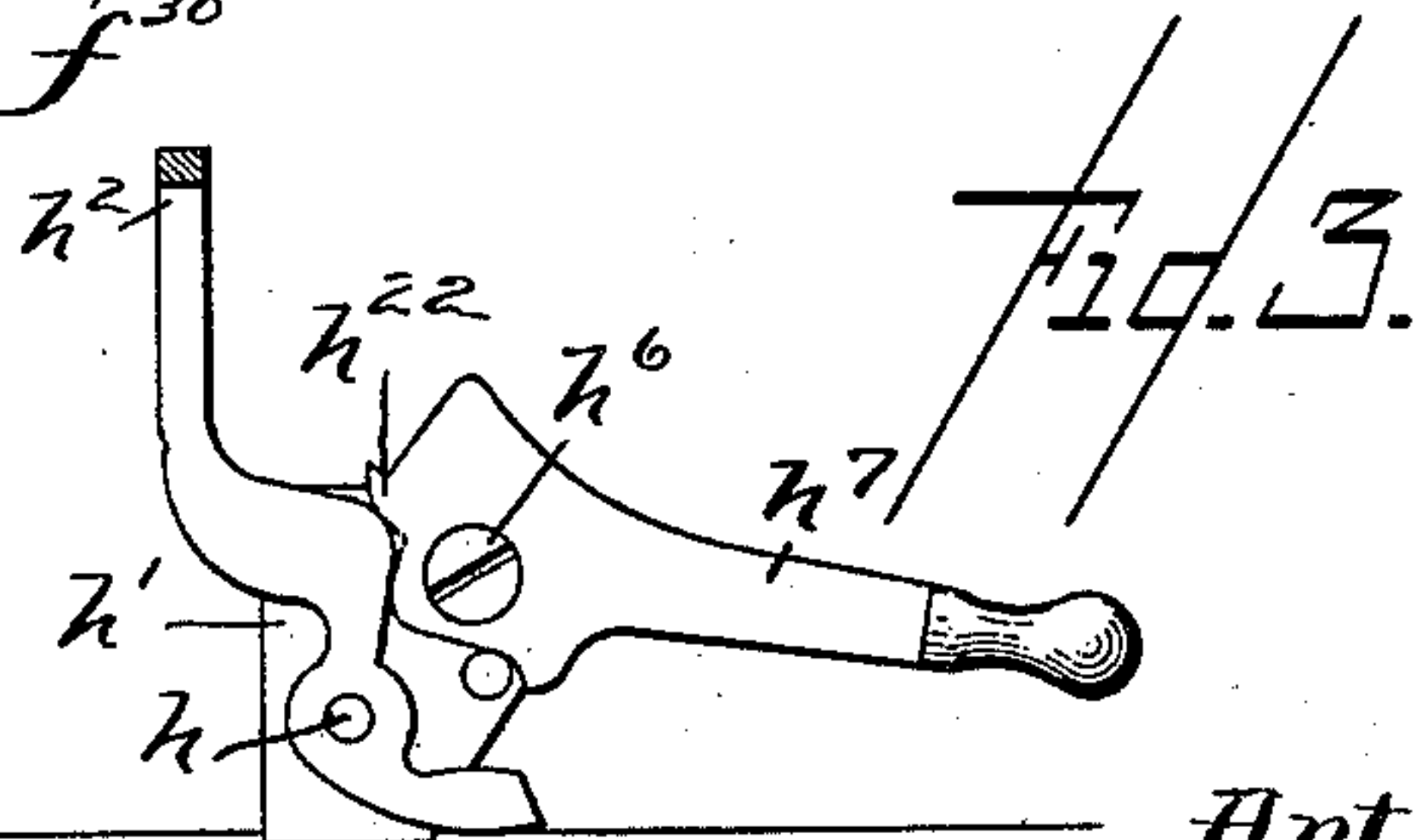
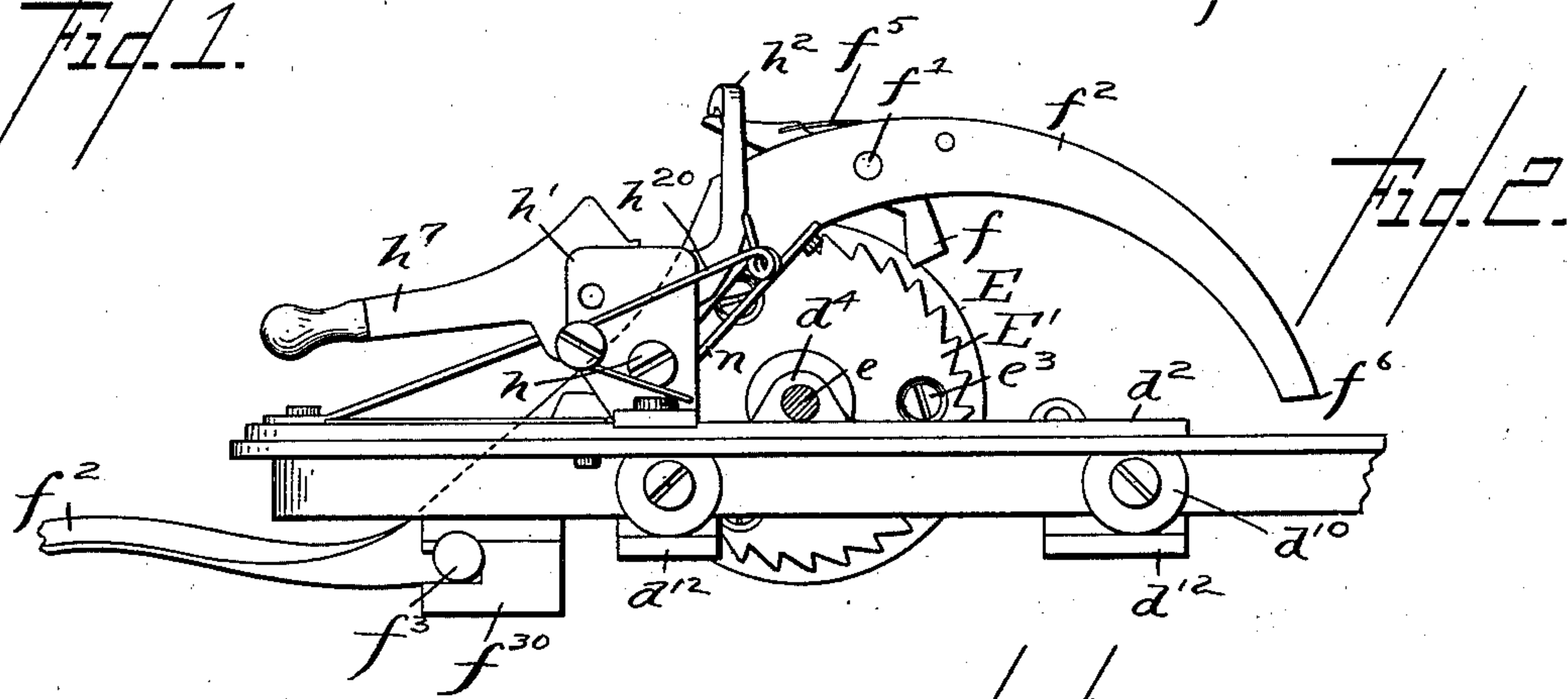
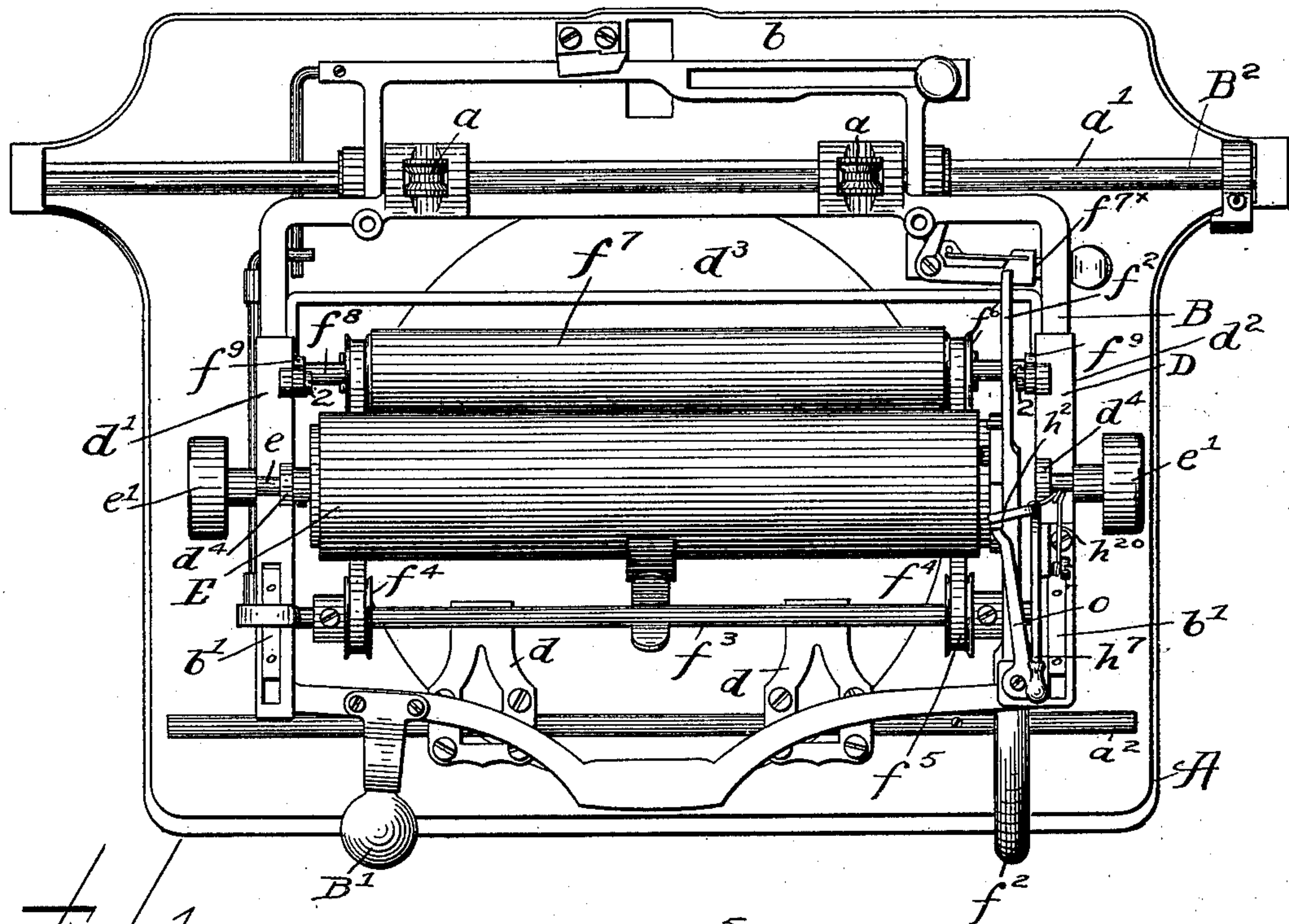
Patented Apr. 9, 1901.

A. H. BEDWORTH.
TYPE WRITER.

(Application filed Nov. 7, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.

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INVENTOR-

Arthur H. Bedworth.

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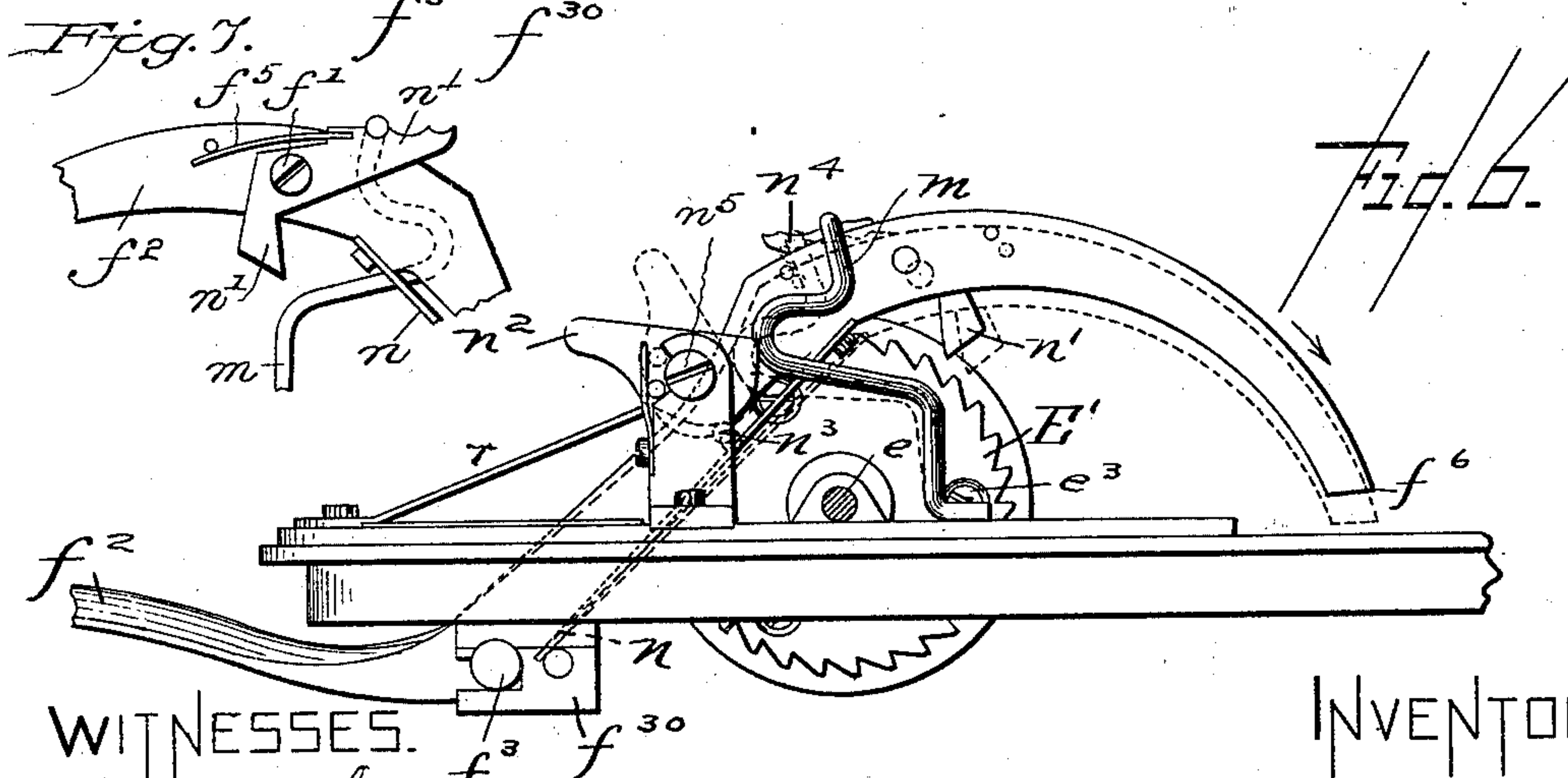
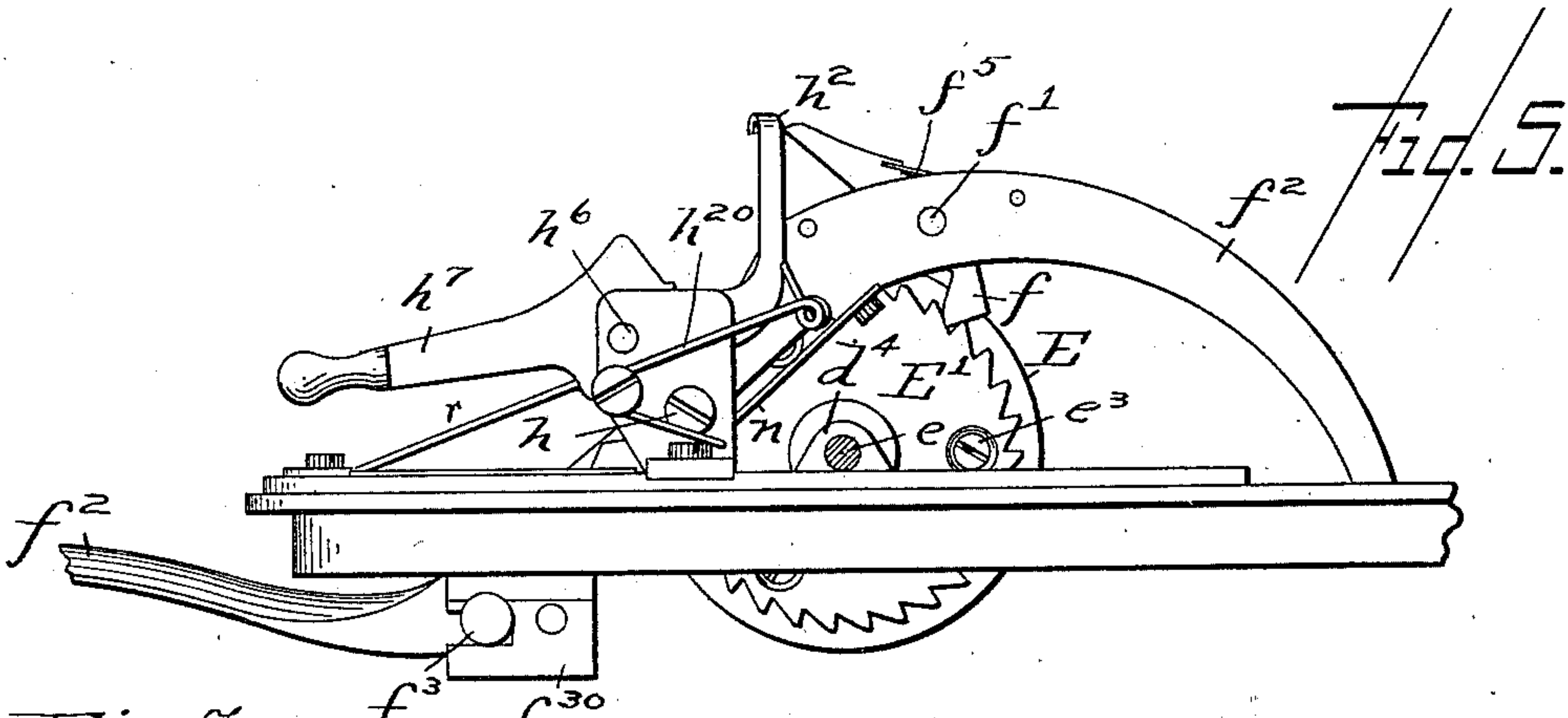
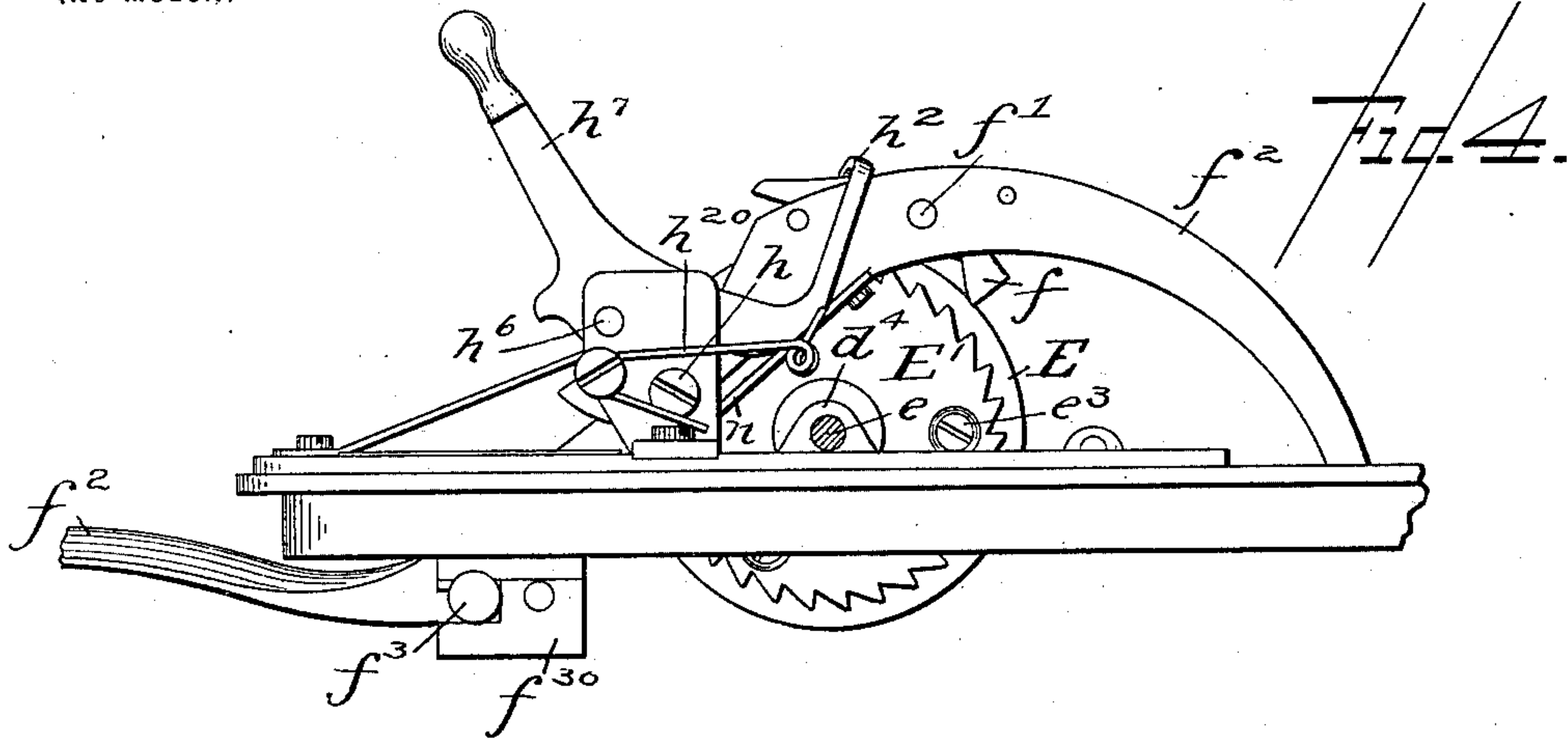
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UNITED STATES PATENT OFFICE.

ARTHUR H. BEDWORTH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO F. S. WEBSTER COMPANY, OF SAME PLACE AND PORTLAND, MAINE.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 671,578, dated April 9, 1901.

Application filed November 7, 1898. Serial No. 695,643. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR H. BEDWORTH, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Type-Writers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to improvements on that class of type-writers wherein the feed-roll acting on the paper is mounted in a carriage which is adapted to be slid backwardly upon a pivoted or tipping frame when upper-case or capitals are to be printed. In that class of machines it has been customary when the feed-roll was to be moved rapidly or independently in one or the other direction to insert or remove the paper or to make any desired corrections or examinations of the printed line to engage by the hand the pawl employed to actuate the feed-roll and throw it into its inoperative position, after which the feed-roll was moved.

In the machine upon which this invention is intended as an improvement the feed-roll is revolubly mounted on a rod fixed at its ends to the side pieces of the sliding carriage, said rod constituting a brace by which to maintain the side pieces of the carriage in proper alinement on the frame. Herein the feed-roll is fixed on a rotating shaft mounted to turn in bearings on the side pieces of the carriage and to keep said side pieces in proper alinement and hold them rigidly one with relation to the other. They have been joined together by a cross bar or brace, which maintains them in proper parallelism as the carriage slides back and forth on the pivoted frame. I have also herein provided a pawl-controller which normally acts upon the usual pawl carried by the spacing or feed lever, so that the acting end of said pawl when the said lever is in its normal or inoperative position is maintained out of the path of rotation of the teeth of the feed-roll, and I have also combined with this pawl-controller means whereby the stroke of the pawl may be changed to effect a greater or less feeding movement of the feed-roll.

The improvement herein to be described has been devised more especially for and is

supposed to be herein represented as applied to a Remington machine, style No. 2.

Figure 1 of the drawings shows a top or plan view of the feed-rolls and their actuating devices, together with the carriage carrying them and the pivoted frame on which the carriage slides. Fig. 2 is a right-hand side elevation of the parts shown in Fig. 1, with one of the small finger-wheels cut off from the shaft carrying the feed-roll. Fig. 3 is a detail of the pawl-controller and the lever for effecting its change of position. Fig. 4 is a side elevation like Fig. 2, but showing the parts in a different position. Fig. 5 shows the spacing-lever fully operated, the pawl in full engagement, the tail end of the pawl having passed from underneath the controller. Fig. 6 shows a modified form of pawl-controller, the spacing-lever being shown by full and dotted lines in two positions it may occupy when in its normal or inoperative position. Fig. 7 shows an inner side view of the spacing-lever and its pawl.

Referring to Fig. 1, let A represent the usual top plate of a Remington or other typewriter, and B the tipping frame, having the usual finger-piece B', by which to lift it to tip it, with the rocking guide rod or track B², mounted to turn in usual bearings on said top plate. The tipping frame has suitable rollers *a*, which run on said guide-rod, and near the front side of said top plate is a guide-rod *a*², which in practice is moved backward and forward toward the rod B², as when the carriage D, to be described, is to be reciprocated to place the feed-roll E in position to enable capitals to be printed, said carriage having arms *d*, provided with lugs which embrace the rod *a*². The tipping frame has extended from its rear side back of the rod B², on which it slides and with which it turns, a ratchet-toothed bar *b*, which is acted upon in usual manner by a suitable device to move the feed-roll and paper longitudinally during the printing of any one line. Herein the tipping frame has suitable gibs *b'* rising from its upper side, which enter slots in the side pieces *d'* *d*² of the sliding carriage D, said side pieces having connected firmly with them at their inner ends a suitable cross-bar *d*³, which stiffens the said carriage and enables it to

maintain in proper alinement the bearings d^4 thereon, in which rotates the shaft e , carrying the feed-roll E , said shaft at its opposite ends, beyond the outsides of the side pieces of the carriage, being provided with suitable finger-rolls e' , which may be readily engaged by the fingers of the operator whenever it is decided to twirl or turn the feed-roll in a forward or backward direction for any purpose, as when introducing the paper, removing the paper, or examining a line, or correcting errors therein. The feed-roll has applied to one end of it a ratchet-toothed plate E' , it being attached by suitable screws e^3 , and these ratchet-teeth are engaged and moved, it may be, for one or more spaces, as may be required, according to the distance apart it is desired to separate the lines by a spacing-lever f^2 , pivoted at f^3 , the pivot for said spacing-lever being shown as the end of a shaft extended from one to the other of the said side pieces d' d^2 of the carriage, said shaft having suitable sheaves or rolls f^4 , which receive a tape or band, preferably of india-rubber, as f^5 , said band being extended over other sheaves f^6 on a roller f^7 , which keeps the paper being printed upon in operative contact with the feed-roll and insures the movement of the paper in unison with the movement of the feed-roll. The roller f^7 is mounted on a shaft f^8 , adapted to turn in suitable bearings f^9 , connected by suitable screws 2 to the side pieces of the carriage.

The roller f^7 , its shaft, the shaft f^3 , and the bands are old and common in type-writing machines, and herein they operate as they commonly do in the machines in which they are employed.

Referring to Figs. 1 to 3, I have pivoted at h on the stand or upright h' , rising from the side piece d^2 of the carriage D , a pawl-controller h^2 , it having an inturned end or projection which overlaps the rear or inactive end of the pawl f , said pawl-controller normally acting at all times when the spacing-lever is in its normal or inoperative position to keep the front or acting end of the pawl f elevated out of the range of movement of the teeth of the ratchet-wheel connected with the feed-roll. When, however, the operator engages the spacing-lever and elevates its outer end, the opposite or inner end of the spacing-lever and the pawl descend together, and the inactive end of the pawl is so changed in its position with relation to the pawl-controller that a spring f^5 , herein shown as connected with said pawl in Fig. 2, causes the end of the pawl to enter one of the notches of the ratchet-toothed plate and move the feed-roll, and said spacing-lever may be moved until its inner end (marked f^6) strikes the stop f^{7x} , thus imparting to the feed-roll its feed movement. The stand h' has pivoted upon it at h^6 a lever h^7 , which may be put into the position Fig. 2 or Fig. 4, according as it is desired to impart to the feed-roll a longer or shorter stroke, that depending upon the spacing de-

sired between the printed lines. Figs. 2 and 4 show this lever h^7 in its extreme positions, and when in the position Fig. 4 it stops the back movement of the spacing-lever sooner than when the lever is in its position shown in Fig. 2, and consequently the effective stroke of the spacing-lever is controlled.

It will be noticed herein that the pawl-controller applied as described renders it unnecessary to manipulate the pawl by hand and leaves the feed-roll free to be twirled or rotated in either direction at will.

The pawl-controller in Figs. 1 to 5 is shown as made movable on or with relation to the carriage; but this pawl-controller may be fixed to the carriage, as represented by the controller m , Fig. 6.

Fig. 6 shows the spacing-lever in two positions. In this modification the spacing-lever, the lever n^2 , pawl n' , and pawl-controller m are shown in different positions, the positions being those, however, in which the spacing-lever is in one of its normal inoperative positions, according to whether the feeding-roll is to be moved a distance of one or two teeth of the plate E' . The spacing-lever is kept in its normal inoperative position by or through a spring n , connected therewith, and said lever has a stop n^3 , which meets the eccentric edge of the lever n^2 , pivoted at n^5 , said lever forming a stop sooner or later for the spacing-lever under the action of the spring n , so that said spacing-lever may occupy either its full or dotted line position. The spacing-lever has pivotally mounted upon it the pawl n' , and the carriage has fixed upon it and extended upwardly therefrom a pawl-controller m . This pawl-controller may be sprung aside under the action of the lever n^2 , and the controller has its upper end bent to overlap not only the spacing-lever but the pawl n' . When the lever n^2 is in the position shown by full lines, it will be understood that the controller m will be in the position represented by full lines and that the spacing-lever will be stopped in its inoperative position, as represented by full lines, and its pawl will stand as represented by full lines, and in such position the pawl n' when the outer end of the spacing-lever is lifted will be in a position to quickly retire from the controller, so that the pawl-operating spring n^x will immediately act and cause the pawl to engage a tooth of the plate E' , and movement of the spacing-lever will thereafter be sufficient to turn the roller a distance equal to two teeth of the plate E' . In case it is desired to make the space between the lines less than that effected by the pawl moving the roll for the distance of two teeth of the plate E' then the lever n^2 will be put into its dotted-line position to act sooner as a stop for the upward movement of the spacing-lever under the action of its spring n , and the same movement of the lever n^2 takes it away from its bearing against the controller m , letting said controller assume its normal position, (represented by dotted lines,) and

in such condition the controller occupies a position more distant from the pivot of the pawl n' , and it will be understood that the spacing-lever will when moved have a less extent of throw than when the lever n^2 stands in its full-line position, and as the outer end of the spacing-lever is lifted the outer end n^4 of the pawl immediately passes out from engagement with the projecting end of the controller, letting the spring n^x of the controller immediately act to engage a tooth of the plate E' ; but the movement at this time of the spacing-lever is only sufficient to turn the roller the distance equal to one tooth thereof. The tipping frame B has antifriction-rolls d^{10} , which act on flanges outturned from lugs d^{12} of the side pieces of the carriage, and said side frames have other lugs f^{30} , which receive the shaft f^3 .

The pawl-controller (shown in Figs. 1 to 5) is acted upon by a spring h^{20} , it keeping the pawl-controller pressed toward the regulating-lever h^7 , said lever having an extra cam portion h^{22} to coact with the pawl-controller.

The detent r acts at one end upon the teeth of the plate E' to prevent any overrunning movement of the lever.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine, a feeding-roll having an attached toothed plate, a spacing-lever, a pawl pivoted between its ends on said lever and adapted to engage with said toothed plate, combined with a pawl-controller independent of the spacing-lever and having a part in the path of and adapted to bear against the rear extended end of said pawl to automatically put the acting end thereof out of the path of movement of said toothed plate as the spacing-lever is moved during the spacing operation and arrives in its normal position.

2. In a type-writing machine, a feeding-roll having an attached toothed plate, a spacing-lever, a pawl pivoted between its ends on said lever and adapted to engage with its front end the said toothed plate, a movable pawl-controller independent of the spacing-lever and adapted to be placed in the path of and to meet the rear end of said pawl and to move the same automatically to put its acting end out of the range of movement of the teeth of said toothed plate whenever said spacing-lever comes into its normal position, combined with the carriage to sustain the shaft carrying said feeding-roll, a finger-wheel mounted upon one end of said shaft by which to turn it freely while the spacing-lever is in its normal position.

3. In a type-writer, a spacing-lever having an attached pawl, a feed-roll having an attached toothed plate, a sliding carriage on which said roll is mounted, a pawl-controller,

and a spring acting against it, combined with a regulating-lever adapted to act as a stop to regulate the position of rest of said spacing-lever, and the position of said pawl-controller, substantially as described.

4. In a type-writing machine, a feeding-roll having an attached toothed plate, a spacing-lever, a pawl pivoted thereon between its ends, one end of said pawl engaging said toothed plate, a pawl-controller independent of said spacing-lever adapted to meet the rear end of said pawl and automatically arrest and to put its acting end out of range of movement of the teeth of said toothed plate whenever said spacing-lever comes into its normal position, combined with a carriage to sustain the shaft carrying said feeding-roll, a finger-wheel mounted upon one end of said shaft by which to turn it freely while the spacing-lever is in its normal position, and means to stop the spacing-lever sooner or later as it returns to its normal position to thereby determine the spacing between the lines, substantially as described.

5. In a type-writing machine, a feeding-roll having an attached toothed plate, a spacing-lever, a pawl pivoted between its ends on said lever, a spring to move said pawl to effect the engagement of its inner end with said toothed plate, and a spring to return said spacing-lever into its normal position; combined with a pawl-controller independent of said spacing-lever and having its end shaped and interposed in the path of movement of the pawl carried by said spacing-lever to automatically turn said pawl and put it into position out of the range of movement of the teeth of said plate when the spacing-lever comes into its normal position, substantially as described.

6. In a type-writing machine, a feeding-roll having an attached toothed plate, a spacing-lever, a pawl pivoted between its ends on said lever, a spring to move said pawl to effect the engagement of its inner end with said toothed plate, and a spring to return said spacing-lever into its normal position, combined with a pawl-controller independent of said spacing-lever and shaped at its free end to overlap not only said spacing-lever but also the said pawl, said controller being automatically engaged by said pawl as the spacing-lever is returned into its normal position, said pawl being thereby always maintained out of the range of movement of the teeth of said toothed plate while the spacing-lever remains in its normal position, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR H. BEDWORTH.

Witnesses:

JOHN C. EDWARDS,
AUGUSTA E. DEAN.