

No. 679,668.

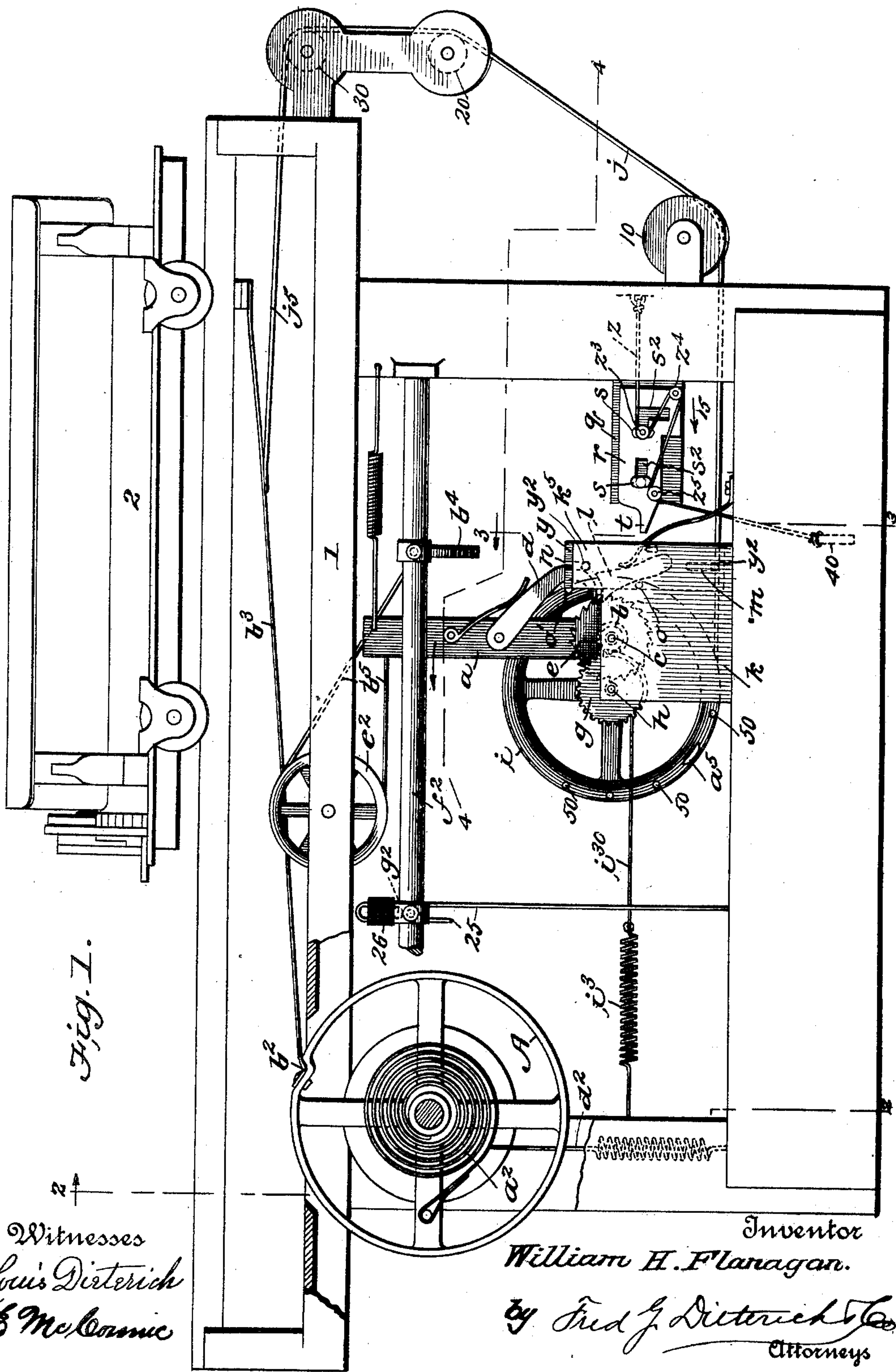
Patented July 30, 1901.

W. H. FLANAGAN.
TYPE WRITING MACHINE.

(Application filed May 1, 1900.)

(No Model.)

3 Sheets—Sheet 1.

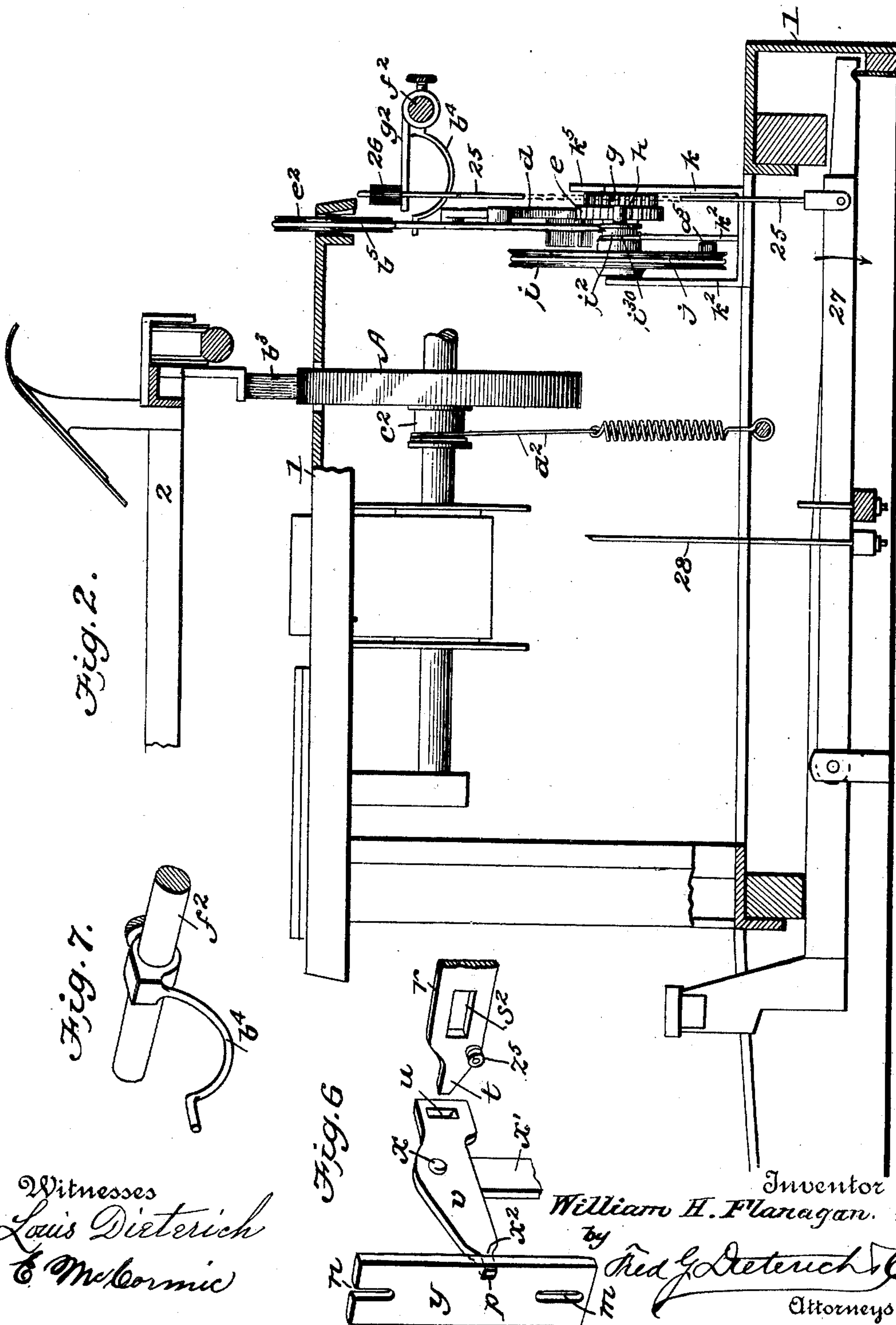


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(No Model.)

3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

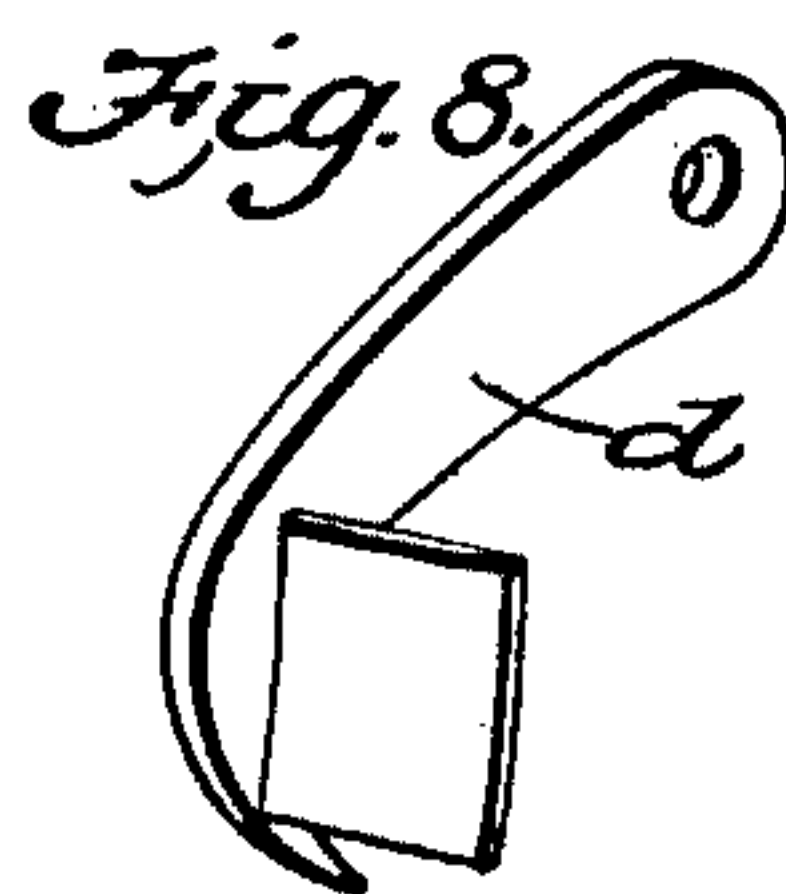
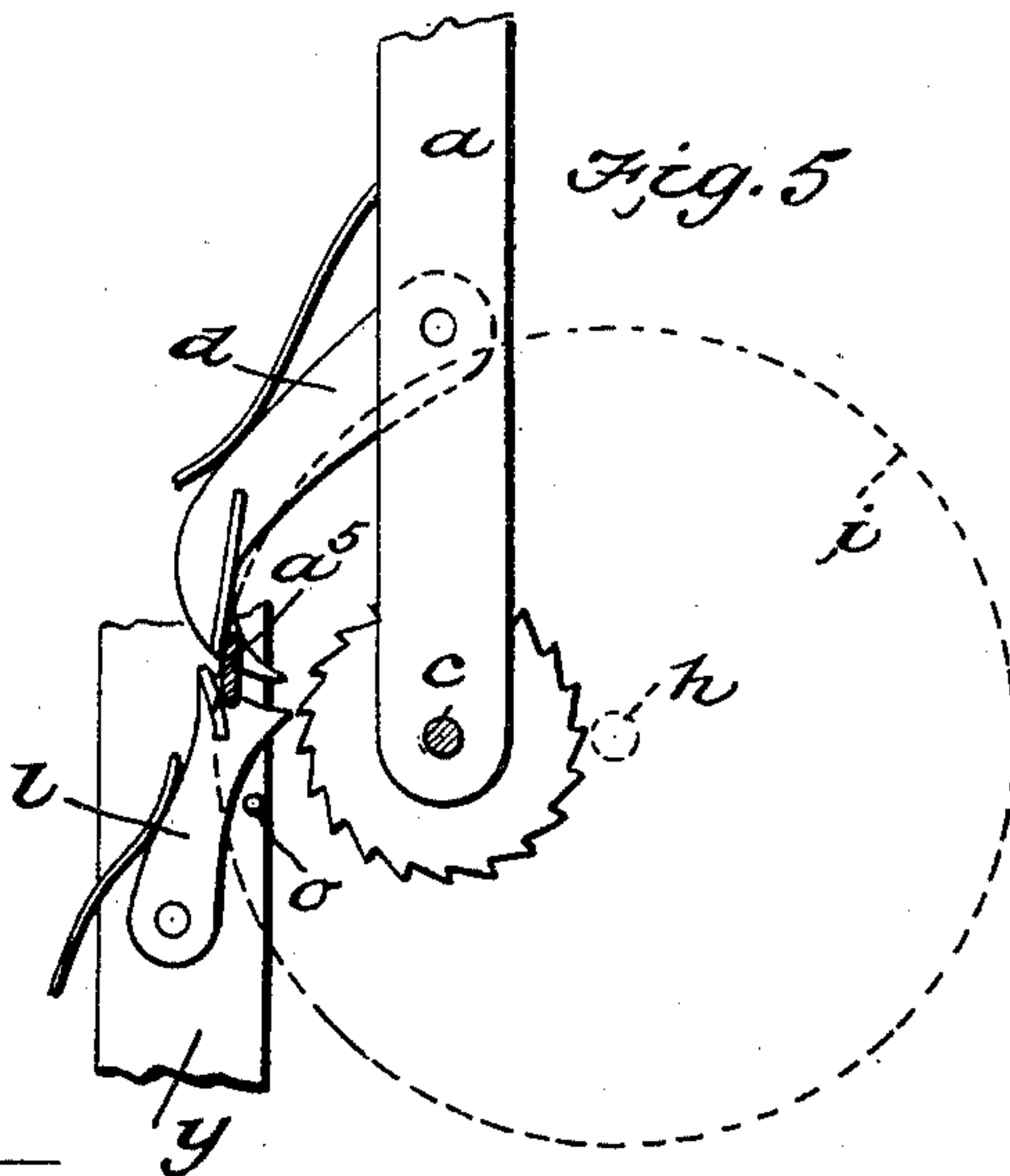
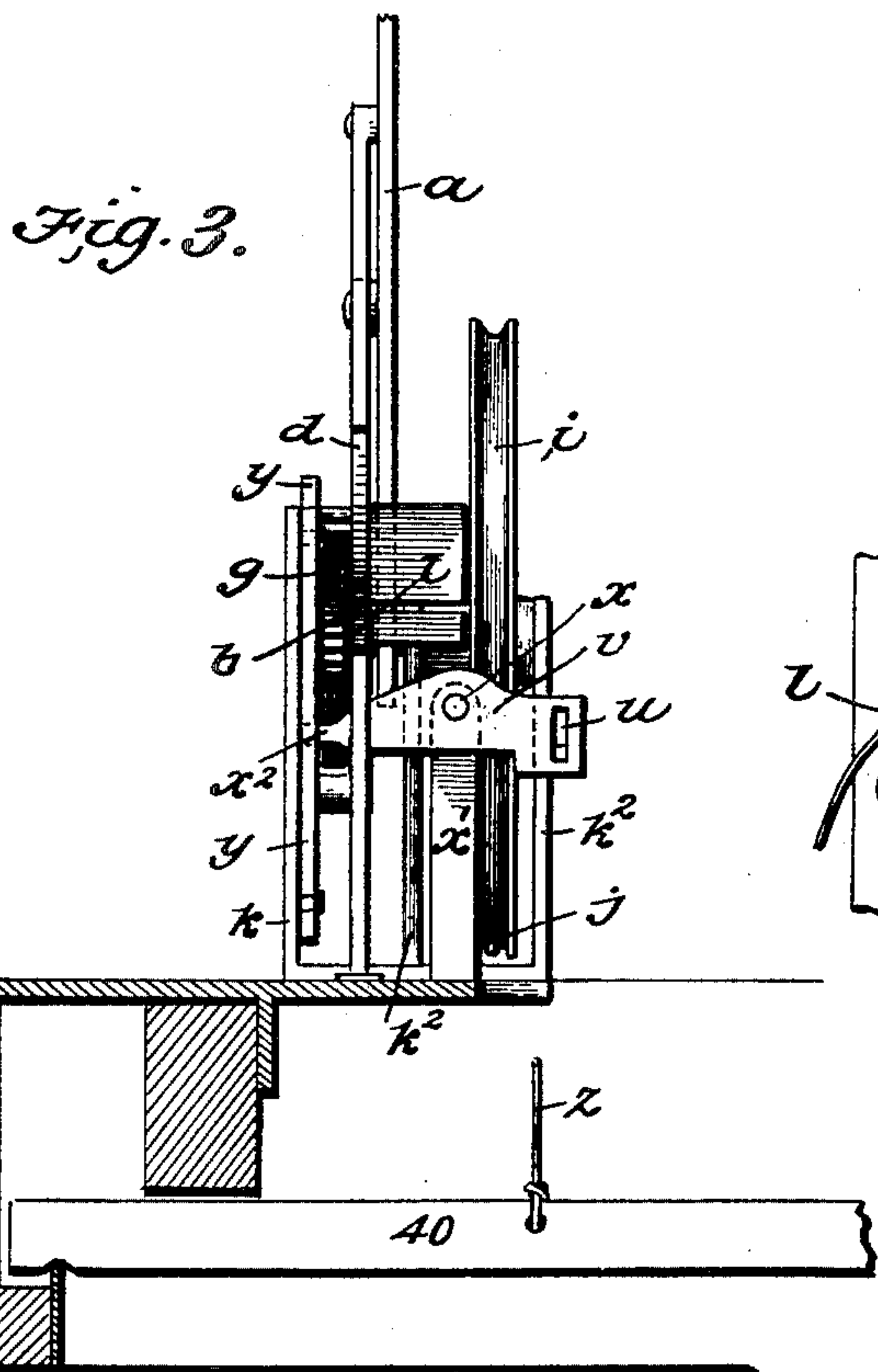
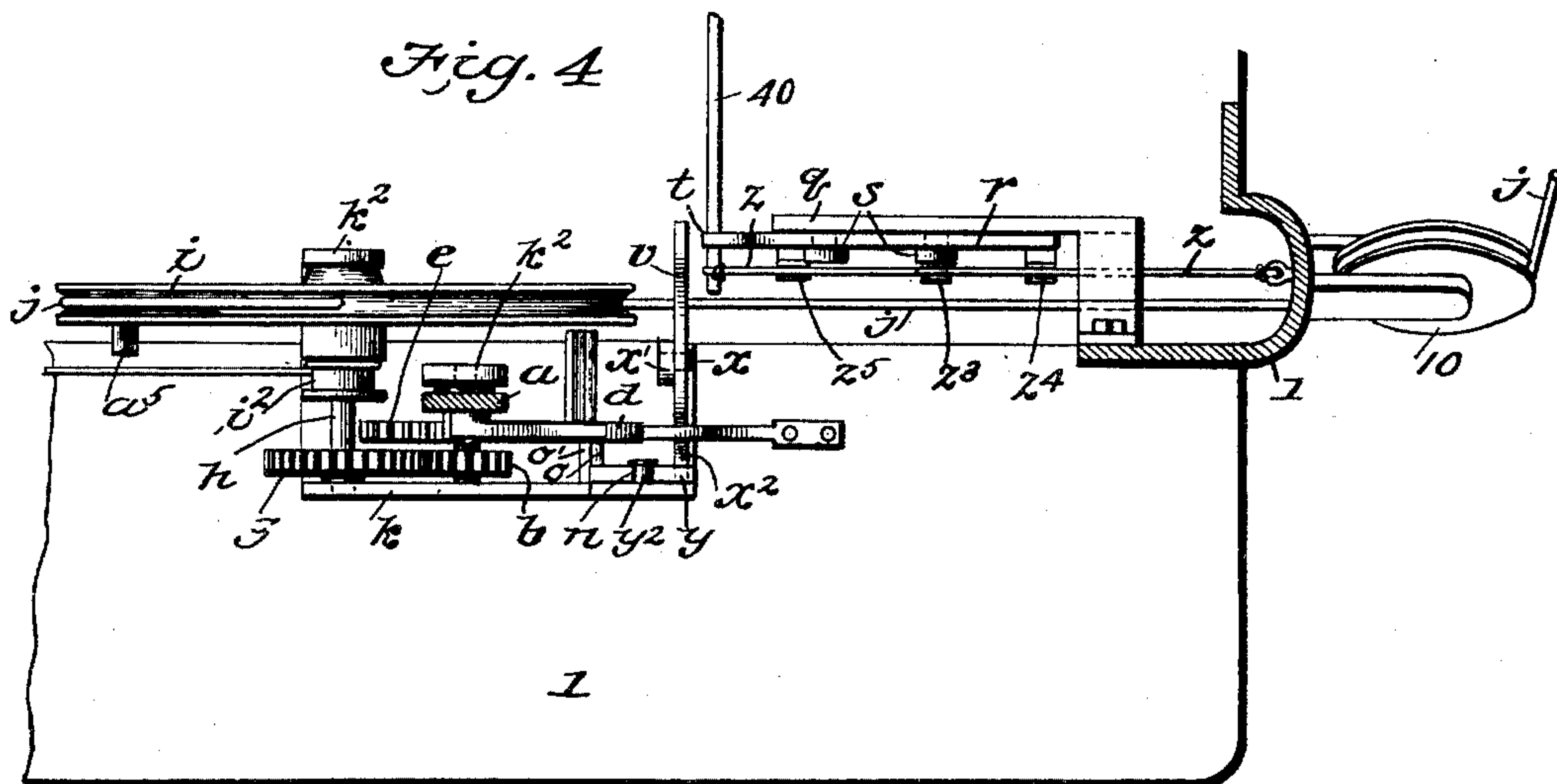


Fig. 9. *William H. Flanagan.*
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UNITED STATES PATENT OFFICE.

WILLIAM H. FLANAGAN, OF GRANTS PASS, OREGON.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 679,668, dated July 30, 1901.

Application filed May 1, 1900. Serial No. 15,075. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. FLANAGAN, residing at Grants Pass, in the county of Josephine and State of Oregon, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention, while relating generally to improvements in type-writing machines, more specifically refers to means for automatically returning the paper-holding carriage from left to right or the place of beginning.

Primarily, my invention comprehends an improved construction of mechanism for the purpose stated of a very simple and inexpensive nature that can be readily applied to any of the well-known forms of type-writing machines having reciprocating carriages, which can be easily manipulated, and which will effectively serve for its intended purposes.

This invention also embodies certain novel spring-actuated means for returning the carriage to the position to commence a new line of type-writing, tripping devices that will automatically operate to permit the said spring-actuated means returning the carriage when the said carriage shall have reached the limit of its travel to the right or end of the line, and intermediate devices operated by a suitable finger-key for setting the said spring-actuated mechanism in operation to return the carriage and from any point between the limits of its movement, my said invention also including a novel arrangement of parts for rewinding the actuating-spring to restore it to the proper tension, said parts being operatively connected with the type-key, whereby the movement of the said keys during a regular manipulation thereof will serve to wind up the aforesaid actuating-spring.

In its subordinate features this invention consists in certain details of construction and novel arrangement of parts, all of which will be first described and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a rear elevation of a portion of the Remington type of writing-machine with my improvements applied. Fig. 2 is a transverse section thereof, taken practically on the

line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3 of Fig. 1. Fig. 4 is a horizontal section taken on the line 4 4 of Fig. 1. Fig. 5 is a detail section taken on the line 5 5 of Fig. 4 looking in the direction indicated by the arrow. Fig. 6 is a detail view of portions of the key-operated tripping mechanism. Figs. 7, 8, and 9 are views of detail parts hereinafter referred to.

In the accompanying drawings, in which only such portions of a type-writing machine which are used in connection with my improvements are illustrated, 1 indicates the main framing, and 2 the paper carriage or platen, which in practice is reciprocally mounted upon the framing and spring-drawn to the left in any well-known manner.

On the rear portion of the framing 1 is mounted the mechanism for intermittently winding up the return or shifter spring and also the tripping devices that automatically release the holdback members, forming a part of the aforesaid mechanism, that connect with the said return-spring, said tripping devices operating when the carriage reaches the limit of its movement to the left, supplemental tripping mechanism coöperatively arranged with the spring-winding mechanism being also shown, which has for its purpose to release the aforesaid holdback devices, said supplemental tripping mechanism in itself being connected with and operated by a separate finger-manipulated key.

Referring now more particularly to Fig. 1, *a* designates an upright lever pivotally supported at its lower end upon a short shaft *c*, presently again referred to.

e designates a ratchet-wheel mounted upon the shaft *c*, with which the combined gravity and spring-actuated pawl *d* engages, said pawl being mounted upon the lever *a*.

b designates a cog-gear, also mounted on the shaft *c*, which meshes with the cog-wheel *g*, fixedly mounted upon the shaft *h*, which carries a peripherally-grooved drum-wheel *i*, formed with a winding-hub *i*². The shafts *c* and *h* are journaled on the outer drum-plate *k* and the inner supports *k*² *k*², as best shown in Fig. 4.

j indicates a cord one end of which is connected to the peripherally-grooved face of the

drum i and passes out over the guide-pulleys 10, 20, and 30, mounted on one end of the main frame, said cord j being connected to the band or strap b^3 , which has one end made fast to the carriage 2 and its other end b^2 secured to the peripheral base of the rewinding or shifter spring casing, as clearly shown in Fig. 1. The guide-pulleys 10 20 30 are properly slanted or inclined so as to bring the portion j^3 of the cord j in line with the strap b^3 , whereby to secure a direct pull when the cord j is manipulated in the manner presently described.

Upon the rear of the main frame and in rearwardly-extended brackets is journaled a rock-shaft f^2 . This shaft has fixedly secured thereto a downwardly and inwardly bent curved arm b^4 , with which connects one end of the cord or other flexible member b^5 , that passes over a suitably-arranged guide-pulley e^2 , mounted upon the rear of the machine-frame, the other end thereof being connected with the upper end of the operating-lever a . A rod g^2 is projected inwardly from the shaft f^2 and is rigidly secured thereto, the same acting as a crank-arm, and the inner end of the said rod g^2 is straddled by two steel wires 25, the upper ends of which connect with the head-block 26, that seats upon the outer end of the member g^2 , and the lower ends of the said wires connect with the lever-arm 27, with which the key-operated bar 28 is connected in any approved manner, whereby each manipulation of any one of the keys or spacer-bars will properly operate the arm 27, it being understood that each movement of the lever-arm 27 in the direction indicated by the arrow in Fig. 2 rocks the shaft f^2 and through the medium of the cord b^5 swings the member a in the direction indicated by the arrow in Fig. 1, which lever through the medium of its pawl d turns the ratchet-wheel e to a predetermined degree, which operation transmits movement through the intermediate gear mechanisms to the drum i and effects a partial rotation thereof, it being understood that the movement of the said drum correspondingly acts to pull upon the cord j , which then winds up the spring a^2 within the casing A, and as it so does it relieves the carriage-operating spring from any undue strain, this being effected by reason that, notwithstanding the direct connection through the strap b^3 of the spring-actuated drum with the carriage, the entire tensile strain of the spring a^2 as it is being correspondingly wound up is transmitted to the cord j and the motor devices that operate to wind it up. The spring a^2 , that carries the carriage back from left to right, is mounted within a drum at that end of the machine opposite that where the usual carriage-propelling spring is located.

So far as described it will be readily observed the several parts are so arranged that at each manipulation of the keys the drum i is partially rotated through the swinging

action of the ratchet-lever a . The lever a is returned to its normal position by suitably-held spring appliances. (See Fig. 1.)

The drum i is held from loose play or movement by means of the spring i^3 , connected at one end to the machine-frame and at the other end to the flexible member i^{30} , that is wound upon and secured to the hub i^2 of the drum-wheel i .

l indicates a holdback-pawl mounted upon the frame that supports the motor-gearing.

As will be seen in Fig. 1 of the drawings, the bearing-plate k has an upwardly-extending member k^5 , and upon the inside of the plate k , on that end having the extension, is mounted a sliding plate y , which has a vertically-extended slot m in its lower end and a vertically-elongated notch n in its upper end, and the said plate y also carries two stud-pins o o' , arranged to positively engage the pawls d l to lift them from engagement with the ratchet-wheel e . At the outer edge the plate y is also provided with a slot p , the purpose of which will presently appear.

q designates a supplemental supporting-plate projected in a parallel plane with the front plate k .

r indicates a member slidably mounted upon the plate q to move in a horizontal plane.

s s denote headed pins projected outwardly from the plate q and entering slots s^2 s^2 in the plate r , said pins s forming guides upon which the said plate r slides.

That end of the plate r adjacent the motor devices terminates in a beveled tongue t , adapted when the plate r is removed, in a manner presently described, to enter the slot u in the inner end of the rocking lever v , fulcrumed at x upon a standard x' , and the outer end of the said lever x has a tongue x^2 , which engages the slot p of the vertically-sliding member y , said member y being guided in its vertical movement by studs y^2 , that engage the slot m and the notch n , as shown.

z designates the cord, secured at one end to the framing, which passes over a guide z^3 , formed upon one of the studs s , projected from the plate q , and other guiding-studs z^4 z^5 , made fast with the plate r , the free end of the said cord being secured to the key-operated lever 40. In practice the cord z and the guide-studs z^2 z^4 z^5 and the key-lever 40 are relatively so arranged that the depression of the key-lever 40 will cause the plate r to slide forward in the direction indicated by the arrow 15, and by reason of its beveled end t engaging the slot u in lever v said plate r will thereby cause the lever v to rock in such a direction that its outer end will elevate the plate y , such movement through the medium of the studs o o' throwing the pawls d l out of engagement with the ratchet-wheel e to release the drum i , and thereby allow the spring a^2 to automatically shift the carriage back from left to right. This same result—that is, the automatic return of the carriage—is also effected at the end of each complete travel of

the carriage without the employment of the sliding plate r and its operating devices, including the key-lever, by providing the drum i with a stud a^5 , which when the drum reaches the end of the complete revolution (which is so timed as to occur when the carriage reaches the end of its movement) engages the pawls d l and moves them out of mesh with the ratchet-wheel e , it being understood that the face of the drum may have a number of threaded sockets 50, into which the pin a^5 may be adjustably fitted, so that the pawls d l may be automatically released before the carriage reaches the limit of its movement.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete operation and advantages of my invention will be readily understood.

It will be noticed that while the tension of the returning-spring a^2 is constantly being resupplied by the operation of the machine the operator at any point between the beginning and end of the movement of the carriage can set the mechanism to return the carriage by simply depressing a single releasing-key, and, if desired, the return movement of the carriage when it reaches the end of its travel to the left or other predetermined points in such direction can be effected entirely automatically without any attention of the operator.

One of the essential advantages of my improvements is that I provide a single motor device (meaning the mechanism for restoring the tension of the spring) so arranged as to be capable of being released either automatically when the carriage shall have moved a predetermined distance or the said carriage caused to return to its starting-point from any point between the extremes of its movement by means of the key-operated devices.

c^2 indicates a drum formed upon the winding-spring casing spindle or shaft, and d^2 designates a tension-cord one end of which is made secure to and wound about the said shaft, the other end being fastened to any convenient point upon the end of the machine.

While the construction of the motor mechanism illustrated in the drawings designates the broad principle of my invention, it is manifest the said construction may be modified or changed without departing from the scope of the appended claims.

In the practical application of my invention the rewinding-spring is so arranged as to be kept ahead of the spacing-dogs on the carriage to prevent the carriage balking on the spacing-bar.

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

1. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected with said spring, key-operated mechanism including a

pawl and a ratchet-wheel, for rotating said wheel, and pawl-tripping means on the wheel.

2. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected with said spring, key-operated mechanism, including a pawl and a ratchet-wheel, for rotating said wheel, pawl-tripping means operative with said wheel, and independent key-controlled pawl-tripping means.

3. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected with said spring, key-operated mechanism including a pawl and a ratchet-wheel, for rotating said wheel, pawl-tripping means on the wheel, and a spring connected to the wheel for steadying the same.

4. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected with the spring, a ratchet-wheel connected with and adapted to turn said wheel, a lever, a pawl on said lever for engaging the ratchet-wheel, an independently-mounted pawl for engaging the ratchet-wheel, means on said first-mentioned wheel for engaging a pawl to throw it out of engagement with the ratchet-wheel, and key-operated mechanism for rocking said lever.

5. In combination with the carriage and the return-spring; of a flexible carriage-pull; a take-up drum to which the said pull connects, mechanism for rotating the drum, including oscillating lever and ratchet-and-pawl devices; a rock-shaft; connections joining the said shaft and the oscillating lever and intermediate members joining with the lever operated by the movement of the key-levers, as specified.

6. The combination with the carriage; the return-spring, and the cable or cord j , connected to the carriage; the drum i ; and mechanism adapted to be operated by movement of the key-levers for winding up the drum i , said mechanism including check-pawls; of a tripping device for moving the pawls to a released position, and a lever for operating the tripping device, for the purposes specified.

7. The combination with the carriage; the returning-spring; and a mechanism for winding up the said spring, said mechanism including the drum i ; an oscillating lever; the pawl-and-ratchet gear connecting the lever and the drum; of the rock-bar f^2 ; said bar having a crank member g^2 ; a lever operated by movement of the key-levers; the connections between said bar and the arm g^2 ; the guide-roll e^2 ; and a flexible connection b , joining the bar f^2 , and the oscillating lever, all being arranged substantially as shown and described.

8. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected with the spring, a ratchet-wheel connected with and adapted to turn said wheel, a lever, a pawl on said lever for engaging the ratchet-wheel, an inde-

pendently-mounted pawl for engaging the ratchet-wheel, means on said first-mentioned wheel for engaging a pawl to throw it out of engagement with the ratchet-wheel, a spring
5 connected to said lever to hold it in its normal position, a rock-shaft having an arm, a flexible connection uniting said arm and lever, a guide to receive the flexible connection, and key-operated means to actuate said
10 rock-shaft.

9. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected to said spring, pawl-and-ratchet mechanism for turning the
15 wheel, key-actuated means for operating the pawl-and-ratchet mechanism, a slide having pawl-tripping means, a second key-operated slide, and means between the slides operated by one for imparting a movement to the
20 other.

10. In a type-writing machine, a traveling carriage, a returning-spring for the carriage, a wheel operatively connected to said spring, pawl-and-ratchet mechanism for turning the

wheel, key-actuated means for operating the
25 pawl-and-ratchet mechanism, a slide having pawl-tripping means, a second slide, means between the slides operated by one for imparting a movement to the other, a series of
30 studs on said second slide, a flexible connection passed around the studs and connected at one end to the framework, and a key-lever connected to the other end of the flexible connection.

11. In a type-writing machine, a traveling
35 carriage, a returning-spring for the carriage, a wheel operatively connected with the carriage, pawl-and-ratchet mechanism for turning said wheel, key-controlled means for actuating the pawl-and-ratchet mechanism, a
40 slide having pawl-tripping means, a lever connected with said slide for operating the same, and a second and key-operated lever, having means to operate said lever.

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