

No. 684,887.

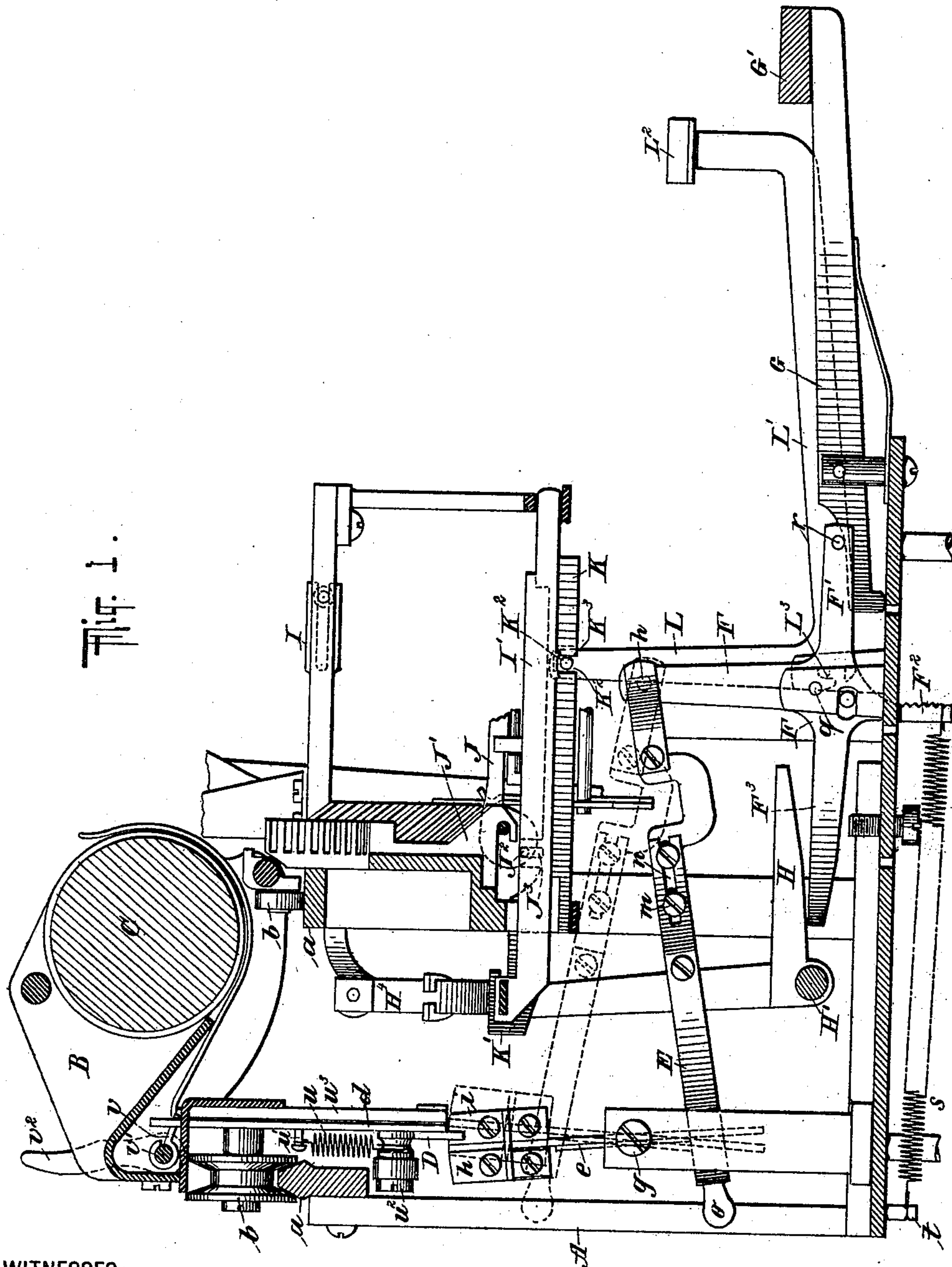
Patented Oct. 22, 1901.

H. L. & F. L. WAGNER.
FEED MECHANISM FOR TYPE WRITING MACHINES.

(Application filed Sept. 2, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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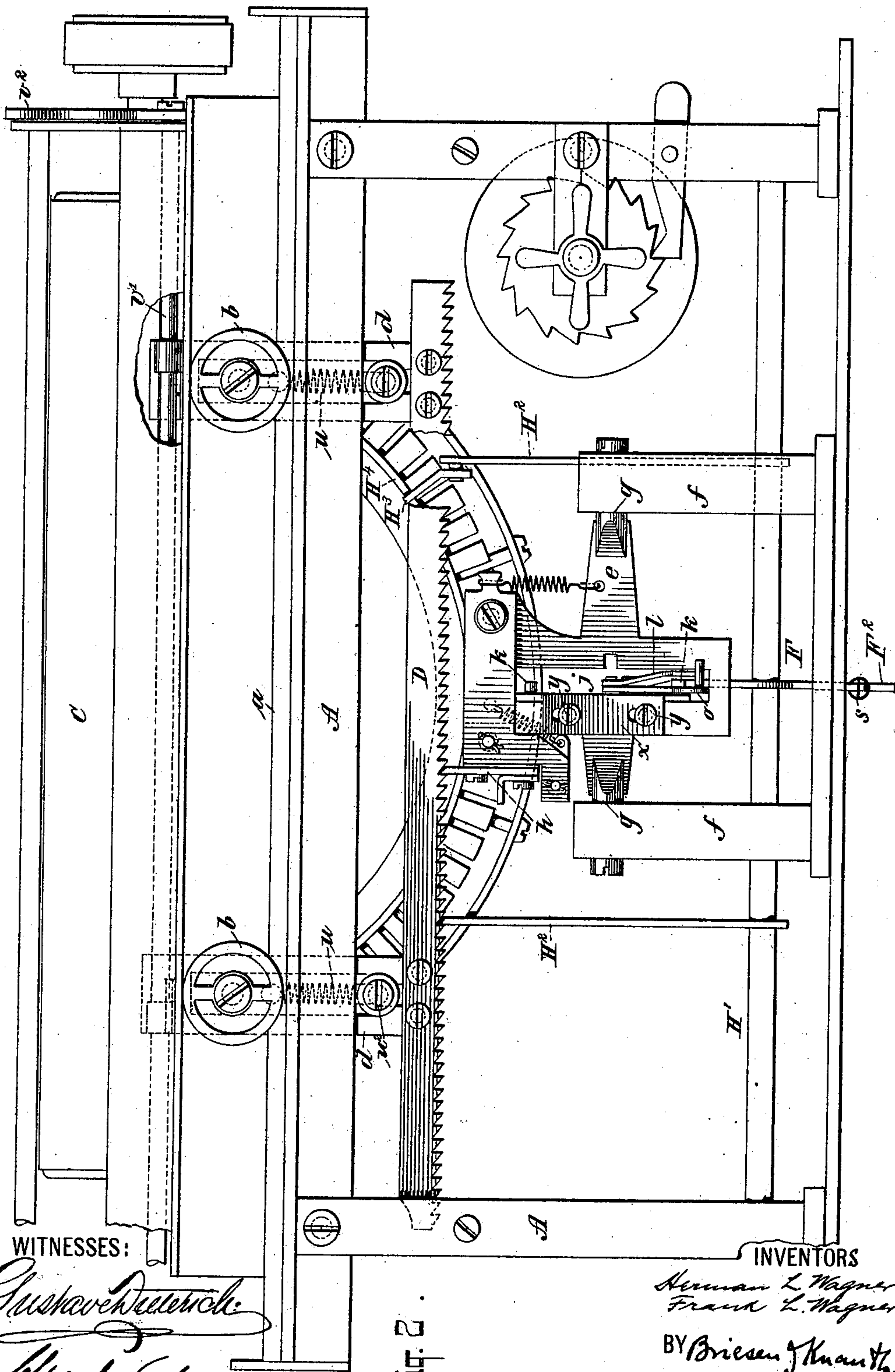
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UNITED STATES PATENT OFFICE.

HERMAN L. WAGNER, OF BROOKLYN, AND FRANK L. WAGNER, OF NEW YORK, N. Y., ASSIGNORS TO THE WAGNER TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

FEED MECHANISM FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 684,887, dated October 22, 1901.

Application filed September 2, 1899. Serial No. 729,295. (No model.)

To all whom it may concern:

Be it known that we, HERMAN L. WAGNER, a resident of Brooklyn, Kings county, State of New York, and FRANK L. WAGNER, a resident of Manhattan borough, city, county, and State of New York, citizens of the United States, have invented an Improved Feed Mechanism for Type-Writing Machines, of which the following is a specification.

10 Our invention relates to carriage-escape-ment mechanism for type-writing machines; and the main object of the invention is to provide a simple and efficient feed mechanism whereby the parts can be readily adjusted to release the carriage for letter-spacing either just before or just subsequent to the impression of the type, according to the adjustment of the machine.

To these ends our invention consists in a 20 type-writing machine embodying the novel arrangement and combination of parts to be hereinafter described and claimed, and broadly in an escapement mechanism for type-writing machines wherein a change of throw of a part thereof can be effected to 25 change the feed action of the mechanism to bring about the feed of the carriage just before or just subsequent to the imprint of a character.

30 The arrangement for permitting the escape of the carriage just after an impression has been made is known as the "natural" or "ordinary" feed, whereas the arrangement which permits the escape of the carriage just before the impression of the type has been made is 35 known as a "speed" mechanism, by reason of the fact that a quicker action or feed of the carriage is provided by the last-mentioned mechanism.

40 It will be understood that our invention is applicable to any type-writing machine wherein a reciprocating carriage is employed.

In the accompanying drawings, wherein like characters represent corresponding parts 45 in both views, Figure 1 represents a central transverse vertical sectional view of a sufficient number of parts of a machine to illustrate our invention. Fig. 2 is a rear elevation of the same.

50 The main frame A of the machine is pro-

vided with tracks *a*, upon which bear rollers *b*, carried by a suitable reciprocating carriage B, which supports a platen C. Depending from the carriage B are arms *d*, which support a feed-rack D, which is adapted to 55 be raised to free itself from engagement with the feed-dogs in a manner to be hereinafter described. Coöperating with the feed-rack D is a suitable dog mechanism, which may be of any well-known or preferred construction. 60 In the present instance two dogs or pawls are shown, which dogs or pawls are carried upon a vibrating piece or carrier *e*, which is pivoted to upright supports *f* on the framing of the machine, as indicated at *g* in Fig. 2 of the 65 drawings. This carrier *e* supports the dogs *h i*, one of which is fixed upon the carrier, while the other is free to vibrate thereon the distance between two teeth of the rack-bar D to feed the carriage, as is well understood. 70 The carrier *e* is preferably slotted, as indicated at *j*, for the reception of the free end of a link E, which constitutes what we term a "controlling member." This link E is provided with an aperture through which either one 75 of the pins *k* is adapted to project, so as to constitute a connection between the carrier and link. These pins *k* are carried by a plate *x*, made adjustable upon the carrier by the pin-and-slot connections *y*, and one pin pro- 80 jects upon each side of the pivotal axis of the carrier *e*. The link E is maintained in operative engagement with the carrier by a leaf-spring *l*, which bears upon one wall of the slot *j* and normally maintains the free end of 85 the link E in engagement with one of the pins *k*. It is obvious, however, that any suitable connection may be provided which will permit the adjustment of the link on the feed-dogs or their carrier to either side of the piv- 90 otal center thereof. The link E is made up of two sections which are united by screw-and-slot connections *m n* in order that the sections may be adjusted to extend or contract the link in the direction of its length. 95 To facilitate an adjustment of the link E upon the pins *k*, a handle *o* is provided at the free end thereof, while the opposite end of the link is pivoted to a cruciform lever F, as indicated at *p*. This cruciform lever is 100

pivoted to a support mounted on the bed-plate of the machine, as indicated at *g*, and the arm *F'* thereof is provided with a laterally-projecting pin *r*, with which the free end of a spacing-lever *G* is adapted to cooperate. This lever *G* is provided with the usual spacing-key *G'*. The lowermost arm *F²* of this cruciform lever *F* is connected adjustably to a retractile spring *s*, one end of which is secured to a fixed portion of the machine, as indicated at *t*, and this spring tends to normally maintain the cruciform lever and the parts connected thereto in the normal position. The rearwardly-extending arm *F³* of the cruciform lever *F* is adapted to extend into the path of an arm *H*, carried by a rock-shaft *H'*. This arm *H* is curved on the lower face thereof, which contacts with the arm *F³* of the lever *F*, in order that it may rock thereon and provide an easy movement thereof. The rock-shaft *H'* is provided with two upright arms *H²*, that are pivoted to brackets *H³*, which extend from a segmental universal bar *H⁴*, as shown in Fig. 2. This segmental universal bar *H⁴* is connected to and supported by slides *I I'*, which permit a backward-and-forward movement to be transmitted to the universal bar by any of the type-bars of the machine, as will be presently described.

The series of type-bars *J* are pivoted to a plate or frame *J'* in the segment of a circle. For the purpose of clearness only a portion of one of these type-bars is represented in the drawings. The heel of each of the type-bars *J* is provided with a pin *J²*, which enters into a slot *J³* in a slide *K*, it being understood that a separate slide is provided for each type-bar. The rear end of each of the slides *K* is provided with a hook *K'*, which is open toward the front of the machine and is adapted to engage the universal bar *H⁴* and to transmit movement thereto when moved toward the front of the machine, but to move independently of said universal bar when the slide is moved in the reverse direction. Each of the slides *K* is likewise provided with a slot *K²*, into which a pin *K³* is adapted to engage. The pin *K³* is carried upon an arm *L* of a key-lever *L'*, which is provided with a finger-key *L²*.

The key-lever is pivoted at *L³* to a suitable stud projecting from the bed-plate of the machine. By this means motion is transmitted from the key-lever to the slide *K*, which moves forward and oscillates its corresponding type-bar *J* to bring the type thereon to the printing-point, and this movement of the slide *K* causes the universal bar to be moved forward and to transmit motion through the arms *H²* and the rock-shaft *H'* to the arm *H*. The arm *H* being thus depressed forces the arm *F³* of the lever *F* downwardly and causes the link *E* to be moved rearwardly. It will be understood that the feed action of the dogs will depend upon the adjustment of the link *E*—that is to say, if the link be connected to the upper pin *k* then an operation of a finger-key will cause the dog *h* to be disengaged from

the rack *D* and the dog *i* to be brought into engagement therewith, whereas the reverse of this movement will follow if the link *E* be connected with the lowermost pin *k* of the carrier *e*. In other words, the adjustment of the link *E* upon the upper or lower pin *k* will change the direction of throw of the carrier of the feed-dogs, and the extent of this throw may be regulated by the pin-and-slot connections *m n*, which secure the sections of the link *E* together, so that by these means either pawl is adapted to be held normally in engagement with the rack.

In order that the rack *D* may be freed from the feed-dogs, so that the carriage may be moved by hand, we make the depending arms *d* vertically movable, the rack and arms being maintained normally in the lowermost position by springs *u*, which are each connected at one end to a pin *u'* on each of the arms *d* and at the other end to a stud *u²*, each carried by an arm *u³*, depending from the carriage *B*. The upper end of each of the arms or slides *d* is provided with a recess into which an arm *v* projects. These arms *v* are secured to a rock-shaft *v'*, which is likewise provided with one or more arms *v²*, which may be engaged by hand to transmit movement to the rock-shaft *v'*, and thus elevate the slides *d* to raise the rack *D* out of engagement with the feed-dogs, with which it cooperates. It will thus be observed that a movement imparted to either the spacing-key or to any one of the key-levers will transmit movement to the link *E* and will thereby cause the feed-dogs to be vibrated on their pivot laterally with relation to the rack, so as to permit the carriage to move one space. When the finger is raised from the key, the parts assume their normal position. When the link *E* is connected with the carrier *e* in the manner represented in full lines in Fig. 1 of the drawings, the carriage will, we will assume, be fed just after the type-bar has impressed its character against the paper on the platen, and this provides what is known as a "natural" or "ordinary" feed; but when the link *E* has been shifted to the other side of the pivot of the carrier *E* and has been brought into engagement with the uppermost pin *k* the parts will be in the position represented in dotted lines in Fig. 1 of the drawings, and the direction of throw imparted to the dogs will be the reverse of what it was when connected with the lowermost pin, thus producing what is known as the "speed" mechanism, which permits the carriage to be fed just before the type-bar impresses its character upon the paper on the platen.

While we have shown and described with some particularity the construction and arrangement of parts, we would have it understood that we do not limit ourselves to the precise construction and arrangement of parts shown, inasmuch as various modifications may be made without departing from the spirit of our invention.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In combination, the carriage under tension, the escapement comprising a toothed member and a single pawl and a single fixed detent adapted to engage therewith, the keys and means interposed between the keys and the escapement for holding either the pawl or the detent normally in engagement with said toothed member, substantially as described.

2. In combination, the escapement, the keys and the means interposed between the keys and the escapement for changing the direction of movement or throw of said escapement in relation to the movement of the keys, substantially as described.

3. In combination, the escapement, the controlling member, the keys, connecting means between the same and said controlling member, and adjusting means for changing the direction of movement or throw of said controlling member, substantially as described.

4. In a type-writing machine, the combination of a carriage, a feed-rack therefor, a suitable dog cooperating with said feed-rack, one of said last-named parts being mounted to move laterally with relation to the other, means for laterally moving said laterally-movable part and means for adjusting said moving means to change the direction of throw of said movable part and thereby vary the feed action of the parts.

5. In a type-writer, the combination of a carriage, a feed-rack therefor, a suitable feed-dog cooperating with said feed-rack, one of said last-named parts being pivotally mounted to move laterally with relation to the other, means for laterally moving said laterally-movable part and means for adjusting said moving means to apply the moving force to one or the other side of the pivot of the movable part and thereby vary the feed action of the parts.

6. In a type-writing machine, the combination of a carriage, a feed-rack carried thereby, a suitable feed-dog cooperating with said feed-rack, said feed-dog being pivotally mounted to move laterally with relation to

the rack, means for laterally moving said feed-dog and means for adjusting said moving means to apply the moving force to one or the other side of the pivot of the dog to change the direction of throw of said dog and thereby vary the feed action of the parts.

7. A type-writing machine provided with a paper-carriage, a pivoted feed-dog therefor, and cooperating feed-rack, an extensible rigid link made adjustable along the dog or its support and to either side of the pivoted axis of said feed-dog or its support for varying the feed action and speed of the dog and means for maintaining the link in its extensibly-adjusted position, substantially as described.

8. A type-writing machine provided with a swinging or pivoted feed-dog, a key-actuated universal bar, a lever actuated by the universal bar, and a link made to connect the lever and dog, said link being made shiftable to opposite sides of the dog-pivot to vary the feed or writing substantially as described.

9. A type-writing machine provided with a feed-dog and cooperating feed-rack, an actuating-link and mechanism substantially as described for actuating the link, said link being shiftable on the dog to change the direction of the throw thereof to vary the feed action and being forked to straddle or hold the dog during shifting substantially as described.

10. A type-writing machine provided with a feed-dog, a shiftable actuating-link therefor, said dog having catches or pins for holding the link in various positions in order to change the direction of throw of the dog to vary the feed action, substantially as described.

11. A type-writing machine provided with a feed-dog and with a shiftable actuating-link therefor, said dog having catches or pins with which the link is adapted to engage and said pins being adjustably secured to the dog substantially as described.

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Witnesses:

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