

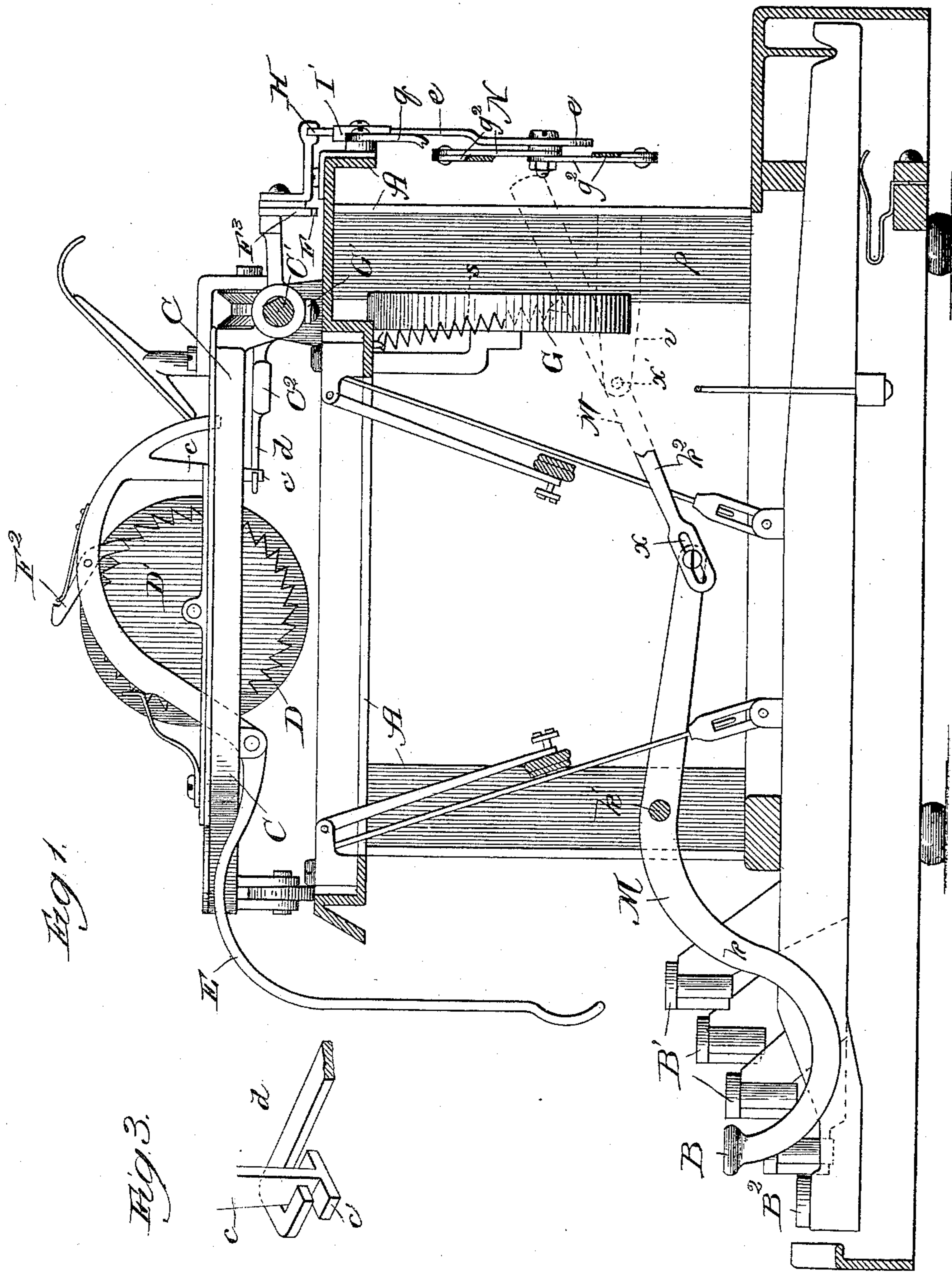
(No Model.)

2 Sheets—Sheet 1.

J. HOULEHAN.
TYPE WRITING MACHINE.

No. 442,318.

Patented Dec. 9, 1890.



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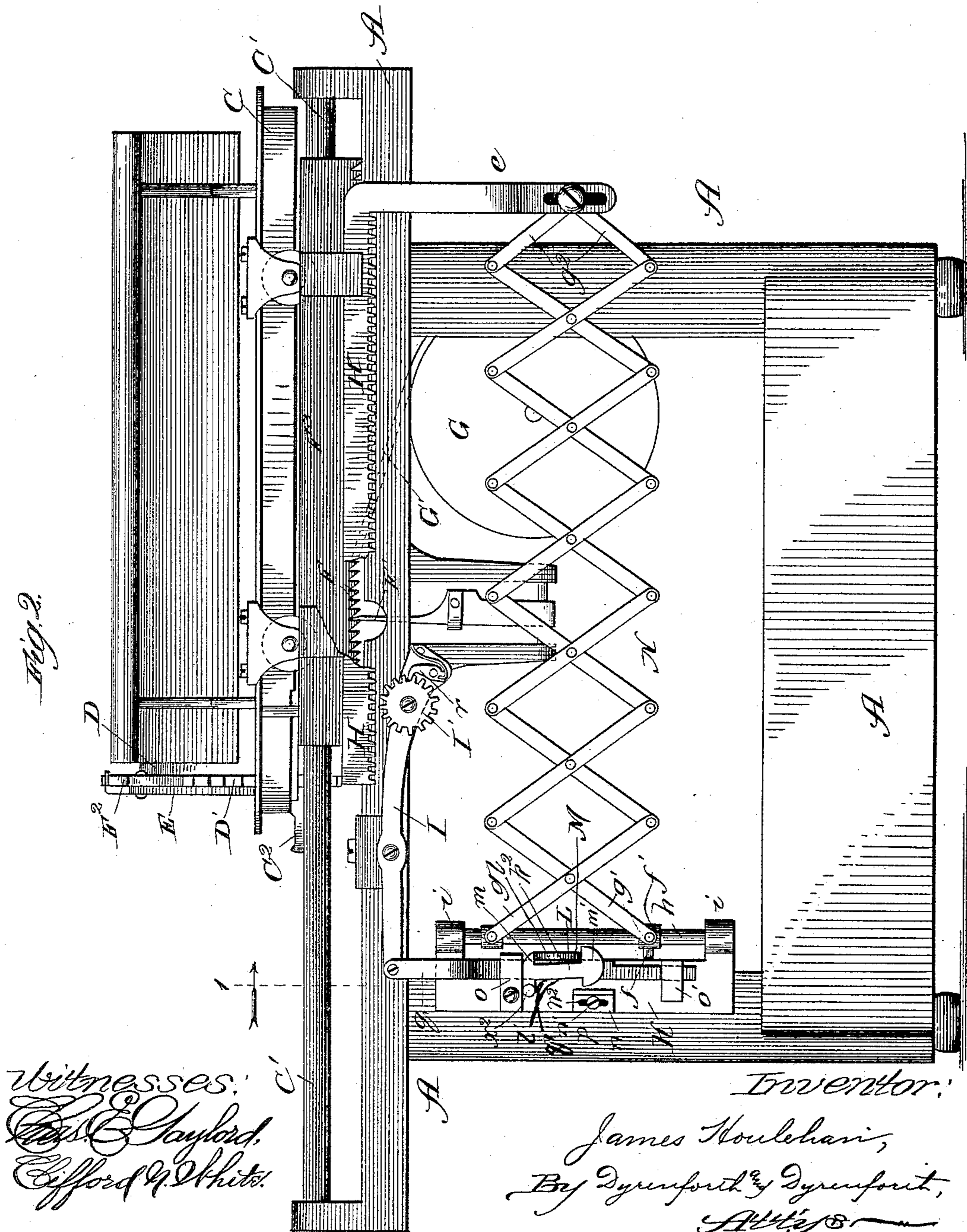
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UNITED STATES PATENT OFFICE.

JAMES HOULEHAN, OF CHICAGO, ILLINOIS.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 442,318, dated December 9, 1890.

Application filed August 1, 1890. Serial No. 360,616. (No model.)

To all whom it may concern:

Be it known that I, JAMES HOULEHAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Type-Writing Machines, of which the following is a specification.

My invention relates more particularly to an improved attachment for a type-writing machine for producing the return of the carriage to or toward its initial position, and thereby also actuating the spacing-roller from a key located at or near the key-board, thus to enable the return of the carriage to be accomplished by the operator without to that end requiring attention to be directed from the work and without entailing interruption of the type-writing position of the operator, nor variation in the position, motion, or action of the hands in manipulating the keys.

The object of my improvement is to provide a device for the purpose which shall involve positively-acting mechanism for returning the carriage; and a further object is to provide the device as an attachment adaptable to various forms of type-writing machines without thereby impairing or interfering with the operations of the other mechanisms thereof.

To these ends my invention consists in the general construction of my improvement; and it also consists in the details of construction and combinations of parts.

In the accompanying drawings, Figure 1 is a vertical sectional view in elevation of a type-writing machine provided with my improvement, the section being taken at the line 1 of Fig. 2 and viewed in the direction of the arrow; Fig. 2, a partly-broken view in rear elevation of the same, and Fig. 3 a perspective view of a detail.

To illustrate my improvement, I show it as applied to a particular and well-known form of type-writing machine—the Remington—and for the sake of convenience I confine the description hereinafter contained to such particular application. I do not, however, wish to be understood as limiting the application of my improvement to such machine, but intend it for use with any form of type-writing machine to which it may be adapted.

A is the frame of the machine, having the

key-board B at its lower forward portion and provided with the keys B' and spacer-bar B², connected, as usual, with the key-levers, from which the type are controlled by well-known means.

C is the carriage, pivotally supported on the guide-rod C' at the rear of the elevated portion of the frame, and carrying the spacing-roller D, provided with the bent hand-lever E for producing the separation or rise of the rack F to unlock or disengage it from the dog F', and being further provided with the dog F² to engage with the ratchet d' on the end of the roller D, to turn the latter for spacing, with the manipulation of the hand-lever to return the carriage by hand.

G is the coiled-spring device supported toward the rear of the frame below the carriage at the side toward which the carriage travels from its initial position, and G' is the band connecting the spring with the carriage to set the spring by the return of the carriage toward its initial position, thus to effect automatically the movement thereof in the opposite direction when its rack F is released from the dog F' by the manipulation of the keys. These and other features which do not require mention to enable my improvement to be comprehended will be recognized as forming the well-known type-writing machine referred to.

Following is the description in detail of the construction forming my improved attachment.

To the support F³ of the rack F (or other part of the carriage) is secured to extend parallel with it another rack H. On the rear side of the upper part of the frame A is pivoted a lever I, fulcrumed between its extremities to the frame and carrying at one end a pinion I', controlled by a dog r and adapted to be brought into and out of engagement with the teeth of the rack H above it by raising and lowering the lever from its opposite end. This last-named end of the lever I has pivoted to it one end of a link q, which is bent to bring it toward its opposite end parallel with the rear surface of the corner-post p of the frame A. On the rear surface of the post p is secured a bearing-plate K, having guides o and o', respectively, near its opposite ends for the link q, and between the said

guides a lug n is provided on the bearing-plate near its outer edge, the lug being adjustable up and down to a limited extent and held by a set-screw n' in its slot n^2 .

5 L is a species of dog or catch, preferably of the anchor shape illustrated, being provided with the cross-piece m near its upper end, near one extremity of which it is pivotally connected eccentrically with the link q at an
10 ear q' , extending laterally from the link, and at its lower end with a head m' , rounded on its under side, recesses l and l' being thus provided between the said cross-piece and head, respectively, on opposite sides of the
15 catch.

M is a compound lever, the handle-section k of which, forming the "key," is fulcrumed on a support or rod k' , near the front of the frame A, and extends thence preferably, as
20 shown, into the key-board at the right-hand side thereof. The other section k^2 of the compound lever M is pivotally connected at its end having a slot x with the inner end of the section k , and is fulcrumed between its ex-
25 tremities, at x' , to a bearing v , secured to the inner side of the post p . The rear end of the section k^2 of the lever M is controlled, to tend normally to rise, by a spring s , and extends through the recess l of the catch L, being con-
30 fined therein by the portions of the cross-piece m and head m' , which project beyond the inner side of the post p and inner edge of the bearing-plate K therein.

At the upper and lower ends of the inner
35 edge of the plate K are socket-bearings i for a vertical rod h .

N is a lazy-tongs, pivotally secured at the upper extremity of its end bar g to the rod h near its upper end, and at the lower extremity
40 of its end bar g' to a sliding collar f' on the rod h , and from which extends a stud f below and into the path of the rear-projecting end of the section k^2 of the lever M. The opposite end of the lazy-tongs is connected
45 at the junction of its forward end bars g^2 with the slotted end of a rigid link e , depending from the rack H.

The eccentric or tripping bar C^2 , commonly provided on the carriage pivot-rod C' for the
50 rear curved end of the hand-lever E to press against to effect raising of the rack F' on its pivot-bar C' out of engagement with the dog F', is provided with a slotted extension-piece d , and on the curved portion of the lever E,
55 behind its rear extremity, I secure a tongue c , to depend therefrom, and having a head c' at its extremity. When the carriage is down or in its horizontal position, the tongue c projects through the slot in the extension
60 d , which is narrower than the head c' , and to raise the carriage from the hand-lever E in the usual manner the slight backward movement of which the carriage is susceptible (and which is also produced, as usual,
65 by depressing the "cap" key) moves the tongue backward out of the slot in the forward end of the extension d , whereby it may

pass upward beyond the extension, and thus permit the carriage to be raised from the hand-lever on its pivot-rod without obstruction from the head c' . As will thus be seen, the machine may be operated in the usual manner to perform all its functions in the usual way, since my attachment does not in the least interfere with such operation. 70 75

The use of my improvement involves the following operation: Supposing the carriage to occupy its initial operative position, manipulation of the keys in writing causes the spring device G to move the carriage, as usual, step
80 by step to the end of its route, from which it requires to be returned, and by returning which the roller D should be turned to space the paper. All this may be accomplished by a single pressure upon the key portion k of
85 the lever M. Such pressure causes the section k^2 of the compound lever to press against and force downward the catch L, pivotally connected at its upper outer corner with the eccentric, extending laterally from the link q ,
90 and the lower end or head m' in such downward course of the catch L bears against the inner side of the adjustable bearing n and is thereby guided to maintain a vertical position in its downward course until the head
95 m' passes the lower end of the lug n , when the continued pressure against it by the section k^2 of the compound lever forces it, owing to its eccentrically-pivoted support x^2 , out of the path of the said section, whereby the lat-
100 ter may then bear against the stud f at the lower extremity of the lazy-tongs. This much of the movement of the lever M also by the downward course of the link q produced by that of the pivotal catch L raises the free
105 end of the lever I, carrying the pinion I', engages the latter with the teeth of the rack H, and forces that rack upward, thereby also raising the rack F' on its pivot-rod C' out of engagement with the carriage-controlling dog
110 F', when the carriage is freed to permit it to be returned to its initial position. The raising of the racks H and F' furthermore lowers the extension d of the trip C^2 against the head
115 c' of the tongue c , causing its bearing force against the head c' to pull downward the curved end of the hand-lever E, and thus force the dog F' against the ratchet D' to turn the spacing-roller D. Obviously, if the lug n be
120 adjusted higher, whereby the catch L will the sooner pass it and be disengaged from the downward pressure against it of the compound lever, the extent of turn of the spacing-roller D will be the less, while conversely, if the
125 spacing is to be greater, the lug n should be adjusted lower for the purpose. Thus, as will be seen, the first effect of pressure against the key k of the compound lever M is to turn the spacing-roller D, and obviously this may be
130 produced without entailing return movement of the carriage, which is the result of continued pressure on the key k , whereby the end k^2 of the operating-lever M is impinged against the stud f , which by lowering the sliding collar

f' contracts or folds the lazy-tongs N, thus by the connection of its arms g^2 with the link e pulling the carriage back from any position it has attained by movement under the influence of its motor G from its initial position, which last-named movement produces the extension of the lazy-tongs illustrated in Fig. 2. When the carriage has been thus returned, release of the lever M permits the spring s to act to return it to its normal position, in reaching which the section k^2 raises the catch V' , and with it the adjacent end of the lever I, whereby the opposite end of the latter, carrying the pinion, is lowered, disengaging the pinion from the rack H.

The purpose of the dog r , controlling the pinion I', will be readily understood to be that of causing the pinion to lock the carriage against movement by the spring device G when the carriage is raised sufficiently to release its rack F from the dog F' and before the lever M has been brought at its section k^2 against the stud f .

The means illustrated and described are believed best to answer the purpose of my improvement, though they may be variously modified without thereby departing from my invention, which I consider broadly to include any means operating positively, by pressure on a key k , to actuate the lazy-tongs to pull back the carriage toward its initial position. For example, other means might be provided to perform the functions of the pinion I', which term I therefore intend to include any substitute for the pinion.

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

1. In combination with a type-writing machine, a lazy-tongs N, connected at one end with the carriage, a lever M, and means, substantially as described, operating by pressure on the lever to disengage the carriage and contract the lazy-tongs to return the carriage against the resistance of its motor, substantially as set forth.

2. In combination with a type-writing machine, a lazy-tongs N, connected at one end with the carriage, a lever M, and means, substantially as described, operating by pressure on the lever to disengage the carriage and turn the spacing-roller and by continued pressure on the said lever to contract the lazy-tongs and thereby return the carriage against the resistance of its motor, substantially as set forth.

3. In a type-writing machine, the combination, with the carriage, of a pivotally-supported rack H, a lever I, carrying at one end a pinion I' to engage the said rack, and connected toward its opposite end with a link q ,

carrying a catch L, a lazy-tongs N, connected at one end with the carriage, and a lever M, operated by pressure upon it to engage successively the said catch to release the carriage and the opposite end of the said lazy-tongs to retract the carriage, substantially as described.

4. In a type-writing machine, the combination, with the carriage, of a pivotally-supported rack H, a lever I, carrying at one end a pinion I' to engage the said rack, and connected toward its opposite end with a link q , movable in a suitable guide, a catch L, pivotally connected with the link, a lug n for the said catch, a lazy-tongs N, connected at one end with the carriage, and a lever M, operated by pressure upon it to engage successively the said catch and opposite end of the lazy-tongs, substantially as described.

5. In a type-writing machine, the combination, with the carriage, of a pivotally-supported rack H, having an extension d , a lever I, carrying at one end a pinion I' to engage the said rack, and connected at its opposite end with a link q , a catch L, pivotally connected with the link, an adjustable lug n for the said catch, a lazy-tongs N, connected at one end with the carriage, a tongue c , connecting the inner end portion of the hand-lever E with the extension d and having a head c' , and a lever M, operated by pressure upon it to engage successively the said catch, thereby to release the carriage, and the opposite end of the lazy-tongs to contract the latter and thereby return the carriage, substantially as described.

6. In a type-writing machine, the combination, with the carriage, of a rack H, connected with the pivotal rack F and provided with a slotted extension d , a lever I, carrying at one end a pinion I' to engage the rack I, and connected at its opposite end with a link q , a catch L, having the recesses l and l' and pivotally supported eccentrically on the said link, a lug n for the catch, a lazy-tongs N, connected at one end with the carriage, a guide-rod h for the movable bar g' of the lazy-tongs, a tongue c , connecting the inner end portion of the hand-lever E with the extension d , and having a head c' , and a compound lever M, having the key-section k extended to the key-board and the section k^2 controlled by a spring s and extended to engage with the catch L and lazy-tongs bar g' , the whole being constructed and arranged to operate substantially as described.

JAMES HOULEHAN.

In presence of—

J. W. DYRENFORTH,
M. J. FROST.