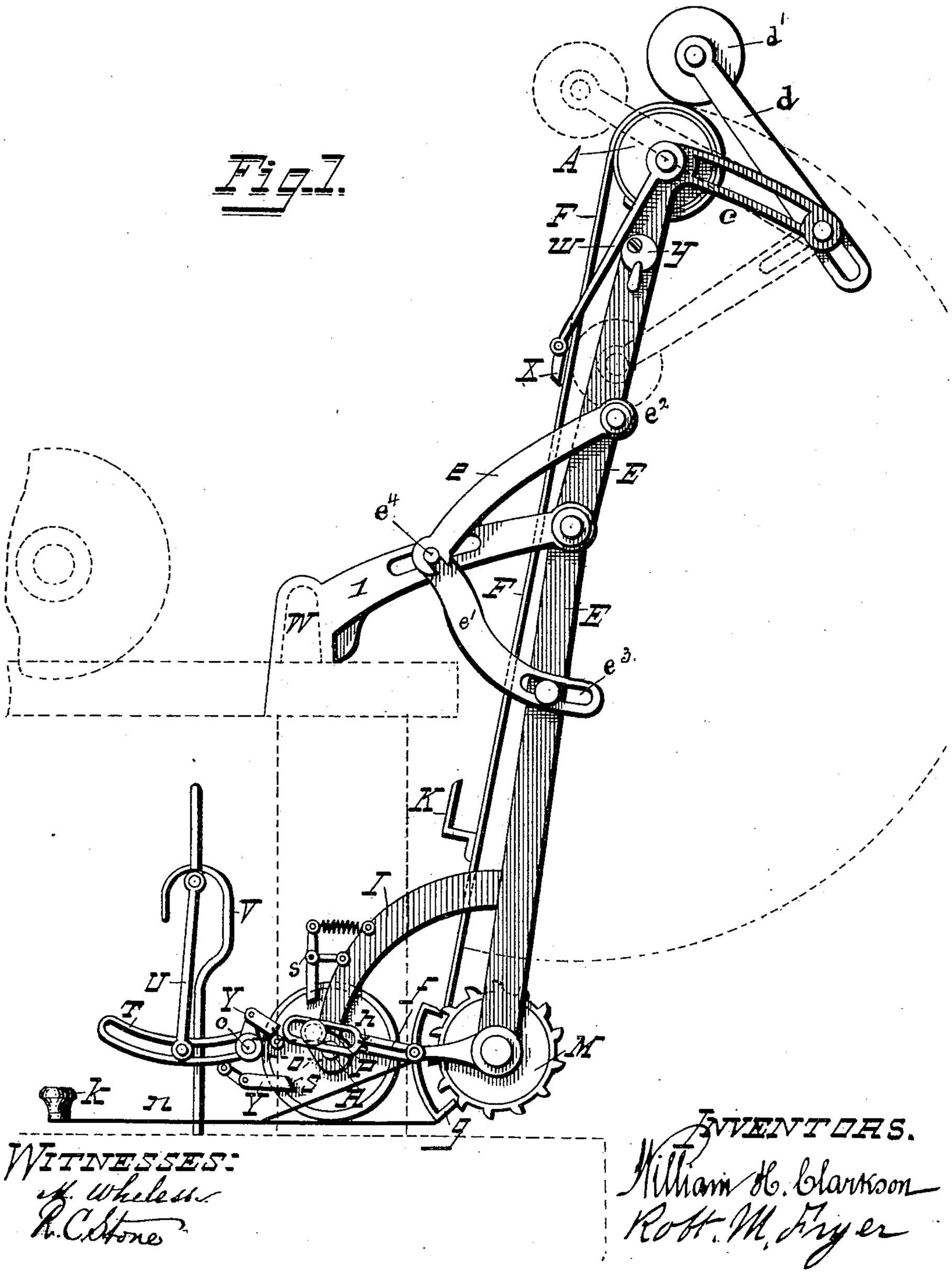
(No Model.) 2 Sheets—Sheet 1.

W. H. CLARKSON & R. M. FRYER.

COPY HOLDER FOR TYPE WRITING MACHINES.

No. 353,622. Patented Nov. 30, 1886.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

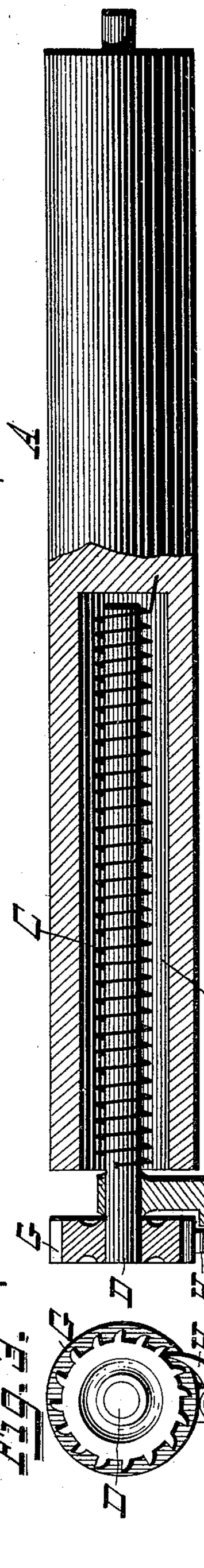


Fig. 3.

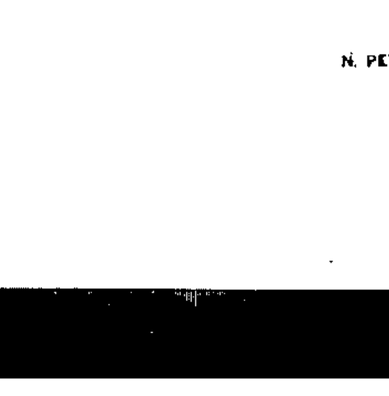
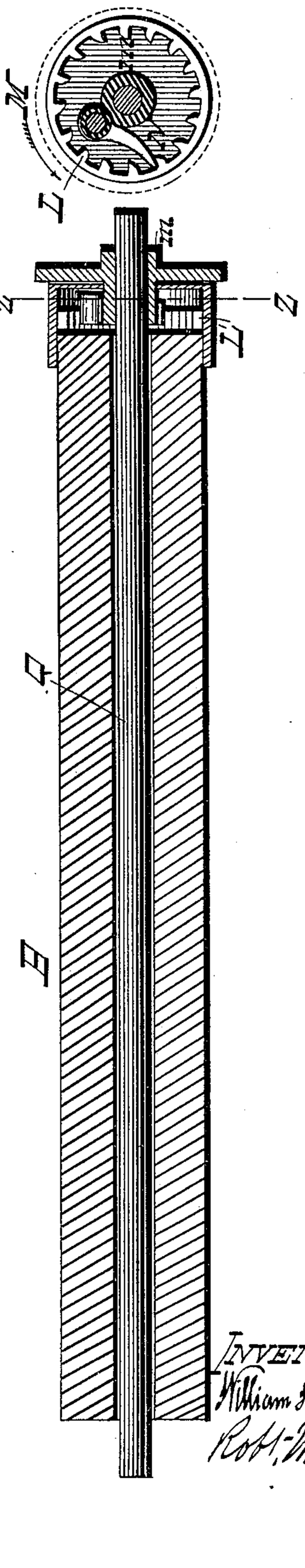


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. CLARKSON, OF NEW YORK, AND ROBERT M. FRYER, OF BROOKLYN, N. Y.

COPY-HOLDER FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 353,622, dated November 30, 1886.

Application filed September 15, 1885. Serial No. 177,146. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. CLARKSON, residing in the city, county, and State of New York, and ROBERT M. FRYER, residing in the city of Brooklyn, county of Kings, and State of New York, both citizens of the United States, have invented certain new and useful Improvements in Copy-Holders for Type-Writing Machines, of which the following, in connection with the accompanying drawings, which are herein referred to and are to be regarded as a part hereof, is a full and complete specification.

The object of our invention is to produce a copy-holder adapted to be attached to a type-writing machine, and so connected with the operating mechanism thereof as to be automatically operated through the operation of said machine to move the copy or carry it along as fast as it is copied, and which shall also be capable of being operated independently of the type-writing machine in order to provide for irregularities in the copy, as in case of lines of irregular length, or for moving the copy along when it is desired to skip or omit portions thereof; and to these ends our invention consists in certain details of construction and combinations of parts, as will be fully hereinafter described, and pointed out in the claims.

Figure 1 of the drawings represents a side elevation of our copy-holder as attached to a Remington type-writing machine, a part of the latter being shown in dotted lines. Fig. 2 is an elevation, partly in section, of the upper or spring roller. Fig. 3 is an elevation of the ratchet-wheel on the end of the shaft of the spring-roller. Fig. 4 is a longitudinal section of the lower roller; and Fig. 5 represents a section on the line Z Z of Fig. 4, showing the inside ratchet and pawl.

In carrying out our invention we provide a frame, which consists, essentially, of two substantially upright bars, E E, which are jointed at or near their middle, and at the joint are connected to an arm, 1, by which they are attached to the frame of the type-writing machine, the said arms 1 being shown in the present instance attached to lugs W on the frame. It is evident, however, that they may be attached in other ways, and to other parts of the machine.

The joint in the bars E E is not necessary to the operation of the copy-holder, but is provided mainly for the purpose of enabling the latter to be folded for packing or transportation.

The frame is rendered rigid when in use by means of stays or braces *e e*, attached, respectively, to the upper and lower parts. The upper brace is pivoted at e^2, and has a hook at the opposite end. The brace *e'* is slotted at one end, as shown at e^3, and a set-screw passes through the slot into the frame-bar E. At its other end the brace *e'* has a lateral pin, e^4, which works in a slot, e^5, (in the arm,) and with which the hooked end of brace *e* engages when the apparatus is adjusted for use. By unhooking the brace or stay *e* from the pin e^4 the upper part of the frame may be folded down, as indicated by the dotted line.

At the top and bottom of the frame E E are journaled two rollers, A B, the upper one being a spring-roller, which does not differ essentially from the ordinary spring window-curtain roller known in the market as the "Hartshorn roller." One end is bored out, as shown at *a*, to receive a shaft, D. Spring C surrounds this shaft, one end being connected with the roller and the other with the shaft, as shown clearly in Fig. 2. On the outer end of the shaft D is a ratchet-wheel, G, which is engaged by a pawl, H, which is pivoted to the frame E.

The lower roller, B, is shown in section in Fig. 4. It is mounted loosely on a central shaft, Q, which extends entirely through it, the ends forming journals which have their bearings in the frame E E. Upon one end of the shaft Q is rigidly secured an escapement-wheel, M, the inwardly-extending boss or hub of which carries a pawl, N, which engages interior ratchet-teeth, L', on the tube L, which is rigid upon the end of the roller B. The escapement-wheel which carries the pawl, being rigidly connected with the shaft Q, it follows that the roller is locked against independent rotation in one direction, but is free to rotate upon the shaft in the opposite direction. The purpose of this will presently appear.

The two rollers A and B are connected by

an apron, F, which winds upon one roller as it is unwound from the other. This apron carries a bracket, K, which receives and supports the copy.

At the lower part of the frame E is an arm, I, which carries a friction-wheel, S. The shaft R of this wheel carries a crank, O, the pin of which works in a slot in the arm P of the pallet or escapement. This arm P is connected with and projects from the pallet or escapement *g*, by which the escapement-wheel M is controlled. A curved or segmentally-slotted lever, T, is pivoted at *o* to an extension of the arm I, and this lever is provided at its pivoted end with a cross-head, which carries at its ends friction-pawls Y Y, by which the friction-wheel S is actuated. The lever T is connected by means of a link or toggle, U, with the ribbon-moving connection V of a Remington type-writing machine. Thus whenever the machine is operated the lever T will be vibrated, and such vibration imparts rotary movement to the wheel S. As the movement of the part V is always the same, it follows that by moving the link U toward or from the pivot of the lever T the vibration of the latter may be varied, and thereby the speed of rotation of the wheel S regulated. A spring-brake, S′, is applied to the wheel to prevent backward rotation.

As a means for operating this copy-holder independently of the type-writing machine, we provide the pallet with an arm, *n*, and the latter with a figure-piece or button, K, by which it is manipulated by hand. In order to provide for this independent operation, we form a flexible connection between the pallet *g* and its arm P. The arm P is pivoted to the pallet, and a spring, *f*, which is rigidly secured to and projects from the pallet, extends between lugs *n* on the arm P. This spring is stiff enough to cause the pallet to move with the arm P when the latter is operated, but will permit it to be moved independently by the arm *n*. The frame E has at the top backward-projecting arm *c*, which supports a roller, *d′*, which rests upon or against the roller A, and serves to hold the copy as it passes between the two. By means of slotted connections it can be moved forward or backward, as may be desired. When copying from a book, or in order to hold or pack the apparatus, this frame and roller may be swung down to the position indicated in dotted lines.

A guide or marker is shown at X, the same being supported by arms or links *w*, which are pivoted to the top of the frame E E. The marker is adjusted to the thickness of the copy by eccentrics *y*.

The operation of this apparatus is as follows: The apparatus being in position, as represented in Fig. 1 of the drawings, and properly adjusted, the copy resting on the bracket or support *k*, and the apron properly adjusted to bring the proper line just below the guide X, the operator is ready to commence. As the machine is operated lever T is vibrated and the wheel S slowly rotated by the operation of the friction-pawls *y y*, as already described. As the wheel S rotates its crank R slowly vibrates the arm P of the pallet *g*, and the latter, by the time the crank has made one revolution, releases one tooth of the escapement-wheel M, which allows the roller B to rotate forward a distance corresponding with the distance between two teeth of the escapement-wheel. As soon as this occurs the spring C of the upper roller, which is under tension, causes said roller to rotate and take up the apron, and this carries the copy forward, or rather upward, one space, and this operation is repeated during every complete revolution of the wheel S and the corresponding vibration of the arm P and pallet *g*. Preferably the teeth of the escapement-wheel M are spaced to correspond with the lines of the copy; but this is not material. Should the operator meet a broken line, or one that is not full, or should he wish to skip or omit one or more lines, he simply touches the button K and depresses it, which causes the pallet *g* to vibrate independently of its arm P, to release a tooth of the escapement-wheel. This carries the copy forward one space, and may be repeated until the proper adjustment is obtained. After the bottom line has been copied the lower roller is rotated backward by hand or by a spring, as will be fully described in an application which we propose to file hereafter, (such rotation being permitted by the pawl and ratchet L′ N,) by which the apron F is drawn down and wound upon said lower roller as it is unwound from the upper one. This winds up the spring C, and the apparatus is set for a new page. The tension of the spring C is regulated by the pawl and ratchet G H.

Having thus described our invention, what we claim as new is—

1. A spring-actuated copy-holder of the character herein described, provided with releasing or escape mechanism, in combination with the operating mechanism of a type-writing machine, substantially as shown and described.

2. In a copy-holder for type-writing machines, the combination of two rollers, one of which is spring-actuated, an apron or carrier connecting said rollers and adapted to be wound from one upon the other, an escape mechanism connected with one of said rollers for intermittently releasing the same, and a connection between said escape mechanism and the operating mechanism of the type-writing machine, substantially as shown and described.

3. In a copy-holder for type-writing machines, the combination of a roller, an escape mechanism connected therewith, means, substantially as described, for actuating the escape mechanism, and a variable connection between said actuating mechanism and the operating mechanism of the type-writing machine by which the speed can be regulated, substantially as shown and described.

4. In a copy-holder for type-writing machines, the combination of an apron, a roller upon and from which the same may be wound, an escape mechanism connected with and controlling the movement of said roller, a rotating wheel and crank for operating the escape mechanism, a lever, T, and pawls connected therewith for driving said wheel, and a connection between said lever and the operating mechanism of a type-writing machine, substantially as shown and described.

5. In a copy-holder for type-writing machines, the combination of an apron, a roller upon and from which the apron is wound, an escape mechanism for controlling the movement of the roller, a driving mechanism connected with and actuated by the operating mechanism of the type-writing machine, a flexible connection between the driving and the escape mechanisms, and a lever connected with the escape mechanism for actuating the latter independently of the driving mechanism, substantially as shown and described.

6. The combination of the roller B, the escape-wheel M thereon, the pallet *g*, for controlling the escape-wheel, having slotted arm P, the wheel S, and its crank O, the latter in engagement with the arm P, a lever and pawls, T Y Y, for actuating the wheel S, and a connection between said lever and the operating mechanism of the type-writing machine, substantially as shown and described.

7. In a copy-holder for type-writing machines, the combination of the roller B, the escape-wheel M thereon, the pallet *g*, for controlling the escape-wheel, the slotted arm P, flexibly connected with the pallet, a driving-wheel and crank S O, an actuating mechanism connected with the operating mechanism of the type-writing machine for driving said wheel S, and a lever, *n*, rigidly connected with the pallet *g*, by which the latter may be operated independently of its driving mechanism, substantially as shown and described.

8. The combination, in a copy-holder for type-writing machines, of a roller and a carrying-apron connected therewith, an escape-wheel, M, on said roller, a spring-controlled pallet, *g*, to govern the escape-wheel, and a hand-lever, *n*, connected with said pallet, whereby the latter may be operated by hand to permit the rotation of the roller, substantially as and for the purposes described.

In testimony that we claim the foregoing as our invention we have signed our names, in presence of two witnesses, this 14th day of September, 1885.

WILLIAM H. CLARKSON.
ROBT. M. FRYER.

Witnesses:
ROBT. S. BATES,
M. J. MCGUIRE.