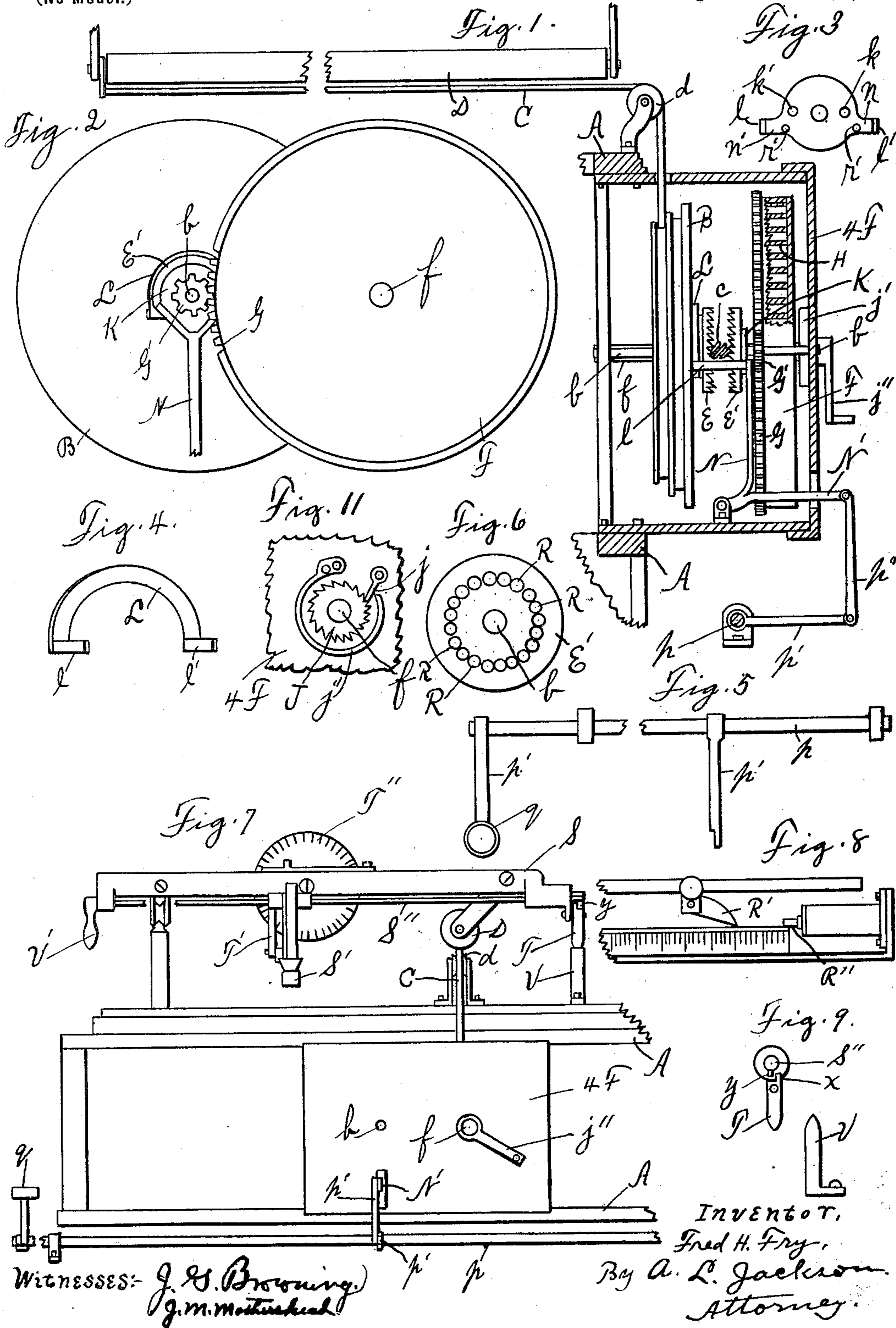


F. H. FRY.  
TYPE WRITER.

(Application filed May 21, 1897.)

(No Model.)

2 Sheets—Sheet 1.



F. H. FRY.  
TYPE WRITER.

(Application filed May 21, 1897.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 10

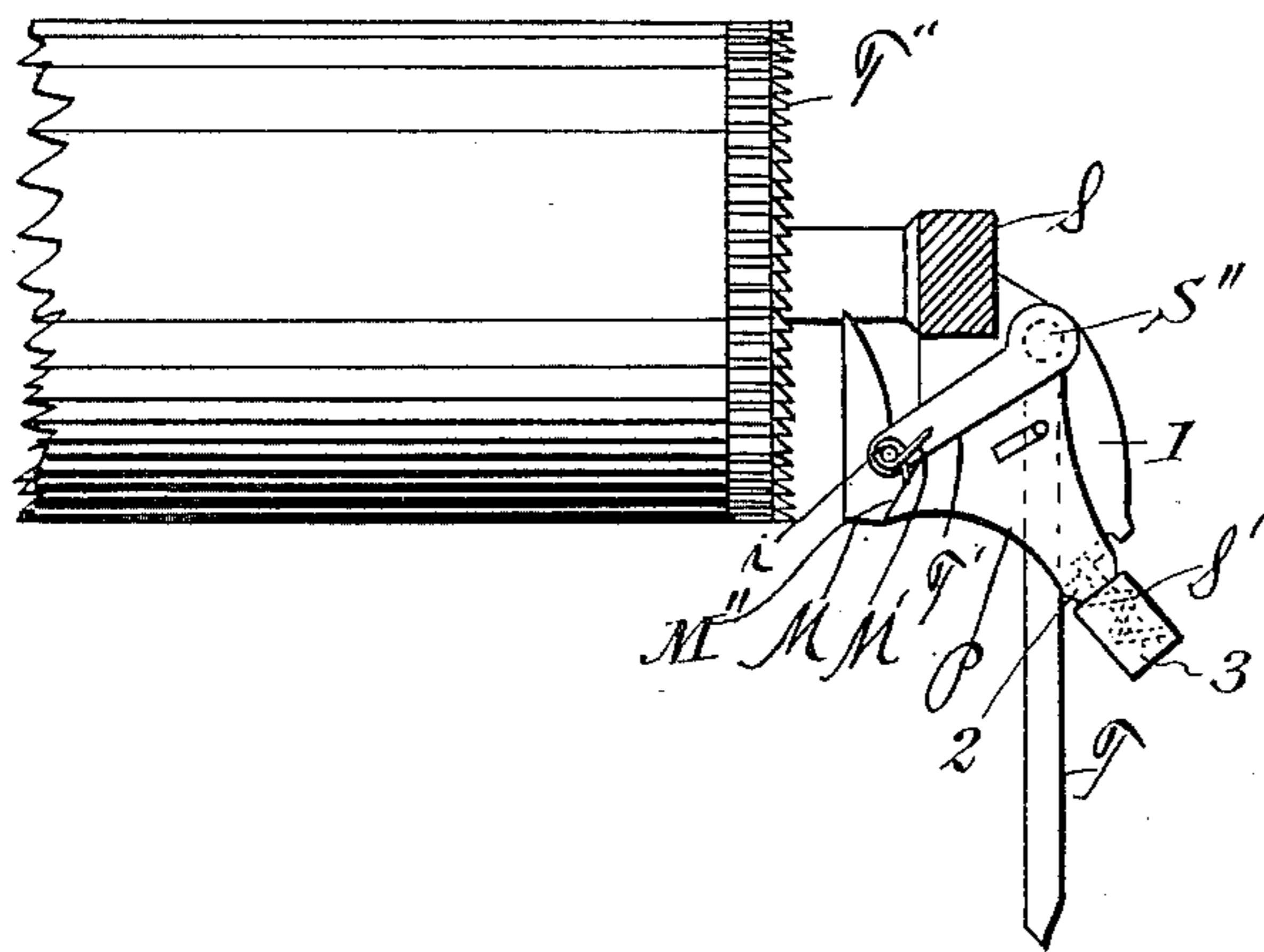


Fig. 12.

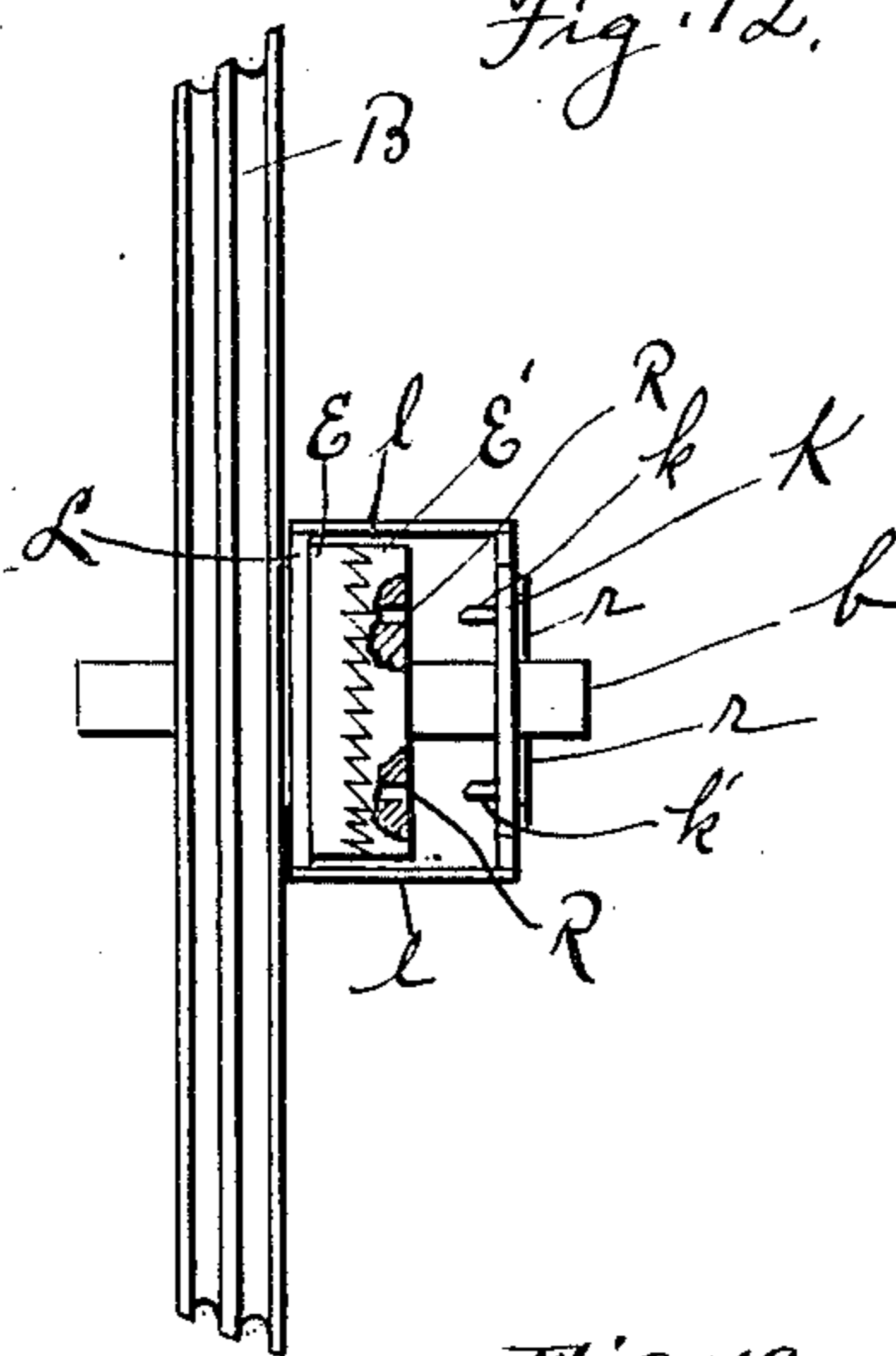
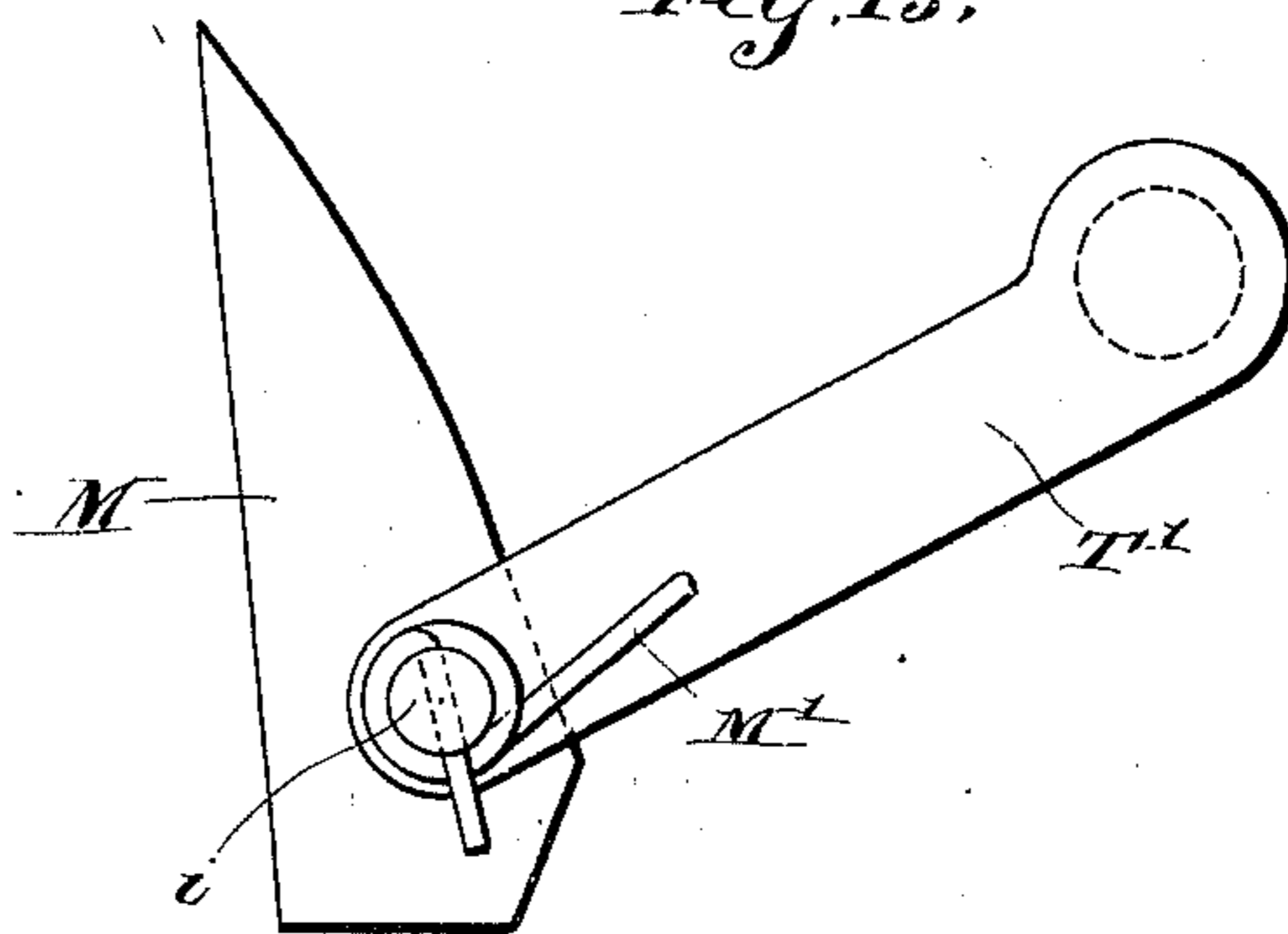


Fig. 13.



Witnesses:-  
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F. H. Fry,  
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# UNITED STATES PATENT OFFICE.

FRED H. FRY, OF FORT WORTH, TEXAS.

## TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 699,299, dated May 6, 1902.

Application filed May 21, 1897. Serial No. 637,593. (No model.)

*To all whom it may concern:*

Be it known that I, FRED H. FRY, a citizen of the United States, residing at Fort Worth, Texas, have invented certain new and useful

5 Improvements in Type-Writers, of which the following is a specification.

This invention relates to attachments for returning the carriages of type-writers to the place of starting and for automatic spacing; and the object is to construct a device that will accomplish these results without in any way interfering with the working of a type-writer and by which the type-writer carriage can be sent back to the first position from any point without the necessity of going to the end of its beat. Other objects and advantages will be fully understood from the following description and claims when read in connection with the accompanying drawings.

Figure 1 is a broken sectional view illustrating a part of a type-writer frame, a front view of a winding-drum, the clutch-drums, the spring-barrel drum, partly in section, other operating mechanism, and a section of the hanger for the said drums. Fig. 2 is a side elevation of the drums, showing their relative position to each other. Fig. 3 is a detail view of a disk for holding and releasing the driving mechanism. Fig. 4 is a perspective view of the yoke for throwing the clutch in and out of mesh. Fig. 5 is a plan view of the operating-lever. Fig. 6 is the detail view of the stationary part of the clutch. Fig. 7 is an end elevation of a portion of a carriage and the frame, showing the invention applied. Fig. 8 shows an elastic buffer. Fig. 9 is a detail view of the tripping device for the line-space handle. Fig. 10 is a detail view of the line-spacing mechanism. Fig. 11 is a detail view of the ratchet-wheel and spring and pawl for locking the spring-drum to its shaft. Fig. 12 is a top view, partly broken, of the cooperating clutches and means for operating the same. Fig. 13 is a detail view of the lever T' and the finger M of the line-space mechanism.

Similar characters of reference indicate similar parts throughout the several views.

50 The device (shown in Fig. 1) may be mounted in any suitable way, as by a hanger attached to frame A, or by uprights attached to

the base-piece of the type-writer, or by cross-pieces attached to the posts between the piece A and the base. A drum B is loosely mounted on a shaft *b*, and a cord C is attached to this drum and to the carriage-frame at any suitable place on the left side, as to the hanger for rod D, the same rod to which the cord for advancing the carriage is attached. The cord C runs over pulley *d* and draws the carriage to the right by means hereinafter described. Coöperating clutch-drums E and E' are mounted on shaft *b*. A spiral spring *c* is mounted on shaft *b* between the clutch-drums. Drum F is loosely mounted on shaft *f* and is provided with cogs G, which mesh with pinion G', which is mounted on shaft *b*. Drum F contains a coiled spring H. (Shown in section in Fig. 1.) One end of this spring is attached to the shaft *f* and the other end to the rim of drum F. This spring must be superior to the spring which causes the advance of the type-writer carriage. Drum F may be locked to the shaft *f* by means of the ratchet J, which is rigidly mounted on shaft *f*, and the spring-pressed pawl *j*, operated by spring *j'*. Spring *j'* and pawl *j* are attached to the hanger 4<sup>r</sup> or to some stationary support. These parts and the ratchet-wheel J may be on the inside or outside of the hanger. The drum B and face-clutch E are made integral with each other and are loosely mounted and have axial movement on the shaft *b*. A groove is left between drum B and the exterior surface of clutch E for the yoke L. The coöperating parts of the clutch are thrown in mesh by means of the yoke L, provided with the arms *l* and *l'* and with suitable connecting-levers. A disk K is loosely mounted on and has axial movement on the shaft *b* and is provided with lugs *k* and *k'* and projections *n* and *n'*. This disk does not revolve, being attached to prongs *r r* of the lever N. Arms *l* and *l'* of the yoke L are attached to the projections *n* and *n'* of the disk K. The characters *r' r'* indicate apertures for bolts to attach prongs or arms *r r* to disk K. The clutch-drum E' has pairs of apertures R for the lugs *k* and *k'*. Any movement of the disk K axially will move drum B and clutch E correspondingly. The clutch should begin to lock before the lugs *k* and *k'* are entirely withdrawn from the apertures R, and in unlocking

the lugs should begin to enter the apertures R before the clutch is entirely unlocked. The lugs  $k$  and  $k'$  prevent the revolution of clutch E' and pinion G' when unlocked. Pinion G' will prevent the revolution of drum F. The shaft  $p$  is arranged as the shafts for operating the type-levers are, and levers  $p'$  are rigidly secured on the shaft  $p$ . The button  $q$  has a stem which is pivotally connected to one of the levers  $p'$ , and the other lever  $p'$  is pivotally connected to the link  $p''$ , which is pivotally connected to the arm N'. (See Figs. 3, 5, and 7.) Pressure on button  $q$  will depress arm N' and throw the clutch in mesh. At the same time lugs  $k$  and  $k'$  are withdrawn from apertures R in the clutch-drum E'. This leaves clutch-drum E' free to be driven by the tension of spring H. In rotating the clutch-drum E' carries clutch-drum E with it, and consequently drum B winds cord C on this drum, and consequently draws the carriage back to starting position. When pressure is taken off of button  $q$ , the spiral spring  $c$  throws clutch out of mesh and at the same time forces the plugs  $k$  and  $k'$  into apertures R, and thus prevents spring H from losing all its tension. So in each operation just enough tension is used to bring the carriage back to starting position.

In moving the carriage back to starting position something is needed to accomplish the line-spacing. For accomplishing this the usual ratchet T'' is mounted on the end of the platen-roller, and means for rotating said roller are mounted on the frame of the type-writer. A rock-shaft S'' is mounted on the frame-piece S in suitable bearings. A line-space handle T and a ratchet-lever T' are mounted on this shaft. The ratchet-lever is provided with a finger M, pivotally mounted therein. These parts stand normally in the position shown in Fig. 10, the finger M resting against a shoulder M'' on a stationary mounting P. A spring M' is mounted in lever T' and coiled around a pivot-bolt  $i$  and secured to said bolt by passing the end of the spring through said bolt. The bolt  $i$  is pivoted in the lever T', and the finger M is mounted on the bolt  $i$ , and when the bolt turns the finger turns. The tension of the spring to uncoil itself actuates and causes finger M to engage ratchet T'' and turn same whenever the shaft S'' is rocked far enough to raise the lever T' the requisite distance. The mounting P may be set at different positions to determine the number of spaces the finger M must move the ratchet T''. The mounting may be set nearer or farther from the ratchet T''. The handle S' carries a lug 2, which is made to engage any desired cog in rack 1. The lug 2 is held in engagement with the rack 1 by means of a spring 3, mounted in handle S'. As the finger M is moved away from the shoulder M'' the spring M' causes the finger to turn enough to engage the ratchet T''. The shoulder M'' holds the finger M normally in the position shown in the drawings. The spacing

is done automatically. It is only necessary to put something to trip space-handle T as the carriage is moved to the right. For this purpose a rod V is mounted on the type-writer frame. If for any reason a line-space handle is needed in front, an additional handle V' may be mounted on rock-shaft S'' at the front. The handle T has a lug  $x$  integral therewith, which engages a lug  $y$ , integral with the shaft S''. When the carriage moves back to starting position, the handle will strike the tripping-rod V. This will cause the handle to rock shaft S'', and the spacing-lever T' shoves upward to turn the platen-roller instead of downward, as in the ordinary type-writer. In going to the left the handle will pass over the tripping-rod without rocking the shaft; but in going to the right the lug  $x$  will engage the lug  $y$  and cause the handle T to rock the shaft S'' until the handle T passes over the tripping-rod V.

As the carriage will move back to starting position rapidly, a check will be necessary. For this purpose an elastic buffer is provided. This may be of rubber, or a pneumatic socket may be provided, which may be mounted so as to be struck by the marginal stop R'. This stop will strike a piston R'' of a pneumatic cylinder as the carriage comes back to the starting position.

The spring H may be wound by a key or a crank or by any other suitable instrument. In Fig. 7 is shown a crank  $j''$  for winding the spring. This spring may be of any suitable length, and the longer it is the less often it would have to be rewound. The size of the pinion G' and the size of the drum F, which is provided with the cogs G and which is in mesh with the pinion G', will also aid in determining how long the type-writer can be run without rewinding.

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

1. A type-writer-carriage-returning mechanism adapted to operate independently of the carriage-advancing mechanism consisting of a cord-winding drum having a clutch-jaw integral therewith, a cord attached to said drum and to the carriage-rod, a second clutch-jaw adapted to cooperate with said first-named clutch-jaw mounted rigidly on the shaft of said winding-drum, means for throwing said clutch-jaws in and out of mesh consisting of a key mounted in the keyboard and suitable levers and connecting devices, a pinion mounted rigidly on said shaft, a spring-actuated cog-wheel for driving said pinion, and means for locking said last-named clutch-jaw against rotation.

2. The combination with the type-writer carriage of a drum containing a coiled spring, said drum having cogs integral therewith, a pinion meshing with said drum, a clutch-jaw, means for locking said clutch-jaw in a stationary position, a cord-winding drum having a clutch-jaw integral therewith and loosely

mounted on a suitable shaft, a cord connected to said drum and to the carriage-rod, means for throwing said clutch-jaw in and out of mesh and simultaneously releasing and locking said first-named clutch-jaw, whereby said carriage is returned to starting position.

3. The combination with the type-writer carriage provided with suitable advancing mechanism of a carriage-returning mechanism, said mechanism consisting of a cord-winding drum having a clutch-jaw integral therewith, a cord attached to said drum and to the carriage-rod at the opposite end to which the cord for advancing said carriage is attached, a shaft on which said drum is loosely mounted, a clutch-jaw rigidly mounted on said shaft having a series of apertures in the end thereof, a disk having two plugs adapted to engage two of said apertures for locking said clutch-jaw stationary, a spring mounted on said shaft between said clutch-jaws adapted to separate said clutch-jaws, a spring-actuated cog-wheel adapted to drive said last-described jaw, means for throwing said clutches in and out of mesh and simultaneously releasing and locking respectively said last-described clutch-jaw.

4. In an attachment for returning the carriage of a type-writer, a cord-winding drum, a spring-actuated drum, suitable gearing by which said cord-winding drum is operated by said spring-actuated drum, a cord attached to said first-named drum and to the carriage-rod at the opposite end to which the cord for advancing the carriage is attached, compound levers for connecting and disconnecting said drums through said gearing and a button for operating said levers.

5. In a type-writer provided with a suitable escapement mechanism for driving the carriage from right to left; means for returning said carriage to starting-point consisting of a cord attached to the left side of the carriage-frame, a drum for winding said cord, a second drum provided with a suitable spring for

rotating said first-named drum, a clutch for locking said drums, and a key provided with suitable connecting-levers for operating said clutch whereby said carriage can be started or stopped at any point in the beat thereof.

6. In a type-writer provided with a suitable escapement mechanism for driving a carriage from right to left; the combination with means for returning said carriage to the right, of line-spacing mechanism consisting of a rock-shaft mounted on the carriage-frame, a lever mounted rigidly on said shaft and provided with a finger pivoted thereon for rotating the platen-roller, a handle mounted on said shaft, and a trip mounted on the type-writer frame for operating said handle, said handle being adapted to pass over said trip going to the left without rocking said shaft and to rock said shaft when going to the right.

7. In a type-writer provided with escapement mechanism for driving the carriage from the right to the left; means for returning said carriage to the right consisting of a cord attached to the left side of the frame of said carriage, a drum for winding said cord, a spring-drum for operating said drum, clutch-jaws for locking said drums, and means for throwing said clutch-jaws in and out of mesh consisting of a yoke on one side of said clutch-jaws, a disk on the other side thereof, said yoke having arms attached to said disk, said disk having plugs for inserting in the apertures in the adjacent clutch-jaw, a lever having two prongs or arms attached to said disk, means for operating said lever, and a spring between said clutch-jaws.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of May, 1897.

FRED H. FRY.

Witnesses:

C. W. ROY,

JAMES GILFORD BROWNING.