

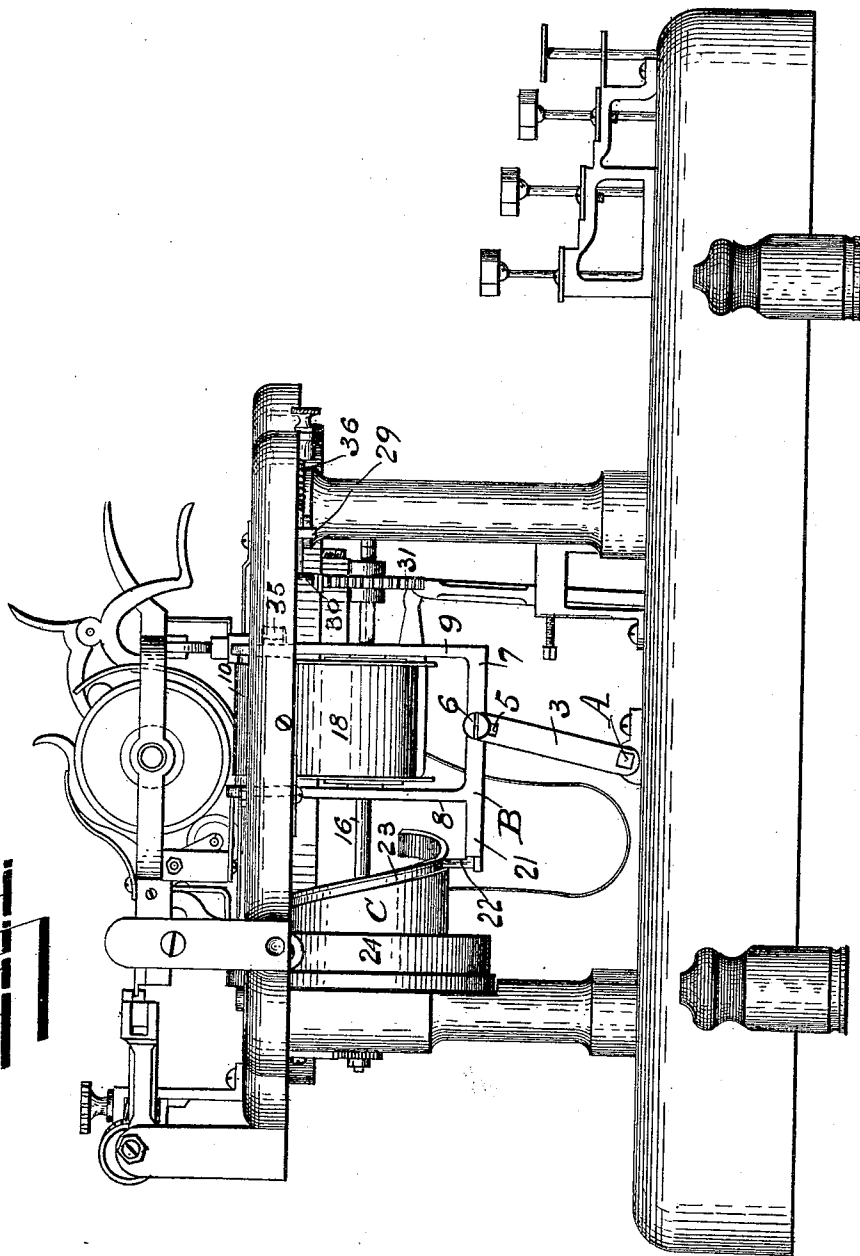
(No Model.)

4 Sheets—Sheet 1.

E. S. SHIMER.  
TYPE WRITING MACHINE.

No. 511,912.

Patented Jan. 2, 1894.



WITNESSES  
*F. L. Ourand*  
*Wm H Bates*

INVENTOR  
*Elmer S. Shimer*  
By *Norman T. Hughes*  
Attorney.

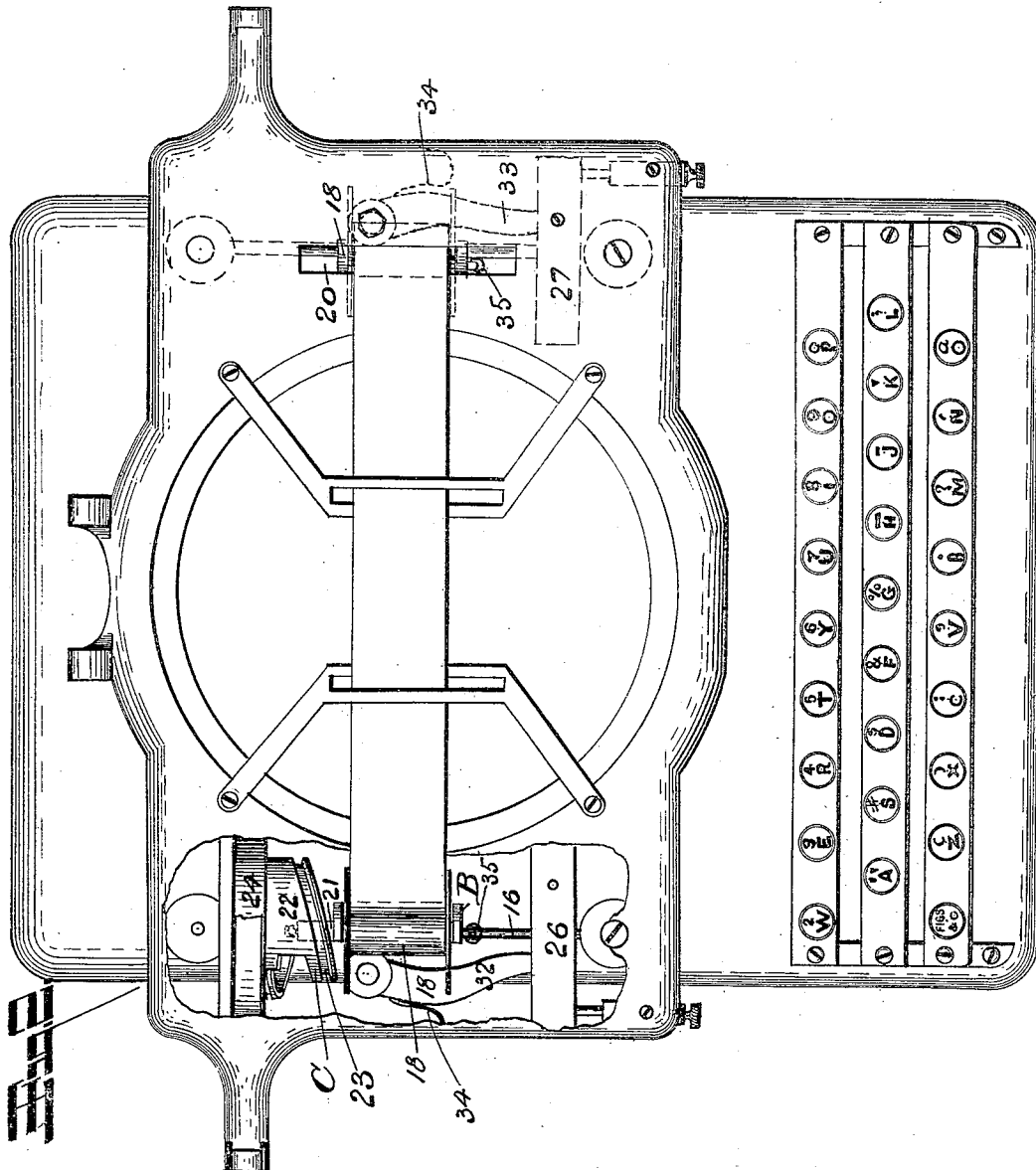
(No Model.)

4 Sheets—Sheet 2.

E. S. SHIMER.  
TYPE WRITING MACHINE.

No. 511,912.

Patented Jan. 2, 1894.



WITNESSES  
F. L. Ourand  
Wm. H. Bates

INVENTOR  
Elmer S. Shimer  
by Horner & Neumann  
Attorneys.

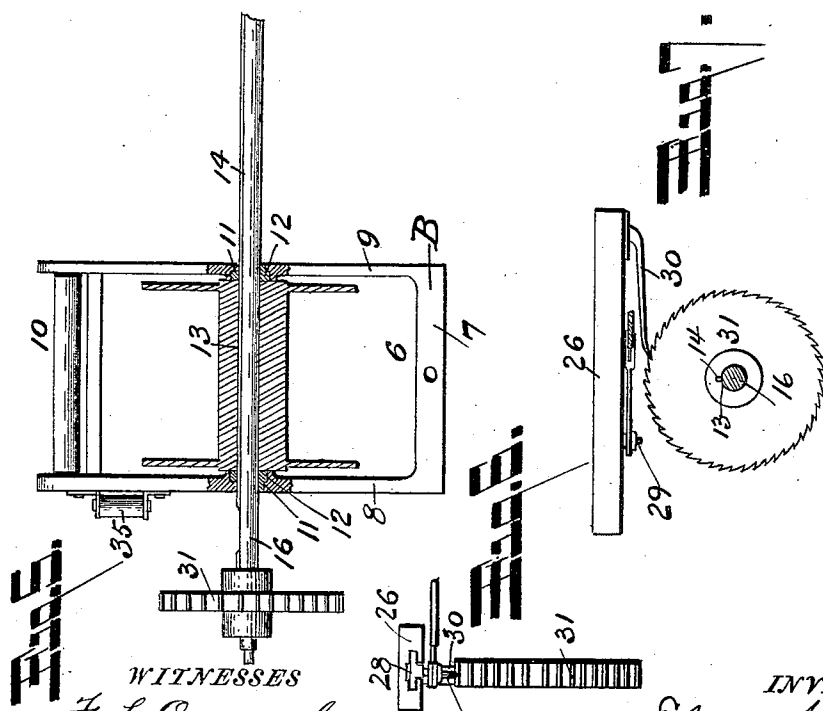
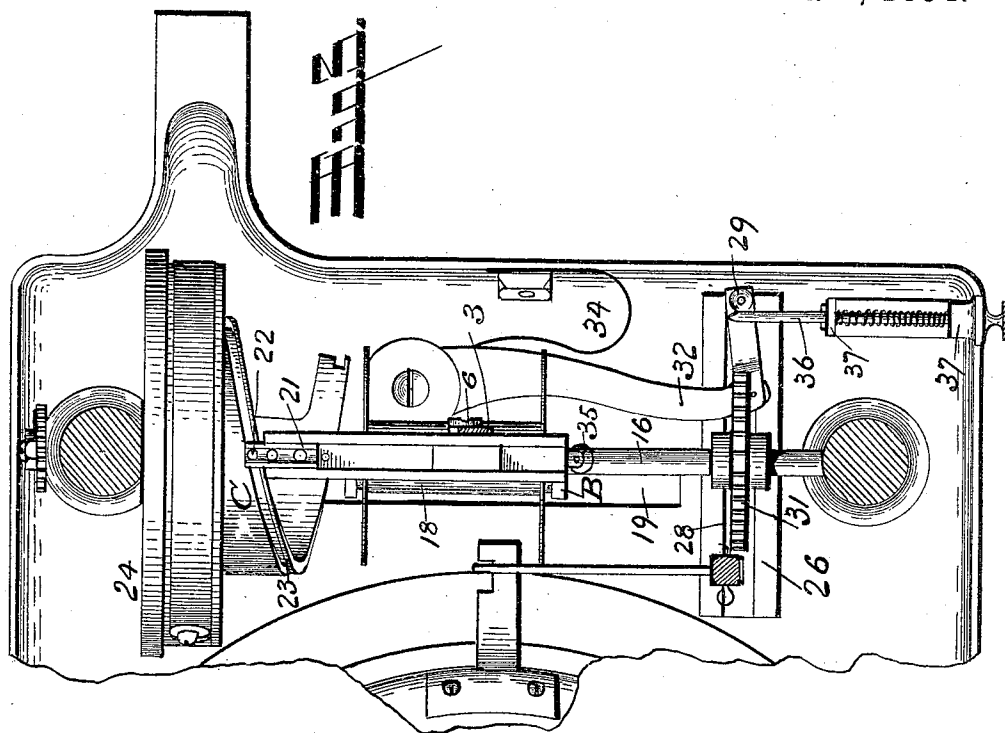
(No Model.)

4 Sheets—Sheet 3.

E. S. SHIMER.  
TYPE WRITING MACHINE.

No. 511,912.

Patented Jan. 2, 1894.



**WITNESSES**

*H. L. Curand*  
*Wm. H. Bates*

**INVENTOR**  
*Elmer S. Shimer*  
by *Hooper & Stephens*  
Attorneys.

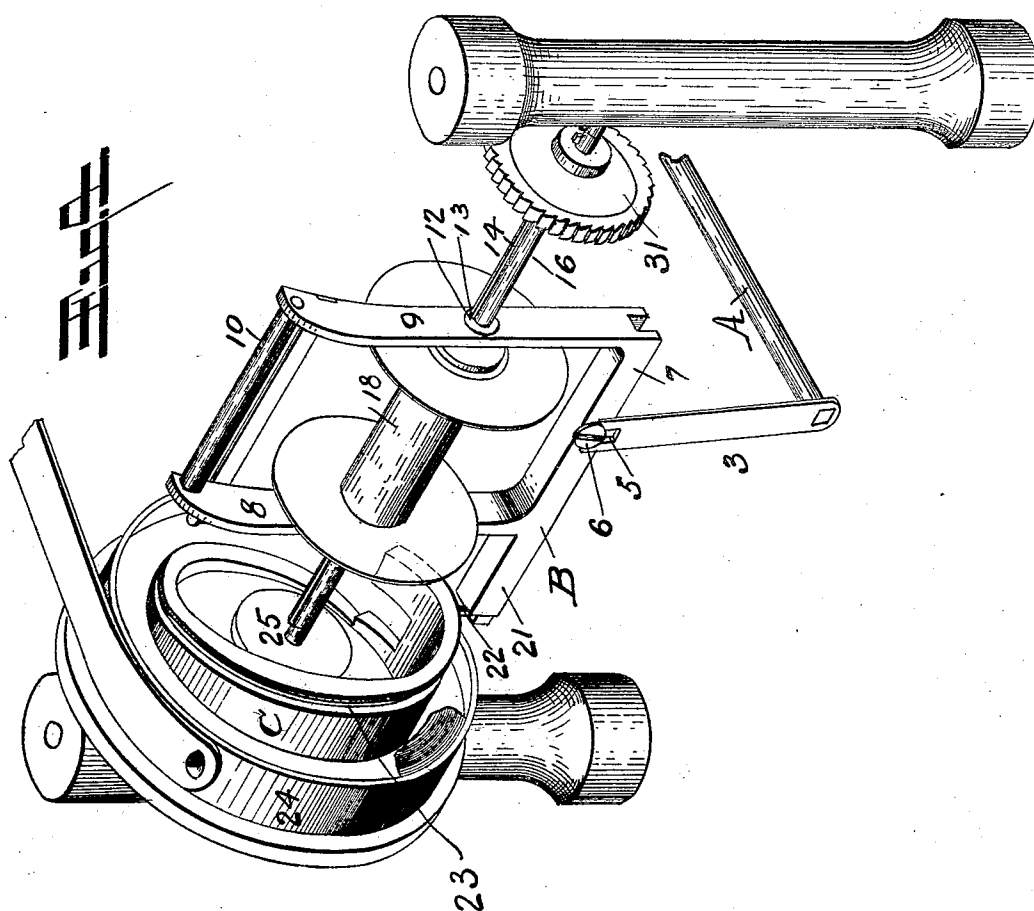
(No Model.)

4 Sheets—Sheet 4.

E. S. SHIMER.  
TYPE WRITING MACHINE.

No. 511,912.

Patented Jan. 2, 1894.



WITNESSES  
F. L. Ourand  
Mm H Bates

INVENTOR  
Elmer S. Skinner  
By Horner & Skyles  
Attorneys.

# UNITED STATES PATENT OFFICE.

ELMER S. SHIMER, OF MILTON, PENNSYLVANIA.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 511,912, dated January 2, 1894.

Application filed April 20, 1893. Serial No. 471,185. (No model.)

### *To all whom it may concern:*

Be it known that I, ELMER S. SHIMER, a citizen of the United States of America, residing in Milton, in the county of Northumberland, in the State of Pennsylvania, have invented certain Improvements in Type-Writing Machines, of which the following is a specification.

My invention has relation to improvements in ribbon-mechanism for type-writing machines, and the object is to provide an improved mechanism for the ribbon to move it laterally or transversely across the line.

My invention consists in the novel constructions and combinations of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is an end view of the machine taken from the left hand. Fig. 2 is a plan view of the ribbon-mechanism arranged in the machine, the carriage and type-bar ring being removed and the top plate broken away to show the parts. Fig. 3 is a bottom plan view of one end of the ribbon-mechanism. Fig. 4 is a perspective of one end of the ribbon shifting mechanism. Fig. 5 is a transverse section through one of the bearings, sleeves and the shaft of one of the ribbon-spools. Fig. 6 is a detail of one of the reversing and feed mechanisms. Fig. 7 is a side view of the same.

A designates a rock-shaft, constituting with its arms the support of the spool-frames, journaled in bearings 1, on the bed-plate of the machine; the ends of the shaft being provided with vertically directed arms 3, 4, formed with bearings 5, in their upper ends which engage bearing-pins 6, on the ribbon-spool frames.

B designates the ribbon-spool frames, which are duplicates in conformation. These frames consist of a bottom-bar 7, having in the middle a bearing-pin 6, engaging in a bearing in the end of the arms of the rock-shaft, and vertical side pieces 8, 9, connected at the top by a roller 10, over which the ribbon runs. Fixed bearings 11, are formed in the side pieces in which are fitted circular boxes 12, adapted to revolve therein, and in the inte-

rior of the boxes is formed a groove 13, which engages on a rib or spline 14, longitudinally fixed on the spool-shafts 16, in order that the bearing-boxes will rotate with the spool-shaft 16. On these shafts are mounted the ribbon spools 18, fixed thereon to turn with the shaft, but so that they may slide longitudinally on the shaft. The upper ends of the ribbon-spool frames with the rollers project a short distance above the face of the machine, in order that the ribbon may be carried free from contact with the metal over which it extends. The slots 19, 20 in the top plate through which the frames project and the ribbon is fed from the spools, are made of such length as to permit the requisite transverse and lateral movement of the frames and ribbon.

From the frame B projects an arm 21, on the end of which is a lug 22, which engages in a spirally arranged cam-race 23, cut in a shell C, fixed on the spring motor wheel 24, journaled in the machine frame as usual. The tread of the cam-spiral or worm 23, is such that the spool frame through the engagement therewith, is drawn transversely the distance of substantially the width of the ribbon, and this distance, is accomplished while the carriage is moved a full line or length over the machine. One of the shafts 16, of the ribbon spools is journaled between the two posts; and the other, being the one at the left hand, is journaled at one end in a bearing on the front post of the machine, and the other end journaled in a stud 25, or other suitable support on the spring-motor wheel. It will now be perceived that as the spring-motor wheel is intermittently rotated through the agency of the usual releasing and engaging mechanism, the shell in which the cam race is formed, is also rotated, and that by the engagement of the arm on the spool frame B, in the cam-race the ribbon frames are moved during the progress of the carriage, so that the ribbon is carried a distance across its width; the lateral movement of the two spools being synchronously and simultaneously effected by the bearing-connections of the arms of the rock-shaft A to the cross-bars of the spool-frames; during this movement the ribbon is not moved longitudinally because there is no mechanism to effect such a longitudinal movement when the carriage is moved to the left; but

in order that the ribbon shall be fed, so that a new portion shall be presented to the type at each transfer of the carriage to the right, I have devised the following described reversing and feeding mechanism. Under the top plate of the machine, at each end are secured two grooved plates 26, 27, the groove having edge flanges which take a sliding piece 28 having a downward pin 29, at the outer ends; and at the other end of each sliding piece is hung a pawl 30 the end of which engages in the notches or ratchets of a wheel 31, on the shaft 16, which carries the ribbon-spools. To the bottom of the top plate are pivotally supported and secured two arms 32, 33, having their outer ends suitably jointed to the slide-pieces 28, to move them in the way of the plates 26, 27, and carry the pawl back to engage with the wheels on the spool-shafts. Springs 34, are secured to the top plate to bear with their free ends against the arms 32, 33, substantially as shown, and move the arms back as the ribbon-spools are moved from front to back when the carriage moves forward from right to left. These arms 32, 33, rest at an incline as shown, with their inner edges engaging against the vertical side piece of the spool frame when in operation, an anti-friction roller 35, being mounted on the side piece of the spool frame to remove the frictional contact between the parts. It will be perceived that when the spool frames are moved toward the rear of the machine the spring in action at the same time pushing the inclined arm inward which carries the pawl back over the wheel in the spool shaft ready to engage therewith. Now when the carriage is drawn back to the right hand end of the machine, the spring motor wheel is rotated a distance, which reverses the operation of the cam-race, and consequently pushes the spool frames toward the front of the machine, and since the arm is in bearing against the roller on the spool frame, it is moved forward or outward, carrying the pawl with it, which being in engagement with the wheel on the spool shaft, that is rotated a distance, and the spools therewith, which moves the ribbon a short distance and thus presents a new ribbon surface to the new line. To lock either the feed mechanisms from action, a spring-actuated rod 36, is let through keepers 37, which may be set behind the stud or pin in the slide-pieces. But one of the feeding mechanisms is used at a time, the other being locked out of operation, and the feed of the ribbon is in the direction of the device left in active force.

What I claim is—

1. The combination in a type-writing machine, of the spool-shafts, laterally movable

ribbon-spools on said shafts, spool-frames provided with a pin on the lower bars thereof, a rock-shaft journaled on the bed of the machine and formed with vertical end-arms having bearings in their upper ends to take the pins on the spool-frames, the motor-wheel formed with a shell having a spiral groove in its circumferential face, and an arm projected laterally from one of the spool-frames and having a pin on the end thereof to engage in the spiral groove in the motor wheel, substantially as shown and described.

2. The combination of the motor-wheel formed with a spirally arranged groove, the ribbon-frames and spools moved back and forth by the connection to the spiral groove in the motor wheel, ratchet-wheels on the spool-shafts, sliding-pawls to engage the ratchet wheels, an arm pivotally connected to the pawls, and a spring to keep the arm against the spool-frame, whereby the forward movement of the spool-frame will rotate the ribbon-spools when the motor-wheel is reversed.

3. The combination of the spool-shafts, the ribbon-spools mounted thereon, the laterally shifting spool-frames, the ratchet-wheels on the spool shafts means as described to shift the spools longitudinally, on the shafts, the spring actuated sliding-pawls drawn back by engagement with the spool-frames, and moved forward to rotate the spool shaft by the forward movement of the spool frame when the carriage is drawn back.

4. The combination of the laterally movable spools, of ratchet-wheels on the shafts of the spools, spring-actuated arms 32, 33, arranged to bear on the spool-frames, slides connected to the free ends of said arms having pins in the ends, pawls on the slides to engage the ratchet-wheels, and spring-actuated rods to engage the pins on the slides and hold the arms away from the spool frames, substantially as and for the purpose specified.

5. The combination of the laterally movable spools, the ratchet wheels on the spool-shafts, arms fulcrumed to bear on the spool-frames, springs to push the arms against the spool-frames, slides connected to the said arms, pawls on the slides to engage the ratchets on the spool-shafts, and means as described, to hold the slides back at discretion with the arms from engagement with the spool-frames, for the purpose specified.

In witness whereof I have hereto set my hand in the presence of two attesting witnesses.

ELMER S. SHIMER.

Attest:

JOS. ANGSTADT,  
CHAS. M. GOODMAN.