No. 719,346. PATENTED JAN. 27, 1903.

G. H. LILLIE.

TYPE WRITER.

APPLICATION FILED AUG. 6, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

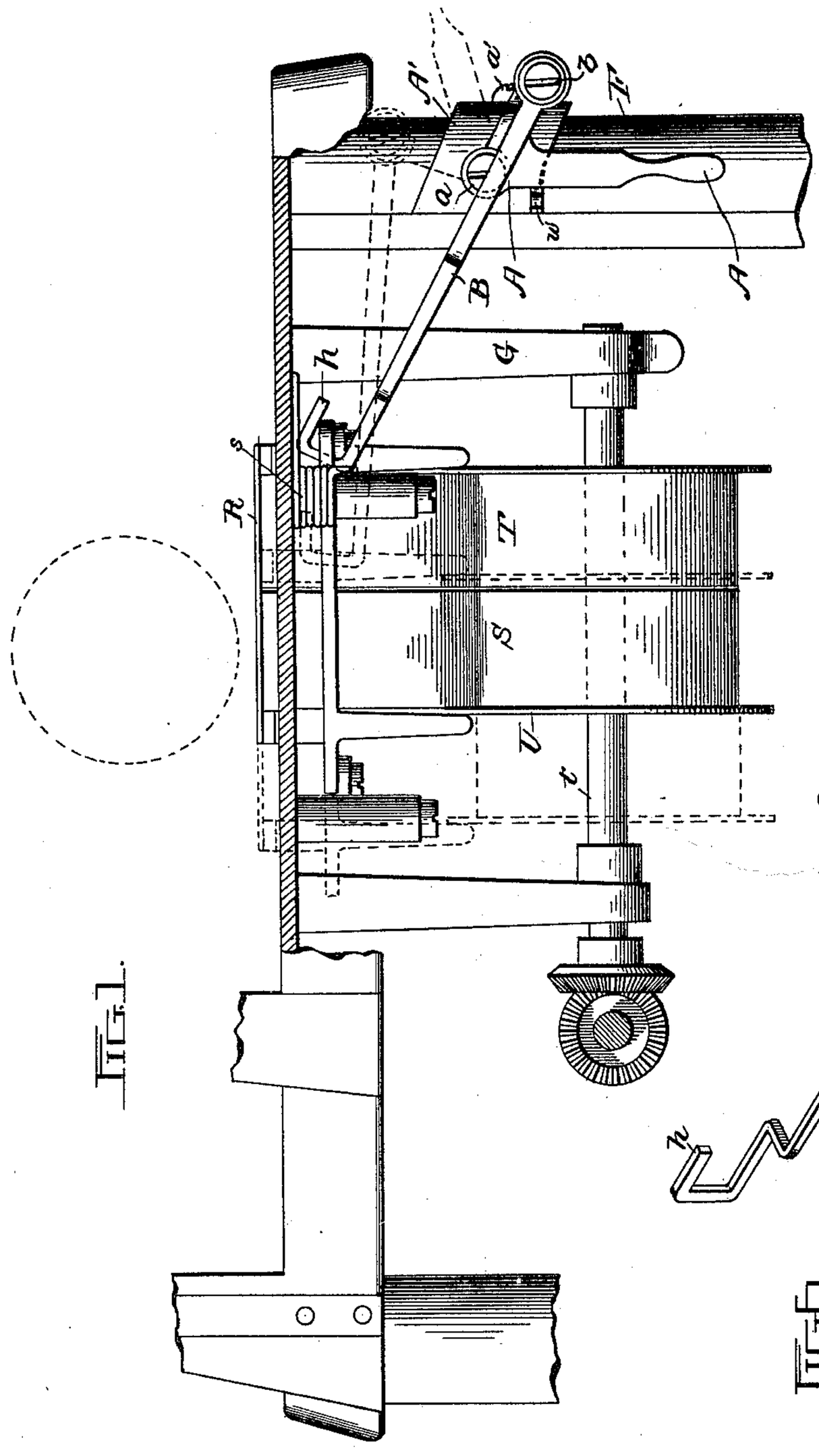


FIG. 1.

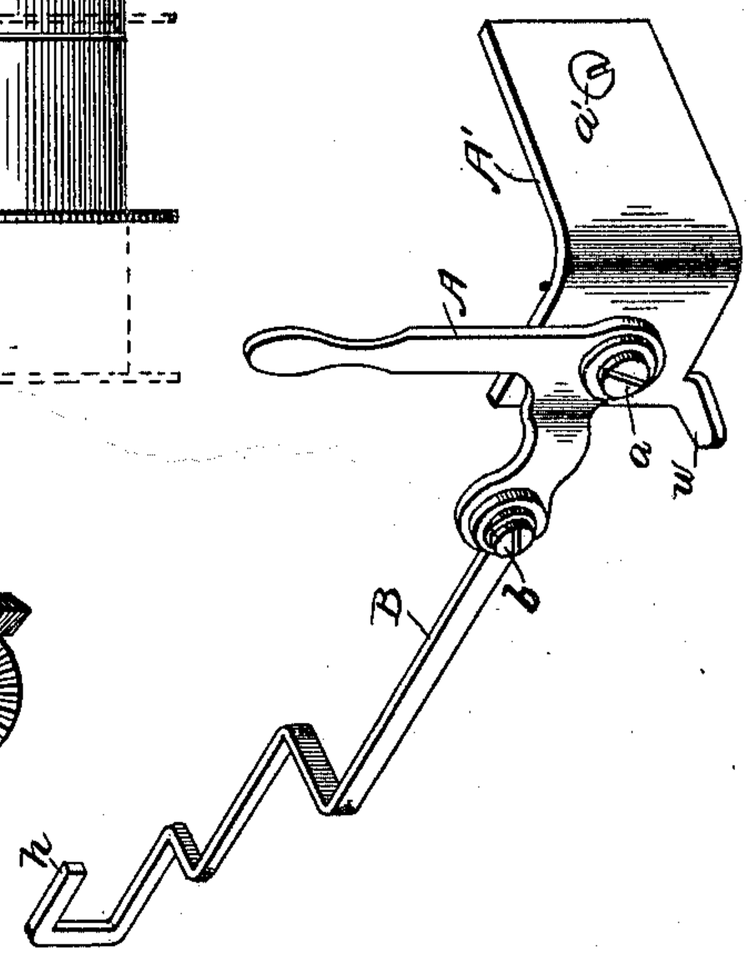


FIG. 6.

Witnesses
G. Howard Walmsley.
Watts T. Estabrook

Inventor
George H. Lillie
By Thomas E. Hodges
Thos Attorney

No. 719,346. PATENTED JAN. 27, 1903.

G. H. LILLIE.

TYPE WRITER.

APPLICATION FILED AUG. 6, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

FIG. 2.

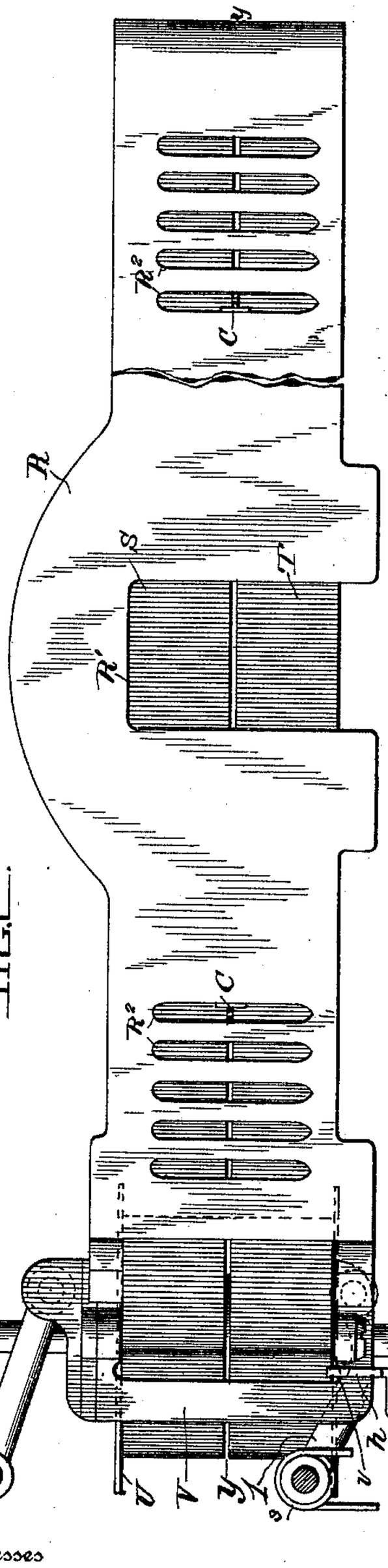


FIG. 4.

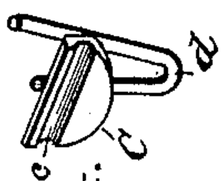


FIG. 3.

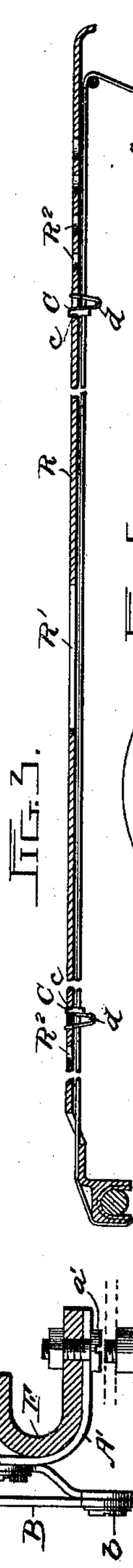
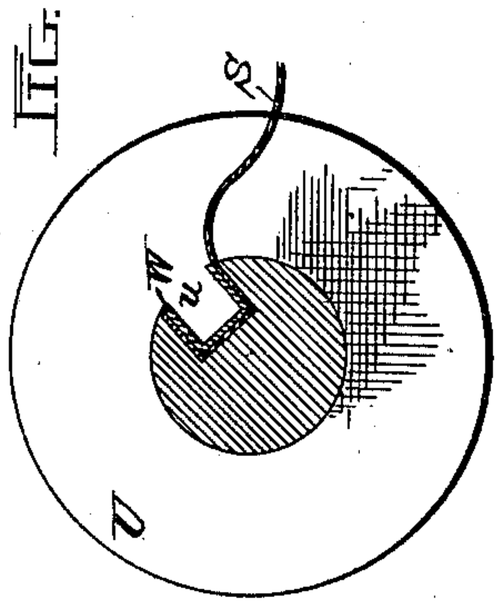


FIG. 1.

FIG. 5.



Witnesses

G. Howard Walmsley.

Watts T. Estabrook

By

Inventor

George H. Lillie

Chas. E. Hodges

His Attorney

UNITED STATES PATENT OFFICE.

GEORGE H. LILLIE, OF DENVER, COLORADO.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 719,346, dated January 27, 1903.

Application filed August 6, 1902. Serial No. 118,676. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. LILLIE, a citizen of the United States, and a resident of Denver, in the county of Arapahoe and State of Colorado, have invented a new and useful Improvement in Type-Writers, of which the following is a specification.

My invention relates to an improvement in type-writers, and has to do more particularly with improved mechanism for carrying a plurality of ribbons side by side and means for shifting from one to the other, a primary object being to permit the use of ribbons of different colors or both record and copying ribbons at the same time, the advantages of such an arrangement being perfectly obvious, as the two ribbons occupy no more space than an ordinary broad ribbon, with the possibility of variation in the color of the print for emphasis or other purposes, with practically no loss of time in making the changes from one ribbon to the other or from one color to the other where different colors of ribbons are used. In addition to the advantages mentioned may be mentioned the fact that for the same length of ribbon less material is necessary, as the width of each ribbon is about half that of the ordinary ribbon, and they may be half as long again.

With the foregoing objects and advantages in view my invention consists in a ribbon-plate such as is ordinarily used on the Remington and all of that class of machines, in connection with means carried thereby for keeping the ribbons apart and preventing their twisting and means for quickly shifting and locking the ribbon-plate to and in either of its extreme positions.

My invention further consists in certain novel features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view from the left-hand end of a type-writer, showing portions of the framework and my improvements attached thereto. Fig. 2 is a plan view of the ribbon-plate, showing the two ribbons carried thereby side by side, the dividers interposed between the ribbons, and showing the shifting mechanism for moving and locking the ribbon-plate. Fig. 3 is a vertical sectional view on the line *y y* of Fig. 2. Fig. 4 is a detached view of one of the dividers. Fig. 5 is a sectional view through one of the ribbon-spools, showing a clip for fastening the ribbon thereto; and Fig. 6 is a perspective view of my complete device detached from a type-writing machine.

R represents a ribbon-plate such as is generally used on the Remington and similar makes of type-writers. The plate shown has the usual open center, as shown at R′, and is provided with transverse slots R^2 at or near its opposite ends.

S and T indicate two ribbons which travel beneath the plate side by side, they being carried over spools U U, mounted in the usual or any approved manner on shafts *t t* at opposite ends of the machine and upon which the spools are capable of sliding, as indicated in dotted lines in Fig. 1, when the ribbon-plate is shifted to bring the desired ribbon into place.

The ribbon-plate is generally hinged to a frame V. This frame V is supported in position over the type-bed by means of a pair of swing-arms 1 1, pivotally secured thereto and to the frame of the type-writing machine at any suitable point. One of these swing-arms is provided with a spring *s*, mounted thereon and adapted to normally retain the ribbon-plate and its frame at one extreme limit of movement, thus operating to normally throw the spools and plate rearward, which action would bring the outer ribbon T normally into position for printing.

A shift key or lever A of bell-crank form preferably, the angle of its parts being acute, is preferably pivoted, by means of a stud *a*, to a bracket A′, which latter is fitted and detachably secured by a bolt, screw, or equivalent means *a′* to the frame F of the machine. A connecting rod or link B is pivotally connected at its outer end, as at *b*, to the shorter arm of the shift key or lever A and preferably on the outer side of the latter, the arm being bent or offset, as shown in Fig. 2, so that the connecting-rod will clear the stud *a*. This connecting-rod, as illustrated, is bent, as shown in Fig. 2, first inwardly around the frame or leg of the machine, then rearwardly alongside the depending arm G, in which one of the shafts *t* is journaled at its forward end. Then the rod is bent inwardly again

around the rear of said depending arm, after which it extends rearward for a third time and terminates in a hook *h*, which enters the slot *v* in the D-shaped frame V, to which the ribbon-plate is hinged. The construction described is merely an approved form of connecting-rod to cause it to occupy the least possible space, and it is obvious that its exact shape might be varied indefinitely according to the place it is to occupy or the machine to which it is to be attached and that it might be differently attached, if desired. It will be noticed that the shift key or lever and spring *s* always operate in opposition to each other—that is to say, the spring always tends to throw the frame-plate and spools backward toward the rear of the machine, as previously stated, and my improved shift key or lever is devised to positively shift the ribbon plate and spools forward against the action of the spring when the other ribbon is to be used and to lock them in that position, and this is accomplished by the peculiar form of shift key or lever, which when thrown downwardly against a stop *w* locks the ribbon plate and spools forward as a result of the forward end of the connecting-rod passing the dead-center or pivotal point of the lever. The release is effected by raising the shift key or lever until the rod repasses the dead-center, when the spring *s* is free to act in its accustomed manner to slide the ribbon plate and spools back to their normal position.

Where ribbon-shifting mechanism is used, as is common with the most approved machines for automatically shifting a single ribbon, this mechanism is disconnected when the two ribbons are used, and the mechanism for shifting them just described is used instead for controlling the position of the ribbon-plate.

As a means for keeping the ribbons apart and preventing their crossing or twisting spring-dividers C C are employed. These are made of spring metal, the upper end being in the form of a head having a groove *c* in one side and a depending V-shaped spring *d*, which serves a double function, one being to hold the divider in position by virtue of its spring action and the other to depend between the ribbons to keep them apart. These dividers are usually inserted in the innermost slot R^2 at each side of the opening R′ in the ribbon-plate. When in place, the groove in the head receives an edge of the slot, and the free end of the V-shaped spring *d* engages the opposite edge of the slot, thus holding the divider securely in place. After being thus placed if not precisely in the center it is possible to slide the divider without removing it to get it into the exact position required. As mentioned, the purpose of these dividers is to retain the two ribbons in their prescribed paths and to prevent their crossing and twisting and to keep the ribbons apart when reeling. As a simple means for attaching these ribbons or, in fact, any ribbon or ribbons to their spools and to avoid pinning, as heretofore, a groove *u* is formed in the ribbon spool or bobbin and the spring clip or clips W are sprung into place, after first inserting the end of the ribbon or ribbons in the groove to clamp the latter in place. To remove the ribbon from the spools, these clips may be sprung out of place with equal facility.

By the use of my invention, as hitherto mentioned, different colors of ribbons may be carried at the same time or a record and copying ribbon may be used side by side. It is likewise evident that two ribbons of the same kind might be carried at the same time.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

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

1. A type-writer attachment comprising a ribbon-plate and dividers detachably and adjustably secured thereto.

2. In a type-writer, a ribbon-plate having transverse slots therein, and dividers detachably secured in said slots.

3. In a type-writer, a ribbon-plate having spring-dividers detachably secured thereto.

4. In a type-writer, a ribbon-plate having transverse slots therein and spring-dividers detachably secured in said slots.

5. The combination with a slotted ribbon-plate, of a divider comprising a grooved head and a V-shaped spring for holding the divider in one of the slots, said spring of sufficient length to extend between two ribbons carried by the plate.

6. A type-writer attachment comprising a ribbon-plate having slots therein, and dividers detachably and adjustably secured in the slots.

7. In a type-writing machine, the combination with a ribbon-plate and a frame therefor, of swing-arms pivotally secured to the frame, a spring for normally retaining the ribbon-plate at one extreme limit of movement, a pivotally-supported lever or key, a stop to limit the movement of the lever, a connecting-rod pivotally secured to the lever or key, the rod also connected to the frame whereby the ribbon-plate may be shifted from one extreme position to the other, the lever and connecting-rod being held in position by the tension of the spring.

8. An attachment for type-writers comprising, in combination with a ribbon-plate, and swing-arms to which the ribbon-plate is pivotally secured, a spring for actuating one of the swing-arms to retain the ribbon-plate in one extreme position, a lever or key, a rod pivotally secured to the lever and adapted to shift the ribbon-plate, the lever adapted to pass a dead-center when the ribbon-plate is brought to one extreme limit of movement,

the spring adapted to retain the lever in the latter position to lock the ribbon-plate in place.

9. A ribbon-plate pivotally supported on swing-arms, a spring for normally retaining the plate and arms in one extreme position, a connecting-rod, adapted to actuate one of the swing-arms, a bell-crank lever pivoted to the frame, one end of the connecting-rod pivotally secured to one arm of the lever, the latter adapted to be moved past its dead-center to move the ribbon-plate to its opposite limit of movement, the spring adapted to retain the lever in the last-named position to lock the plate in the opposite position to that which it normally assumes.

10. A pivotally-supported ribbon-plate adapted to have lateral movement, means for normally retaining it in one extreme position, a rod loosely and removably connected with the ribbon-plate, a lever or key pivoted to the frame, the lever or key adapted to have a movement past a dead-center, a stop for limiting the movement of the lever or key in one direction, the opposite end of the connecting-rod pivotally secured to the lever or key, the lever or key when moved past its dead-center adapted to bring the ribbon-plate to its opposite extreme position, the first-named means adapted to retain and lock the lever in place after it has moved past the dead-center.

11. A ribbon-plate adapted to have a lateral movement, means for normally retaining the plate at one of its extreme positions, a connecting-rod one end of which is detachably connected with the ribbon-plate, a pivotally-mounted lever or key to which the free end of the connecting-rod is pivotally secured at a point adapted to be brought into alinement with the pivotal point of the lever or key, the lever or key adapted to have a movement past the dead-center thus formed to move the ribbon-plate to the opposite extreme position, a stop against which the lever or key contacts, the first-mentioned means adapted to retain and lock the lever against the stop after it has passed the dead-center to hold the plate in the opposite position from that which it normally occupies.

12. A ribbon-plate adapted to have a lateral movement, a spring for normally retaining it in one extreme position, a connecting-rod, one end of which is connected with the plate, a lever or key pivotally secured to a stationary support, the opposite end of the connecting-rod pivotally secured to the key or lever at a point adapted to be brought into alinement with the longitudinal axis of the rod, and the pivotal point of the lever or key, a stop against which the lever or key abuts to limit its movement in one direction, the lever or key adapted to be moved past the dead-center to bring the ribbon-plate to the opposite extreme position, the spring also adapted to retain the lever or key in contact with the stop to lock the ribbon-plate in the opposite extreme position to which it has been moved.

13. In combination with a type-writer, a ribbon-plate adapted to have a lateral movement, means for normally retaining it in one extreme position, a bracket removably secured to the frame, a stop located on the bracket, a lever or key pivotally secured to the bracket, a connecting-rod extending between and connected to the ribbon-plate and lever or key, the lever adapted to shift the ribbon-plate against the action of the retaining means to the opposite extreme position, the retaining means adapted to hold and lock the ribbon-plate in either of its extreme positions.

14. The combination with a ribbon-plate and a spring-actuated arm for normally moving and retaining the plate in one direction and position, of a shift key or lever, a connecting-rod extending from the key or lever to the plate to permit the plate to be shifted, the spring operating to automatically return the plate to its normal position after the lever has passed a certain point.

15. The combination with a movable ribbon-plate, of a hand-operated rock-over lever, a link connecting the ribbon-plate and lever, means for limiting the movement of the lever, the position of the said means being such that the link must cross the pivotal point of the lever before the lever will reach the limiting means.

16. The combination with a movable ribbon-plate and a spring for normally retaining the plate in one extreme position, of a lever, a link connecting the lever and ribbon-plate, the movement of the lever adapted to shift the link across the pivotal point of the lever, and means for limiting the movement of the lever whereby the latter is locked in position.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE H. LILLIE.

Witnesses:
GEORGE L. HODGES,
D. EDGAR WILSON.