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C. SPIRO.

SHIFT KEY FOR TYPE WRITERS.

APPLICATION FILED APR. 28, 1903.

NO MODEL.

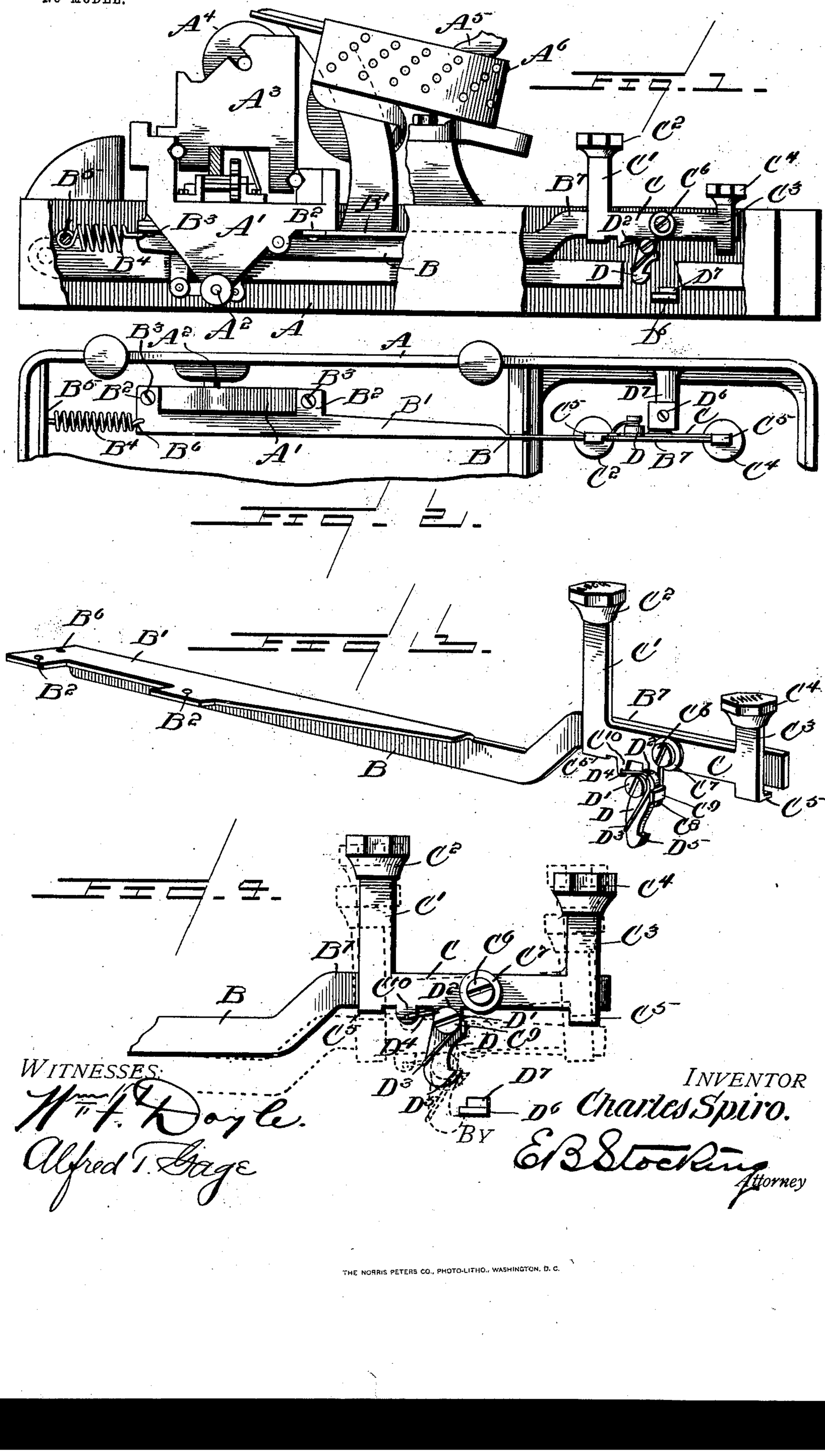

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

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SHIFT-KEY FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 744,255, dated November 17, 1903.

Application filed April 28, 1903. Serial No. 154,653. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPIRO, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Shift-Keys for Type-Writers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a shift-key for type-writers, and particularly to means for automatically holding said key in each of its shifted positions when so desired.

The invention has for an object to provide means by which the ordinary shift-key for changing the relative position between the platen and the type of the type-bar when more than one character is used upon said bar may be retained automatically in such shifted position until released.

A further object of the invention is to provide a structure of rock-lever having at its opposite ends shift and locking keys and provided with a pivoted latch adapted to engage a fixed projection when the latch is thrown into the path of the projection by pressure upon the lock-key.

Another object of the invention is to provide an improved form of shift-lever formed from a blank of sheet material, all of the parts thereof being capable of formation by a stamping and subsequent bending operation.

Other and further objects and advantages of the invention will be hereinafter set forth, and the novel features thereof defined by the appended claims.

In the drawings, Figure 1 is an elevation of one form of type-writer having this invention applied thereto, with parts of the frame broken away. Fig. 2 is a detail bottom plan of one end of a type-writer; Fig. 3, a perspective of the shift-key removed from the machine, and Fig. 4 an enlarged elevation of one end of the shift-lever.

Like letters of reference refer to like parts in the several figures of the drawings.

This invention is adapted for application to any form of type-writer in which the relative position of the platen to a plurality of type carried by the type-bar is shifted for the purpose of writing different characters carried by the type-bar. For the purpose of illustration the invention is shown as applied to the form of type-writer disclosed in Patent No. 714,252, dated November 25, 1902, in which a frame A has pivoted therein a rocking cradle A′ by means of a journal A^2, and this cradle carries a reciprocating carriage A^3, which supports the rotatable platen A^4 adjacent to the type-bar A^5, mounted in a suitable support A^6. The usual driving and escapement means are also provided as disclosed in said patent.

The shift or lever B is formed in any suitable manner, preferably of sheet material stamped from a blank and subsequently bent, and the portion thereof for connection with the cradle just described comprises a flange B′, extending at an angle to the body B and provided with apertured lugs B^2, adapted to be connected with the cradle by any desired means—for instance, by screws B^3, extending through the lugs into a portion of the cradle. For the purpose of normally retaining this cradle in one position a spring B^4 is provided and connected at one end to a fixed part B^5 and at its opposite end to the flange B′ by means of the aperture B^6 therein. The front portion of the shift-bar, or that which lies in the keyboard of the type-writer, is bent upward at B^7 into a plane parallel with the body B, and this portion is provided with a rock-lever C, having at one end a standard C′, carrying a lock-key C^2, and at its opposite end a standard C^3, carrying a shift-key C^4. Beneath each of these standards a laterally-extending flange C^5 is provided, which engages with the under side of the bar, thus limiting the upward movement of the lever in its oscillations. This lever may be pivoted in any desired manner—for instance, by means of a screw C^6, having a washer C^7 and passing through the rock-lever into the shift-bar. Depending from the rock-lever C at one side of its pivotal point is an arm C^8, upon which a latch D is pivoted by means of a screw D′ or other device. This arm C^8 is also provided with a stop-lug C^9 to limit the movement of the latch-finger in one direction, while said latch is normally held in contact with the stop-lug by means of a coil-spring D^2, one free end, D^3, of which engages the latch, while the opposite end, D^4, is connected to a

projection C^{10}, carried by the rock-lever. This latch is provided with a tooth D^5, adapted to engage the plate D^6, carried by the stud or projection D^7, extending inwardly from the frame of the type-writer, when the latch is thrown into the path of said plate.

In the operation of the invention it will be seen that pressure applied to the free end of the shift-bar will oscillate the cradle and carriage supporting the platen beneath the type-bar, and when this downward pressure is applied to the shift-key upon the rock-lever the latch is carried out of the path of its engaging plate, so that as soon as the pressure is removed from the shift-bar the spring will immediately restore the parts to their initial position. When it is desired to write a heading or other portion in different characters than those usually used upon the type-writer—for instance, capital letters—the lock-key upon the rock-lever is depressed, which throws the pivoted latch into the path of its engaging plate and also carries the shift-bar downward, while the latch engages the edge of the plate and is pressed backward until it passes the plate, when the tooth thereof engages the under surface, thus holding the shifted parts in position and the restoring-spring under tension. As soon as it is desired to release the parts it may be accomplished by simply touching the shift-key of the rock-lever, thus throwing the latch out of the path of its engaging plate and permitting the restoring-spring to shift the parts to their initial position. It will also be obvious that the parts may be locked in their shifted position when depressed by the shift-key of the rock-lever by simply transferring the pressure to the lock-key, which will throw the latch into engagement with its plate without permitting the spring to restore the parts.

It will be seen that this construction of shift-bar permits the formation thereof from a blank of sheet material by stamping or cutting and subsequent bending into form, which produces accuracy in construction and permits the ready application of the part to a type-writer without the necessity of any fitting, while it also materially economizes in the construction thereof. It will further be seen that this key is adapted to be applied to any character of type-writer embodying shifting parts by slight modifications in the details of construction, which will be apparent to a mechanic skilled in the art.

It is obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. In a type-writer, a frame provided with a projection, a carriage mounted upon a rocking support, a shift-bar connected with said support, a shiftable member pivotally mounted upon the free end of said bar and depressible therewith, and means carried by said shiftable member for automatically engaging said projection upon the frame in the downward movement of the bar to hold it in its depressed position.

2. In a type-writer, a frame provided with a projection, a carriage mounted upon a rocking support, a shift-bar, a shiftable member connected with said bar to depress the free end thereof, means carried by said member for automatically engaging said plate or projection, and means for moving said engaging means out of the path of said projection.

3. In a type-writer, a rocking support, a restoring-spring extending therefrom to a fixed part, a shift-bar connected to said support, a fixed projection, a rock-lever mounted upon said bar, a latch carried by said lever to engage said projection and means upon the rock-lever for releasing said latch.

4. In a type-writer, a rocking support, a restoring-spring therefor, a shift-bar connected to said support, a fixed projection, a rock-lever mounted upon said bar, a latch carried by said lever to engage said projection, and shift and lock keys provided at opposite ends of said rock-lever to move said latch relative to the projection.

5. In a type-writer, a shiftable member, a restoring-spring therefor, a shift-bar connected to said member, a fixed projection, a rock-lever carried by said bar, a latch carried by said lever to engage said projection, shift and lock keys provided at opposite ends of said rock-lever, means for limiting the vertical oscillation of said rock-lever, and means to limit the oscillation of said latch in one direction.

6. In a type-writer, a shiftable member, a restoring-spring therefor, a shift-bar connected to said member, a fixed projection, a rock-lever carried by said bar, a latch carried by said lever to engage said projection, shift and lock keys provided at opposite ends of said rock-lever, means to limit the vertical oscillation of the said rock-lever, means to limit the oscillation of said latch in one direction, and a tension-spring for holding said latch at one extreme of its movement.

7. A shift-bar having at one end an angularly-disposed flange with spaced connecting-lugs thereon, a rock-lever pivotally mounted entirely upon the opposite free end of the bar to travel therewith, and a latch mounted upon said rock-lever at one side of the pivot thereof.

8. A shift-bar having an angular flange disposed at one end with connecting-lugs thereon, a rock-lever mounted upon the opposite end of said bar, key-standards at each end of said rock-lever, and lateral lugs beneath said standards to limit the oscillation of said lever by engagement with the under face of said bar.

9. A shift-bar having an angularly-disposed flange at one end with connecting-lugs thereon, a rock-lever pivotally mounted at

the opposite end of said bar, key-standards at each end of said rock-lever, lateral lugs beneath said standards to limit the oscillation of said lever by engagement with the bar, a depending arm at one side of the pivot of said lever, and a pivoted latch carried by said arm.

10. A shift-bar having an angular flange disposed at one end with connecting-lugs thereon, a rock-lever at the opposite end of said bar, key-standards at each end of said rock-lever, lateral lugs beneath said standards to limit the oscillation of said lever by engagement with the bar, a depending arm at one side of the pivot of said lever, a pivoted latch carried by said arm, a stop-lug at one side of said latch, and a tension-spring for normally holding said latch in engagement with said lug.

11. In a type-writer, a rocking support, a rocking shift-bar connected therewith, restoring means for said rocking support, means carried by the free end of said bar for automatically engaging a fixed part in the depression of the bar, and means for shifting the engaging means into and out of contacting relation with the fixed part.

12. In a type-writer, a shiftable member, a shift-bar connected therewith, restoring means for said shiftable member, means carried by said bar for automatically engaging a fixed part in the depression of the bar, and means for throwing said engaging means out of the path of said fixed part.

13. In a type-writer, a pivoted cradle and carriage supported thereon, a shift-lever having an angularly-disposed bar connected to said cradle at opposite sides of its pivot, a restoring-spring extending from said bar to a fixed part, and a free end to said key disposed above the body thereof in a plane parallel thereto.

14. In a type-writer, a pivoted cradle and carriage supported thereon, a shift-lever having an angularly-disposed bar connected to said cradle at opposite sides of its pivot, a restoring-spring extending from said bar to a fixed part, a free end of said key disposed in a plane parallel to and above the body thereof, a pivoted device upon the free end of said key, a latching device carried thereby, and a fixed projection to be engaged by said latch.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES SPIRO.

Witnesses:
F. L. SPIRO,
EDWD. E. JONES.