

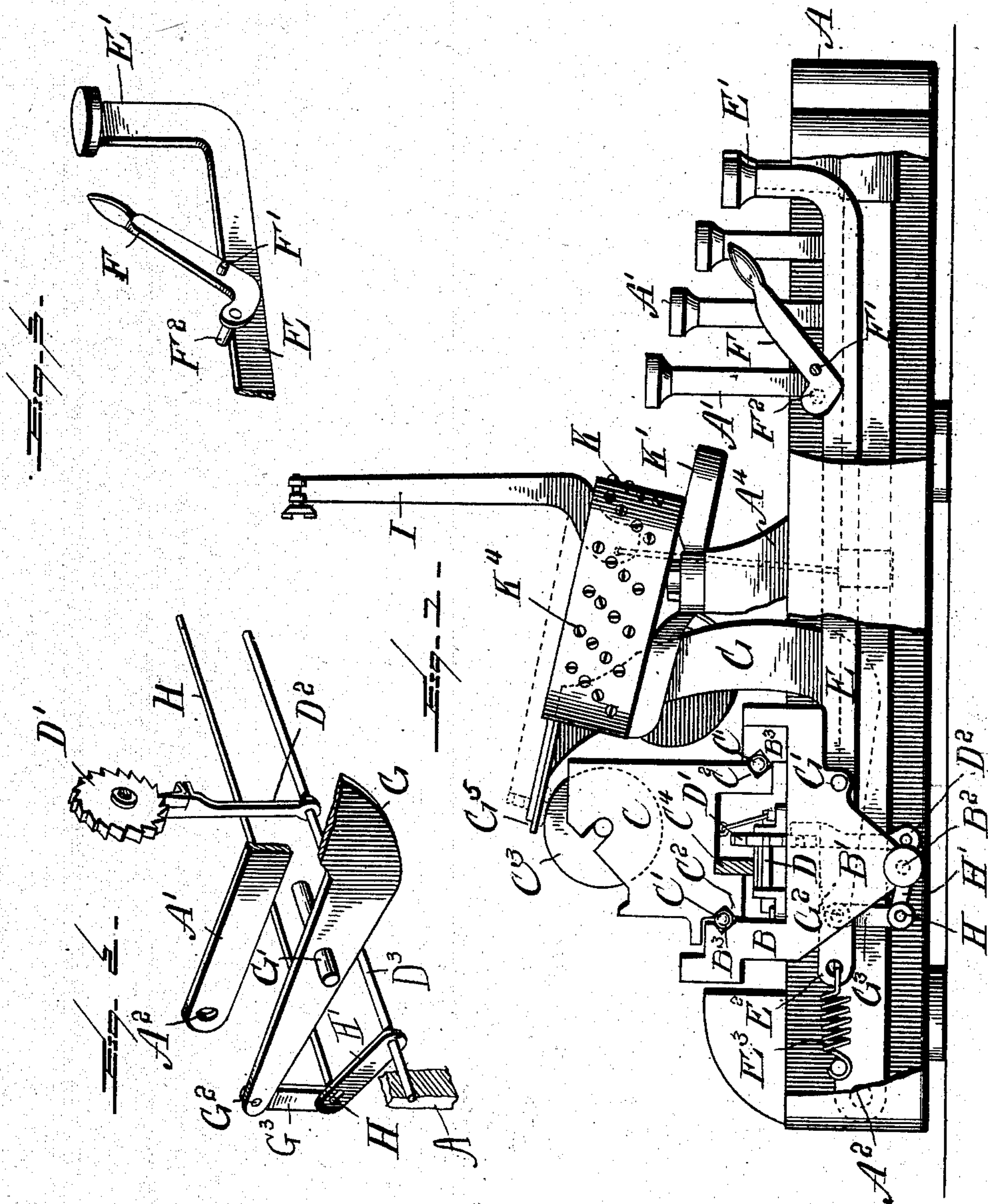
No. 714,252.

Patented Nov. 25, 1902.

C. SPIRO.  
TYPE WRITER.

(Application filed July 20, 1901.)

(No Model.)



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 714,252, dated November 25, 1902.

Application filed July 20, 1901. Serial No. 69,112. (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 Type - Writers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to type-writers, and particularly to that character of machines known as a "bar-lock" type-writer.

The invention has for an object to present an improved construction of shifting device, 15 whereby the paper-carrying carriage is mounted upon an oscillating cradle, so as to be shifted beneath the type carried by the type-bars.

A further object of the invention is to provide means by which this cradle may be shifted or held in either of its adjusted positions and by which the escapement mechanism therefore may accurately operate under all conditions.

25 Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

30 In the drawings, Figure 1 represents a side elevation of a type-writer embodying this invention and having parts of the base broken away. Fig. 2 is a detail perspective of the operating means for the escapement and ribbon mechanisms, and Fig. 3 is a similar view of the shifting-lever.

Like letters of reference indicate like parts throughout the several figures of the drawings.

40 The letter A designates the base of a type-writing machine, which may be of any desired construction or configuration and has mounted therein a series of key-bars A', pivoted at any desired point—for instance, as at A<sup>2</sup>.

45 Upon this base or frame A an oscillating cradle B is pivotally mounted at its opposite ends by means of the depending lug B' and pivoting-apertures B<sup>2</sup>, while the upper face of this cradle is provided with any suitable 50 means for permitting the reciprocation of the carriage C therein—for instance, the race-ways B<sup>3</sup>, carrying ball-bearings C' and adapt-

ed to cooperate with similar ways C<sup>2</sup> upon the carriage. This carriage has mounted at the upper portion thereof the usual paper-platen C<sup>3</sup>, adapted to be rotated therein, and is provided at its lower portion with a feed-rack C<sup>4</sup>, located in the same vertical plane as the pivot B<sup>2</sup> for the cradle and adapted to mesh with a pinion mounted upon suitable 60 supports extending from the base, said pinion being provided with an escapement-wheel D', adapted to cooperate with the pivotally-mounted dog D<sup>2</sup>, carried upon a fixed support. The carriage is provided with any suitable 65 form of tension or spring mechanism for imparting a moving power to the same during the writing operation. For the purpose of oscillating this cradle a shift-key E is secured thereto and projects forward to the keyboard of 70 the machine, where it is provided with the usual finger-piece E', while the opposite end of this key-lever extends to the rear of the cradle, as at E<sup>2</sup>, and is there connected by a spring E<sup>3</sup> to a fixed part of the base, so that 75 said spring is adapted to restore the cradle to its initial position after it has been oscillated or shifted by a depression of the shift-key E. When it is desired to retain the cradle and its operating-bar in the forward shift- 80 ed position with the spring under tension, the same may be accomplished by means of the cam-lever F, which is pivotally mounted at F' upon the base of the machine and provided at F<sup>2</sup> with a projection lying eccentric 85 to its pivot, whereby a shifting of the lever depresses the key-bar E and holds the same in its shifted position to throw the cradle forward.

The ribbon-carrying arms G, which in this 90 character of machine are adapted to have an oscillatory movement in each movement of the universal bail of the machine, are pivotally mounted at G' upon the oscillating cradle B and the end G<sup>2</sup> thereof connected by 95 means of a link G<sup>3</sup> with the universal bail H, which lies beneath all of the key-bars of the machine, whereby a depression of either the key or the space bars will produce a downward movement upon the end G<sup>2</sup> of the ribbon-arms G, thus throwing the upper end G<sup>5</sup> 100 thereof over the platen and carrying the ribbon beneath the type at the instant of contact with the paper upon the platen. A rock-arm



H' is connected to the universal bail and also to the dog mechanism D<sup>2</sup> for the purpose of oscillating this mechanism transversely of the escapement-wheel D at each downward movement of a type-key or space-bar. The rock-arm H' is secured to the shaft D<sup>3</sup>, which is mounted to rotate in a fixed support, and has also secured thereto the oscillating dog mechanism D<sup>2</sup>. The free end of this arm is slotted to permit the necessary movement in the oscillation of the arm and reciprocation of the bail H. It will be understood that each of the type-keys is suitably connected by the usual ligaments with the type-bars I, and such details of construction have not been specifically illustrated in the present application.

The type-bars herein described are pivotally mounted in a segmental bearing K by means of screws K<sup>4</sup>, and this bearing is supported by a plate K' from the standard A<sup>4</sup>.

In the operation of the invention it will be seen that a depression of the shift-key will rock the cradle forward, thereby bringing the carriage and platen to a position beneath a capital character upon the type, if a small character be normally used when the cradle is in its initial position. This same movement of the shift-key places the spring E<sup>3</sup> under tension, so as to restore the parts to their initial or normal position immediately upon the release of said key, while if it is desired to retain the key and cradle in a shifted position the same may be accomplished by a movement toward the left of the lever F. A depression of any of the type-keys causes a similar movement of the universal bail H, which operates the ribbon-shift beneath the type and feeding mechanism, as hereinbefore described.

It will be obvious that changes may be made in the details of construction and configuration of the several parts and that the novel features herein described may be applied to other and different characters of type-writers from that illustrated without departing from the spirit of the invention as defined by the appended claims.

Having described my invention, what I claim is—

1. In a type-writer, a pivotally-mounted cradle, a paper-carriage carried thereon, means for oscillating said cradle upon its pivot, a universal bail beneath said cradle, a ribbon-shift connected to said bail, an escapement actuated by the bail, and a key-bar for depressing said bail; substantially as specified.

2. In a type-writer, a pivotally-mounted cradle, a paper-carriage mounted thereon, and a shift-key rigidly connected to the cradle in a horizontal plane above the pivot and extending to the keyboard of the type-writer; substantially as specified.

3. In a type-writer, a pivotally-mounted cradle, a paper-carriage carried thereon, a shift-key extending from said cradle to the keyboard of the machine, a restoring device ex-

tending from the base of the machine to said cradle upon the opposite side from said shift-key, a feed-rack carried by said carriage, and an escapement mechanism mounted beneath said carriage and rack; substantially as specified.

4. In a type-writer, a pivotally-mounted cradle, a paper-carriage carried thereon, a shift-key extending from said cradle to the keyboard of the machine, a restoring device extending from the base of the machine to said cradle upon the opposite side from said shift-key, a rack-bar secured to said carriage in substantially the vertical plane of the pivot thereof, and an escapement mechanism cooperating with said rack-bar; substantially as specified.

5. In a type-writer, a pivotally-mounted cradle, a paper-carriage carried thereon, a shift-key extending from said cradle to the keyboard of the machine, a restoring device extending from the base of the machine to said cradle upon the opposite side from said shift-key, a rack-bar secured to said carriage in substantially the vertical plane of the pivot of the cradle, an escapement mechanism cooperating with said rack-bar, a ribbon-holding arm pivotally mounted upon said cradle, a depressible key-bar mounted in the base of the machine, a universal bail beneath said key-bar, and a link extending from one end of said ribbon-arm to the universal bail; substantially as specified.

6. In a type-writer, a pivotally-mounted cradle, a paper-carriage carried thereon, a shift-key extending from said cradle to the keyboard of the machine, a restoring device extending from the base of the machine to said cradle upon the opposite side from said shift-key, a rack-bar secured to said carriage in substantially the vertical plane of the pivot of the cradle, an escapement mechanism cooperating with said rack-bar, a ribbon-holding arm pivotally mounted upon said cradle, a depressible key-bar mounted in the base of the machine, a universal bail beneath said key-bar, a link extending from one end of said ribbon-arm to the universal bail, and a connecting device between said universal bail and the escapement mechanism; substantially as specified.

7. In a type-writer, a pivotally-mounted cradle, a carriage mounted to reciprocate therein, a shifting-key rigidly supported from said cradle in a horizontal plane above its pivot and extending to the keyboard of the type-writer for oscillating the cradle, and a spring opposite said key extending from the cradle to a fixed support for restoring said cradle to its initial position; substantially as specified.

8. In a type-writer, an oscillating cradle centrally pivoted at its lower portion, a carriage mounted in said cradle, a rack-bar carried by said carriage in substantially the vertical plane of the pivot of the cradle, and an escapement mechanism cooperating with said rack-bar; substantially as specified.



9. In a type-writer, an oscillating cradle centrally pivoted at its lower portion, a carriage mounted in said cradle, a rack-bar carried by said carriage in substantially the vertical plane of the pivot of the cradle, a pinion in mesh with said rack-bar, an escapement-wheel carried upon the shaft of said pinion, and a dog mechanism adapted to cooperate with said escapement-wheel; substantially as specified.

10. In a type-writer, a cradle having opposite tracks or ways adapted to receive and retain a carriage and provided at opposite ends with depending pivotal projections disposed in substantially the central vertical plane of said cradle; substantially as specified.

11. In a type-writer, an oscillating cradle, a paper-carriage mounted thereon, a ribbon-holder pivotally connected to said cradle, a universal bail, and a link connection between

said holder and bail; substantially as specified.

12. In a type-writer, a pivotally-mounted cradle, a carriage mounted thereon, a key-bar extending from said cradle to the front of the machine, a shifting-lever having an angularly-disposed end portion, a laterally-extending pivot for said lever supported in the frame of the machine above said key-bar, and an eccentric projection extending laterally from the end portion of said lever on the opposite side from the pivot and lying over the key-bar to engage and depress the same; substantially as specified.

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

CHARLES SPIRO.

Witnesses:

MICHAEL P. CORRIGAN,  
H. LESINSKY.