C. C. HARTING.

KEY LEVER FULORUM FOR TYPE WRITERS.

APPLICATION FILED NOV. 15, 1906.

904,201. Patented Nov. 17, 1908.

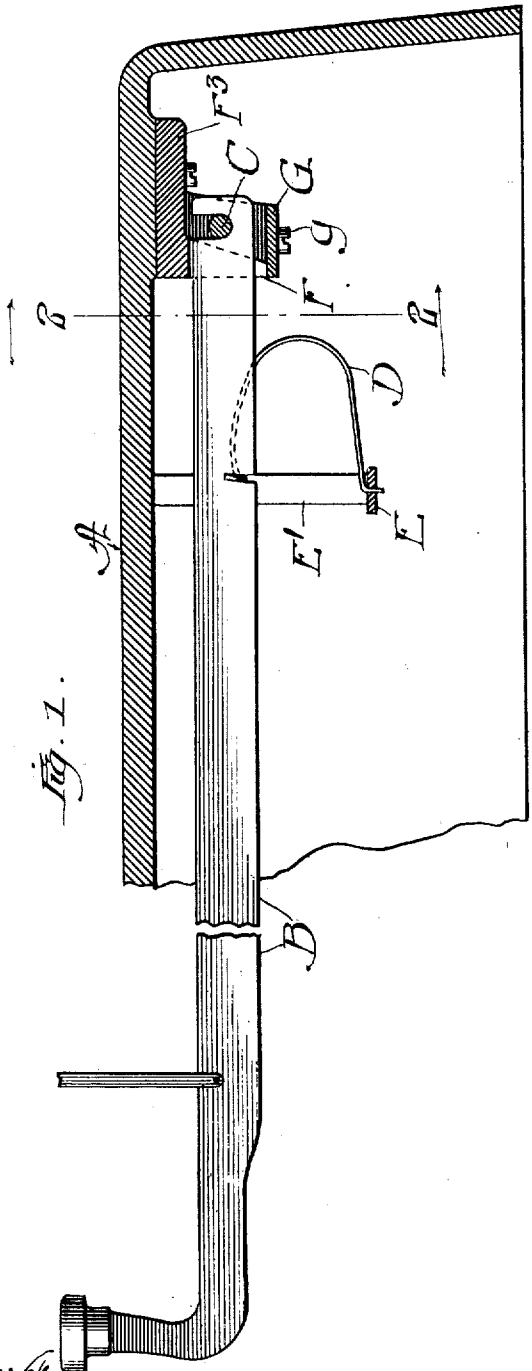


Fig. 1.

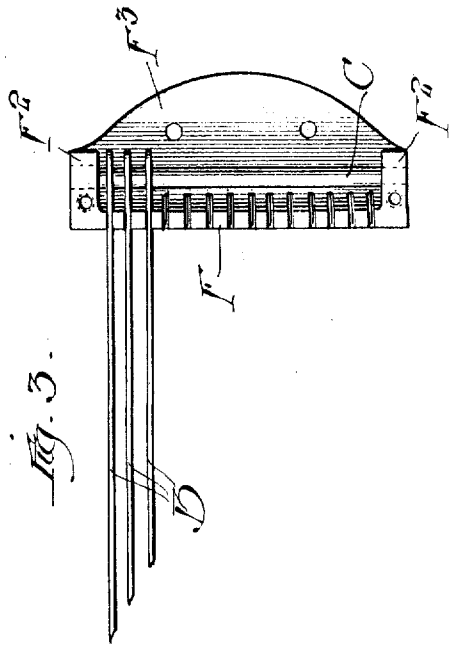


Fig. 3.

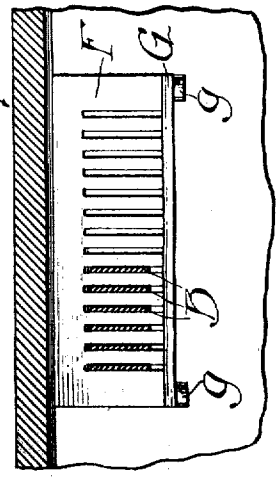


Fig. 2.

Witnesses:
Frank L. Blanchard
F. H. Hyde

Inventor
Clayton C Harting
By Poole & Brown
Attorneys.

UNITED STATES PATENT OFFICE.

CLAYTON C. HARTING, OF WOODSTOCK, ILLINOIS, ASSIGNOR TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

KEY-LEVER FULCRUM FOR TYPE-WRITERS.

No. 904,201. Specification of Letters Patent. Patented Nov. 17, 1908.

Application filed November 15, 1906. Serial No. 343,529.

To all whom it may concern:

Be it known that I, CLAYTON C. HARTING, a citizen of the United States, of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Key-Lever Fulcrums for Type-Writers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in typewriting machines and more especially to improved features in the fulcrum-pivot by which the rear ends of the key-levers are connected with the frame of the machine.

My improvements are shown in the accompanying drawings as applied to a machine of the kind shown in the prior application of Harry Cross and George J. Griffiths, Serial No. 288,179, filed November 17th, 1905. The improvements herein described and claimed are, however, applicable to machines which differ in details of construction from that shown in said prior application.

The invention consists in the matters hereinafter described and pointed out in the appended claims.

In the accompanying drawings:—Figure 1 is a longitudinal vertical section, taken between two key-levers and through the base-frame of the machine. Fig. 2 is a transverse vertical section through the base-frame of the machine, taken on line 2—2 of Fig. 1. Fig. 3 is a detail bottom view of the key-lever fulcrum bracket, showing the rear ends of some of the key-levers and the means for pivotally attaching them to the fulcrum bracket.

As shown in said drawings, A indicates the base-frame of the machine, having a horizontal top portion and nearly vertical downwardly extending flanges at the sides and back margins thereof, forming a hollow structure within which the rear ends of the key-levers are inclosed.

B B indicate key-levers which extend in a direction from front to rear of the machine and are pivotally connected at their rear ends with the base-frame A by a horizontal pivot rod C extending transversely of said key-levers. Said key-levers, in the "Oliver" typewriter, are arranged in two laterally separated groups located one on each side of the longitudinal center line of the machine, and the key-levers B B illustrated in the accompanying drawings constitute a portion of the levers belonging to one of such groups. The pivot rod C constitutes a common pivot or fulcrum for all of the key-levers belonging to one of said groups. Each key-lever is provided with an upwardly opening transverse notch at its rear end adapted for engagement with said pivot rod.

D (Fig. 1) indicates one of the key-lever lifting-springs such as have heretofore been used on the "Oliver" typewriter. Said lifting-spring is located at a point forward of the pivot rod and serves to keep the key-lever in engagement with the pivot rod. Said spring, as illustrated, consists of a wire bent into "U" form, and having its lower end bent downwardly and inserted into a hole in the cross-bar E and its upper end bent to form a hook which engages a notch in the lower edge of the key-lever B. The cross-bar E is supported by two downwardly projecting posts depending from the horizontal top part of the base-frame A. One of these posts is indicated by E^1 (Fig. 1).

F indicates a vertical flange which depends from the top plate of the base-frame and extends transversely of the key-levers adjacent to and in front of the pivot rod C.

F^2 F^2 indicate vertical flanges depending from the top plate of the base-frame and extending transversely of the pivot rod C. Said flanges have holes adapted to receive the ends of the pivot rod C, in which said ends of the pivot rod are secured. The flange F is provided with vertical guide slots through which the key-levers pass and which secure said key-levers against lateral displacement.

The flanges F and F^2 F^2 are preferably made integral with each other and with a horizontal flat top-plate F^3 attached by screws to the horizontal top part of the base-frame A. These parts together constitute an integral part by which the pivot rod is connected with or supported in the machine frame or a part of or upon the same, and which is hereinafter referred to as a bracket.

G indicates a plate secured to the bottom of the bracket by screws *g g* inserted into the flanges F^2 F^2 and serving to prevent the key-levers from being accidentally moved

downwardly or in a direction away from the pivot rod, and being thereby accidentally disengaged from said pivot rod.

It will be seen that in assembling the parts, it is necessary only to insert the pivot rod C, hook the notched ends of the key-levers into engagement with it, place the lifting springs D into position, and attach the plate G to the bottom of the bracket.

Since the lifting springs D constantly exert an upward force or pressure on the key-levers, the latter will remain in place without additional means of attachment, and the plate G serves only to prevent them from being accidentally displaced by an outside force tending to depress their rear ends.

The construction described not only enables the parts to be easily assembled in the original construction of the machine, but also permits any one or all of the key-levers to be easily and quickly removed and replaced in making repairs.

I claim as my invention:—

1. In a typewriting machine, the combination with a machine frame, and a plurality of key-levers, of a pivot rod attached at its ends to the frame and forming the fulcrum for said key-levers, said key-levers having upwardly opening notches adapted for engagement with the fulcrum rod, and a bracket attached to the frame and to which the pivot rod is secured at its ends, said bracket having a depending integral guide flange arranged adjacent to and parallel with the pivot rod, and provided with downwardly opening guide notches to receive the key-levers.

2. In a typewriting machine, the combination with a machine frame, of a plurality of key-levers, a pivot rod forming a fulcrum for said key-levers, said key-levers having upwardly opening notches for engagement with said pivot rod, a bracket having at its ends upright parts to which the ends of said pivot rod are attached, said bracket having an integral guide flange arranged parallel with and adjacent to the pivot rod and provided with downwardly opening guide notches to receive the key-levers, and a plate attached to the bracket beneath the said guide flange for holding the key-levers from movement away from the pivot rod.

3. In a typewriting machine, the combination with a machine frame, of a plurality of key-levers and a pivot rod forming a fulcrum for said key-levers, said key-levers having upwardly opening notches for engagement with the pivot rod, a bracket to which the said pivot rod is attached at its ends, said bracket having a guide flange located adjacent to and parallel with the pivot rod and provided with downwardly opening guide notches, and lifting springs acting on the key-levers and holding the latter in engagement with said pivot rod.

4. In a typewriting machine, the combination with a plurality of key-levers, and a pivot rod forming a fulcrum for said key-levers, said key-levers having upwardly opening transverse notches for engagement with said pivot rod, of a bracket to which said pivot rod is attached at its ends, said bracket having a notched guide flange adjacent to and parallel with the pivot rod, lifting springs acting on the key-levers and holding the same in engagement with the pivot rod, and a plate attached to the bracket beneath said guide flange for holding the key-levers from movement in a direction away from the pivot rod.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 5th day of November A. D. 1906.

CLAYTON C. HARTING.

Witnesses:
WM. H. O'BRIEN,
E. WINDMUELLER.