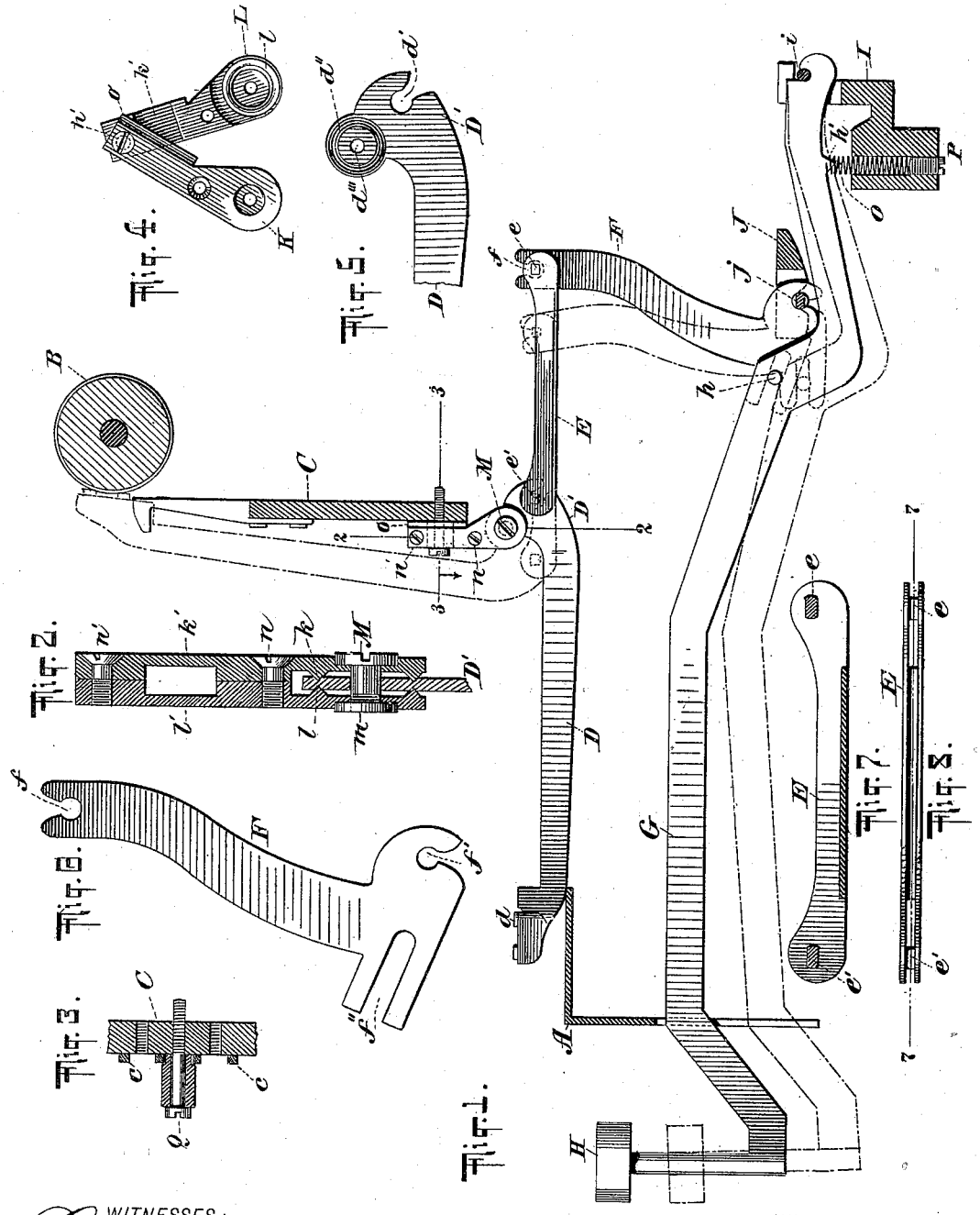
No. 647,035. Patented Apr. 10, 1900.

A. SCHNEELOCH.

TYPE WRITING MACHINE.

(Application filed Nov. 25, 1898.)

(No Model.)



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AUGUST SCHNEELOCH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO JOHN E. THOMAS, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 647,035, dated April 10, 1900.

Application filed November 25, 1898. Serial No. 697,339. (No model.)

To all whom it may concern:

Be it known that I, AUGUST SCHNEELOCH, a subject of the Emperor of Germany, residing at the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to type-writing machines; and its object is to provide a rapid and accurate key-action for such machines, the parts of which may be readily disconnected and put together again and which will admit of the independent adjustment both of the printing-point and of the bearing of each type-bar.

To these ends my invention consists of a device for actuating the type-bar from the movement of the key-lever, comprising an auxiliary lever and connecting-link, of a new journal or bearing for the type-bar, of an adjustable hanger for such journal, and of certain details in construction.

I attain the objects by the mechanism illustrated in the accompanying drawings, in which similar letters indicate similar parts throughout the various views.

Figure 1 is a side view of my device applied to a visible-writing machine. Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is a section on line 3 3 of Fig. 1. Figs. 4 and 5 are detail views, respectively, of the hanger and heel of the type-bar, showing the bearing for such type-bar. Fig. 6 is a detail view of the auxiliary lever. Fig. 7 is a section on line 7 7 of Fig. 8, and Fig. 8 is a detail view of the connecting-link.

The mechanism is shown in the drawings adapted to that class of type-writing machines in which the writing is visible to the operator.

A, J, and I indicate parts of the frame of the machine.

B is the platen, and C the segment on which the hangers supporting the journal of the type-bars are hung.

E is the connecting-link, provided at its ends with flat pins *e* and *e'*, adapted, respectively, to operate in the slotted bearing-openings *f* of the auxiliary lever F and *d'* of the heel D' of the type-bar. The said auxiliary lever F is also provided with slotted bearing-opening *f'*, by means of which it is fulcrumed on flat pin or bar *j*, supported in part J of the frame. The key-lever G is operatively connected with said auxiliary lever F by means of pin *h* and open slot *f'''*.

In providing means for operating the type-bar from the movement of the key-lever it is important that the connecting mechanism be quick-acting, so that there should be the least possible amount of lost motion between the parts. I accomplish this in my device by making all the joints and bearings pivotal and not a combination of pivotal and sliding bearings. The key-lever G, Fig. 1, is fulcrumed on rod *i*, supported by part I of the frame. O is a spring abutting against key-lever G on knob *h'* thereon and against screw P in frame I, whereby an adjustable spring tension of the key-lever is provided. Said lever G is provided with pin *h*, operating in open slot *f''* of lever F, so as to work said lever F upon its fulcrum *j* as said lever G is worked upon its fulcrum. Connecting-link E communicates motion from lever F to type-bar D, being connected with them, respectively, by the pivotal bearings *e f* and *e' d'*. The dotted lines show the position of the parts when the key H is depressed, the only sliding motion of the action being an inappreciable amount of pin *h* in slot *f''* It is also important that the several parts of the key-action may be readily disconnected independently of the rest of the machine for purposes of cleaning, repairing, and the like. I therefore have provided a new system or combination of open joints or bearings and a new split bearing for the type-bar.

Great difficulty has been encountered in producing a type-writing machine in which the alinement of the writing produced thereby is and may be maintained accurate. A common method of accomplishing this result is by changing the position of the type *d* on type-bar D. As the type is soldered to the bar, such a method of adjustment involves delay and expense. By moving the journal

on the type-bar toward or away from the printing-point of the platen the desired result may be accomplished. I provide for such adjustment of said journal in the following manner: Said journal is carried by the hanger comprising the parts K and L and means for uniting them. A slot is formed in said hanger by the cut-away portions k' and l', respectively, of the parts K and L. A set-screw Q passes through this slot, screwing into segment C and holding the hanger in position. When the set-screw is loosened, the hanger may be raised or lowered, so as to bring type d into proper alinement. Grooves o in the hanger operating with slides or rails c on the segment may also be employed to give steadiness to the hanger and guide it as it is being adjusted. It is also important that the action of the type-bar be free from vibration and accurate, and at the same time it should be allowed to operate with as little friction as possible. I have provided a new journal embodying these features and means of adjusting said journal, whereby the proper action of each type-bar may be easily maintained as the machine becomes worn by use. My new journal is also dust-proof, which is one of the principal features of my invention, and I do not limit myself to the particular construction described—as, for instance, the grooves on the heel and the rings on the pieces K and L might be transposed without departing from my invention. I now proceed to describe said journal.

Referring to Figs. 2 to 5, inclusive, the heel D′ of the type-bar is extended so as to provide room on each side of said extension of the heel for similar circular grooves d'', concentric with each other. Each of the parts K and L is cut away, so as to leave on each a circular rib or ring k and l, respectively, said rings being adapted to operate or oscillate one in each of said grooves d'', and so as to form the only points of contact between said extension of heel D′ and said parts K and L. Said parts K and L, I then place upon said extension of heel D′, so that ring k fits in one of the grooves d'' and ring l in the other of said grooves, and screw the parts together by screws n and n'. The whole is then attached in any convenient manner in its proper position on segment C. Additional steadiness may be given this journal by providing bearing-opening d''' in heel D′ concentric with grooves d'' and similar bearing-openings in pieces K and L concentric, respectively, with rings k and l and passing through the bearing-opening thus formed the type-bar bearing-pin M, which is held in position by nut m. It will readily be understood that a second leverage is thus obtained and that by the regulation of bolt-pin M the journal may be properly adjusted. From this split journal the type-bar D may also be readily removed.

The parts of the key-action may be assembled as follows: The type-bar having been adjusted, the flat pin e' of the connecting-link E is inserted in the bearing-opening d' of the type-bar and the flat pin e of said connecting-link is inserted in the bearing-opening f of the lever F, and then the bearing-opening f' of said lever F is adjusted upon the flat pin or bar j. The pin h of the key-lever G is then placed in the open slot f'' of said lever F, and when the open bearing at the rear of said key-lever has been placed upon the rod i the several parts will be held in proper position by adjusting-spring O.

What I claim, and desire to secure by Letters Patent, is—

1. In a key-action for type-writing machines comprising a key-lever, an auxiliary lever, an oscillating type-bar, and a connecting-link, the means of rendering said parts readily separable from each other and the machine consisting of a split journal for the type-bar, slotted bearing-openings in said type-bar and said auxiliary lever coöperating with flat pins on said connecting-link, a second slotted bearing-opening in said auxiliary lever coöperating with a flat pin or bar on the frame of the machine, an open slot in said auxiliary lever coöperating with a pin on said key-lever and a half-open bearing-opening on said key-lever coöperating with a pin or rod on said frame.

2. In a key-action for type-writing machines comprising a key-lever, an auxiliary lever, an oscillating type-bar, and a connecting-link, the means of rendering said type-bar adjustable, and said parts readily separable from each other and the machine, consisting of a split journal for the type-bar borne by a hanger provided with a slot and set-screw adapted to pass loosely through said slot and into the frame of the machine, slotted bearing-openings in said type-bar and said auxiliary lever coöperating with flat pins on said connecting-link; a second slotted bearing-opening in said auxiliary lever coöperating with the flat pin or bar on the frame of the machine; an open slot in said auxiliary lever coöperating with the pin on said key-lever and a half-open bearing-opening on said key-lever coöperating with a pin or rod on said frame.

3. In a key-action for type-writing machines comprising a key-lever, an auxiliary lever, an oscillating type-bar, and a connecting-link, the means of rendering said type-bar adjustable, and said parts readily separable from each other and the machine, consisting of a split journal for the type-bar borne by a hanger provided with a slot and set-screw adapted to pass loosely through said slot and into the frame of the machine, and a sliding bearing for said hanger on said frame; slotted bearing-openings in said type-bar and said auxiliary lever coöperating with flat pins on said connecting-link; a second slotted bearing-opening in said auxiliary lever coöperating with the flat pin or bar on

the frame of the machine; an open slot in said auxiliary lever coöperating with the pin on said key-lever and a half-open bearing-opening on said key-lever coöperating with a pin or rod on said frame.

4. A journal or bearing consisting of a two-piece stationary part, each of said pieces having thereon a circular rib adapted to operate in a circular groove one on either side of the movable part, and means of binding together the said two pieces of the stationary part so that the only points of contact between said stationary part and said movable part are those between said ribs and said grooves.

5. A journal or bearing consisting of a two-piece stationary part, each of said pieces having thereon a circular rib adapted to operate in a circular groove one on either side of the movable part, and means of binding together the said two pieces of the stationary part so that the only points of contact between said stationary part and said movable part are those between said ribs and said grooves, a bearing-opening concentric with said grooves and said rings and a bearing-pin passing through said opening.

6. A journal or bearing consisting of a two-piece stationary part, each of said pieces having thereon a circular rib adapted to operate in a circular groove one on either side of the movable part, and means of binding together the said two pieces of the stationary part so that the only points of contact between said stationary part and said movable part are those between said ribs and said grooves, a bearing-opening concentric with said grooves and said rings, and a screw-bearing pin passing through said opening whereby the frictional contact of said rings in said grooves may be adjusted.

In testimony whereof I affix my signature, in the presence of two witnesses, this 23d day of November, 1898.

AUGUST SCHNEELOCH.

Witnesses:
C. W. WESTON, Jr.,
E. W. STARR.