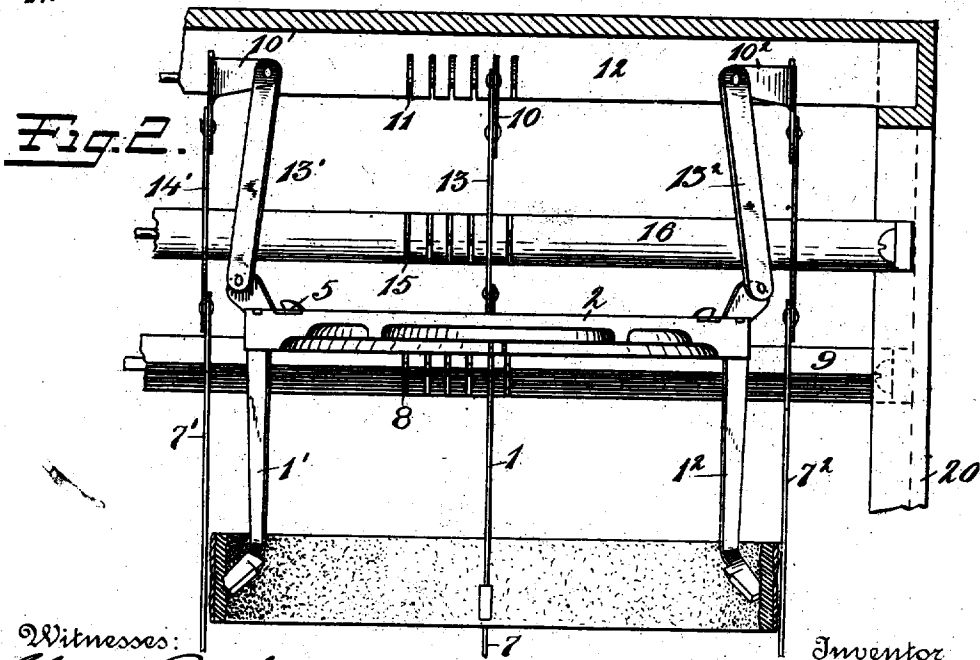
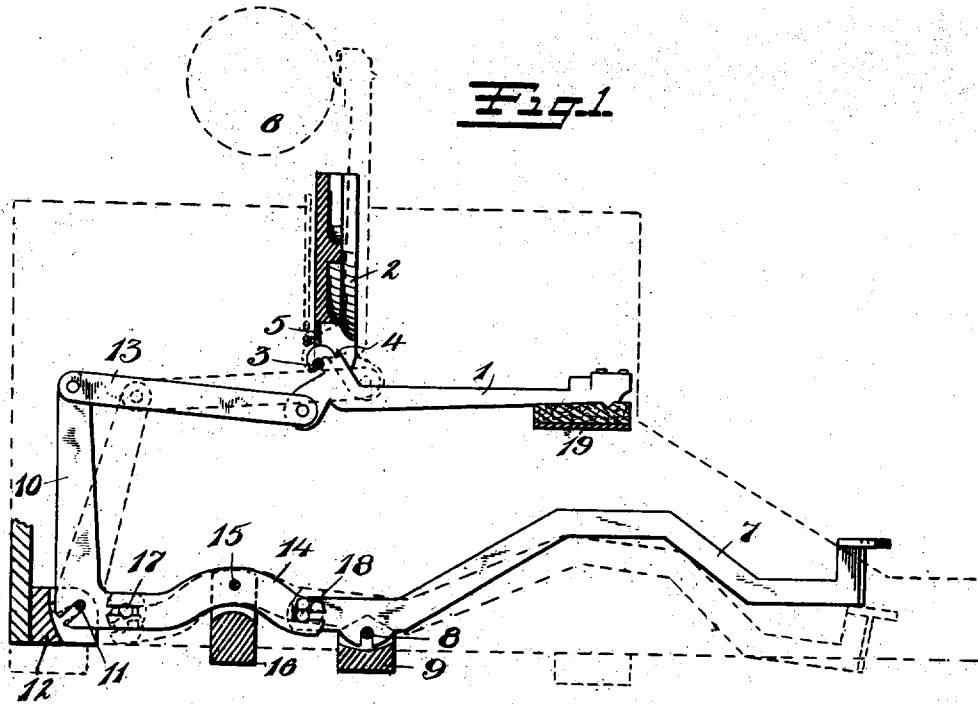


J. ALEXANDER.
 TYPE WRITER KEY AND TYPE BAR MECHANISM.
 APPLICATION FILED OCT. 8, 1908. RENEWED MAY 26, 1910.

974,335.

Patented Nov. 1, 1910.

2 SHEETS—SHEET 1.



Witnesses:
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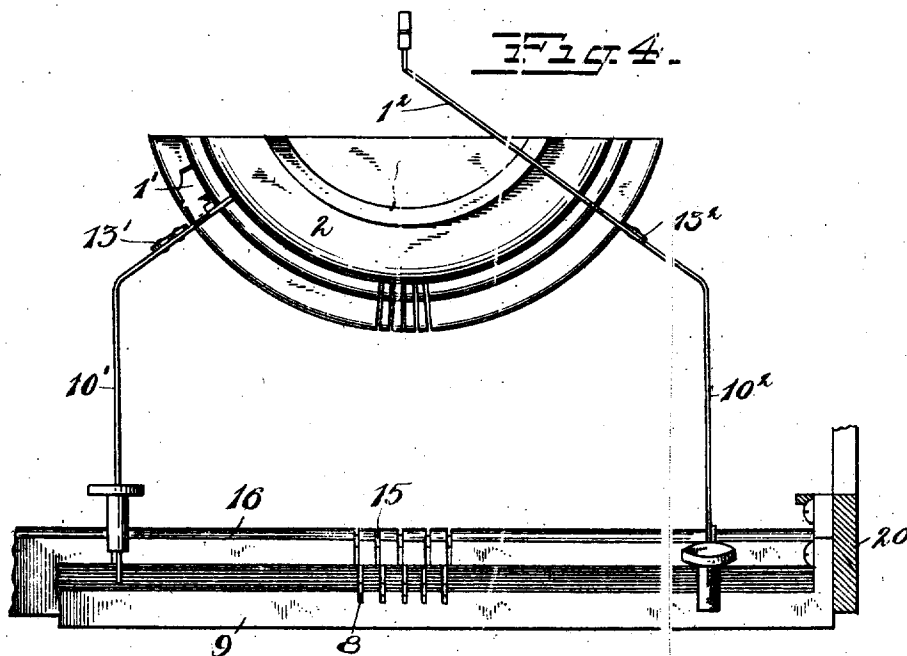
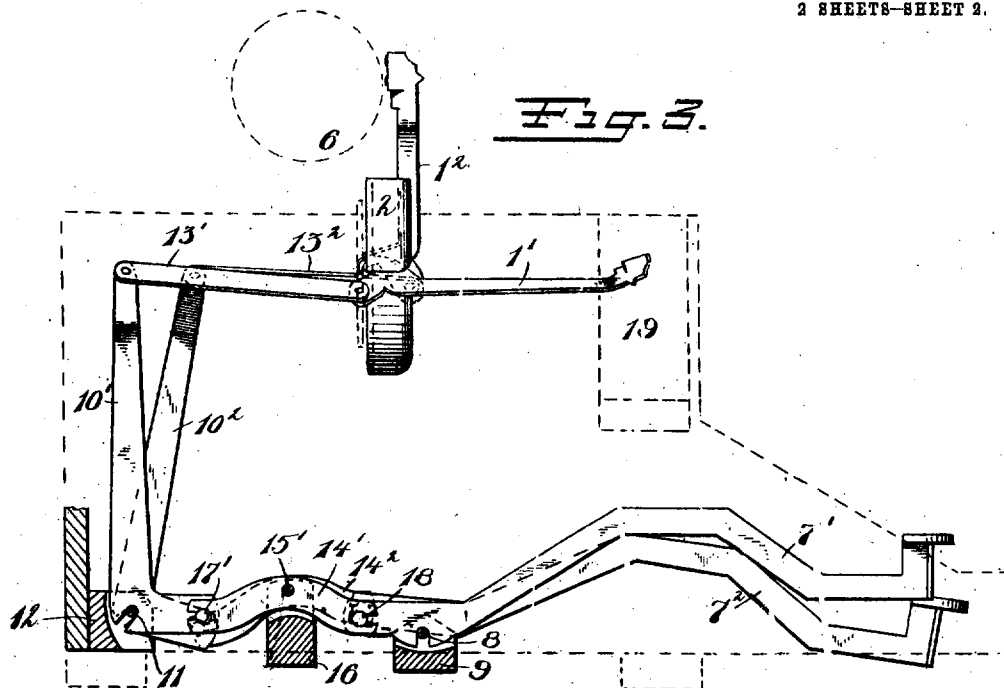
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Witnesses:

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UNITED STATES PATENT OFFICE.

JESSE ALEXANDER, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS,
OF ONE-HALF TO EMMA SCHEU SCHORCHT, OF BUFFALO, NEW YORK.

TYPE-WRITER KEY AND TYPE-BAR MECHANISM.

974,335.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Continuation of application Serial No. 219,725, filed August 6, 1904. This application filed October 8, 1908.
Serial No. 456,804. Renewed May 26, 1910. Serial No. 563,623.

To all whom it may concern:

Be it known that I, JESSE ALEXANDER, a citizen of the United States, residing at Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Type-Writer Keys and Type-Bar Mechanism, of which the following is a full, clear, and exact description.

My invention relates to improvements in typewriters, and particularly to a key and type bar construction adapted for use with what may be termed a front strike machine.

The object of the invention is to provide a construction which is simple and efficient in its operation, the parts being so assembled that they may be disassembled readily when desired. It is desired also to so perfect the touch that it shall be elastic and as nearly uniform throughout the entire keyboard as possible.

The invention consists in mounting a series of typebars on the arc of a circle in front of and below a revoluble platen. These typebars are operated by a series of keybars which are pivoted below and may be arranged as in the usual standard keyboard. These keys and typebars are connected by intermediate mechanism consisting of a series of pivoted L-shaped levers, the upper ends of which are connected to the type bars and a series of tilting levers pivoted in front and connected to the horizontal arms of the L-shaped levers and to the rear of the key levers.

The construction and operation will be more readily understood on an inspection of the accompanying drawing.

Figure 1 is a side elevation of one unit of mechanism showing the supports in cross-section and the frame of the machine and platen and also the mechanism in the printing position dotted. Fig. 2 is a plan view of the supporting members together with three units of mechanism, the left-hand end of the support being broken away. Fig. 3 is a side elevation of two units of the mechanism at the outside edge of the series. Fig. 4 is a front elevation of the same.

1 represents a typebar which is pivotally carried by the typebar plate 2.

3 is the pivot rod on which the series of typebars are pivoted. The typebars are

provided with shoulders as at 4 for engagement with the universal bar 5 which fits into the rear of the typebar plate 2. This universal bar operates the usual carriage feeding mechanism and ribbon operating mechanism as is common in machines of this general character.

6 indicates a platen.

7 is one of a series of key-levers which has a pivot rod 8 carried by the slotted supporting beam 9.

10 is an L-shaped lever pivoted on the rod 11 carried by the slotted back beam 12. The upright arm of the lever is connected by a link 13 to the rear end of the type bar 1.

14 is a tilting lever supported by the pivot rod 15 which is carried by the slotted beam 16. This tilting lever 14 is slotted at both ends and engages with pins 17 and 18 carried by the L-shaped lever and the key lever, respectively.

19 indicates the gasket or mat against which the type bars rest. The machine to which this construction is adapted to be particularly used is of the single shift class in which two type are carried by a single type bar and the platen is moved by some suitable mechanism from the lower to the upper case position.

20 is a lower side frame of the machine forming a support for the beams 9, 12, 16.

When the front end of the key lever 7 is depressed, it raises the front end of the tilting lever 14 and thus depresses the front end of the L-shaped lever 10 so as to throw the upright arm forward and by means of the link 13 raise the type bar 1 to the printing position. The connections between these levers is particularly advantageous in operation since although there is no great lost motion there is nevertheless sufficient play in the joints and by reason of the compressibility of the link 13 to insure an elastic rather than a rigid touch.

The intermediate L-shaped levers 10 vary in length for the units from the center toward the outer edges of the machine in order to more effectually and properly connect them to the type bars. It will be noted on inspection of Fig. 1 that the length of the upright arm of lever 10 is such that the link 13 passes from the position downwardly

inclined toward the forward end to a position slightly inclined upwardly as it passes from the position of rest to the printing position. The angle of connection is such as to give the full operative pressure between the parts in operation.

All of the key levers being pivoted on the beam 9 can be removed from the machine at any time by simply removing the beam 9. In a similar manner all the tilting levers 14 being pivoted on the beam 16 may be removed from the frame of the machine. Similarly the L-shaped intermediate levers being all pivoted to the beam 12 may be removed at one time when the type bars are unhung by removing the beam 12. The connection between the tilting levers and the key levers and intermediate levers is such as to permit of the removal of any one of these sets of parts without interference with the others. The key levers and the intermediate levers being slotted and thus engaging their pivots in a removable or detachable manner, render it very easy to take out or replace a single lever when desired.

What I claim is:

1. A key and type bar construction for a typewriter including a pivoted type bar having a rearward and downward extension therefrom, an L-shaped intermediate lever to the rear thereof, having an upright arm and a horizontal bar, the upright arm being connected by a link to the rearward extension of the type bar adapted to exert an upwardly inclined thrust thereon, a pivoted key lever, and a tilting lever pivoted to the frame connecting in the same plane the key lever and the horizontal arm of the intermediate lever.

2. A key and type bar construction for a typewriter including a pivoted type bar having a rearward and downward extension therefrom, a pivoted key lever, a pivoted L-shaped intermediate lever, a link connecting said lever to the type bar adapted to exert an upwardly inclined thrust thereon, a pivoted tilting lever connecting in the same plane said lever to the key lever, a removable beam forming a support for the pivot of said intermediate lever, and a beam forming a support for the pivot of said tilting lever.

3. A key and type bar construction for a typewriter including a pivoted type bar having a rearward and downward extension therefrom, a pivoted key lever, a pivoted L-shaped intermediate lever, a link connecting said intermediate lever to the type bar and adapted to exert an upwardly inclined thrust thereon, a pivoted tilting lever connecting in the same plane said lever to the

key lever, a beam forming a support for the pivot of said key lever, removable means for securing said key lever pivot beam to the frame of the machine and a beam forming a support for the pivot of said tilting lever.

4. A key and type bar construction for a typewriter including a pivoted type bar, having a rearward and downward extension therefrom, a pivoted key lever, a pivoted L-shaped intermediate lever, a link connecting said intermediate lever to the type bar and adapted to exert an upwardly inclined thrust thereon, a tilting lever connecting in the same plane said lever to the key lever, a beam forming a support for the pivot of said tilting lever, and removable means for securing said tilting lever pivot beam to the frame of the machine.

5. A key and type bar construction for a typewriter comprising a series of type bars pivoted on an arc of a vertical circle, each type bar being provided with a downward and rearward extension, a series of intermediate levers to the rear thereof, links connecting said bars and levers to exert an upwardly inclined thrust upon said type bars, a series of key levers, a series of pivoted tilting levers connecting in the same plane said intermediate and said key levers, a supporting beam, a pivot rod carried thereby, said key levers being slotted at the bottom edge to engage said rod, and a beam forming a support for the pivots of said tilting levers.

6. A key and type bar construction for a typewriter, including a frame therefor provided on the under side with three transversely detachable beams, each beam having a plurality of corresponding slots and a pivot pin passing through the top of the slots the entire length thereof, a plurality of key levers each pivoted near the end on the pivot pin in a slot in the inner beam, a plurality of tilting levers each pivoted intermediate its length on the pivot pin of the middle beam in a slot corresponding with that of a key lever, a plurality of L-shaped levers each pivoted on the pivot pin on the outer beam in a slot corresponding to the tilting lever, the extremity of each tilting lever being provided with a slot engaging a pin carried by the adjacent ends of each key lever and each horizontal arm of the L-shaped lever, each upright arm of said L-shaped lever being connected by a link to a pivoted type bar.

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Witnesses:

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