

F. C. CLARK.  
TYPE WRITER.

APPLICATION FILED OCT. 23, 1912.

1,077,804.

Patented Nov. 4, 1913.

3 SHEETS—SHEET 1.

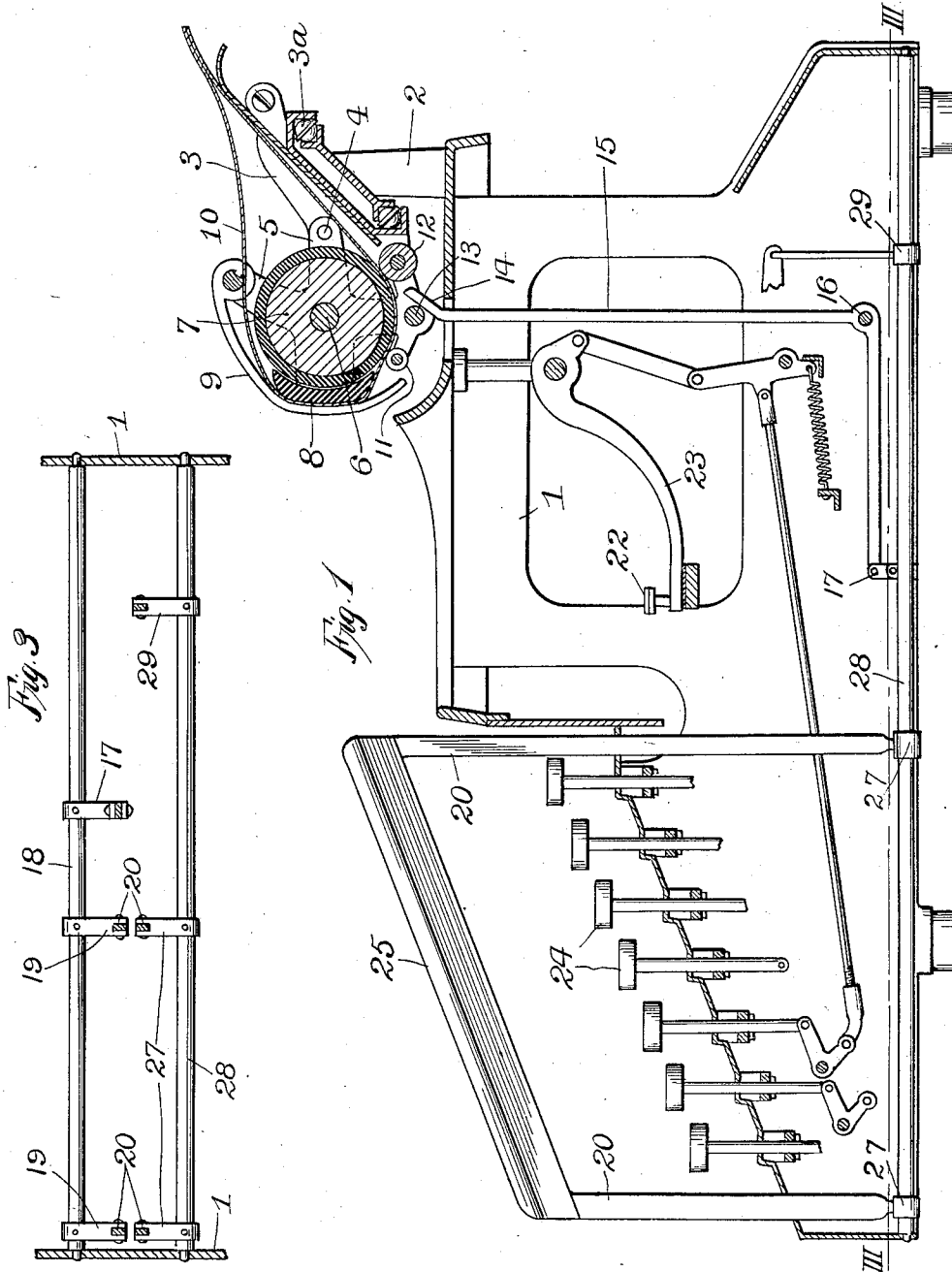


Fig. 3

Fig. 1

WITNESSES:

*R. Hamilton*  
*L. J. Fischer*

INVENTOR:

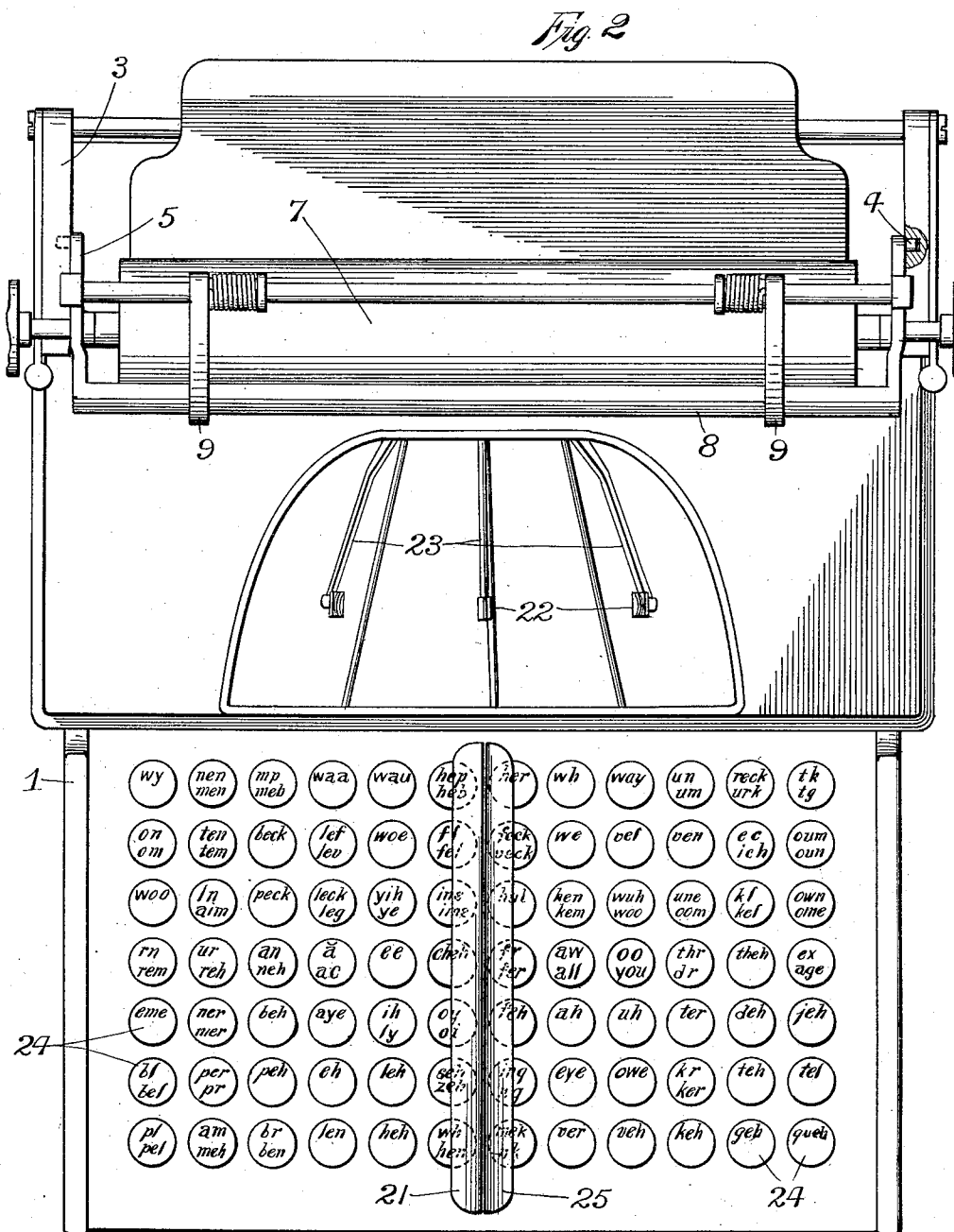
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3 SHEETS—SHEET 2.



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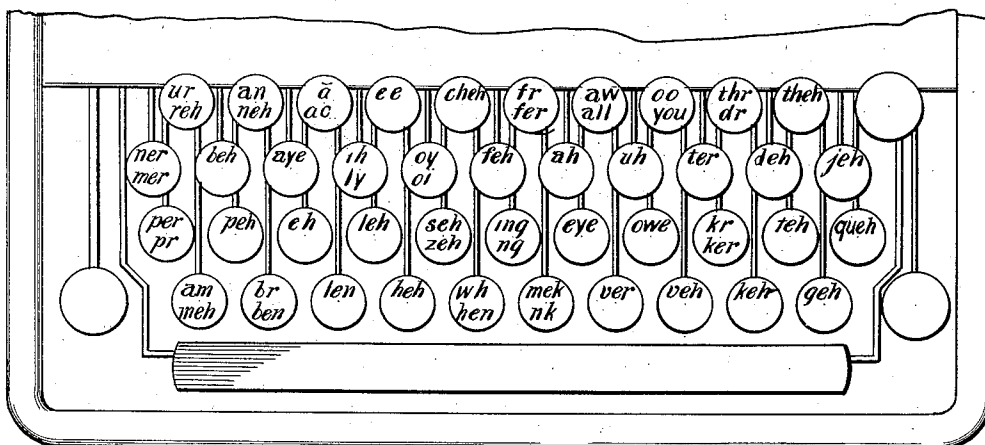
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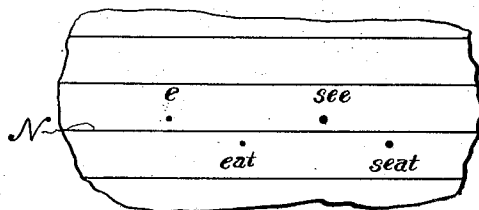
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3 SHEETS—SHEET 3.

*Fig. 4*



*Fig. 5*



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*L. J. Fischer*

INVENTOR:

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# UNITED STATES PATENT OFFICE.

FRANCIS CHADWICK CLARK, OF KANSAS CITY, KANSAS.

TYPE-WRITER.

1,077,804.

Specification of Letters Patent.

Patented Nov. 4, 1913.

Application filed October 23, 1912. Serial No. 727,365.

*To all whom it may concern:*

Be it known that I, FRANCIS CHADWICK CLARK, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Type-Writers, of which the following is a specification.

My invention relates to improvements in typewriters, and more particularly to the keyboard of typewriters.

My object is to provide a keyboard so arranged that shifting of the typewriter platen, either longitudinally or vertically, may be accomplished while the hands are in any position over said keyboard, to the end that the platen may be shifted in less time and with less exertion than heretofore.

My keyboard is especially adapted for the touch system of typewriting, as it is so arranged that the shift and space bars may be actuated by the thumbs without removing the fingers from printing position. Hence, the eyes need never be removed from matter being copied or transcribed to bring the hands back to printing position after actuating the shift and space bars, as is necessary with the usual keyboard.

Referring to the accompanying drawings, which illustrate my invention: Figure 1, is a longitudinal vertical section of a typewriting machine equipped with my improvements, the type-bar action being that of a Smith Premier machine, and some parts of the carriage escapement or spacer being omitted. Fig. 2 is a top plan view of the machine, omitting certain irrelevant parts. Fig. 3 is a reduced scale sectional plan, on line III—III of Fig. 1, showing certain details. Fig. 4 represents a single keyboard for shorthand characters, and a spacer bar in the usual position. Fig. 5 represents a fragment of paper bearing four imprints as made by a single type in different phases of platen position or movement as will be presently described.

In said drawings, 1 designates in general the fixed frame of a typewriter; 2, upward extensions at the rear thereof; 3, the end members of the carriage, the parts 3 providing supports for the platen frame pivots 4. The carriage is longitudinally movable upon ball bearings 3<sup>a</sup>.

5 are the ends of cheeks of a platen frame; 6, the platen shaft, and 7, an ordinary cylindrical platen or platen roller. The frame

cheeks 5 are extended forwardly, in order to provide supports for the ends of a supplementary platen 8, which is disposed in front of, close to, but not in contact with, the platen roller 7. This platen 8, instead of the roller, receives the type strokes, and hence is hereinafter termed the platen.

9 designate paper guides which hold a sheet of paper 10 in contact with the outer face of the platen 8.

11 and 12, designate friction or feed rollers, whose function will be obvious without description.

13 designates a rod whose ends are fixed in the respective cheeks 5 below the platen roller 7. Rod 13 is adapted for actuation by the inclined part 14 of a bell-crank lever 15 which is fulcrumed on a rod (or pair of studs) 16, set or pivoted in the frame 1.

The lower arm of lever 15 is pivotally-connected to a rock-arm 17, that is fixedly-mounted on a rock-shaft 18, whose ends are pivoted in the frame 1. Said rock-shaft extends forward below the keyboard, and fixed thereon are two rock-arms 19, pivotally-connected to the ends of which are two vertical arms 20, that pass through guide slots in the keyboard frame and extend upwardly to support the shift-bar 21, which, as shown in

Fig. 2, extends from front to back of the keyboard and immediately at the left of the median line thereof. By this arrangement the operator's left thumb may rest constantly on the bar 21, while the fingers can reach any key of the left-hand half of the keyboard. By depressing this bar 21, the arms 20, will be depressed, the rock-shaft 18, turned, depressing rocker-arm 17, which will pull down the lower arm of bell-crank lever 15, moving its upper arm leftwardly whereby the cam part 14 will shift rod 13, forwardly (to one facing the machine), the platen frame rocking on its pivot 4; this motion will raise the platen 8. When pressure on shift-bar 21, is removed, the arms 20, and the parts 18, 19, and 15 are restored to initial position, by the platen frame which falls to its normal position, seen in Fig. 1.

The object of the above described shift motion and of its actuating mechanism is to provide for printing any character in a sub-normal position whereby it will acquire a different or added sound meaning. To illustrate, reference being had to Fig. 5: The dots "e" and "see" above line N, are in the normal alinement. The dots "eat" and

"seat" are in subnormal alinement. All four imprints can be made by a single type character. Thus the dot above line N means "e" while the same dot below that line (or

below the normal alinement) signifies "eat." The outer face of the platen 8 is so conformed that the type (22) will strike it squarely regardless of the vertical position of the platen. This platen is a necessary addition to the cylindrical platen owing to the movement of the frame 5 upon its pivots and the need of clear printing when the platen is shifted. It should be noted in this connection that each type face 22 bears but one character and not two characters as do the type faces of the Remington machine. The type-bar action here illustrated is a well known one, therefore I do not deem it necessary to describe same.

24 designates the keys of the keyboard which is divided by the shift and space bars 21 and 25, respectively, into left-hand and right hand divisions. When the keys 24 are arranged in step-form, as shown on Fig. 1, the shift bar and the space bar, which parallel each other, are inclined accordingly, so that the distance between the adjacent keys 24 and said bars is, substantially, the same throughout the length of the latter.

Referring to Fig. 2, numeral 25 indicates the space bar by which the well known step-by-step motion of the carriage is produced. This bar is located symmetrically with the shift-bar 21 and is held by vertical arms 20, on rock-arms 27, on a rock-shaft 28, (see Fig. 3) on which is a third rock-arm 29, which actuates the carriage escapement (not shown) by suitable linkages.

Both of the operator's thumbs may rest on the respective bars 21 and 25 during the operation of the keys, which is manifestly of advantage as increasing the speed of operation.

In applying my invention to ordinary typewriters, it is only necessary to substitute my shorthand keys for the usual keys, and add the necessary parts herein shown and described; the platen shifting mechanism being of course modified to coact with the movable platen frames of different makes of machines.

Having thus described my invention, what

I claim and desire to secure by Letters Patent is:

1. In a typewriter, a keyboard, a shift bar extending from front to rear of said keyboard, vertical arms carrying said shift bar, rock arms to which the vertical arms are operably connected, a rock shaft upon which said rock arms are rigidly mounted, a third rock arm mounted upon said rock shaft, a bell-crank controlled by the last-mentioned rock arm, said bell-crank having an inclined upper portion, a rock frame controlled by the inclined upper portion of said bell-crank, and a platen mounted in said rock-frame.

2. In a typewriter, a keyboard, a space bar extending from front to rear of said keyboard, upwardly-extending arms carrying said space bar, rock-arms to which said upwardly-extending arms are operably connected, a rock-shaft upon which said rock-arms are rigidly mounted, and a third rock-arm mounted upon said rock-shaft and adapted to control the carriage escapement of the typewriter.

3. In a typewriter, a double key-board comprising right and left hand divisions, a space-bar extending from front to rear of said key-board and disposed between the two divisions, upwardly-extending arms carrying said space-bar, rock arms to which said upwardly-extending arms are operably connected, a rock-shaft upon which said rock-arms are rigidly mounted, a third rock-arm mounted upon said rock-shaft and adapted to control the carriage escapement of the typewriter, a shift-bar arranged beside the space-bar, upwardly-extending arms carrying said shift-bar, rock-arms to which the last-mentioned upwardly-extending arms are operably connected, a rock-shaft upon which the last-mentioned rock-arms are rigidly-mounted, a third rock-arm mounted upon the last-mentioned rock-shaft, a platen, and means controlled by the last-mentioned rock-arm for shifting said platen vertically.

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

FRANCIS CHADWICK CLARK.

Witnesses:

F. G. FISCHER,

L. J. FISCHER.