

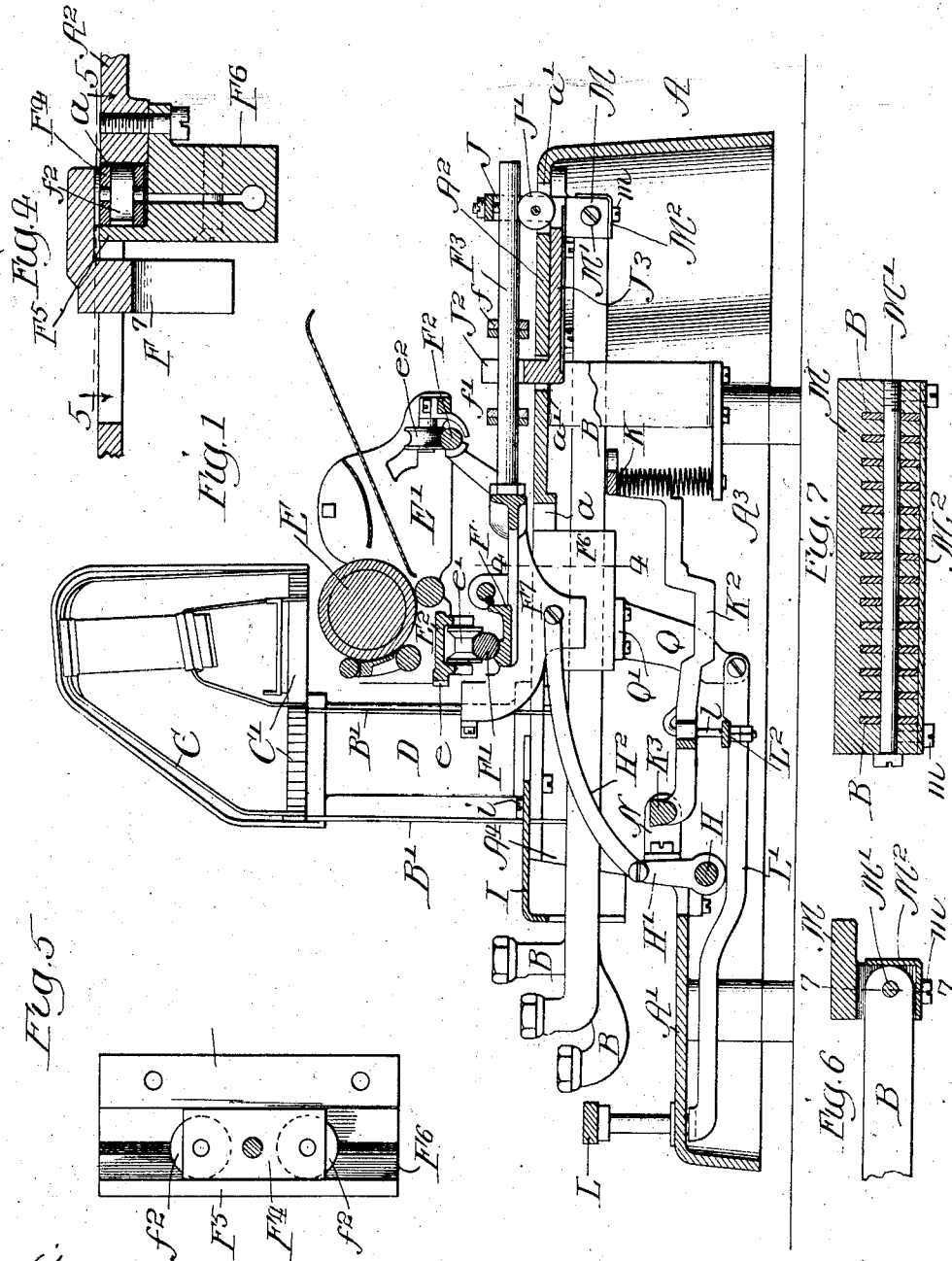
No. 834,565.

PATENTED OCT. 30, 1906.

H. CROSS & G. J. GRIFFITHS.
TYPE WRITER.

APPLICATION FILED NOV. 20, 1905.

3 SHEETS—SHEET 1.



Witnesses:
W. G. Bennett
E. R. Wilkins

Inventors:
Harry Cross
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by Poole & Moore their Attys

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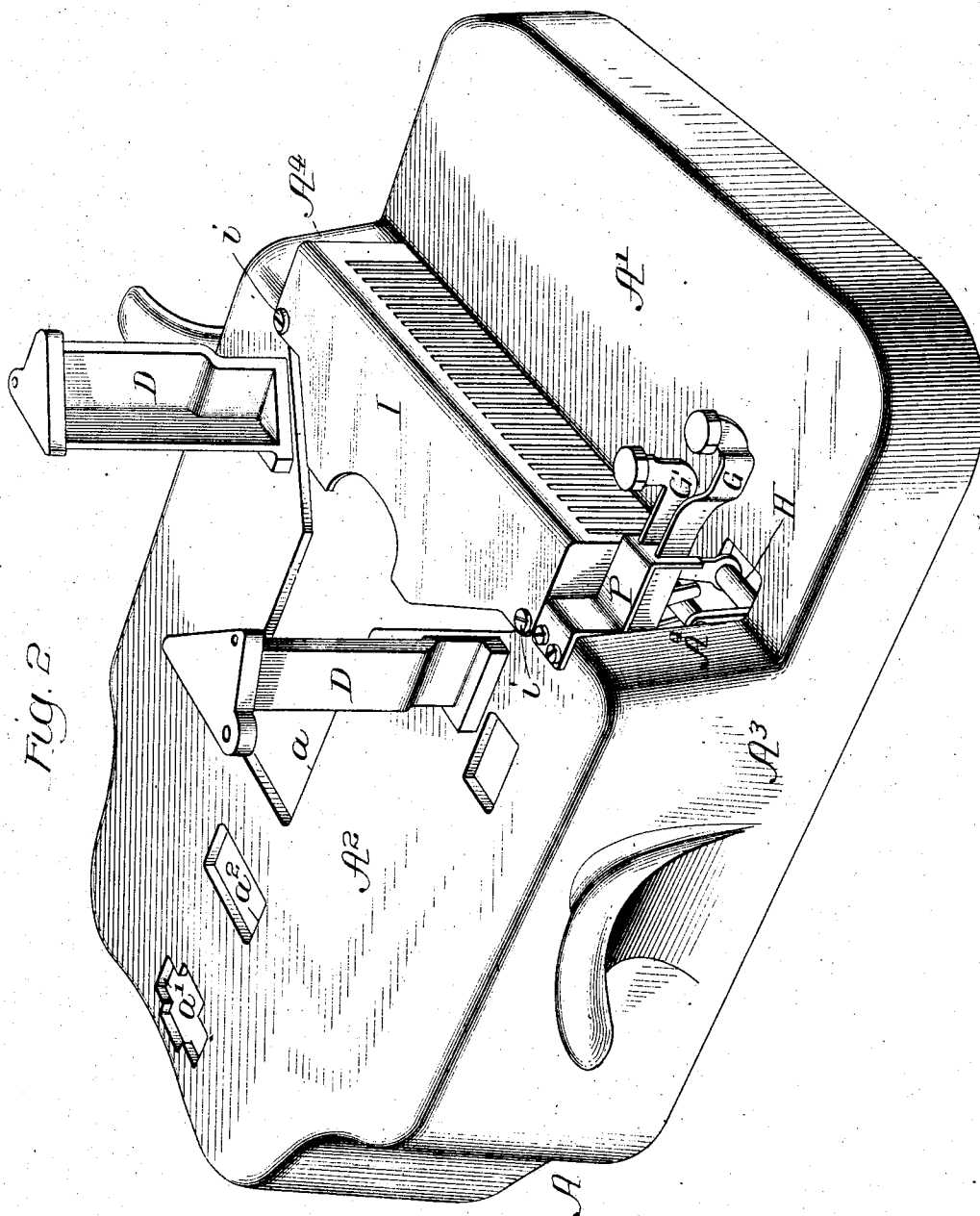
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3 SHEETS—SHEET 2.



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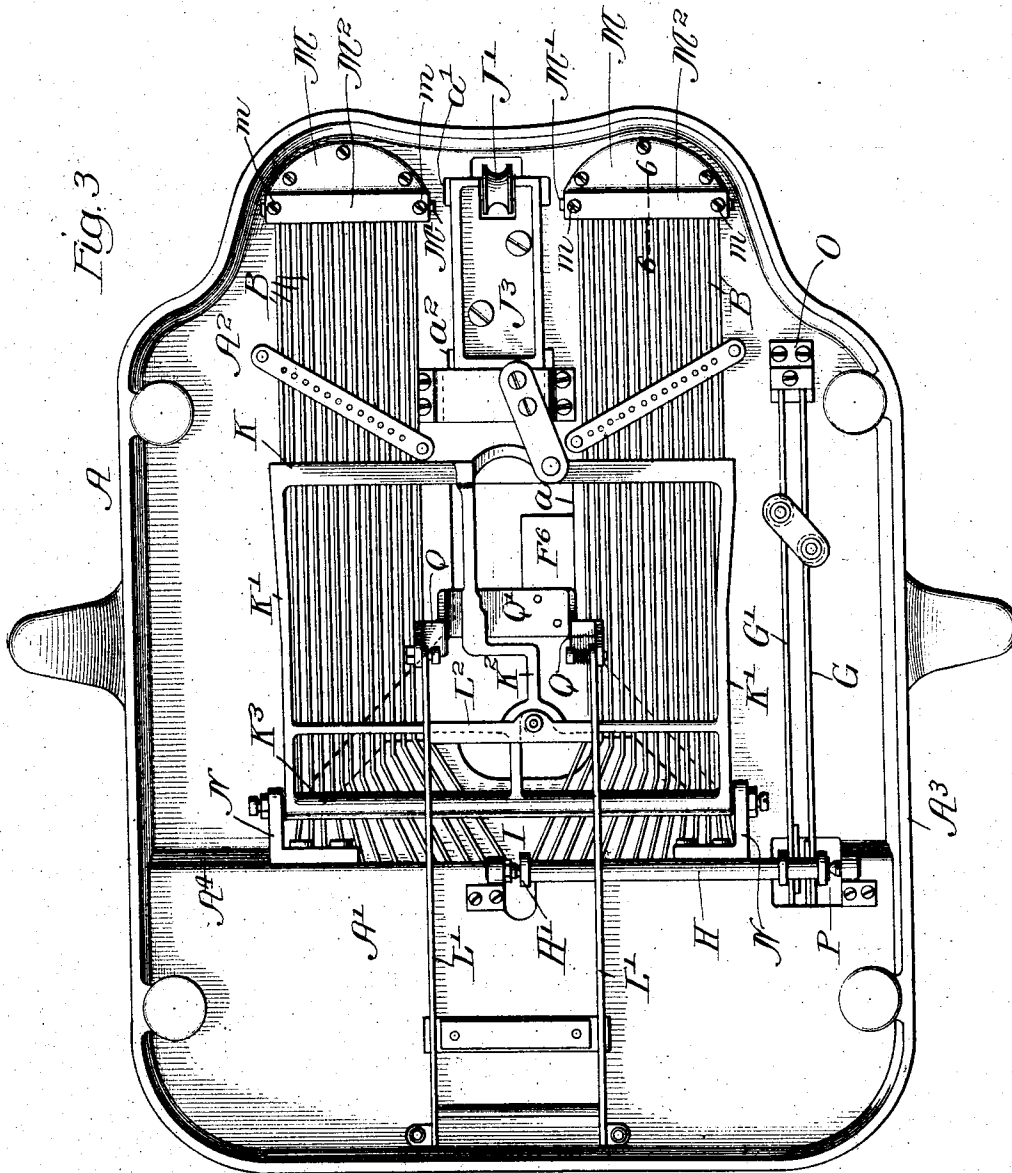
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

HARRY CROSS AND GEORGE J. GRIFFITHS, OF WOODSTOCK, ILLINOIS,
ASSIGNORS TO THE OLIVER TYPEWRITER COMPANY, OF CHICAGO,
ILLINOIS, A CORPORATION OF ILLINOIS.

TYPE-WRITER.

No. 834,565.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Application filed November 20, 1905. Serial No. 288,179.

To all whom it may concern:

Be it known that we, HARRY CROSS and GEORGE J. GRIFFITHS, citizens of the United States, residing at Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Type-Writers; and we 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 type-writing machines of the character shown in the prior patent granted to Thomas Oliver, No. 599,863, dated March 1, 1898, having reference more especially to the construction of the base-plate of said machine and means for supporting or sustaining the several main operative parts of the machine on said base-plate.

The improvements herein described and claimed are, however, applicable to machines which differ in details of construction from that shown in said Oliver patent.

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

In the accompanying drawings, Figure 1 is a view in central vertical longitudinal section of a type-writing machine embodying our invention. Fig. 2 is a perspective view of the base-plate, illustrating the type-bar-supporting standards secured thereto. Fig. 3 is a plan view from beneath of the base-plate of the machine and parts thereon mounted. Fig. 4 is a detail sectional view taken on line 4 4 of Fig. 1. Fig. 5 is a detail plan section taken on line 5 5 of Fig. 4. Fig. 6 is a detail cross-section taken on line 6 6 of Fig. 3. Fig. 7 is a detail section taken on line 7 7 of Fig. 6.

First referring to the general features of construction shown in the machine illustrated, A indicates the base-plate of the machine, and B the key-levers, which extend from front to rear of the machine and which are pivotally connected at their rear ends with the rear part of the base-plate.

C designates the type-bars, which are mounted in two groups at opposite sides of the center of the machine and are mounted in supporting-frames C', attached to stand-

ards D D, which rise from said base-plate near the front of the machine.

B' indicates the upright links, which connect the key-levers with the type-bars.

E indicates the platen or paper-roller, which is mounted in a paper-carriage, of which E' E' are the end plates, and which is provided with a front longitudinal frame-piece E², on which is formed the rack-bar e of the carriage.

F indicates as a whole the shift-frame, on which the carriage is supported and travels, said shift-frame having front and rear longitudinal guide-bars F' F², on which rest and travel the supporting-rollers e' e² of the paper-carriage. Said shift-frame is provided with a rearwardly-extending guide-rod or stem F³, which rests on a supporting-roller J', mounted in a standard J at the rear end of the base-plate. Said stem is also provided with adjustable stop shoulders or nuts f f', adapted for contact with a standard J² and which is provided with an open slot, through which the stem F³ passes, and which serves to limit the forward and backward movement of the shift-frame.

G G indicate shift-levers through which motion is transmitted to the shift-frame by means of a horizontal rock-shaft H, having an upwardly-extending crank-arm H', connected with the shift-frame by means of a connecting-bar H². Said rock-shaft is operated from the shift-levers G G', as in the Oliver machine.

K indicates the space-bar of the machine, which extends transversely thereof beneath the several key-levers and is provided with three forwardly-projecting arms K' K' K², connecting it with a transverse horizontal rock-shaft K³, which is pivoted to the forward part of the base-plate of the machine.

L indicates the space-key of the machine, which is attached to two space-key levers L' L', which are pivoted at their rear ends to the machine-frame and are connected with the space-bar arm K² by a cross-bar L² on the arms and a link l, connected with said cross-bar and said arm K².

The shift-frame is guided in its forward and backward movement and held from endwise movement under the pull of the carriage-actuating spring by means of a guide-block F⁴, which is attached to the under surface of

and projects downwardly from the shift-frame and engages lateral guide-surfaces by which the shift-frame is held from lateral movement.

- 5 F⁷ indicates the downward projecting part on the shift-frame, which in an Oliver type-writing machine constitutes a support for the parts concerned in the control of the movement of the carriage under the action of the carriage-actuating spring.

10 Now referring to the features of construction in the base-plate to which the present invention more particularly relates, said base-plate is provided with a horizontal forward portion A', located beneath the forward ends 15 of the key-levers, and with a rear elevated horizontal portion A², which extends forward of the type-bar-supporting standards D D and to which said standards are attached. 20 The forward lower part and the rear elevated part A' and A² are made integral with a depending marginal base-flange A³ extending entirely around the base-plate. The said horizontal rear part A² of the base-plate extends over and covers the rear portion of the 25 key-levers. At the forward part of said elevated portion the latter is connected, at the sides of the base-plate, with the forward lower part A' by nearly upright walls A⁴ A⁴, 30 between which is an opening, through which the key-levers extend. Said opening is continued backwardly and rearwardly into the top plate to form a V-shaped opening, affording a space through which rise the links B' B', 35 connecting the key-levers with the type-bars. From the rear end of said V-shaped opening extends a narrow slot or opening located beneath the shift-frame of the machine to afford room for the downward extension F⁷ on 40 said shift-frame and the parts carried thereby. One edge of said opening constitutes the guide-surface *a* for the rollers f² f², hereinbefore referred to.

To the forward part of the slot or opening 45 in the top plate A² is applied a cover-plate, indicated as a whole by I and consisting of a horizontal top portion and a vertical front portion which is vertically slotted to receive the several key-levers which pass through the same. The cover-plate I is shown as attached to the base-plate by means of screws 50 *i*, inserted through the end portions of the horizontal part thereof, which overlap the adjacent parts of the elevated portion A² of the base-plate at each side of the said opening. The rear edge of said horizontal part of the cover-plate I is shaped to give space for the working parts adjacent thereto and to 55 form two oblique slots, through which pass the links above referred to.

The rear ends of the key-levers are arranged in two groups at opposite sides of the central line of the machine and are pivotally 60 mounted in two blocks M M, secured to the under surface of the elevated rear part A² of

the base-plate and projecting downwardly therefrom. Said blocks M M are vertically slotted to receive the ends of the key-levers, which are rounded, as shown. A pivot-pin M' 70 is inserted endwise through each block and through the several key-levers. An L-shaped plate M², Figs. 6 and 7, is secured to each block M by screws *m*, or otherwise, and covers the bottom and rear faces of the block. Said plate M is arranged with its vertical and 75 horizontal parts in position for contact with the rounded ends of the several key-levers and serves to support the same when the pivot-pin M' is removed. Such plate M² serves to facilitate the assembling of the 80 parts, because it holds the rear ends of the key-levers in position for insertion of the pivot-pin, which will be inserted through the same after the plate M² has been attached to the block.

85 The two standards J J², which engage the stem F³ of the shift-frame, are formed in one piece with and rise from a horizontal bar J³, which extends along and is secured to the under surface of the elevated part A² of the 90 frame-plate, said standards extending through holes *a'* *a'*, formed in said frame-plate.

The rock-shaft K³ of the space-bar is pivotally supported at its ends in two brackets 95 N N, which are attached to the front walls A⁴ A⁴ of the frame-plate at either side of the front opening therein.

The shift-levers G G' are, in the principal portions thereof, located beneath the said 100 elevated part A² of the base-plate and at their rear ends are pivoted to a block O, secured to the under surface of said elevated part. The forward ends of said shift-levers extend through a slot or opening formed in the left-hand vertical front wall A⁴ of the base-plate 105 and are guided by vertical slots in a guide-plate P, secured to the front margin of the elevated part A² and extending outwardly and downwardly over the said opening, as 110 clearly seen in Fig. 2.

The guide-block F⁴, which is attached to the shift-frame, as hereinbefore stated, extends downwardly through the central opening of the elevated part of the frame and is 115 provided with guide-rollers f² f², arranged to bear laterally against the forwardly and rearwardly extending marginal surface *a* of said elevated part of the base-frame under the lateral pressure exerted on the shift-frame by 120 the action of the carriage-actuating spring. A guide-flange F⁵ for the right-hand side of said guide-block F⁴ is, moreover, formed upon a separate piece or block F⁶, which is secured by screws to the under surface of the elevated 125 part A² of the base-plate and extends downwardly therefrom, as clearly seen in the drawing Fig. 4.

Supports for the pivots at the rear or inner ends of the space-key levers are formed 130

by means of two depending arms Q Q, formed on a transverse cross-bar Q', attached to the block F⁶.

An important advantage gained by the construction of the frame-plate here described as compared with that of the typewriter shown in the Oliver patent hereinbefore referred to, is that by providing the base-plate with an elevated rear part extending above the level of and over the rear portions of the key-levers and attaching the standards DD, which support the type-bars, to said elevated part of the base-plate said standards are made shorter, and therefore much stiffer or more rigid, and the pivotal supports for the type-bars sustained by said standards are thereby more strongly and rigidly held in position, and vibratory movement thereof tending to interfere with the accuracy in printing is thereby lessened.

The construction in the base-plate by which the rear horizontal part thereof extends over the rear part of the type-bars and mechanism associated therewith has the advantage of protecting such parts from dust or dirt and from mechanical injury. Moreover, the elevated rear part of the base-plate made as described affords stronger and more rigid support for the key-levers, which latter are located only a short distance beneath said plate, thereby avoiding the necessity of using relatively long standards on the base-plate to sustain the key-lever pivots, as in the prior Oliver machine.

The construction described also has the advantage that the rearwardly-extending stem F³ on the shift-frame is only a short distance above the elevated rear part of the plate, so that the standard J², which receives the blow or impact of the stop-nuts on said stem by which the movement of the shift-frame in either direction is limited, is made very much shorter, and therefore more firm and rigid, than in the case of the corresponding standard of the Oliver type-writer as heretofore constructed.

We claim as our invention—

1. A base-plate for a type-writing machine having a lower, horizontal front part, a higher, horizontal rear part, a downwardly-extending marginal flange wider at its rear than at its front part to correspond with the higher elevation of the rear horizontal part, and an opening between its lower front and higher rear horizontal parts for the passage of the key-levers of the machine.

2. A type-writing machine embracing substantially horizontal key-levers, and a base-plate provided with a downwardly-directed flange extending around its margin, and having a lower, horizontal front part extending beneath the forward ends of the key-levers, and a higher, horizontal rear part extending over the rear portion of said key-levers.

3. A type-writing-machine frame embrac-

ing a flanged base-plate having a lower, horizontal, front part and a higher, horizontal rear part, and two frame-standards attached to and rising from the forward portion of the higher, rear part of the base-plate at opposite sides of the center of the same.

4. A type-writing machine, embracing horizontally-arranged key-levers, type-bars arranged in two groups above the key-levers, supporting-frames for the type-bars, a flanged base-plate having a lower, horizontal, front portion beneath the forward ends of the key-levers; and a higher, horizontal rear portion extending over the rear portions of the key-levers, and frame-standards for supporting said type-bar-supporting frames, said frame-standards being attached to and rising from the said higher rear portion of the base-plate.

5. The combination with horizontally-arranged key-levers, of a flanged base-plate having a lower, horizontal, front part beneath the forward ends of the key-levers and a higher, horizontal, rear part extending over the rear portions of the key-levers, said lower and higher parts of the base-plate being joined by upright walls at the sides of the frame between which walls is formed an opening through which the key-levers extend.

6. The combination with key-levers, type-bars arranged in two groups above the key-levers, supporting-frames for said type-bars, a platen, a paper-carriage and a shift-frame supporting the paper-carriage, of a flanged base-plate having a lower horizontal front portion located beneath the forward parts of the key-levers and a higher horizontal rear portion located over the rear portions of the key-levers and below the shift-frame, and standards attached to and rising from the said higher rear portion of the base-plate for supporting the said type-bar frames.

7. The combination with horizontally-arranged key-levers, of a flanged base-plate having a lower, horizontal, front portion beneath the forward portions of the key-levers and a higher, horizontal, rear part extending over the rear portions of said key-levers, and blocks affording pivotal support for the said key-levers, said blocks being attached to and depending from the lower surface of the said higher, horizontal rear part of said base-plate.

8. The combination with horizontally-arranged key-levers, and a horizontally-movable shift-frame provided with a rearwardly-extending guide-rod or stem, of a base-plate having a lower, horizontal, front portion beneath the forward portions of the key-levers, and a higher, horizontal rear part extending over the rear portions of the key-levers, and standards for guiding the said stem and limiting the movement of the shift-frame, said standards being formed on a horizontal con-

necting-bar which is secured to the under surface of the higher portion of the base-plate and rising from said bar through apertures in said base-plate.

- 5 9. The combination with horizontally-arranged key-levers, of a flanged base-plate having a lower, horizontal, front part beneath the forward portions of the key-levers and a higher horizontal rear part extending
10 over the rear portions of the key-levers, said base-plate having between the lower and higher parts thereof an opening for the passage of the key-levers, which is extended rearwardly into the higher horizontal part of
15 the plate and a separate cover-plate attached to the base-plate over said opening and provided with a vertical depending flange which is slotted to receive the key-levers.

10. The combination with horizontally-ar-

ranged key-levers and a horizontally-mov- 20
able shift-frame above the same, of a flanged base-plate having a horizontal part which extends between the key-levers and the shift-
frame, said shift-frame being provided with a depending guide-block provided with anti- 25
friction-rollers and the base-plate having an opening through which said guide-block downwardly projects and one margin of
which forms a guide-surface for said rollers.

In testimony that we claim the foregoing 30
as our invention we affix our signatures, in presence of two witnesses, this 15th day of November, A. D. 1905.

HARRY CROSS.

GEORGE J. GRIFFITHS.

Witnesses:

F. A. DANIELS,
L. T. HOY.