G. J. GRIFFITHS.

TYPE WRITING MACHINE.

APPLICATION FILED DEC. 21, 1910.

1,015,559.

Patented Jan. 23, 1912.

2 SHEETS—SHEET 1.

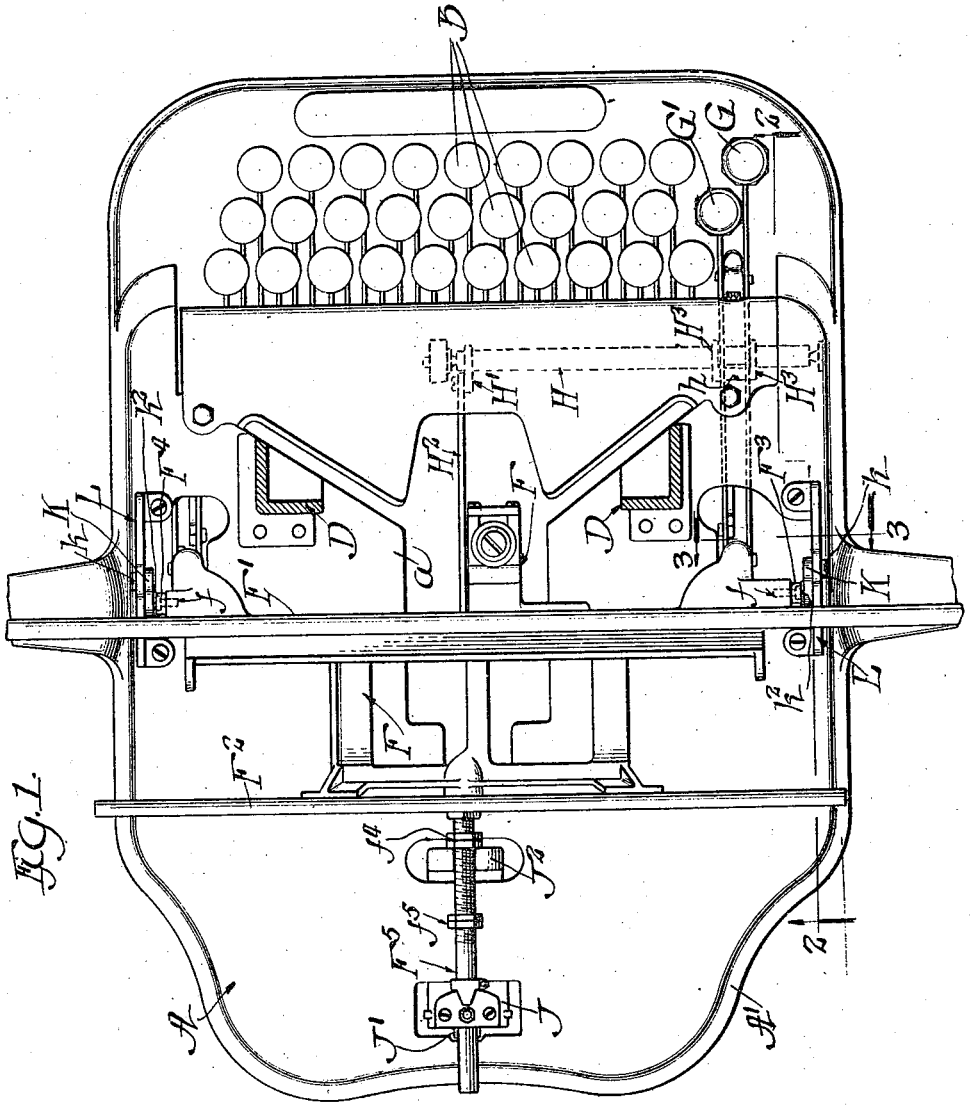

FIG. 1.

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Inventor:
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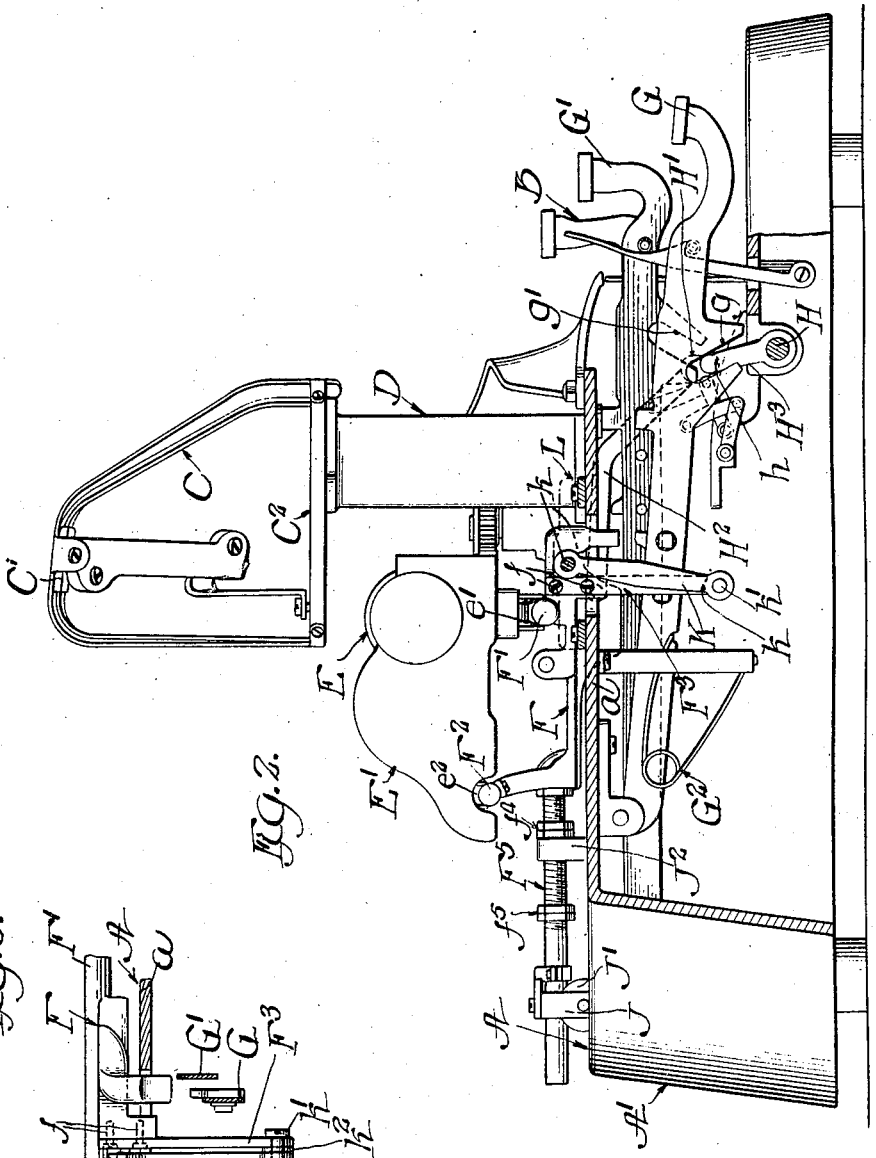

FIG. 2.

FIG. 3.

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UNITED STATES PATENT OFFICE.

GEORGE J. GRIFFITHS, OF WOODSTOCK, ILLINOIS, ASSIGNOR TO THE OLIVER TYPE-WRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TYPE-WRITING MACHINE.

1,015,559. Specification of Letters Patent. Patented Jan. 23, 1912.

Application filed December 21, 1910. Serial No. 598,580.

To all whom it may concern:

Be it known that I, GEORGE J. GRIFFITHS, a citizen of the United States, and a resident of Woodstock, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Type-Writing Machines; 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 certain novel features of construction in typewriting machines of the kind having a platen-shift mechanism by which the paper-carriage is moved or shifted to bring the platen into position to receive an impression from either of three types carried by each of the type-bars.

The improvements shown and described herein and which constitute the present invention are illustrated in the accompanying drawings as applied to an "Oliver" typewriting machine such as that shown in the prior patent to H. Cross, No. 837,611, granted December 4th, 1906. Said improvements, however, may be applied to other kinds of typewriting machines of the double shift type.

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

In the drawings:—Figure 1 is a top plan view of a typewriting machine provided with the novel features constituting my invention, the paper-carriage being removed, Fig. 2 represents a vertical section through the machine in a plane indicated by the line 2—2 of Fig. 1. Fig. 3 is a view representing a partial vertical section through the machine base in a plane indicated by the line 3—3 of Fig. 1.

Referring briefly to the general features of construction of the machine, A indicates the base of the machine which consists of a horizontal top plate *a* provided with a deep depending marginal flange or side wall A^1. B are the key-levers which are located beneath the top plate *a*, and extend from front to rear of the machine. Said key-levers are pivoted at their rear ends to their rear part of said base, in a familiar manner. Said levers are operatively connected with type-bars C of the form employed in said "Oliver" typewriting machine and which are mounted in two groups located at opposite sides of the center line of the machine. Said type-bars C carry type-heads C^1, each provided with three types, as is common in such machines.

E indicates the platen, which is mounted in the paper-carriage E^1. The type-bars C are mounted in supporting frames C^2, which overhang the platen and carriage and are rigidly attached to supporting-standards D, D, attached at their lower ends to the top plate *a* of the base A and which are in front of the paper-carriage and platen.

F indicates, as a whole, a shift frame which is located above the top plate *a* of the base and on which the paper-carriage is mounted. Said shift-frame is capable of movement backwardly and forwardly from a central position, so that the platen may be brought under the striking point of either of the three sets of types on the type-bars. Said shifting frame is provided with front and rear horizontal guide-bars F^1, F^2, on which rest the rollers e^1, e^2 of the carriage-frame.

G, G^1 indicate the shift-levers for actuating the shift-frame which are located at the left-hand side of the machine.

H indicates a horizontal, transverse rock-shaft by means of which motion is transmitted from said shift-levers to the shift-frame. The rock-shaft H is provided with an upwardly extending crank-arm H^1, which is located in a longitudinal median plane of the machine and is connected with the shift-frame by means of a connecting-bar H^2. Said rock-shaft is provided beneath the shift-levers G G^1 with rock-arms H^3, H^3, carrying a crank-pin *h*, adapted to engage cam-slots formed in cam-plates *g*, g^1, which, as shown, are integral with and depend from the shift-levers G, G^1, respectively.

G^2 is a spring which acts on the shift-lever G to lift the same and which tends to return the shift-frame to its central position when shifted forwardly or rearwardly away from the same. A similar spring (not shown) is provided for the shift-lever G^1.

Referring now to the novel features of construction which constitute the means for supporting the shift-frame, and the subject-matter of the present invention, said features are as follows: Said shift-frame is provided in front of the guide-bar F^1 and at its opposite ends with rigid, depending arms F^3, F^4 which extend downwardly from the ends of the shift-frame through openings formed in the top-wall *a*, and near the upright side-walls A^1, of the base-plate of the machine. As shown in the drawings, said arms F^3, F^4 are made separately from the main part of the shift-frame and are rigidly connected thereto by means of screws *f*. Said arms are suspended from the top plate *a* of the base A by means of links or hangers K, K which are connected at their upper ends by transverse pivot-screws *k*, *k* to longitudinally extending plates L, L rigidly secured to said top wall of the base, and at their lower ends are connected by transverse pivot screws k^1, k^1, to the lower ends of the arms F^3, F^4. A spacing washer k^2 is preferably located on each of the screws k^1 to space the hanger K from the associated arm F^3 or F^4. The links or hangers K, K thus support the forward end of the shift-frame in such manner as to permit a forward and backward movement of the same from an intermediate central position by the swinging of the lower ends of said links forwardly and backwardly from a central vertical position.

The rear end of the shift-frame F has sliding connection with the base by the same means as shown in said prior patent above referred to, that is to say, by means of a rearwardly extending, horizontal, centrally arranged guide rod or stem F^5, which is rigidly attached to the rear part of the shift-frame and slides in a standard J fixed to top plate *a* of the base A, said standard J being provided with a supporting roller J^1 on which said stem rests and moves in the shifting movement of the frame. As in the machine referred to, the forward and rearward movement of the shift-frame is limited in the present case by means of stop-nuts f^4, f^5 on the stem F^5 arranged at opposite sides of, and adapted for contact with a standard J^2, said standard being mounted on the base-plate of the machine and being provided with a notch through which said stem F^5 freely passes.

It is apparent that in the improved construction, the forward part of the shift frame will have the same rising and falling movement as it is shifted toward and from the printing positions in front of and to the rear of the intermediate, central printing position, as in the case of the machine described in the application referred to, and the present construction has the important advantage mentioned therein of facilitating the prompt return of the shift-frame, carriage, platen, and other parts supported or carried by the shift-frame to central or lower case printing position, since the weight of the parts which are moved in effecting the shift, serve to aid in the return thereof to said central position.

In the improved construction described, the supporting links or hangers for the shift-frame, as well as the depending arms on said shift-frame extend downwardly through holes in the top plate *a* of the hollow base, so that they are contained within said base, and protected thereby from injury. Moreover, the construction described provides in connection with a hollow base of the kind shown, means for supporting the shift-frame by parts which, while they are located within and occupy otherwise unutilized parts of the space within the base, have connection only with the shift-frame and the top-plate of the base, thereby affording a very simple construction in the parts, and at the same time one in which the supporting means are located within and protected by the base.

I claim as my invention:—

1. In a typewriting machine, the combination with a hollow machine base consisting of a horizontal top wall and a marginal side wall, of a paper-carriage, a shift-frame on which the paper-carriage has endwise movement for letter-spacing and which is located above the machine base and movable thereon to bring the paper into either one of a plurality of printing positions, arms located at the opposite ends of the shift-frame, said arms being rigid with the shift-frame and depending through holes in said top wall into the interior of the hollow machine base, and suspension links or hangers pivoted at their lower ends to the lower ends of said depending arms and pivotally connected at their upper ends with the said machine base at or near the top of the same.

2. In a typewriting machine, the combination with a hollow machine base consisting of a horizontal top wall and a marginal side wall, of a paper-carriage, a shift-frame on which the paper-carriage has endwise movement for letter-spacing and which is located above the machine base and movable thereon to bring the paper into either one of a plurality of printing positions, arms located at the opposite ends of the shift-frame, said arms being rigid with the shift-frame and depending through holes in the said top wall into the interior of the hollow machine

base, supporting plates attached to the said top wall of the base, and suspension links or hangers pivoted at their lower ends to the lower ends of said depending arms and at their upper ends to said supporting plates.

In testimony, that I, claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 16th day of December A. D. 1910.

GEORGE J. GRIFFITHS.

Witnesses:
B. C. YOUNG,
A. J. MULLEN.