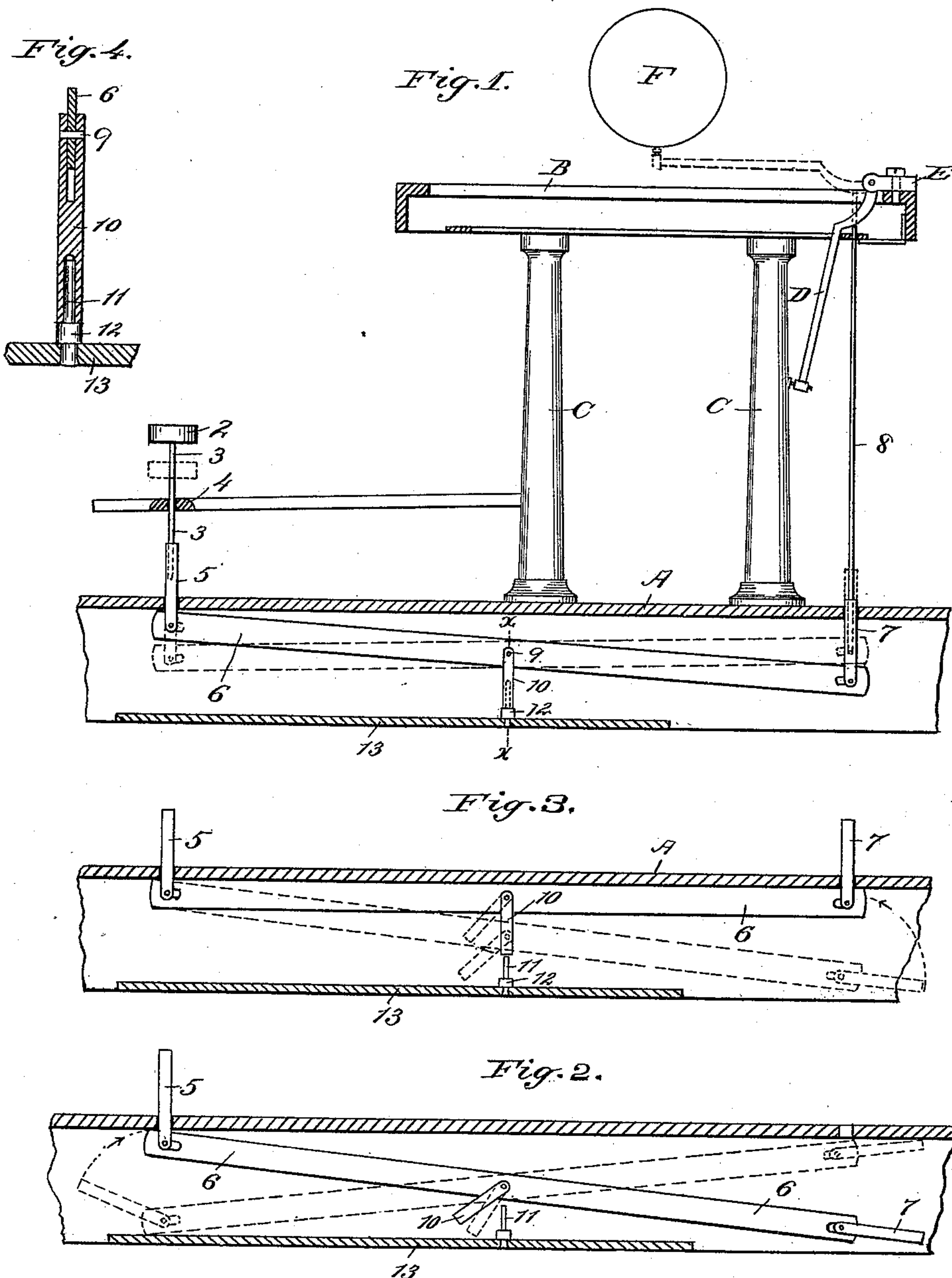


(No Model.)

G. W. N. YOST.  
TYPE WRITING MACHINE.

No. 420,567.

Patented Feb. 4, 1890.



Attest:

Andrew J. Steyer  
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# UNITED STATES PATENT OFFICE.

GEORGE W. N. YOST, OF NEW YORK, N. Y., ASSIGNOR TO THE YOST WRITING MACHINE COMPANY, OF SAME PLACE.

## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 420,567, dated February 4, 1890.

Application filed May 16, 1887. Serial No. 238,352. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. N. YOST, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates more particularly to that class of type-writing machines in which the key-levers are arranged below the bed-plate or flooring, perforated for the passage of the connecting-rods which operate the type-levers, and for the stem-keys which actuate the key-levers.

Heretofore in machines of this class considerable difficulty has been experienced in readily assembling the key-levers, connecting-rods, and stem-keys, and in arranging the individual supports for the key-levers all in true vertical positions, so that the key-levers may all vibrate in parallel vertical planes and not touch and the stem-keys and connecting-rods work in right lines without binding in the perforations through which they pass.

My invention has for its main objects to provide a simple and cheap construction and arrangement whereby the trouble and expense previously encountered may be wholly avoided; and to this end my invention consists in the features of construction and combinations of parts hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a central vertical section of a portion of a type-writing machine embodying my invention. Fig. 2 is a vertical section taken at the base of the machine for the purpose of illustrating more particularly the mode of fitting or mounting the key-levers. Fig. 3 is a similar view for the same purpose; and Fig. 4 is an enlarged vertical cross-section taken at the line  $x x$  of Fig. 1.

In the several views the same part will be found designated by the same letter or numeral of reference.

A represents the bed-plate or flooring of the machine; B, the top plate or type-circle sup-

ported by pillars C, secured to the base-plate; D, the type bar or lever journaled in hangers E, adjustably secured to the top plate, and F the usual platen or impression-cylinder.

2 designates a stem-key, the shank 3 of which preferably passes down through a perforated bridge or cross-piece 4, and is inserted into a socket-piece 5, whose lower end is pivoted at one end of a key-lever 6. To the opposite end of said key-lever is pivoted the lower end of another socket-piece 7, to which is attached a connecting-rod 8 for actuating the type bar or lever D. The stem-key socket-piece and the connecting-rod socket preferably work in perforations made in the bed-plate or flooring A. About midway of its length the key-lever 6 is pivoted at 9, to vibrate in the bifurcated upper end of still another socket-piece or support 10, the lower end of which is mounted upon an upright or post 11, preferably provided with a circular flange or collar 12. The lowermost end of this post is secured, by riveting or otherwise, to a horizontally-arranged plate, stand, or support 13, located beneath the bed-plate of the machine, but attached thereto.

In the completed machine each post 11 is arranged perpendicular to the support 13, and each socket-piece 10 constructed and mounted to stand in a similar position, so that the key-levers, which come very close to one another, may all vibrate in parallel vertical planes without touching and interfering with the perfect operation of the machine.

Each key-lever may be expeditiously and conveniently arranged by proceeding in the following manner: The several socket-pieces 5, 7, and 10 having been previously pivoted at the proper localities, the lever 6 is introduced between the perforated bed-plate A and the support 13, containing the posts 11, and brought to about the position indicated by dotted lines at Fig. 2. The socket-piece 5 is then turned up, as per the arrow, and passed through the perforation in the bed-plate intended for its reception. By this operation the position of the lever is changed, as indicated by the full lines at Fig. 2 and the dotted lines at Fig. 3. The socket-piece



7 is then turned up and passed through a hole in the bed-plate in line with that through or into which the socket-piece 5 was inserted, and the lever with its socket-pieces 5 is pulled up into the horizontal position shown in full lines at Fig. 3. When the lever is in this position, the socket-piece 10 will hang or may be brought over the post 11, as represented at Fig. 3, and may be guided down thereupon, as shown at Figs. 1 and 4. When the socket-piece 10 shall have been slipped upon the post 11 and the lever thus brought to its true position, the stem-key and the connecting-rod may be inserted, respectively, into the socket-pieces 5 and 7.

If at any time it should be desired to remove the key-lever, it will be understood that the reverse of the above operation will accomplish it.

The operation of the machine will be readily understood from an inspection of the drawings, and hence little need here be said in that respect. Upon depression of the stem-key and the forward end of the lever 6, the rear end of the latter and the connecting-rod are raised and the type-bar elevated to impress the paper upon the platen, as shown by the dotted lines at Fig. 1. Upon releasing the pressure on the stem-key the moving parts all return to their original positions. (Indicated by the full lines at Fig. 1.)

So far as the main feature of my invention is concerned, the socket-pieces 5 and 7 may be omitted and the stem-keys and connecting-rods attached directly to the key-levers, but the construction shown is much more preferable.

Although I have used a lever of the first

order in the machine illustrated, it will be understood that a lever of some other order or description may be employed, and that many changes in detail construction and in the arrangement of the several parts may be made without departing from the spirit of my invention.

I do not claim herein the construction of the bed-plate nor the means for supporting the type-ring, as these features form the subject-matter of an application filed by me June 15, 1887, Serial No. 241,377.

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

1. In a type-writing machine, the combination of the horizontal support 13 at the base of the machine, a vertical post or upright secured thereto, a socket adapted to be slipped on and off said post or upright, a key-lever pivoted to said socket, a rod connected to one end of said key-lever and adapted to actuate the type-carrier, and a finger-key connected to the other end of said key-lever, as set forth.

2. In a type-writing machine, the combination of the perforated bed-plate, the support 13, a post secured thereto, a socket mounted upon said post, a key-lever pivoted to said socket, sockets 5 and 7, pivoted to said lever, a stem-key, and a connecting-rod, substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 25th day of April, A. D. 1887.

G. W. N. YOST.

Witnesses:

JACOB FELBEL,  
ANDREW W. STEIGER.