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W. F. HELMOND

2,098,780

TYPEWRITING MACHINE

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Fig.1.

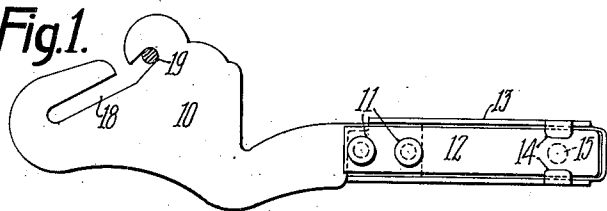


Fig.2.

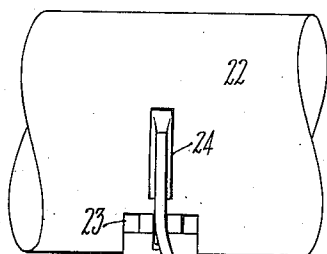
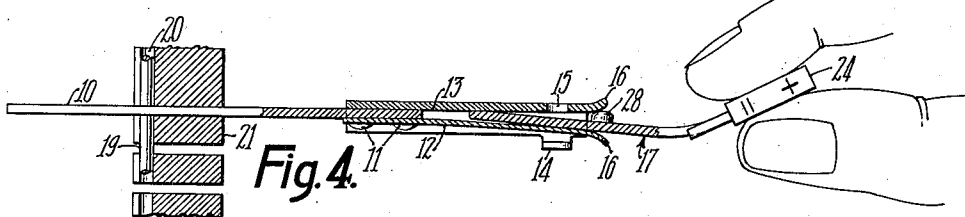
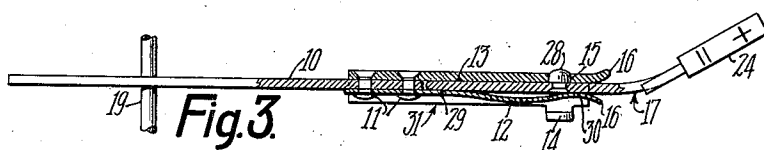
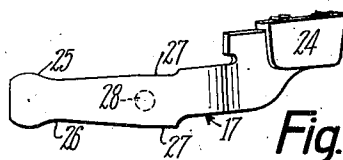


Fig.5.

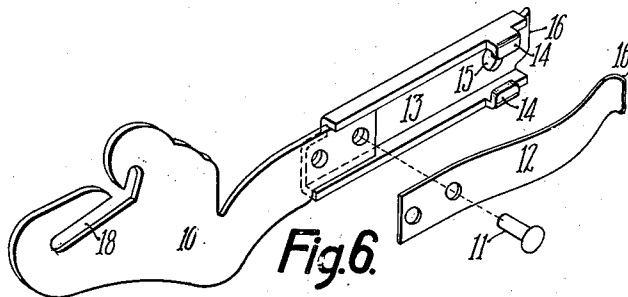
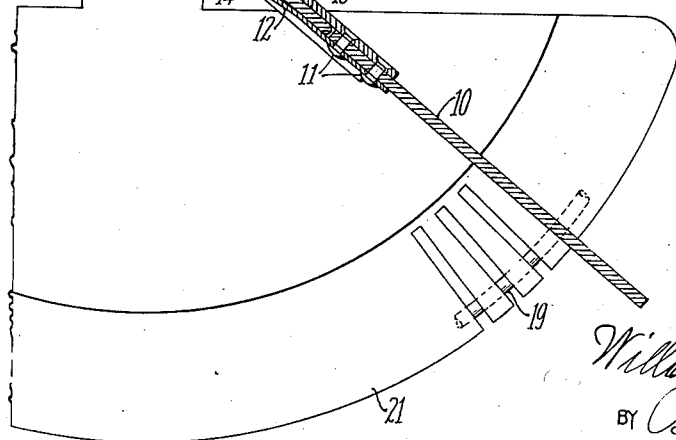


Fig.6.



INVENTOR:
William F. Helmond
BY *B. B. Stickney*
ATTORNEY.

UNITED STATES PATENT OFFICE

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TYPEWRITING MACHINE

William F. Helmond, West Hartford, Conn., assignor to Underwood Elliott Fisher Company, New York, N. Y., a corporation of Delaware

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7 Claims. (Cl. 197—36)

This invention relates to detachable types for typewriting machines.

This invention presents a separable type-bar for typewriting machines in which the rigidity and alignment of the assembled type-bar is accomplished by means which, acting substantially at right angles to the plane of the type-bar, does not have to oppose the forces resulting from the contact of the type-head with the platen, or the centrifugal force incident to the type-bar travel from its home position to the platen.

The object of the invention is therefore to provide a separable type-bar construction which permits the disengagement of the elements by the exertion of a moderate force applied substantially at right angles to the plane of the type-bar.

Other features and advantages will hereinafter appear.

In the accompanying drawing,

Figure 1 is a side elevation of the hub portion of the type-bar.

Figure 2 is a side elevation of the removable type-bearing element.

Figure 3 is a sectional view taken horizontally through the type-bar and its type-element.

Figure 4 shows the method of removing the type-bearing element.

Figure 5 is a sectional view of the assembled type-bar and type-bearing element in printing position.

Figure 6 is a perspective of the type-bar hub.

Referring to Figure 1, 10 is the main or hub portion of the type-bar, to which is secured by rivets 11 or other suitable means a leaf spring 12 and a channeled member 13, the sides of said channel embracing the outer edges of the type-bar hub and the leaf spring. Near its free extremity, channel 13 is formed with a pair of oppositely disposed lugs 14, extending upwardly and inwardly from the channel sides, and a hole 15, preferably intermediate the lugs. The outer ends of the channel and leaf springs are flared, as at 16, Figure 3, to receive the type-bearing element 17. The hub portion 10 is formed with a suitable slot 18 at its hub end to receive the customary fulcrum wire 19, Figure 4, which occupies a groove 20 in the type-bar supporting segment 21 of the typewriter, so as to be swung, by the action of a key-bar (not shown), into printing position against the platen 22. The type-guide 23 of usual design assists in the alignment of the type-head 24 against the platen.

The type-bearing element 17 is formed of sheet metal and has a partially circular profile 25 at its entering end, the maximum diameter of which

is sufficient to engage the sides of the channel 13. At a convenient intermediate point, as 26, the sides diverge, forming parallel sides 27, again sufficient to engage the sides of channel 13. The type-bearing element therefore may engage the sides of the socket formed by leaf spring 12 and channel 13 without binding.

A rounded top button 28 riveted or otherwise secured to the shank of the type-bearing element 17 is arranged to tightly engage the hole 15 in the channel member, so as to act as a gage for assuring the correct overall length of the assembled type-bar, and to prevent any longitudinal movement of the type-bearing element 17 during operation.

The type-head 24 of any conventional design, Figure 2, is secured to the type-bearing element 17 in the usual manner.

When the type-bearing element 17 is inserted into the socket formed by leaf spring 12 and channel 13, as at Figure 3, the spring 12 engages the sides of the type-bearing element at two places, as 29 and 30, Figure 3, urging the element into contact with the inner surface of the channel 13 throughout its length, and keeping the button 28 in engagement with hole 15.

The inner portion 29 of spring 12 is parallel to the inner surface of the channel 13 and comparatively unyielding because of its proximity to its rivets 11, making the socket substantially rigid at its inner end. The type-bearing element 17 is of the same thickness as the hub portion 10, and is held tightly in the socket, so as not to twist during typing. Because of the contact of the side walls of the channel 13 with the type-bearing element 17 at the sections 25 and 27 of the latter, the force of the blow of the type-head 24 is taken by the side walls of the channel, and the pin-and-hole connection is not subjected to a strain which could affect the alignment of the assembled type-bar.

To remove the type-bearing element, it is necessary only for the operator partially to depress the associated key (not shown) to raise the assembled type-bar 31 to a position where the type-head can be grasped, as shown in Figure 4. By exerting a suitable pressure at the type-head 24, the type-bar-holding element 17 may be used as a lever to spread the spring 12 and at the same time bring the button 28 out of engagement with hole 15. Harmful or unnecessary flexing of spring 12 is prevented by the lugs 14. A simple pull will then suffice to remove the type-holding element. When inserting a new element, only a direct push is required, because the mouth of the

socket, formed by the flaring at 16, and the rounded head of button 28 permit easy entrance.

When the type-bearing element is inserted to the proper depth, the spring 12 will snap the button 28 into the hole 15.

The additional or special type-bearing elements may be suitably plated, painted or otherwise marked to serve to distinguish them from those regularly associated with the keyboard.

It will thus be seen that I have devised a simple and useful type-bar construction which provides for the easy removal or insertion of type-bearing elements and yet holds the type-bearing element in a manner which precludes the possibility of loss of alignment when in service.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. A separable type-bar for a typewriter, comprising a hub-member having a socket fixed to one end thereof, said socket including a channel, the sides of which embrace the hub-member, and a plate-spring opposing the web of the channel and forming one side of the socket, a type-carrying member arranged to be inserted into said socket, and means co-operating with said yieldable side to retain said type-carrying member in position in said socket.

2. A separable type-bar for a typewriter, comprising a hub-member, a four-walled socket fixed to one end thereof, one of the said walls being a plate-spring, and a type-head-carrying member having a shank arranged to fit snugly within the said socket in frictional engagement with the side walls of the said socket at a plurality of points along both side edges of the said shank, the latter having a pin to engage a hole formed in one wall of the socket, to establish the length of the assembled type-bar, the pin-and-hole engagement being secured against accidental separation by the pressure of the plate-spring against the said shank.

3. A separable type-bar for a typewriter, comprising a hub-member, a socket fixed to one end thereof, the said socket comprising a channel and a plate-spring, a type-head-carrying member having a shank for insertion into the said socket, and means for rigidly gaging the length of the assembled type-bar, said socket including means for protecting the said gaging means against the force of the impact of the type-head against the platen.

4. As an article of manufacture, a separable type-bar for a typewriting machine comprising the combination with a type-head-carrying member having a shank and an abutment formed on said shank, of a hub-member arranged at one end to receive a type-bar-fulcrum wire and co-operate with the typewriter-key-bar mechanism, said hub-member having at its other end a yieldable sided socket to receive the type-head-holding element, said socket including a channel and a plate-spring, the side walls of the channel embracing the plate-spring and having lugs overlying the plate-spring to form means to prevent

the undue distortion of the yieldable side thereof, the said channel also having a recess to receive the abutment on said type-head-holding element.

5. A separable type-bar for a typewriting machine comprising a main or hub portion formed at one end to receive a type-bar fulcrum wire and engageable with the key-bar mechanism of said typewriting machine, a flared end socket having one yieldable side fixed to the opposite end of said hub portion, the said socket including a channel and a leaf-spring secured to opposite faces of the said hub portion, and held in spaced relationship by the hub portion, the sides of the channel embracing the sides of the said hub portion and of the leaf-spring, thus forming a substantially rectangular socket closed at one end by the said hub portion, and a manually removable or insertable type-head-holding element to co-operate with said socket, said element composed of a shank, a type-head fixed to one end thereof, and an abutment pin on said shank to engage a suitable recess in a wall of said socket, the yieldable side of said socket reacting to the insertion of the type-head-holding element to maintain the engagement of said abutment pin and recess so as to co-operate with the frictional engagement of said shank and socket walls to maintain the alignment of said type-head-holding element in said socket.

6. A separable type-bar for a typewriting machine, comprising a hub-member formed to receive a type-bar-fulcrum wire and engageable with the key-bar mechanism of the said machine, a socket fixed to the free end of the said hub-member, the said socket having substantially closed sides and bottom, one of the said sides being a leaf-spring, and a type-head-holding member having a shank arranged to fit snugly within the said socket and frictionally to engage all of the sides thereof, the said shank having a gaging pin thereon to co-operate with a hole in said socket to establish the assembled length of the type-bar and to secure the assembled bar against accidental separation; the side walls of the socket taking the force of the impact of the type-head by reason of the close engagement of the type-carrying shank therewith, thus relieving the pin-and-hole connection of the strain resulting from the said impact.

7. A separable type-bar for a typewriter, including a hub-member, a type-head-carrying member having a shank to which the type-head is secured, and a socket formed at one end of the hub-member and arranged to receive the shank of the type-head-carrying member snugly, the said shank lying in the same plane as the hub-member, the overall length of the assembled type-bar being maintained by a pin-and-slot engagement between the shank and the socket, the said pin-and-slot engagement being non-yieldingly resistant to a force acting in the plane of the hub-member and shank, and protected by the said socket from strain resulting from the effect of the blow of the type-head against the platen.

WILLIAM F. HELMOND.