Sept. 13, 1932. W. A. DOBSON 1,876,640

TYPEWRITING MACHINE

Filed Feb. 12, 1929

Fig. 1.

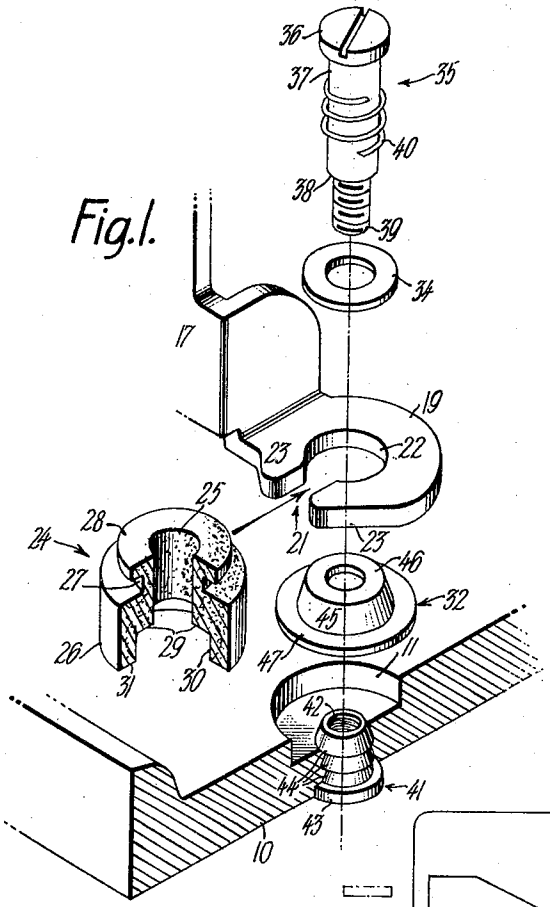


Fig. 2.

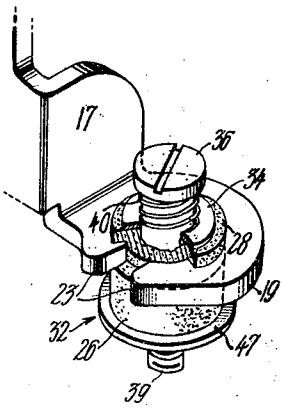
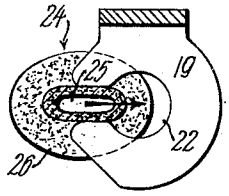


Fig. 3.



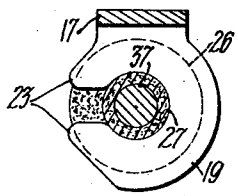
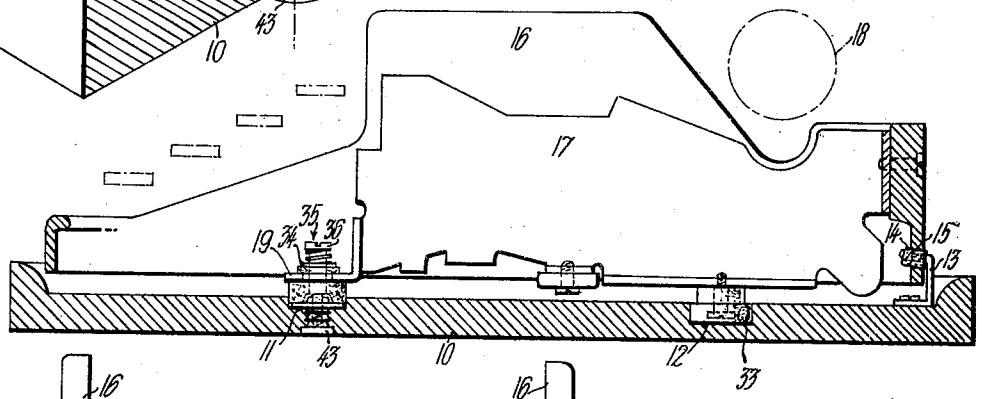


Fig. 4.

Fig. 5.



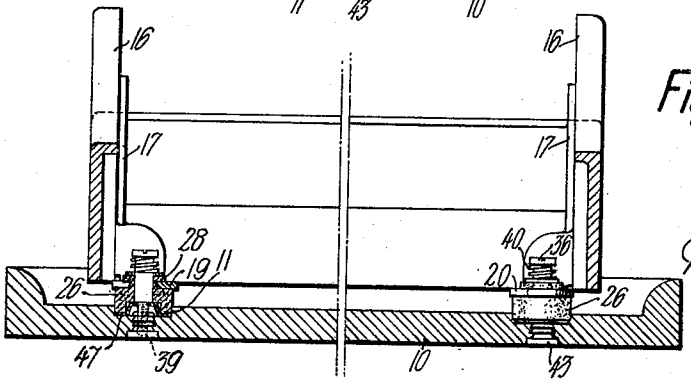


Fig. 6.

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UNITED STATES PATENT OFFICE

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TYPEWRITING MACHINE

Application filed February 12, 1929. Serial No. 339,337.

This invention relates to the connection between a portable typewriting machine frame and the baseboard upon which it rests, which baseboard forms one side of a carrying case.

It has been the practice to have the typewriter-frame shod with four soft rubber feet, which rest in sockets that are formed in the baseboard, thereby reducing the noise of operation of the machine. It has also been the practice to secure the machine to the baseboard, as is necessary in transporting the machine in the case.

In my co-pending application No. 65,524, filed October 29, 1925, now Patent No. 1,810,309, dated June 16, 1931, the typewriting machine is secured to the baseboard partly by means of a rear hook, which rises from the baseboard and hooks into an eye formed in the rear wall of the typewriting machine frame, and partly by means of bolts, one at each side of the machine near the front end thereof; these bolts, however, having yielding elements, to avoid injury to the baseboard. The baseboard has to be of but little weight, and is therefore weak, so that if the typewriting machine were to be rigidly fixed to the baseboard, the latter would prove insufficient to withstand shocks, and would be injured and perhaps broken in case the machine should fall upon the floor with the baseboard up, as the weight of the falling machine would be apt to tear the bolt away from the baseboard, or otherwise to injure the latter. It has been the practice, therefore, to use shock cushioning springs between the heads of the bolts and the machine lugs, down through which the bolts extend into the baseboard.

One of the objects of the present invention is to improve the touch upon the keyboard of the typewriter, which is done by moving the front soft rubber cushion feet forward and locating them directly under said keyboard; and also to simplify the construction by combining the front rubber feet with the bolts that secure the typewriter to the baseboard, and to accomplish this while retaining a yielding connection.

The rear rubber feet are of usual construction, but in this invention the front rubber feet are combined with the bolts, and the usual screws which hold the front rubber feet up against the machine-lugs are omitted, and said front feet are made self-securing upon said lugs. The securing bolts extend down through central perforations or bores formed in said rubber feet. The latter are contrived so as to secure themselves. This is done by forming a flange upon the top of each foot, with a neck intervening between the flange and the body of the foot. Inasmuch as the bolt-hole extends down through the flange, the neck and the foot, it results that the entire foot-structure is collapsible, and hence may be squeezed, by lateral pressure, into an oblate form. While held in its squeezed condition, the neck is inserted within a slotted eye that is formed in the machine-lug, and then it expands within said eye and regains its normal circular shape. Then the bolt is inserted down through the flange, the neck and the foot, to form a key which locks the foot within the eye of the flange, since the foot can no longer be squeezed out of shape; and hence it cannot be withdrawn from the eye in the lug.

The spring for cushioning the bolt is provided above said flange and below the head of the bolt. The bolt is seated upon a washer which underlies the foot, and said bolt at its threaded lower end is screwed into an anchorage provided in the wooden baseboard.

Thus the connection is simplified, and the machine is made somewhat lighter and less expensive, and the parts are readily accessible, while the advantages set forth in said co-pending application are retained.

Because the simple hollow resilient feet or cushions are insertible and self-locking in the typewriter-frame, the attachment of the feet is facilitated, reducing assembly cost. Be-

cause of the ease of replacement, an operator can readily substitute new feet if the old ones lose their resiliency.

The bolts are in the form of shouldered screws, one of which is passed down through each front rubber foot. These screws are threaded at the bottom into anchorages which are set in the baseboard. As the screws are tightened, their heads compress coil-springs to make yielding connections of the baseboard to the typewriter.

To prevent too great a compression of the springs, which would reduce their cushioning properties, a truncated conical washer is first placed in each front recess, and through contact with the shoulder limits the downward setting of the screw. With the above-described securing means there needs to be no direct metallic connection to conduct vibrations between the typewriter-frame and the semi-resonant baseboard, so that typing noises are subdued.

The holding means of this invention permits ready removal of the machine from the baseboard. When removed, and placed on a desk, it is advantageous to have the rear feet widely spaced from the front feet in order to insure stability. For this reason, the forwardly-extended placement of the front feet, as provided for in this invention, is a feature of importance.

In light unanchored portable typewriters the depression of the keys upsets their balance, and more particularly when operated with a heavy touch. In placing the front feet more nearly under the keyboard, as in this invention, the unbalancing is better counteracted, because support is afforded under the keyboard. The typewriter when operated will not readily creep, and therefore is not so apt to fall off and become damaged.

Other features and advantages will hereinafter appear.

In the accompanying drawing,

Figure 1 is a detail view of the parts of this invention shown disassembled, but in correct relative positions.

Figure 2 is a detail view of the detachable parts of this invention, as assembled on a portion of the typewriter-frame.

Figure 3 illustrates how the resilient feet are compressed and forced into slots formed in pedestrial projections which they support.

Figure 4 shows the resilient feet expanded in the pedestrial projections, and with an anchoring screw passed through the central aperture of the feet.

Figure 5 is a partial vertical section through a portable typewriter with baseboard, and illustrates this invention in association therewith.

Figure 6 is a partial vertical section taken at right angles to that shown in Figure 5, and shows the parts of this invention as viewed from the front of the machine.

Referring to the drawing, 10 is a baseboard which can form part of a carrying case for a typewriter, and has front recesses 11. There are also two usual rear recesses 12, of which but one is shown. A hook 13 is attached at the baseboard by screws and has an upper portion covered by resilient material 14. Said upper portion normally projects through a slot 15 in the outer frame 16 of a typewriter which is shown generally in outline. An inner frame 17 is also indicated generally in outline. Both of said frames support other parts of a typewriter, including a platen 18.

At the forward lower corners of the inner frame 17 are projections 19 and 20 which may be integral or attached. Said projections, however, can equally well form part of the outer frame without limiting the scope of this invention. Said projections have slots 21 which are formed with rounded apertures 22 having narrower throats 23. Cushion feet 24 are formed with bores 25, bodies 26, channels 27, and annular flanges 28. The bodies also have interior shoulders 29 and walls 30, which have bearing surfaces 31. The feet are sufficiently resilient to permit of their channels 27 being forced through the narrower throats 23 and into the apertures 22. After insertion the feet will assume normal shape, and said channels will fill and be held by said apertures in a self-locking manner.

When the feet 24 have been attached to the projections 19 and 20, and it is desired to attach the typewriter to the baseboard, washers 32, which have truncated conical portions 45, are placed as illustrated in the front recesses 11. The frame 16 is then forced rearwardly until the hook 13 engages the slot 15, and rear feet 33 are registered with the recesses 12. The forward end of said frame is then lowered and the walls 30 encompass said washers 32, while the shoulders 29 and bearing surfaces 31 will rest on the flat portions 46 and 47 respectively of the washer 32. Flat washers 34 are then placed over the feet 24 with the respective holes thereof in registration.

Screws 35 have heads 36, shanks 37, shoulders 38 and threaded portions 39. Coil-springs 40 are loosely mounted on the shanks, excepting that the top coil of each spring may be of constricted diameter to grip the associated shank and retain the spring thereon. When the springs are in place, the screws 35 are pushed downwardly through the holes 25, the shanks and holes having a close fit to prevent lateral movement. The threaded portions 39 are then screwed into set-in lugs 41, which have interior threads 42, heads 43 and circular barbs or outer threads 44.

When the lugs 41 have outer threads, the

latter are spiraled in a reverse direction to the interior threads, so that a threading-in of the screws does not unscrew the lugs from the baseboard. This is prevented also by the washers 32 which restrain the shoulders 38 from abutting the lugs. The washers, through the comparatively large diameter of their bases, also steady the screws against bending movements. Furthermore, said large diameter of the bases also spreads strains over a large area of the baseboard, and the thin, light structure of the latter is not so easily broken away around the inserted lugs.

When the typewriter is being transported by the usual handle attached to the case, it lies in an approximately vertical plane, and hangs suspended by its feet. Under such conditions, an undue jolt might ordinarily collapse the feet 24 and permit the projections 19 and 20 to become disassociated therefrom. Such a possibility is prevented, however, by the screws 35 which maintain the channels 27 in expanded close relation with the apertures 22, and serve to key the feet 24 so that they cannot work out through the throats 23. The screws therefore function as an auxiliary locking device for the normally self-locking cushion feet.

In forming the projections 19 and 20, the respective throats 23 are so located therein as to face in opposite directions. The throats also lie at an approximate right angle to a center line beginning intermediate thereof and extending through the hook 13. With such positioning of the throats, the typewriter is prevented from moving laterally away from the anchored feet and also from backing off the hook. Furthermore, with such location of the throats, the feet can be more conveniently inserted and removed than they could be were it necessary to move them forward and back under the keyboard.

Owing to the superior gripping and cushioning properties of hollow resilient feet, they can be used to advantage as rear supports on a typewriter. When so installed, in the same kind of projections as above described, they are not readily dislodged, because they do not receive any strains when the typewriter is transported in its case. For this reason their resiliency is sufficient to hold them in their apertures without the necessity of screws 35. At the same time, if desired, it is possible to use such screws with lugs to secure the rear of the typewriter to the baseboard, and thus eliminate the necessity for a hook 13.

It will be apparent that a number of conditions have been successfully met which heretofore it has been found practicable to meet only by placing the front rubber foot in a socket at one point in the board, and anchoring the machine at a different point in the board. These conditions in the present invention are met, and at the same time the rubber foot and anchorage are placed at only one point in the board, with the further advantage that the rubber foot is located at a more forward point than has heretofore been found practicable.

In this connection it will be noticed that one of the features of the screw 35 is that its threaded shank turns within the anchorage 41 in the baseboard 10, whereby the shoulder of the screw is drawn down upon the top 46 of the pedestal 32, which pedestal also includes the conical sides 45 and the annular base 47. The anchorage 41 is liable to become loosened in the baseboard, owing to variations in climate, and also owing to strains that are set up when the machine is used for transportation; and, when so loosened, the anchorage may be tightened by simply turning the screw 35 down by means of a screwdriver. The threaded shank of the screw pulls the anchorage up tight again. For this purpose, the base 47 of the pedestal is made in annular form, so as to surround the anchorage and afford a broad bearing upon the baseboard outside of or surrounding said anchorage. The use of the conical or spread sides 45 of the pedestal permits the lower part of the rubber foot 24 to set down in the socket 11 in the baseboard, since said pedestal sets up within an annular recess 30 in the rubber foot. The screw, moreover, by means of the co-operation of the spring 40, is enabled, with the aid of the anchorage, to hold the typewriter yieldingly to the baseboard, thereby minimizing the liability of the baseboard to injury, as above explained.

A further advantage is gained in that the sidewise thrusting of the shoulder or body portion of the screw 35 is taken up by means of said pedestal 32, or 46, 45, 47, which fits tightly in the bottom of the socket 11, and therefore gives a rigid lateral support to the screw in all directions. Without this lateral support 32, the continual thrusting and hammering upon the screw would tend to loosen the anchorage. Moreover, the screw would be apt to break off at the junction of the shoulder with the shank. All of this is prevented by providing this rigid support 32 engaging the screw at the junction of the shank with the shoulder.

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. In a portable typewriting machine having a frame and a baseboard for supporting the same, the combination with a lug secured to the frame, the lug having a foot-retaining opening therein, of a shoulder-screw, a resilient foot having a longitudinal orifice through which said screw is mounted on the

baseboard, a spring on said screw above the foot, effective to press against the top of the foot to urge the foot to bear against the baseboard, means on said baseboard against which the shoulder on said screw bears to limit its movement and control the pressure of said spring, and means carried by said baseboard with which the screw engages to secure the machine to the baseboard, whereby the machine can be carried by the baseboard.

2. In a portable typewriting machine having a frame and a baseboard for supporting the same, the combination with a foot having a longitudinal opening therein, and a lug, secured to the frame, having an opening therein to receive the foot, of a pedestal having a central aperture therein supported by said baseboard, a shoulder-screw extending through said opening in the foot and the aperture in the pedestal, the shoulder of said screw bearing against said pedestal, and means associated with said baseboard to engage the screw and retain the machine on the baseboard.

3. In a portable typewriting machine having a frame and a baseboard for supporting the same, the combination with a lug, secured to the frame, the lug having a circular opening therein and a side orifice of less width than the diameter of the opening extending from the circular opening to the outside of the lug, of a resilient foot having a longitudinal bore throughout and compressible sufficiently to be moved through said orifice, the foot expanding into its operating position in the circular opening, a screw passing through said bore in the foot, having a diameter sufficient to enable it to serve as a key to lock the foot against escape through said orifice and also effective to secure the foot to the baseboard and means carried by said screw to press on the top of said foot to hold it in engagement with said lug, whereby the machine is secured to the baseboard to be carried thereby.

4. In a typewriting machine, the combination with a baseboard, a frame and a lug secured thereto, of a resilient foot having a recess at its lower end, means for securing the foot to the lug, a shoulder-screw extending through said foot to the baseboard, means associated with the latter to engage said screw, and additional means engaging said recess to locate the foot thereon, and against which, said shoulder of the screw bears to limit its movement and thereby control the pressure of the screw against the foot.

5. In a typewriting machine, the combination with a baseboard, a frame and a lug secured thereto, of a cylindrical resilient foot having an annular groove in its cylindrical surface to engage said lug, an axial orifice in said foot and a recess in the lower end thereof, a shoulder-screw extending through said orifice, a head on the screw, a resilient helix mounted on the screw between the head of the screw and the top of the foot, effective to urge the lug towards the baseboard, a shouldered washer on said baseboard assembled in said recess to locate the foot on the baseboard and against which said shoulder of the screw bears, and a nut secured to the baseboard to engage said screw, effective to secure the machine to the baseboard.

WILLIAM A. DOBSON.