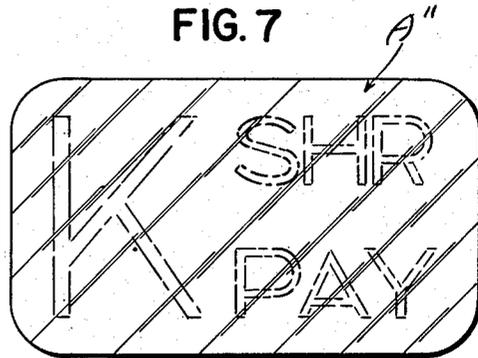
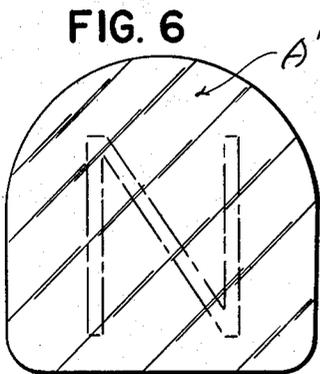
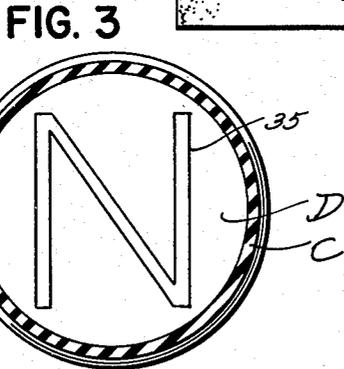
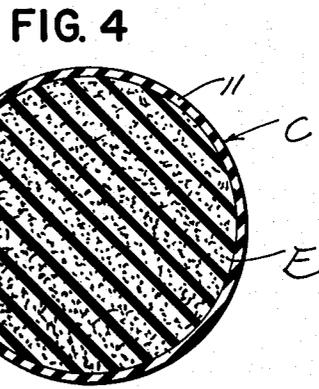
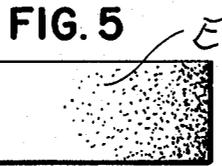
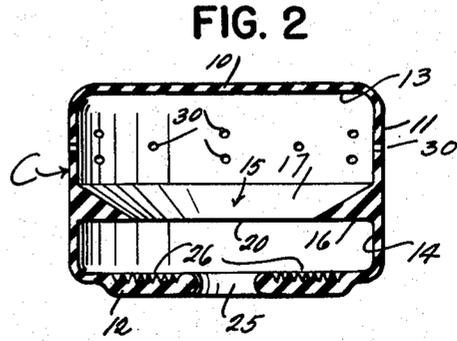
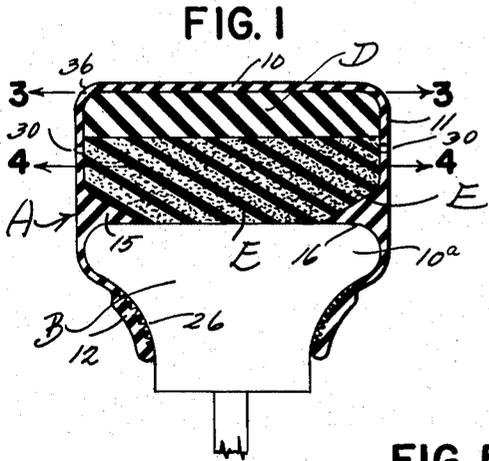


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P. P. WESSON
RUBBER KEYS FOR BUSINESS AND OFFICE
MACHINES SUCH AS TYPEWRITERS
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RUBBER KEYS FOR BUSINESS AND OFFICE MACHINES SUCH AS TYPEWRITERS

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This invention relates to improvements in protecting caps for keys of machines such as typewriters, cash registers, billing machines and other business machines.

The primary object of this invention is the provision of an improved yieldable and resilient shock absorbing cap or protector adapted for detachable connection upon the keys of machines such as typewriters, cash registers, and other business machines, for the purpose of reducing operator physical shock and fatigue, and to aid in sound deadening the operation of the machine.

I am well aware that heretofore it has been proposed to use protecting caps for the keys of typewriters and the like. For the most part they are either constructed of metallic parts, including tempered spring steel springs, or the rubber element is held in place by means of metal collars, etc. The latter soon loosen in their grip upon the keys and permit the cap portions to loosen to the point where they become loose or detached from the keys. Also, it has been proposed to use characters upon such caps, but for the most part they are exposed and subject to friction and wear with the result that sometimes they become indistinguishable. These disadvantages result in loss of operator efficiency in performing the required work with the machine, until necessary repairs or replacements have been made. To obviate these defects I propose to provide a flexible and resilient cap for the keys of typewriters and the like, which is free of metallic parts, and in which the character is protected to the extent that the fingers of the operator do not come in contact therewith. Furthermore, the improved protecting cap has an extremely resilient pad arrangement for increasing the shock absorbing characteristics thereof.

A further object of this invention is the provision of an improved shock absorbing and protecting cap for typewriter keys and the like.

A further object of this invention is the provision of an improved protector cap for typewriter keys and the like which is relatively economical to construct; requires practically no maintenance, and one which effectively maintains its proper position upon the typewriter key under hard usage.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawing, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views:

Fig. 1 is a vertical sectional view taken thru the improved protecting cap, showing the same applied to a typewriter key.

Fig. 2 is a cross sectional view taken thru the one piece casing portion of the improved cap.

Figs. 3 and 4 are transverse cross sectional views taken substantially on the respective lines 3-3 and 4-4 shown in Fig. 1 of the drawing.

Fig. 5 is a side elevation of the sponge rubber cushion used as a part of the key cap construction.

Figs. 6 and 7 are plan views of different shapes the protector cap may assume in order to suit different shaped keys of machines.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of the invention, the letter A may generally designate the improved cap construction. It is adapted for use upon a key B as shown as well as keys of other shapes. The assemblage A preferably includes a one-piece casing over the key B; a character bearing disc D, and a shock absorbing pad E.

The casing structure C is preferably integrally formed of one piece of material. It may be of rubber, natural or synthetic, or any of the plastics which can be formed as flexible, resilient, and durable. It includes a top wall structure 10, an annular or cylindrical shaped side wall 11 and a lower gripping sleeve portion 12. The chamber formed by the walls 10, 11 and 12 is sub-divided into an upper compartment 13 and a lower compartment 14 by means of a wedging and retaining flange 15. The latter annularly extends into the chamber. It normally has a lower horizontal surface 16, paralleling the lower portion of the gripping sleeve, when in its state of repose and not applied to the key. The upper surface 17 of the flange 15 flares convergently downward to an opening 20. The flange 15 has an edge adapted to lie in close flush contact with the top surface of the head 10^a of the key when applied thereto. The sleeve portion 12 has a reduced central opening 25 therein. It is preferably slightly thicker at its gripping portion than the walls 10 and 11, because it must be considerably distended when applied to the key head 10^a. Its inner surface is roughened at 26 for effectively gripping the under or side walls of the key head. The annular side wall 11 of the casing structure C is provided with minute air vents 30 therethrough, between the flange 15 and the wall 10, to permit the casing and porous sponge rubber pad E to have a breather action under operation.

The disc or wafer D conforms to the shape of the typewriter key. It is preferably of flexible resilient rubber or plastic material and has the character 35 designated upon the top surface thereof; preferably in colored contrast, sufficiently distinct to be instantly visible. This disc D may be convexly rounded at its top edge, as shown in Fig. 1, to conform to the convex juncture 36 of the walls 10 and 11 of the casing C. The shock absorbing pad E preferably consists of a cylindrical disc of sponge rubber, or some other equally resilient and flexible shock absorbing and sound deadening material. Its shape is generally that shown in the side elevation of Fig. 5; being of uniform thickness throughout and under slight compression when applied in the compartment 13 of the casing C.

Application of the device A upon the typewriter key will be apparent from the drawing. The character bearing disc is first slipped through the openings 25 and 20 into the compartment 13 beneath the wall 10, and thereafter the sponge rubber cushion E is likewise slipped through said openings and wedged into the compartment 13 above the flange 15. The sleeve portion 12 is then distended and slipped over the head 10^a of the typewriter key B; the roughened surfaces 26 gripping the under or side surfaces of the key head 10^a and the top surfacing of the key resting immediately beneath and in contact with the lower surfacing 16 of the retaining flange 15 and the undersurfacing of the cushion E.

It is within the scope of this invention to provide protecting pads and caps shaped other than circular, for instance, the shape designated at A' in Fig. 6 or the rectangular shape designated at A'' in Fig. 7. The casing wall 10 is clearly transparent, in order that the character 35 will be clearly visible therethrough. In fact, the entire casing structure C may be transparent, but if desired

the wall 10 itself may only be transparent and the other structure of the casing translucent or opaque. It should be clearly understood that the casing structure C is flexible and resilient, as is also the character bearing disc D. However, the shock absorbing pad is much more flexible, pliable and resilient, the comparison being that of ordinary resilient rubber and sponge rubber as it is known in the art.

It will readily be apparent that the operator's fingers will not come in contact with any metal or projecting parts. Even the edging at the top of the cap is rounded. The breather action of the cap enables the sponge rubber pad to respond readily, and thus reduce finger shock and fatigue. The cap will not permit a clicking action to take place between the same and the fingernails of the operator.

Various changes in the shape, size and arrangement of parts may be made to the form of invention herein shown and described, without departing from the spirit of the invention or scope of the claims.

I claim:

1. As an article of manufacture a fatigue resisting, shock absorbing and sound deadening cap for keys of typewriters and the like comprising a flexible casing structure having a chamber therein and a flexible transparent top wall, a yieldable character bearing disc disposed in the chamber immediately beneath the transparent top wall and with the character immediately facing and visible through said top wall, a shock absorbing pad in the chamber beneath said disc, and means to connect the casing structure upon the key of a typewriter so that the pad contacts the top of the key.

2. A typewriter key cap as described in claim 1 wherein the casing is provided with vent openings to the chamber thereof to give the same a breather action under impact by the operator's fingers.

3. A key cap of the class described comprising a flexible and resilient casing structure having a chamber therein and including a flexible top wall, side walls, and a lower flexible and resilient gripping sleeve, said casing structure above the gripping sleeve having a flange extending into the chamber spaced from the top wall, and yieldable pad means in said chamber between the top wall and flange, the latter having a tapered slope which the pad engages in order to compress the outer portion of the pad between the flange and the top wall when the pad is located in said chamber.

4. A cap as defined in claim 3 wherein the casing side walls above said flange are provided with vent openings to give a breather action to the cap under impact by the operator's fingers.

5. As an article of manufacture a completely flexible casing structure for the keys of typewriters comprising a one piece flexible resilient casing having a flexible top wall, flexible side walls, and a lower flexible clamping sleeve having a plurality of saw tooth like serrations upon its inner surfacing for the purpose of gripping a typewriter

key to prevent relative movement of the sleeve upon said key.

6. A fatigue resisting and sound deadening protecting cap for the keys of typewriters comprising a completely flexible and resilient casing structure including a flexible top wall, flexible side walls and a flexible bottom wall having a central key receiving opening therein, said casing having a chamber therein, and a resilient porous sponge rubber pad in the chamber of said casing beneath said top wall, the flexible side walls of said casing immediately adjacent to said pad having transverse vent openings therethrough to permit of a breather action in the chamber of said casing and within the porous sponge rubber pad.

7. In a fatigue resisting and sound deadening protective cap for the keys of a typewriter the combination of a flexible and resilient casing structure including a flexible top wall, flexible side walls arranged normal to the plane of the flexible top wall, and a key attaching bottom wall having an opening therein for receiving therethrough the key of a typewriter, said casing structure having a chamber therein adapted to receive in the lower part thereof the key of a typewriter, the upper portion of said chamber above the typewriter key receiving portion having transverse dimensions equally as great as the top dimensions of the key portion received in the casing, and a resilient shock absorbing pad in the upper portion of said chamber below said flexible top wall of a size to completely cover the top of the key structure received in the lower part of said chamber.

8. A device as described in claim 7 wherein the flexible top wall of said casing structure is transparent, and a resilient rubber character bearing disc fills said chamber between said shock absorbing pad and said top wall.

9. As an article of manufacture a completely flexible casing structure for the keys of typewriters comprising a one piece flexible resilient casing having a flexible top wall, flexible side walls, and a lower flexible clamping sleeve having a plurality of sawtooth like serrations upon its inner surfacing for the purpose of gripping a typewriter key to prevent relative movement of the sleeve upon said key, a retaining flange provided internally of the casing above said sleeve and spaced from the top wall, and a compressed shock absorbing pad held between said top wall and said flange.

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