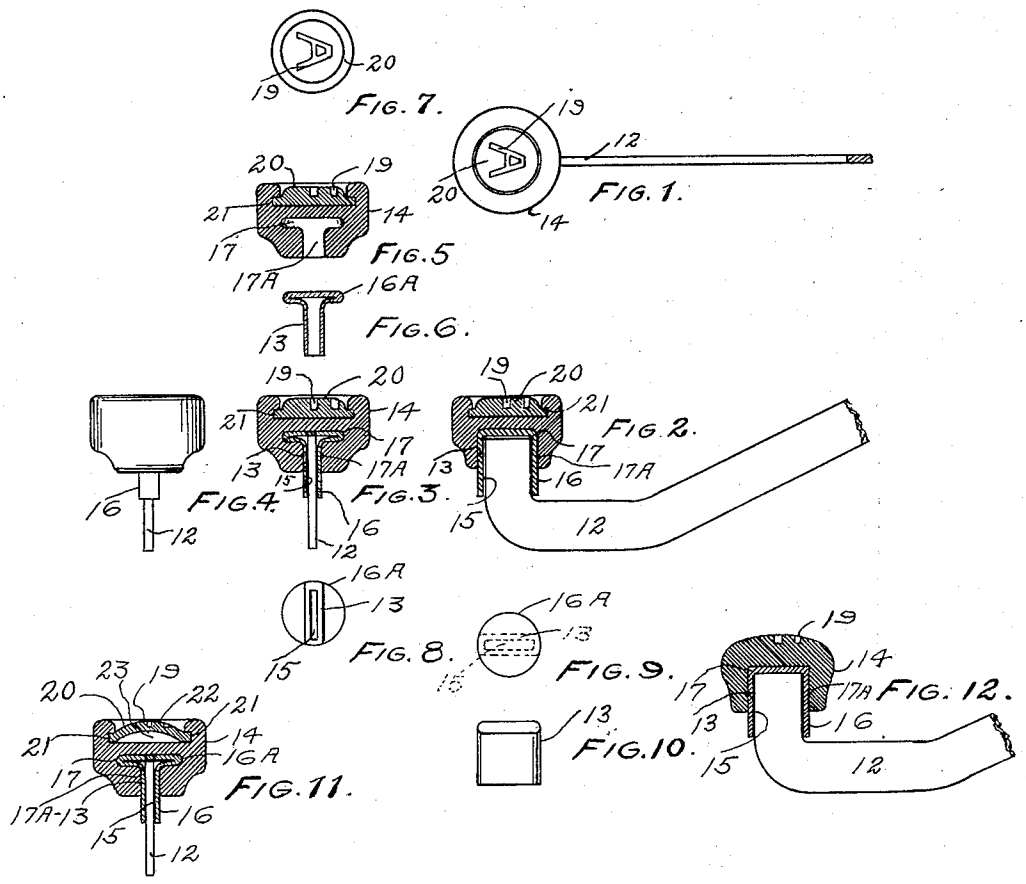
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TYPEWRITER

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TYPEWRITER

Application filed March 30, 1925. Serial No. 19,433.

This invention relates to improvement in the operating key, or push-bar of a typewriter. Although I describe my invention particularly as applied to typewriters, it will be readily understood that the invention is not necessarily limited to such articles, but may be applied to other articles or devices of a nature which may need operating keys, or push-bars, such as adding machines, calculating machines and the like.

In the normal use of the operating of typewriters and using keys of the standard manufacture, it is found that the keys not being resilient to the touch or finger tips, that they cause fatigue and soreness of fingers and the more or less calousing of same, and it has been tried on various occasions to overcome this by replacement caps and the like over the operating keys, but these caps soon become old and soiled and finally oxidize and harden until they become loose and drop off.

It is an object of my invention to provide a simple and durable key-head, which is soft and pliable to the finger-tips, having a metal re-inforced key-socket or fastening device by which it could be rigidly fastened to the operating type-bar of the typewriter or other machine; and also with separate renewable plate, having designating marks representative of the letter or figure or mark so indicated, so that it may not be necessary to change the key-head unless so desired.

With these objects in view the further objects or corresponding features of my invention will be best understood from the following detailed description of prefered and specific forms of device embodying the invention; this description being given not for the purpose of limiting my invention to the specific forms described but for the purpose of giving a clear and comprehensive understanding of the invention both in its broad aspect and in its preferred and specific details. For the purpose of this specific description, I refer to the accompanying drawing, in which—

Fig. 1 is a plan view of the key-head when fastened to the key-bar of the machine.

Fig. 2 is a sectional side-view of the key-head showing its assembly and when fastened to the key-bar of the machine.

Fig. 3 is a sectional end view of the key-head also showing its assembly and when fastened to key-bar of the machine.

Fig. 4 is an end view of the key-head, as, and when fastened to the key-bar of the machine.

Fig. 5 is an end sectional view of that part of key-head which carries the metal fastening device by which it is fastened to the key-bar of the machine, and which carries the separable, removable plate having designating letters, figures, or marks thereon.

Fig. 6 is a sectional end view of the metal fastening device by which the key-head is fastened to the key-bar of the machine.

Fig. 7 is a plan view of separable removable plate (shown with a letter "A" thereon for clearness in explanation) which carries the designating marks.

Fig. 8 is a plan view looking from the bottom of the metal fastening device by which the key-head is fastened to the key-bar of the machine.

Fig. 9 is a plan view looking from the top of the metal fastening device by which the key-head is fastened to the machine.

Fig. 10 is an unsectionalized side view of the metal fastening device by which the key-head is fastened to the key-bar of the machine.

Fig. 11 is a sectionalized end view of the key-head showing a modified construction to that as shown in Figs. 1 to 10; it here shows a removable plate, having the characters thereon, which can be made of rubber, and then forced into a seat opening, by a special tool, which would impound the air underneath, and at the same time, seal the edges, by cementing, or otherwise, and also to arrange it in a curved position, so that it would act as a pneumatic air cushion, and it then would be very resilient to the finger touch.

Fig. 12 is another modification of the construction of the key-head, to that as shown in Figs. 1 to 10, it is shown as a sectionalized side view, and with the key-head of rubber or any other preferable soft material, but

having the characters impressed or inlaid therein.

Throughout the drawing numeral 12 designates the key-bar, which may be variable in shape as are made at present and by which the key-head and its parts are fastened.

The key-head primarily consists of the head itself, carrying means for designating letters, figures, or marks, and means for rigidly and removably fastening on the key-bar without destroying its resiliency.

The metal connection or fastening device 13 is so arranged that it will be formed adaptably so that it may be cast or rigidly formed into the key-head 14; this metal connection 13 having a slot opening 15 so formed that it will admit key-bar 12 and then permit of being squeezed or pressed onto key-bar 12 by that part of its extension which projects outside of the key-head 14 as I have shown at 16, Figures 2, 3, 4, 11 and 12. It may not be necessary to press or squeeze onto key-bar 12, but I have drawn this extension as a protective means should it be necessary. I have shown this metal connection with a diametrical top 16—A as shown in Figures 8 and 9, the object being to give the key-head 14 a good durable thrust contact to and with the metal connection or fastening device 13, but I am aware that other forms can be made without destroying the essence or intent of my invention. This diametrical top 16—A being so formed for sufficient bearing surface by which it may rigidly retain or hold the key-head 14 by the diametrical groove shown in Figures 2, 3, 5, 11 and 12. The diametrical groove 17 as well as the slot opening 17—A in the detail of key-head 14 of Fig. 5, is formed by the metal connection or fastening device 13, when it is cast into the said key-head. The metal connection or fastening device 13 is made of such a shape or form that it will be a proper connecting means for the key-bar of any machine. The metal connection 13 can be of a material so adapted that it can be formed with a corresponding slot opening 15 shown in Figures 3, 6, 8, and 11, such as steel, aluminum, or the like, for slipping down and over the key-bar 12, and then pressed or squeezed to said key-bar 12 if it may become necessary. By having key-head 14 with a metal fastening device 13 it will permit of longer life to the key-head when it is made of soft rubber or any suitable material which will be resilient to the finger touch, and, it will be less liable to oxidize or become hard and drop off the key-bar 12. The key-head 14 can be made of any suitable material which is resilient to the finger touch, such as rubber, leather, or the like, and, it can have the letters, figures or marks, printed, deeply indented, inserted or inlaid into the top of said key-head as shown at 19 in Figures 2, 3, 5, and 12.

In Figure 12 I have shown a key-head with a convex surface but without the separable removable plate 20 as I have shown in Figures 2, 3, and 11. The separable removable plate 20, upon which the letters, figures or marks can be deeply indented, or even inlaid or inserted in grooves or slots therein as shown in Figures 2 and 3, can be renewed at pleasure when necessary, either after becoming old or otherwise, or, this separable renewable plate 20 can be inserted or pushed into its seat opening 21 by a special tool or arrangement whereby it will retain a sufficient amount of air, the space being shown at 23, which will permit or give it a pneumatic resiliency and cause it to curve or camber over the air content, and in so doing will be very resilient to the finger touch, as I have shown by its curve or camber at 23 of Fig. 11. I have shown the separable renewable plate or inset 20 having its deeply indented or inlaid letters, figures, or marks, fastened into seat-opening 21, as a convenient means of fastening, but I am aware that there are other means of fastening this renewable plate, such as driving or inserting into a diametrical groove or slot provided therefor, and to a greater or lesser depth as may be found practicable, without destroying the essence or intent of my invention. With a separable or renewable plate or inset 20 as I have shown, and which will permit of deeply indented or inlaid letters, figures, or marks, and by which arrangement, the separable or renewable plate or inset can be made of a dark green or any other colored rubber or other material so desired, with its deeply indented or inlaid letters, figures, or marks, therein, it will greatly eliminate the very great strain on the eyes of the operator, which is caused under the present system now in use, due to the glare of light on the metal keys now used.

The deeply indented or inlaid letters, figures, or marks in the separable renewable plate or inset 20 will greatly eliminate the letters, figures, or marks from wearing off and still at the same time be resilient to the finger touch, as well as greatly relieve eye-strain.

It will be also seen that the removable plate or inset 20 could be of one colored rubber, while the inlaid letters, figures, or marks in this renewable plate or inset 20 could be of another colored rubber or other material, making it easy to distinguish.

The annular or diametrical groove 17 which I have shown in detail of key-head 14 of Fig. 5 and shown to accommodate or be suitable for the metal connection or fastening device 13, and by which it is formed around diametrical top 16—A as shown in Figs. 8 and 9, when it is cast or formed within key-head 14, can be so altered or changed without destroying the essence or intent of my invention. In fact, the rubber key-head

14 can be cast or formed around any suitable form of metal connection or fastening device 13 which may be suitable to connect to the key-bar 12. Or, in fact, the rubber key-head 14 can be cast with any other means by which it can receive the necessary connection.

I have shown in Figs. 2, 3, 8, 9, 10 and 11, as a form of metal connection or fastening device 13 which may be made in one piece, but, I am aware that it may be made in one or more pieces if necessary, and so formed that the key-head 14 when made of rubber, would have a drawing or elastic holding effect when it is connected or assembled with the key-bar 12.

The very great advantage of the separable or renewable plate or inset 20 is, that the plate itself can be made of one color rubber, and the letters, figures, or marks, 19, when inlaid, can be made of rubber of another color, and then that effective part of key-head can be renewed very quickly and at little expense.

The resilient or rubber key-head 14 could be made rounding, concave or flat on its surface. I am aware that modifications can be made, as for instance by perforations or a change in shape, such as square or hexagonal with its accompanying parts of a suitable nature, without destroying the essence or intent of my invention.

Having described the preferred forms of the present invention, I do not wish to limit myself to these details of construction, but wish to reserve to myself any changes, modifications, or variations that may appear to those skilled in the art or fall within the scope of the following claim.

Having described the preferred forms of my invention, I claim:

A resilient keyhead rigidly formed by casting to a slotted fastening means for fastening to a key bar of a key operating machine, means in the resilient keyhead at its operating end for inserting a rubber plate having character marks, said plate arranged so that the air can be impounded underneath.

In testimony whereof I affix my signature.

EDWARD H. MOYLE.