L. R. ROBERTS.

TYPE WRITING MACHINE.

APPLICATION FILED JAN. 30, 1914.

1,173,538. Patented Feb. 29, 1916.

FIG. I.

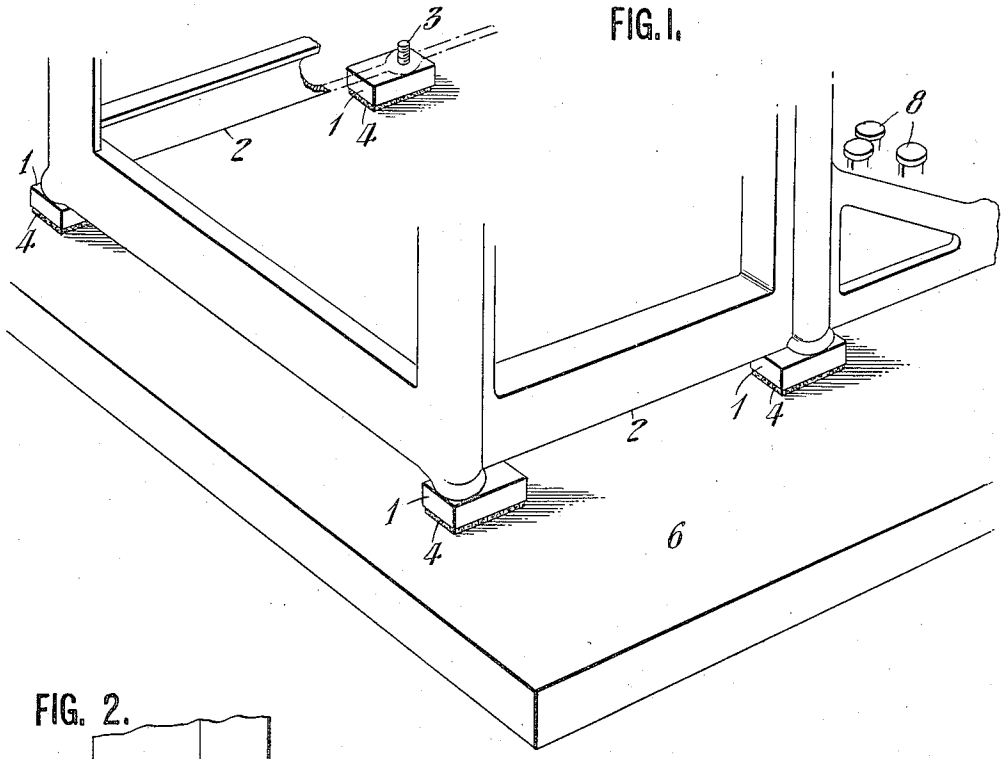


FIG. 2.

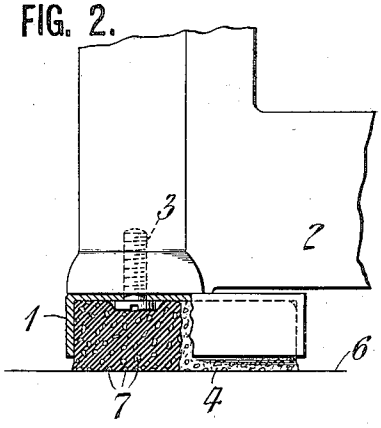
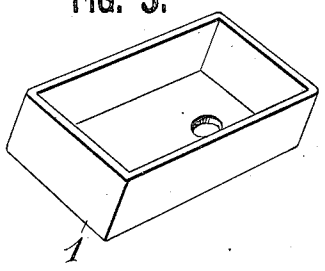


FIG. 3.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

1,173,538. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed January 30, 1914. Serial No. 815,387.

To all whom it may concern:

Be it known that I, LYMAN R. ROBERTS, a citizen of the United States, residing in Rutherford, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to improvements in the feet or supports for typewriting machines.

An object of the invention is to provide an improved sound-deadening means for absorbing vibrations imparted to the machine, and thus preventing such vibrations from being transmitted to the resonant desk or table on which the machine rests. For this purpose the machine is supported on a soft, elastic, porous material containing a large number of cells or pockets containing air placed under compression, and forming an air cushion or cushions on which the machine is supported. When the machine is thus supported, the vibrations imparted thereto by the types striking the platen are absorbed by the air cushions, and thus prevented from being transmitted to the table, desk, or other support on which the machine is placed. The noise of operation is thereby materially reduced. The vibration and jarring of the machine are also lessened, wear and loosening of parts are reduced, and a smoother operation is obtained. Owing to the softness and elasticity of the material employed, the weight of the machine is supported by the lifting power of the confined air which keeps the material inflated. That is, the machine is supported on air cushions. This is in contrast to the usual solid rubber feet or other supporting material, which is of sufficient solidity to sustain the weight of the machine.

The invention further provides a means for overcoming the tendency of the machine to creep along the table or support on which it rests. This tendency is due to the rapid step-by-step feeding of the carriage. To avoid such creeping of the machine, there is usually employed a fastening means which consists of a metal bar or other device that transmits the sound vibrations to the table, and the table acts as a sounding board. In the present invention, the machine is not only cushioned, but the cushioning material provides a multitude of sharp-edged suction cups which cling to the table top and prevent the machine from creeping. The need of the usual metal fastening devices is thus removed and the noise of operation substantially reduced.

In practising the invention, the feet or supports may comprise blocks of spongy, porous, elastic material, such as very spongy rubber, said blocks placed in inverted cups or casings secured to the bottom of the machine frame at the corners of the frame. The blocks of porous material placed in these cups are preferably made somewhat larger than the interior dimensions of the cups, and are thus placed under more or less compression when in the cups, thereby holding the blocks securely in the cups and placing the air confined in said blocks under compression. The cups further serve to confine the air in many of the cells which would otherwise be in communication with the outside air, and thereby increase the amount of compressed air serving as a cushion for the machine. These cushioning blocks, being made of rather soft material, are preferably made of considerable area to enable them to properly support the weight of the machine. Said blocks project downwardly beyond their containing cups, so that the machine is entirely supported on said cushioning blocks. The open air cells on the bottom faces of these cushioning blocks operate by suction to securely hold the machine against sliding movement or creeping over the surface of the table or support on which the machine is mounted. Spongy rubber can be compressed; other rubber can not. The compression of the spongy material laterally, has a tendency to compress laterally and to elongate vertically a little, the air cells within said material, and the shock and vibrations are, of course, transmitted along the longer axes of such compressed cells. This makes the mass of the pad more elastic in position, that is, more elastic vertically than laterally, and adds materially to the efficiency of the pads which form the features of this invention.

Other features and advantages will appear hereinafter.

In the accompanying drawings, Figure 1 is a perspective view showing a machine frame with my invention applied thereto.

Fig. 2 is a part sectional elevation view of one of the feet or supports. Fig. 3 is a perspective view of a cup or casing.

Each of the feet comprises a cup or casing 1, secured as by means of a screw 3 to the frame 2 of a typewriting machine, or other machine to which the invention is applied. Within each cup or receptacle 1 is placed a block 4 of soft, elastic, and very porous material, such as very spongy rubber. Such material contains a great many air cells or pockets 7, so that a large portion of the space occupied by the material is taken up by these air cells. Stated in another way, each block is made up of a large number of closed receptacles, formed of soft elastic material, and each inclosing a volume of air or gas and forming an air cushion. The blocks 4 are preferably cut somewhat longer and wider than the interior dimensions of the containers 1, so that said blocks are under compression when placed in position. This serves not only to securely hold the blocks in position, but also to compress the air contained therein to a greater or less extent. The weight of the machine serves to further compress the confined air so that the entire machine is supported on a cushion or a large number of cushions of compressed air. The blocks 4 protrude downwardly below the cups 1, and bear directly on the table or support 6 on which the machine rests. The cups 1 are thus held off the table 6. The blocks 4 are preferably made of considerable area to enable them to properly support the weight of the machine.

With the construction above described, in which the machine is supported on compressed air cushions, any vibrations imparted to the machine when the keys 8 are actuated and the types strike the platen, are prevented from being transmitted to the support 6, which would otherwise act as a sounding board and increase the noise. The air cushions supporting the machine also tend to materially reduce the amount of vibration to which the machine itself is subjected, thus reducing the wear of the machine and preventing the parts from working loose. The air cells 7 which are open at the under face of the blocks 4 act as suction valves to hold the machine to its support 6; that is, the weight of the machine, by compressing the material 4, drives a portion of the air out of said cells, causing the blocks to adhere to the surface of the support 6. The machine is thus prevented from creeping or moving over the surface of its support, as is usual with the compact rubber feet generally employed. If preferred, the blocks 4 may have a smooth or finished surface to rest on the support 6.

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 typewriter pad of cellular or spongy rubber, said rubber being under strong lateral compression, and having an exposed or bottom surface of the pad formed of said spongy rubber.

2. A typewriter pad composed of cellular spongy soft rubber, some of the said cells being closed and elongated under later compression, and some of said cells being open transversely at the bottom of said pad, where they form suction cups to hold the machine to the surface on which it rests and thereby prevent it from "walking".

3. A foot for typewriting machines comprising a cup, means for securing said cup to the bottom of a machine in combination with a pad of spongy rubber, normally larger and deeper than said cup, compressed laterally into said cup, whereby the cells within the area of the cup walls are laterally compressed, and the part beyond the areas of said walls is not compressed.

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