Dec. 8, 1931. P. E. SHIELDS 1,835,973

BUFFER

Filed Aug. 7, 1928

Fig. 1.

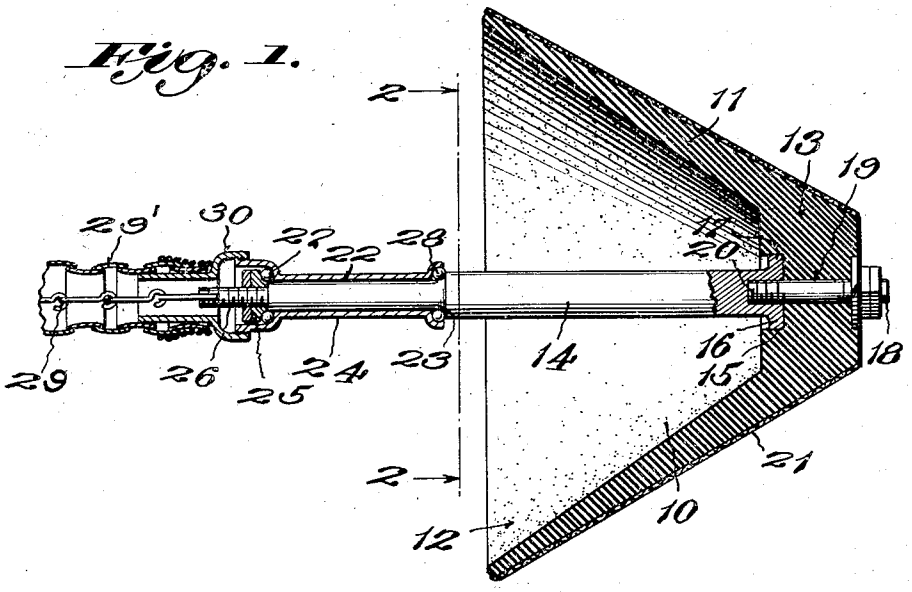
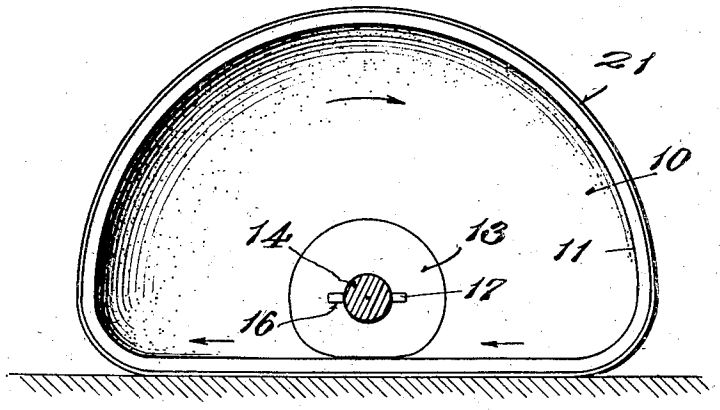


Fig. 2.



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Patented Dec. 8, 1931

1,835,973

UNITED STATES PATENT OFFICE

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BUFFER

Application filed August 7, 1928. Serial No. 298,025.

The present invention relates to buffers and more particularly to mechanically driven buffers of the type employed in cleaning and polishing automobile bodies and the like. It has heretofore been proposed to use a cone-shaped buffer for cleaning and finishing purposes, and while such a buffer offers many improvements over the flat type buffer, it has not proven entirely satisfactory. The known cone buffer is ineffective in small crevices, corners, and on irregular and uneven surfaces. Moreover, even when applied to a flat surface, prior cone buffers did not produce the desired result, due to the fact that their contracting areas were too narrow, being confined to substantially a straight line. To give the desired large area contact, it has also been proposed to use a belt type buffer, but the latter is unwieldy to handle and cannot operate in cracks and corners.

A general object of this invention is to provide a power driven buffer in which the disadvantages referred to are eliminated.

A further object of the invention is to provide a novel form of buffer which is effective in narrow depressions and corners, and also capable of presenting a large contact area when applied to flat surfaces. The invention contemplates the provision of a conically shaped buffer which is flexible in nature and capable of flattening out when pressed upon the surface to be cleaned.

These and other features of the invention will appear more fully from the following detailed description when read in connection with the accompanying drawings, and will be pointed out in the appended claims.

In the drawings,

Fig. 1 is a cross section of a buffer with the improvements embodied therein; and

Fig. 2 is an end view along the lines 2—2 of Fig. 1, showing the buffer pressed down upon a flat surface.

Referring more particularly to the drawings, the buffer 10 has a body 11 made of semi-flexible rubber and in general outline approximates the shape of a hollow cone. The large end 12 of the buffer is open as indicated, while the small end is closed by the transverse end member 13 preferably moulded integrally with the sides.

The buffer is mounted upon one end of a rigid shaft 14 and is non-rotatably secured thereto in a manner hereinafter described. The inner side of the end member 13 is formed with a central cylindrical recess 15 from which slots 16 radiate at diametrically opposed points. The adjacent end of the shaft 14 is provided with ribs 17 corresponding in size and relative location with the slots 16. The end of the shaft fits into the cylindrical recess 15 and the ribs 17 are received by the slots. The buffer is retained on the shaft by means of the bolt 18 which extends through the bore 19 in the end member and screws into the threaded hole 20 formed in the shaft 14.

The body of the buffer is covered by any suitable material 21, such as cloth, felt or any well known buffing material.

The shaft 14 is extended beyond the large end of the buffer and the outer end thereof is reduced as at 22, shoulder 23 being formed between the reduced and large portions of the shaft. A handle 24 loosely surrounds the reduced portion of the shaft so as to be freely rotatable relative thereto. The handle is retained upon the shaft by means of nuts 25 screwed upon a threaded extension 26 of the shaft. The adjacent faces of the handle and nut are shaped to form raceways for ball bearings 27. A similar provision is made between the shoulder 23 and the adjacent handle surface for the reception of ball bearings 28.

A flexible drive shaft 29 driven from any suitable source of power such as an electric motor is secured to the extension 26 and serves to rotate the shaft 14 and the buffer. The flexible shaft is surrounded by a suitable housing 29′ which is coupled to the handle 24 by the threaded coupling 30.

In use the buffer is manipulated by grasping the hand grip 24 and directing the buffer against the surface to be treated. If the surface operated upon be irregular or uneven, the buffer will adapt itself to the surface by its resilience. When used against a flat surface the buffer may be flattened out

in the manner illustrated in Fig. 2, thereby producing a contacting area comparable to that obtained by the belt type buffers. Of course, the resiliency of the body may be varied by changing the thickness and regulating the amount of vulcanization of the rubber.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A buffer of the character described comprising a hollow body formed in the shape of a cone, the said body being formed of resilient material, the small end of the body being closed, a rigid shaft extending through the large end of the body, ribs on one end of said shaft, the inner side of the closed end having a recess for receiving one end of the shaft and grooves radiating from the recess to receive the ribs on the shaft, means for detachably securing the body to the shaft, means for driving the shaft, and a handle surrounding the shaft and rotatable with respect thereto.

2. A buffer having a hollow body of resilient material in the shape of a hollow cone, the small end of the body being closed, a rigid shaft extending through the large end of the body, means for locking the end of said shaft to said closed end, and means for rotating said shaft and buffer, the large end of said hollow body being spaced from said shaft.

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