

Aug. 17, 1965

J. E. LEY

3,200,542

BUFFING BAR AND METHOD OF MAKING SUCH BAR

Filed May 10, 1963

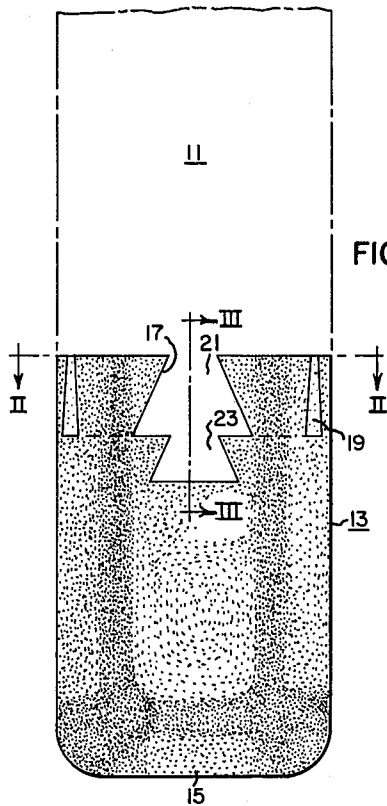


FIG.1

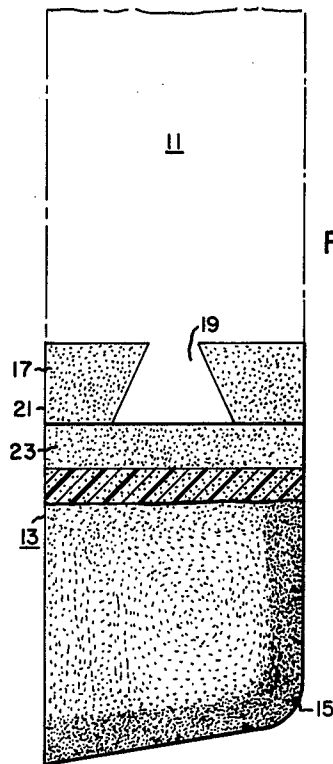


FIG.3

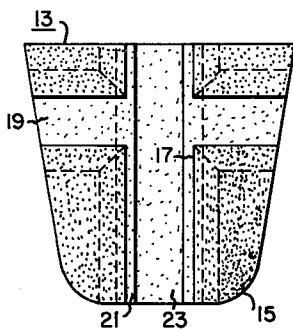


FIG.2

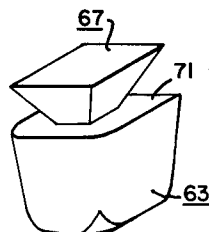


FIG.6

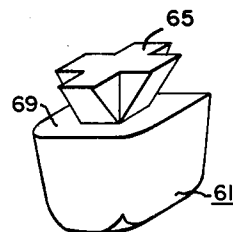


FIG.5

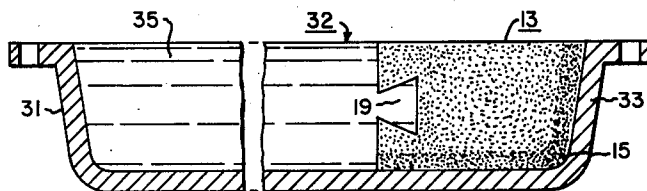


FIG.4

1

2

3,200,542
BUFFING BAR AND METHOD OF MAKING
SUCH BAR

John E. Ley, Pittsburgh, Pa., assignor to Schaffner Manufacturing Company, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 10, 1963, Ser. No. 279,582

2 Claims. (Cl. 51—262)

This invention relates to buffing compounds which are used in the buffing, polishing or finishing of parts such as the fenders of automobiles, metal sheet used in the making of polished articles and other like processes. This invention has particular relationship to buffing bars.

In a buffing, polishing or finishing operation the surface to be treated is engaged by a rotating buffing wheel. The wheel is usually of smooth or non-abrasive material and is impregnated with a buffing compound to produce the buffing effect. The buffing compound is derived from a bar which the operator holds in engagement with the periphery of the wheel as it rotates. The bar is melted in the region where it engages the wheel by the heat of friction between the bar and the wheel. As melted compound leaves the point where it is produced, it is solidified by the current of air created by the rotation. The wheel thus coated with the compound is applied to the work. The bar is consumed as it is melted by the friction with the wheel.

When the bar is melted down to the portion which is being gripped by the operator, this portion must be discarded. Since the discarding of unused grip portions of the bar would result in serious economical loss, the buffing bars in accordance with the teachings of the prior art includes a grip cardboard. This grip is formed by bending a card-board blank and stapling or glueing the edges of the blank to form a hollow box-like object. The compound is then secured to the box. This bending and stapling operation is highly time consuming and the cost of making the card-board grip is high. In addition, the card-board grip inherently has sharp edges and an operator holding such a grip for any substantial length of time suffers discomfort.

It is an object of this invention to overcome the difficulties of prior art buffing bars having grips. It is a specific object of this invention to provide a buffing bar having a grip which shall lend itself to manufacture at a low cost and which shall be usable by an operator without discomfort. Another object of this invention is to provide a method for making such a buffing bar.

In accordance with this invention, a buffing bar is provided having a grip of a solid material having indentations in which the buffing rod is engaged. In accordance with an important specific aspect of this invention the grip is molded from a polystyrene foam and has cross indentations or cavities generally in the form of female dovetail grooves into which the abutting end of the rod of buffing compound is molded or projections around which the compound is molded. The density of the molded material should be sufficiently high to enable the grip to withstand crushing in the hands of the operator. A minimum density of 1.75 pounds per cubic foot has been found satisfactory. The grip may be molded rounded about a substantial portion of its surface so that the operator suffers no discomfort in holding the grip. Materials sold under the names Chemfoam and Styrofoam are satisfactory for this purpose.

In accordance with the broader aspects of this invention, the grip may be molded from urethane foam or from polyurethane foam. But the polystyrene foam has marked advantages over these.

The compound has a substantially lower melting temperature than the foam. Typically the melting temperature of the compound is between about 125° F. and 165° F. while the foam has a melting temperature of 185° F. In accordance with a further aspect of this invention, a method for readily marking the above-described bar is provided by molding the compound into the bar. The grip is inserted in one end of a mold having the form of the bar with the indentations facing inwardly. The buffing compound is liquified and poured into the mold filling the mold and the indentations. The compound is then permitted to solidify. A bar is thus formed with a rod of compound extending from the grip and secured in the indentations in the grip.

The novel features considered characteristic of this invention are disclosed generally above. For a better understanding of this invention both as to its organization and as to its method of operation, together with additional objects and advantages thereof, reference is made to the following description of a specific embodiment taken in connection with the accompanying drawing, in which:

FIGURE 1 is a view in side elevation of a buffing bar in accordance with this invention;

FIG. 2 is a view in section taken along line II—II of FIG. 1;

FIG. 3 is a view in section taken along line III—III of FIG. 1;

FIG. 4 is a view in longitudinal section showing the manner in which a bar according to this invention is formed; and

FIGS. 5 and 6 are views in perspective showing grips in accordance with a modification of this invention.

The apparatus shown in FIGS. 1 through 3 includes a buffing bar having a grip 13 of a solid, preferably polystyrene foam of density at least 1.75 pounds per cubic foot, to which a rod 11 or buffing material may be molded. The buffing material may be of numerous different compositions and usually includes principally an abrasive and a binder. A typical material may have the following composition:

Tripoli—about 60% to 65%

Stearic acid—about 18%

Paraffin—remainder

The Tripoli is in this case the abrasive and the Stearic acid and Paraffin the binder. This specific material has a melting temperature of about 125° F. to 128° F. and may be molded into a grip of a polystyrene foam which has a melting temperature of 185° F.

The grip 13 may be prepared by molding a mass of pellets which form the foam. This grip 13 is of generally trapezoidal form but a large part 15 of its surface is curved or rounded. The grip 13 has cross indentations, grooves or cavities 17 and 19. These indentations 17 and 19 are generally at right angles and have the form generally of dovetails. The indentations 17 includes a wider dovetail 21 in communication with a narrower dovetail 23.

In the use of the apparatus the cross indentations or dovetails 17 and 19 hold the rod 11 firmly. With an indentation along only one dimension of the grip 13, there may be a tendency for the rod 11 to become displaced with reference to the grip 13. The composite dovetail structure 21—23 assures firm engagement of the rod 11 by the grip.

The buffing bar is formed by molding. For this purpose a mold 31 having a cavity 32 in the form of the bar is provided. Preferably the outer surface of the grip 13 has the same form as the surface of the rod 11 extending from it. The surface of the cavity 32 is then formed

3

symmetrically so that the grip 13 may be inserted in either end 33 with its surface conforming to the surface of the cavity 32 of the mold. The indentations 17 and 19 extend remotely from the inner surface of the end 33 engaged by the grip 13. The compound is reduced to a molten mass and poured into the mold. The liquid compound 35 extends from the end of the grip 13 having the indentations 17 and 19 to the other end of the cavity 32. The liquid fills the indentations 17 and 19.

The material of which the grip is composed, particularly polystyrene foam, is wetted by the liquid compound which adheres to it. The mold 31 and its content is permitted to cool so that the compound solidifies. The bar is then readily releasable from the mold. A buffing bar in which the grip 13 is fused or molded to the buffing rod 11 is thus produced.

In the use of the bar, the bar is held against a buffing wheel by the grip. The palm of the operator's hand may engage the curved portion 15 of the grip. Thus the operator suffers no discomfort. Substantially the whole buffing rod 11 is consumed usefully. When the outer edges of the indentations 17 and 19 are reached, the operator may continue to melt the compound in the indentations 17 and 19. The contiguous part of the grip 13 is ground away but drops to the ground as a fine white dust.

The grips 61 and 63 shown in FIGS. 5 and 6 have projections 65 and 67 respectively. The projection 65 has the form of a cross tapering from the outer extreme to a plane 69 and the projection 67 has the form of a male dovetail tapering to the plane 71. These grips have been found to hold a rod of compound molded around them firmly.

In the claims the word recess or recesses is intended to mean any recession from an outer extension of a grip to an inner surface either around the periphery of a projection or in the form of a cavity within the periphery of

4

the grip and the expression indentation means a recession in the form of a cavity.

While a preferred embodiment of this invention has been disclosed herein, many modifications thereof are feasible. This invention then is not to be restricted except insofar as is necessitated by the spirit of the prior art.

I claim as my invention:

1. A buffing bar including a solid grip of a moldable material having at least one recess in one end thereof and a rod of a buffing compound secured in said recess by molding liquified buffing compound in said recess, the liquid buffing compound adhering to said material, the moldable material having a higher melting temperature than the compound.

2. A buffing bar including a solid grip of polystyrene foam having at least one recess in one end thereof and a rod of a buffing compound secured in said recess by molding liquified buffing compound in said recess, the liquid buffing compound adhering to said polystyrene foam, the said polystyrene foam having a higher melting temperature than the compound.

References Cited by the Examiner

UNITED STATES PATENTS

1,970,545	8/34	Chandler	51—263
2,122,665	7/38	Twynning	51—263
2,177,992	10/39	Moon	51—263
2,467,596	4/49	Pratt	51—293
2,904,418	9/59	Fahnoe	51—293

FOREIGN PATENTS

63,847 8/49 Netherlands.

ROBERT C. RIORDON, *Primary Examiner*.

LESTER M. SWINGLE, *Examiner*.