Jan. 16, 1962 J. R. ALBERT 3,016,763

HANDGRIP FOR HANDLE BARS

Filed Sept. 28, 1959

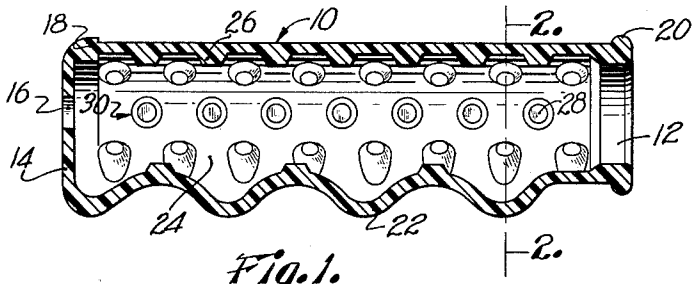


Fig. 1.

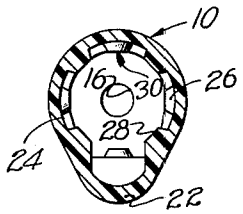


Fig. 2.

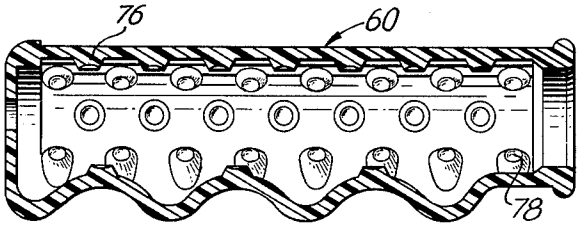


Fig. 3.

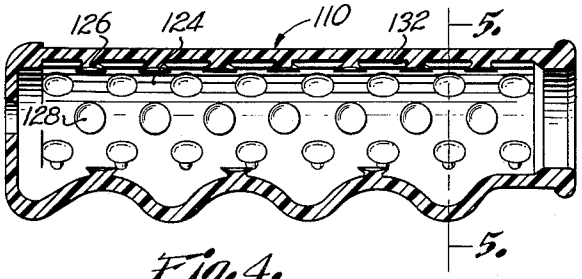


Fig. 4.

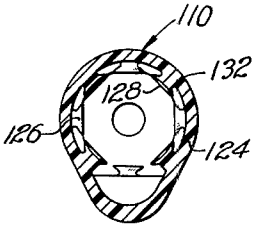


Fig. 5.

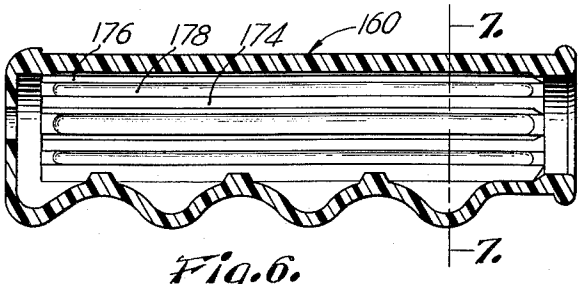


Fig. 6.

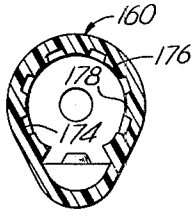


Fig. 7.

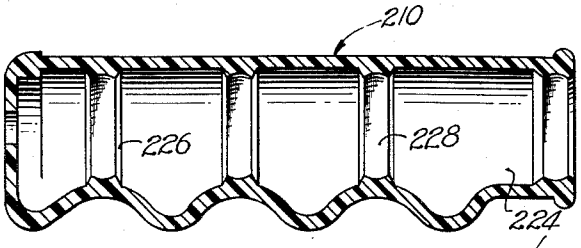


Fig. 8.

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United States Patent Office

3,016,763
Patented Jan. 16, 1962

3,016,763

HANDGRIP FOR HANDLE BARS

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Filed Sept. 28, 1959, Ser. No. 842,691
2 Claims. (Cl. 74—551.9)

This invention relates to handgrips broadly in the nature of an elongated, flexible tube used on rods, pipes and the like forming a part of handles or handle bars, the primary object being to provide novel means within and as an integral part of the handgrip for positively holding the handgrip in place, particularly when it is grasped in the hand of the user.

It is the most important object of the present invention to provide a handgrip having a plurality of protuberances therewithin, each of which has a handle-engaging surface of such nature as to give the same substantial holding power against the handle with which the said surfaces engage.

Another important object of the instant invention is the provision of a handgrip having the aforementioned attributes, while at the same time conforming to the hand when grasped, thereby permitting the user to get a firmer grip preventing slippage of the hand from the handgrip as well as slippage of the handgrip itself from the handle.

Still another important object of the instant invention is the provision of a handgrip having the protuberance means aforementioned made and arranged to be completely effective as above explained, yet inexpensive to manufacture by virtue of the fact that a minimum amount of material is needed for its manufacture.

It is a further object of the instant invention to provide a handgrip including all of the features above set forth, yet made in a manner to permit manufacture through a molding process and without difficulty from the standpoint of removal of the finished article from the mold.

In the drawing:

FIG. 1 is a longitudinal, cross-sectional view through a handgrip for handle bars made pursuant to one form of my present invention.

FIG. 2 is a cross-sectional view taken on line 2—2 of FIG. 1.

FIG. 3 is a longitudinal, cross-sectional view through a second form of the invention.

FIG. 4 is a longitudinal, cross-sectional view taken through a third form of the instant invention.

FIG. 5 is a transverse, cross-sectional view taken on line 5—5 of FIG. 4.

FIG. 6 is a longitudinal, cross-sectional view through a fourth form of the invention.

FIG. 7 is a cross-sectional view taken on line 7—7 of FIG. 6; and

FIG. 8 is a longitudinal, cross-sectional view through still another embodiment of the invention.

The handgrip illustrated in FIGS. 1 and 2 of the drawing is broadly designated by the numeral 10 and is in the nature of an elongated tube of flexible material preferably synthetic, and including any one of the moldable plastics presently available on the open market.

An opening 12 is provided in one end of the handgrip 10 for receiving a handle (not shown) in the usual manner, and end wall 14 has a vent opening 16 for evacuation of air as may be necessary or desirable when the handgrip 10 is to be inserted onto a handle. Reinforcing, external beads 18 and 20 may be provided as desired. Furthermore, a plurality of finger-receiving undulations 22 as is quite common, facilitate a firm grip when the device 10 is grasped by the user.

The handgrip 10 has an inner face 24 provided, in accordance with the instant invention, with a plurality of preferably integral, spaced protuberances 26 that are

in the nature of small, inwardly extending frusto-conical knobs terminating in handle-engaging flat, circular surfaces or ends 28. Hence, it is seen that the cross-sectional area of each knob or protuberance 26 progressively decreases as the surface 28 thereof is approached.

Noteworthy is the fact that the knobs 26 are arranged in longitudinal rows 30 extending longitudinally of the handgrip 10. The rows 30 of knobs 26 are spaced circumferentially and completely surround the handle when the handgrip 10 is placed thereon. Furthermore, it is to be preferred that the knobs 26 of each row 30 be staggered with respect to the knobs 26 of the row 30 next adjacent thereto as is quite evident in FIG. 1 of the drawing.

It is important to the success of the handgrip 10 that there be substantial contact between each surface 28 and the handle so that appreciable holding power is presented when the handgrip 10 is grasped by the operator. This is accomplished by providing the surfaces 28 on the knobs 26 and the combined effect of a large number of the surfaces 28 engaging the handle bar when the handgrip 10 is grasped by the operator is to hold the handgrip 10 in place and prevent slippage of the same from the hand'e bar, the latter of which is usually made from metal and has a rather slick outer surface.

Since the knobs 26 are spaced apart throughout the interior of the tubular device 10, the latter is rendered soft to the grip and when grasped, the body of material from which the handgrip 10 is made, will conform to the shape of the hand of the user. In other words, as grasping pressure is applied to the handgrip 10 exteriorly thereof, a large number of the knobs 26 will be brought into firm holding, tight frictional contact with the handle, but at the same time, the flexible material will yield between the protuberances 26 according to the shape of the hand and pursuant to the pressure applied thereto, which of course, varies from end-to-end of the handgrip 10, as well as circumferentially thereof.

If desired, the attributes just above outlined might well be enhanced by following a slight modification as illustrated in handgrip 60 in FIG. 3 of the drawing. The handgrip 60 is in all respects identical with the handgrip 10 except that the knobs or protuberances 76 in the handgrip 60 are provided with handle-engaging, terminal surfaces 78 that are concave.

While the circular, peripheral edge of each surface 78 is rather sharp because of the concavity and the frusto-conical configuration of the knobs 76, nonetheless, when the surfaces 78 engage the handle bar, the area of engagement is virtually throughout the entire surface 78 and, therefore, there is more than a mere line contact between each knob 76 and the handle. This is especially true when the grip 60 is grasped by the operator, and it is to be noted that the concavity of the surfaces 78 creates a suction cup effect, thereby causing an even greater grip on the handle.

The suction cup principle is included also in handgrip 110 shown in FIGS. 4 and 5 of the drawing. The knobs or protuberances 126 are provided with concave, handle-engaging, terminal surfaces 128 in the same manner and for the same purpose as the surfaces 78 in FIG. 3.

The knobs 126 differ however, from the knobs 26 and 76 in that the same are undercut adjacent inner face 124 of the handgrip 110. Such undercutting presents an annular groove 132 surrounding each knob or protuberance 126 respectively, adjacent the face 124. Hence, the knobs 126 progressively increase in cross-sectional area as the surface 128 thereof is approached. It is preferred, as illustrated, that the side wall of each protuberance 126 which extends from groove 132 to the outermost circular periphery of the surface 128, be arched or transversely convex. This facilitates removal of the device

110 from the mold since the knobs 126 will readily yield or flex and thereby clear projections on the mold fitting between the plurality of spaced-apart knobs 126.

The relatively small, cross-sectional area of the knobs 126 at the grooves 132 thereof, as compared with the appreciably larger cross-sectional area of the surfaces 128, lends flexibility to the knobs 126 such that they properly engage the handle and also augment the feature of my invention above outlined with respect to the handgrip conforming to the shape of the hand, depending in part of course, upon the extent and zones of pressure exerted in the grasping action.

FIGS. 6 and 7 of the drawing illustrate an embodiment that comprises a handgrip 160 wherein the protuberances are in the nature of ribs 176 which, as in the protuberances 26 and 76, progressively decrease in cross-sectional area as handle-engaging surfaces 178 thereof are approached. In other ords, the sides of the elongated, longitudinally extending ribs 176 diverge as the inner face 174 of the handgrip 160 is approached. The ribs 176 preferably surround the handle when the handgrip 160 is placed thereon, and here again, a suction-cup effect is produced by virtue of the fact that the surfaces 178 are transversely concave. Longitudinally, however, the grooves or surfaces 178 are straight.

In the modification illustrated by FIG. 8 of the drawing a handgrip 210 is provided with a plurality of protuberances or ribs 226 on inner face 224 that are annular and, therefore, surround the handle when the grip 210 is placed thereon. As in the case of the longitudinally extending ribs 176, the ribs 226 are provided with handle-engaging, terminal surfaces 228 that are transversely concave to effect the suction cup action on the handle and present a surface of substantially greater area than mere line contact with the handle. It is apparent in FIG. 8 of the drawing that the cross-sectional area of each protuberance 226 progressively decreases as the surface 228 is approached, since the sides thereof diverge as the face 224 is approached.

Except for the differences above noted, the various

forms of the handgrip illustrated in the drawing may be substantially identical and it is now quite obvious that the novel results initially outlined hereinabove are attained irrespective of which form of the invention is chosen by the manufacturer thereof.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. A handgrip for a handle comprising an elongated, handle-receiving tube of flexible material having an inner face provided with a plurality of spaced protuberances each having a handle-engaging terminal surface to effect suction cup action on the handle and adapted to engage the handle throughout an area substantially greater than line contact with said handle, each protuberance being undercut adjacent said face of the tube.

2. A handgrip for a handle comprising an elongated, handle-receiving tube of flexible material having an inner face provided with a plurality of spaced knobs each having a concave handle-engaging terminal surface to effect suction cup action on the handle and adapted to engage the handle throughout an area substantially greater than line contact with said handle, each knob being undercut adjacent said face of the tube.

References Cited in the file of this patent

UNITED STATES PATENTS

385,715	Jeffery	July 10, 1888
391,253	Latta	Oct. 16, 1888
476,424	Smith	June 7, 1892
586,371	Stein	July 13, 1897
2,091,458	Sleight	Aug. 31, 1937
2,666,340	Hunt	Jan. 19, 1954

FOREIGN PATENTS

19,602 of 1893	Great Britain	Aug. 18, 1894
19,995 of 1902	Great Britain	July 23, 1903
330,243	Great Britain	June 2, 1930
804,757	France	Aug. 10, 1936