Sept. 27, 1938. C. KAACK 2,131,224

SUCTION CUP

Filed Aug. 25, 1937

Fig. 1.

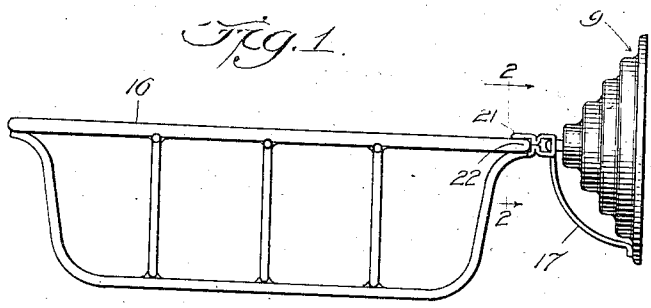


Fig. 2.

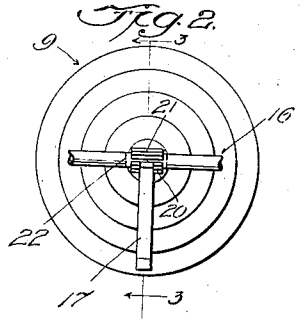
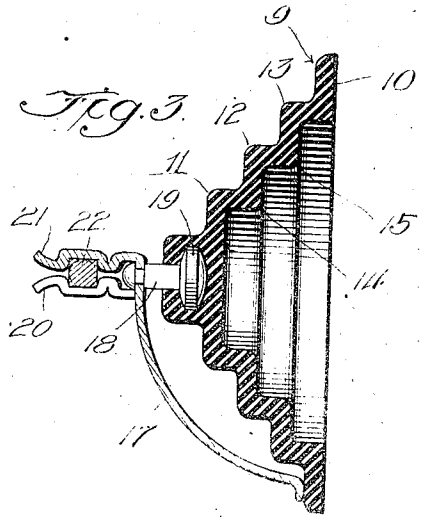


Fig. 3.



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SUCTION CUP

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2 Claims. (Cl. 248—206)

This invention relates to a suction cup of the type adapted to be pressed against a smooth surface and to be maintained in place by a partial vacuum.

An object of the invention is the provision of an improved construction whereby the attaching of the device is facilitated and the attaching peripheral surface is not distorted during the attaching or affixing operation.

A further object is the provision of an improved support for maintaining an article in an upright or horizontal position.

In the drawing wherein is illustrated a preferred embodiment of the invention:

Fig. 1 is a side elevational view of the complete device;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged vertical sectional view taken on the line 3—3 of Fig. 2.

As illustrated, the preferred embodiment of the invention comprises a suction cup 9 of resilient material such as rubber, having a flat peripheral surface 10 adapted to be pressed against a second flat surface to which the device is to be attached.

The outer surface of the cup device is preferably constructed of a plurality of concentrically arranged corrugations or steps 11, 12 and 13, and the inner surface likewise is provided with a corresponding plurality of corrugations 14 and 15. By this construction and arrangement, when the device is attached to a surface and the air expelled by pressure, the corrugations or corrugated portions are progressively pressed inward. Thus, portion 11 will be pressed inward a short distance before pressure is exerted on portion 12, and finally portion 13 is depressed. In this manner surface 10 is not distorted or dislodged during the attaching operation, and a more uniform vacuum action results. The corrugations 14 and 15 on the inner surface facilitate the progressive movement of the stepped portions.

The device is adapted to support any suitable article such as a rack 16 and to assist in maintaining the article in proper position, an auxiliary spring arm 17 is preferably provided. In the form shown in Figs. 1, 2 and 3, the spring arm 17 is held in place by a stud 18, having an enlarged head 19 embedded in the central portion of the cup. The primary object of this arm 17 is to offer relief to the suction cup, and prevent the vacuum being broken by the weight of the article supported thereon. Two spring forked members 20, 21, may be provided to receive a member 22 of the article to be supported. In this instance it is desirable to have the article to be supported made of square section, preferably at the point of its support by the holder.

I claim:

1. A device of the character described, comprising a resilient cup member having a corrugated outer surface, a corrugated inner surface corresponding configuratively with said corrugated outer surface adapted to "nest" under pressure applied at the apex of said cup member, thus providing several independently gripping vacua, a supporting stud securely anchored to the apex of the outer surface of the said cup member, and an auxiliary supporting arm securely fastened to said supporting stud, and having one end terminating in two flexible receiving lips, forming a socketed portion adapted to receive an article to be supported and having its other end resting on the outer flange of said cup member.

2. A device of the character described, comprising a corrugated outer surface, a corrugated inner surface corresponding configuratively with said corrugated outer surface, and having at least three serrations or corrugations adapted to "nest" under pressure applied at the apex of said cup member, thus providing several independently gripping vacua, a supporting stud securely anchored to the apex of the outer surface of the said cup member, and an auxiliary supporting arm securely fastened to said supporting stud, and having one end terminating in two flexible receiving lips, forming a socketed portion adapted to receive an article to be supported and having its other end resting on the outer flange of said cup member.

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