May 21, 1929. I. E. HANSON 1,714,422

SUCTION SUPPORTING DEVICE

Filed June 9, 1927

Fig. 1.

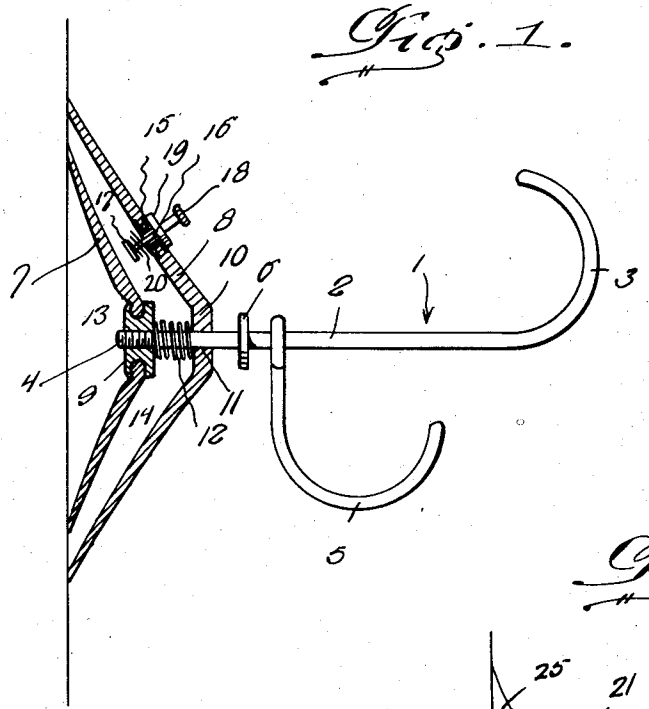


Fig. 3.

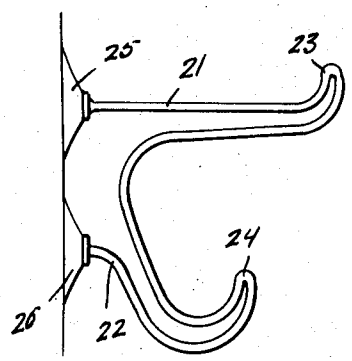
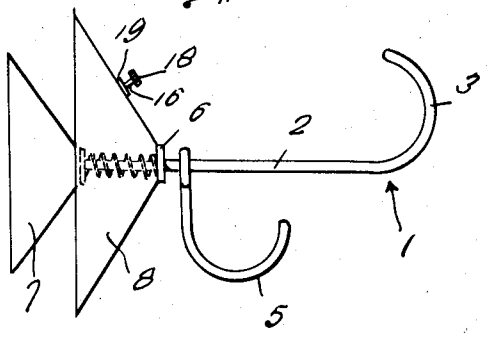


Fig. 2.



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Patented May 21, 1929. 1,714,422

UNITED STATES PATENT OFFICE.

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SUCTION SUPPORTING DEVICE.

Application filed June 9, 1927. Serial No. 197,606.

The present invention relates to improvements in suction supporting devices and has reference more particularly to means for supporting a bracket on a highly polished surface by means of suction, and more particularly the invention relates to a support for a clothes hook.

One of the important objects of the present invention is to provide a suction supporting device for a clothes hook which will obviate the necessity of having to screw the hook or drive the same into the wall or otherwise deface the wall so as to properly support the hook.

A further object resides in the provision of a suction supporting device of the above mentioned character which includes the provision of a pair of concentrically arranged suction cups carried by the inner end of the hook, said concentric suction cups being adapted to engage the supporting surface for rigidly supporting the hook in position for use, the provision of the double vacuum created by the concentric cups permitting the hook to support articles of various weights.

A still further object of the invention is to provide a suction supporting device wherein means is provided for breaking a partial vacuum created in the outer chamber in order to permit the ready and easy removal of the hook and the suction supporting means therefor from the wall.

A further object is to provide a suction supporting device of the above mentioned character which is simple in construction, inexpensive, and furthermore adapted to the purposes for which the same is designed.

Other objects and advantages of this invention will become apparent during the course of the following description.

In the accompanying drawing forming part of this specification and in which like numerals are employed to designate like parts, throughout the same:

Figure 1 is a vertical sectional view of the concentrically arranged concentric cups showing the manner in which the same cooperate to support a clothes hook on a vertical wall.

Figure 2 is a side elevation showing the relationship of the suction cups when the device is detached from the wall, and,

Figure 3 is a side elevation of another form of suction supporting means.

In the drawing wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates generally a clothes hook of a conventional construction, the same including a shank 2 having an upwardly bent hook 3 formed on its outer end, the inner end being threaded as illustrated at 4. An auxiliary hook 5 is suspended from the shank portion 2. A collar 6 is provided on the shank 2 forwardly of the threaded inner or rear end 4.

My improved suction supporting device for the clothes hook comprises the inner and outer suction cups 7 and 8 respectively, the same being formed of rubber and the outer suction cup is relatively larger than the inner suction cup. An opening is formed in the apex of the smaller or inner suction cup 7 and seated in this opening is the nut 9, the threaded bore of which is adapted to receive the threaded end 4 of the shank 2 of the clothes hook 1 in the manner as clearly illustrated in Figure 1. The outer suction cup 8 has its closed end 10 formed with an opening 11 and this opening is of such diameter as to fit snugly on the shank 2 so that a partial vacuum created beneath the outer suction cup will not be broken under normal conditions, yet this opening will permit the outer suction cup to slide on the shank.

An expansible coil spring 12 encircles the shank 2 and is disposed between the nut 9 carried by the inner suction cup 7 and the closed end 10 of the outer suction cup 8. This coil spring normally separates the suction cups with respect to each other and furthermore the collar 6 on the shank 2 will limit the forward sliding movement of the outer suction cup thereon in the manner as clearly shown in Figure 2.

These suction cups 7 and 8 are arranged concentrically on the inner end of the shank 2.

In attaching the bracket or clothes hook 1 to a vertical wall, the suction cups 7 and 8 are forced into engagement with the wall surface and a vacuum will be created in the chamber 13 as well as the chamber 14 whereby the clothes hook will be rigidly supported on the wall and various pieces of apparel or the like may be suspended from the hook and by the provision of the inner and outer suction cups, the hook is capable of supporting considerable weight.

For the purpose of breaking the vacuum in the chamber 14 in order to facilitate the removal of the clothes hook from the supporting surface, I provide a valve for association with the outer suction cup and the construc-

tion of this valve will now be specifically described.

An eyelet 15 is arranged in a suitable opening provided therefor in the sides of the outer suction cup 8 and slidable through this eyelet is a relatively short pin 16 the same being formed on its inner end with a head 17 and on its outer end with a knurled handgrip 18. A disc 19 is arranged on the intermediate portion of the pin or stem 16 and this disc is disposed on the outside of the suction cup and is normally held against the outer face of the eyelet to cover the opening by the action of the coil spring 20 which encircles the inner end portion of the pin or stem and is disposed between the head 17 on the inner end of the stem and the inner face of the eyelet in the manner shown in Figure 1.

By pulling outwardly on the stem or pin and this is accomplished by grasping the knurled head 18, the disc 19 is moved away from the eyelet and the opening is uncovered, whereby air is permitted to enter the chamber 14 thereby breaking the partial vacuum and permitting the outer suction cup to be readily disengaged from the supporting surface and when the vacuum has been broken in the chamber 14, the coil spring 12 will force the outer suction cup 8 forwardly on the shank 2 so that the outer end 10 of the suction cup will engage the shoulder 6. Then by pulling downwardly on the shank 2 of the clothes hook 1, the smaller suction cup 7 may be moved away from the wall, whereby to break the partial vacuum in the chamber 13. In this manner, the clothes hook can be readily removed from the wall and there will be no marks left on the wall. The provision of a suction supporting device of this character where especially employed with clothes hooks having threaded shanks will obviate the necessity of having to thread the shank of the hook into the wall or to apply the suction cup by adhesion to the supporting surface as is frequently done with suction supporting cups now generally on the market.

In Figure 3 of the drawing I have shown a modification wherein a clothes hook is formed of a single strand of wire and is bent to form two shanks designated by the numerals 21 and 22 and at the outer end of each shank is a hook as shown at 23 and 24 respectively. A suction cup 25 is secured on the free end of the shank 21, a similar suction cup 26 being secured on the free end of the outer shank 22 and these single suction cups are disposed in vertical spaced relation and engage a smooth surface in the manner as clearly shown in the drawing.

It will thus be seen from the foregoing description, that I have provided a suction supporting device which will at all times be positive and efficient in carrying out the purposes for which it is designed and due to its simplicity, the same may be readily and easily attached to a wall or other highly polished surface. Furthermore, the provision of the valve as associated with the outer suction cup will permit the partial vacuum formed by the outer vacuum cup to be readily and easily broken in order to facilitate the ready removal of the entire supporting device from the wall.

While I have shown the preferred embodiment of my invention, it is to be understood that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit or sacrificing any of the advantages of the appended claims.

I claim:

1. In a suction supporting device, in combination, a bracket including a shank, a suction cup on the inner end of the shank, and an additional relatively larger suction cup movable on the inner end of the shank forwardly of the first mentioned suction cup, and a normally closed valve associated with the last mentioned suction cup for breaking the vacuum created thereby, when the valve is moved to an open position.

2. In a suction supporting device, in combination, a bracket including a shank, a suction cup on the inner end of the shank, and an additional relatively larger suction cup movable on the inner end of the shank forwardly of the first mentioned suction cup, a normally closed valve associated with the last mentioned suction cup for breaking the vacuum therein, when the valve is moved to an open position, and a spring between the cups tending to urge the larger cup from the smaller cup.

In testimony whereof I affix my signature.

ISAAC E. HANSON.