This invention comprises a novel and useful cleaning pad holder and more particularly relates to a handle or holding device specifically adapted to releasably but securely grip and retain cleaning pads of various types to facilitate use of the cleaning pads.

For certain cleaning operations such as the cleaning of kitchenware and the like cleaning pads such as those of the Brillo type are frequently employed. Such cleaning pads of this type and others with which this invention is concerned consist generally of a pad of loose fiber such as steel wool, glass wool, or similar surface-cleaning materials or even cloth or woven pads of a textile as well as a fibrous nature. It is usually undesirable to be compelled to grip these pads with the fingers during their manipulation especially where rough and very dirty surfaces are being treated by the pads.

It is therefore the primary purpose of this invention to provide a cleaning pad holder specifically adapted to effectively grip and retain a wide variety of types of cleaning pads both to facilitate an effective use of the pads in the cleaning operation and to protect the hands of the user from contact with the surfaces being treated by the pads during the cleaning operation.

A further important object of the invention is to provide a cleaning pad holder of a simple compact construction, ideally adapted to be conveniently and effectively gripped and held in the hand of the user and yet which will have a secure gripping but readily releasable engagement with a cleaning pad.

A further object of the invention is to provide a cleaning pad holder in accordance with the preceding objects wherein the gripping action of the holder upon the pad is effected by claws or prongs which will penetrate into the material of the pad and be embedded therein and wherein the connection of the gripping prongs to the pad will be recessed in and protected within the confines of the holder.

Still another object of the invention is to provide a readily releasable and attachable pad holder which may be quickly and easily applied to or removed from a pad thereby permitting ready replacement of the pad when necessary or a re-positioning of the pad in order to effectively make use of other surfaces of the pad during the cleaning operation.

Still another object of the invention is to provide a pad holder as set forth in the preceding objects wherein the engagement of the pad by pronged elements of the holder is enhanced in its gripping action by a further gripping engagement of the body of the holder itself upon the pad, thereby increasing the area of the pad which is gripped and engaged by the holder, assisting in retaining the pad in a generally flat or plate-like configuration during its use.

A still further and more specific object of the invention is to provide a cleaning pad holder as set forth in the preceding objects which shall consist of but three elements simply but effectively combined and including a hollow holder body having serrated gripping means on the lower edge thereof, a plunger slidably guided and retained in the holder together with claw elements carried by the plunger for retraction into or projection from the bore of the holder and wherein a camming surface on the holder cooperates with these claw elements to permit their separation under their inherent resiliency when the plunger is moved downwardly in the holder and the claw elements are projected axially therefrom, and to effect compressive gripping of the claw elements to ensure their embedment in the pad when the plunger is moved upwardly into the holder.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view illustrating the manner in which a preferred embodiment of this invention is applied to a cleaning pad such as one of the Brillo type;
FIGURE 2 is a view in vertical longitudinal section taken substantially upon the plane indicated by section line 2—2 of FIGURE 1;
FIGURE 3 is a view in vertical longitudinal section through the cleaning pad holder but with the latter disengaged from a cleaning pad and showing the position of the pad gripping elements in their released or disengaged position;
FIGURE 4 is a perspective view of the plunger and the resilient gripping elements carried thereby;
FIGURE 5 is a horizontal sectional view taken substantially upon the plane indicated by the section line 5—5 of FIGURE 2; and
FIGURE 6 is a horizontal sectional view showing in plane the bottom surface of the cleaning pad holder, being taken substantially upon the plane indicated by the section line 6—6 of FIGURE 3.

A preferred exemplary embodiment of a cleaning pad holder in accordance with this invention is indicated generally by the numeral 10 and in FIGURES 1 and 2 is shown operatively engaged with a cleaning pad 12 of any desired type. Although the invention is not limited thereto, the device is especially well adapted for use with cleaning pads of the steel wool type such as the well known Brillo pad although it may be employed with similar pads such as those of glass wool, synthetic fibers or even textile pads of cloth or loosely woven fabrics. It is merely necessary for the purposes of this invention that such a pad shall be capable of being penetrated by gripping claws of the holder in order to effect a secure attachment but readily releasable engagement of the pad with the holder.

The holder itself may be of any suitable material and comprises a generally cylindrical body 14 having an axial opening extending therethrough. This opening provides an axial bore 16 which opens at the upper end of the body and which at its lower end is provided with a radially and laterally inwardly projecting annular rib 18 which likewise has a cylindrical inner surface as at 20. Preferably this rib has an annular top surface 22 together with an annular lower surface 24 for a purpose to be subsequently apparent. From the open bottom end of the body there projects an annular flange 26 extending laterally outwardly from and depending axially beneath the rib surface 24. Upon its annular bottom surface 28, the flange 26 is provided with serrations or teeth as at 30, see FIGURES 3 and 6, which thus provide an annular ring of gripping elements extending outwardly beyond the exterior surface of the cylindrical body 14 and which are adapted to engage the contacting surface of the pad 12 over a relatively wide area. These serrations provide a frictional gripping means which prevent relative rotation between the pad and the holder as pressure is applied to the holder and a twisting or sliding movement is given to the pad by the holder over the surface to be cleaned.

Within the bore 16 there are provided a pair of axially extending keyways 31 in the form of guide channels or grooves and which preferably extend from the open upper
end of the body 14 down to the annular surface 26 of the rib 18.

Cooperating with the body 14 is a relatively movable plunger assembly. This includes a generally cylindrical plunger 32 of a diameter to be slidably and guidingly received in the cylindrical surface 29 of the rib 18 to thus have a sliding and guided engagement therewith. The lower end of the plunger 32 may be projected outwardly of the bottom open end of the body as shown in FIGURE 3, thus position being utilized to release the holder from a pad or to initiate the gripping engagement of the pad by the holder. However, the plunger may be slid upwardly to the upper end of the bore as shown in FIGURE 2, at which time the plunger will be entirely received within the holder, this being the normal position of the plunger when the holder is secured to the pad as shown in FIGURE 2.

At its upper end the plunger is provided with a laterally enlarged flange or shoulder 34. Extending radially from the flange 34 are keys or lateral projections 36 which are complementary to the guides or keyways 31 and are slidably received therein, serving to prevent relative rotation between the plunger assembly and the body 14. As shown in FIGURES 2 and 3, the top surface of the plunger is preferably downwardly dished or concaved as at 38 so that it may be engaged through the open upper end of the body 14 whereby the plunger may be pushed downwardly by the finger of the user. The underside of the flange 34 is provided with an annular surface 40 which cooperates with the surface 22 of the rib to limit downward travel of the plunger assembly as shown in FIGURE 3.

Although such a means has not been shown it will be readily appreciated that a resilient return means of any desired type may be operatively interposed between the plunger 32 and the body 14 to effect normal upward movement of the plunger in the body to the position shown in FIGURE 2. Such a means could comprise coil springs disposed in the annular space between the wall of the bore 16 and the exterior wall of the plunger 32 and positioned between the surfaces 40 and 22 and having their extremities received in suitable recesses in those surfaces to permit full downward travel of the plunger and thus enable the surfaces 40 and 22 to be placed in limiting contact.

The lower portion of the plunger is provided with a diametrically extending portion 44 of the outer end thereof. Seated in the slot and secured therein is a hook element indicated generally by the numeral 44. This hook is of U-shaped configuration consisting of a bight portion 46 together with a pair of generally parallel legs 48 having terminal portions 50 comprising claws. The hook element 44 may be of a resilient steel wire construction and will have sufficient resilient bias to normally cause the legs to be urged outwardly to the position shown in FIGURE 3, but to permit the legs to be bent inwardly as shown in FIGURE 2 in a manner to be subsequently set forth.

The terminal portions 50 comprise arcuate end sections of the legs which terminate in points as at 52 which are directed towards each other and are preferably sharpened to facilitate their penetration of the pad as shown in FIGURE 2. Any suitable means as provided for securing the bight portion 46 in the upper end of the slot 42. Normally the legs will be slid or substantially therein as will be apparent from a consideration of the showing in FIGURES 2, 3 and 4. However, the legs are capable of being flexed still further inwardly between the positions of FIGURE 3 and that of FIGURE 2. The terminal portions 50 project axially beyond the lower end of the plunger and the annular surface 24 as shown in FIGURES 2–4 and have inherent resiliency of the hook element is such that the terminal portions would normally be projected radially outwardly beyond the slot as shown in FIGURE 3. However, actuating means are provided for forcing by a compressive inwardly directed force the terminal portions 50 into the slot as shown in FIGURE 2.

This actuating means comprises a cam surface consisting of the lower edge of the rib 18 at the junction of the cylindrical and annular surfaces 24 and 26 to press upon the exteriorly bowed surfaces of the terminal portions 50 and thus compressively force these latter inwardly of the slot as shown in FIGURE 2. This inward travel will cause the prongs 52 to penetrate the material of the cleaning pad and establish a secure gripping engagement therewith simultaneously with the engagement of the pad by the serrated surface 30.

Thus the prongs serve to firmly secure the holder to the pad while the serrations 30 serve both to effect a non-rotating engagement of the pad with the plunger and also distribute the pressure of the holder over a considerable area of the pad tending to retain the pad in its flat plate-like shape.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed is new as is follows:

1. A cleaning pad holder comprising a generally cylindrical body having an axial bore therein open at its bottom end, a plunger slidable in said bore and having a lower end projectable from said open end, guide means cooperating with said body and plunger and restraining the latter to rectilinear travel in said bore, said lower end having a transversely extending slot therein, a resilient hook mounted in said slot and having opposed terminal claws projecting laterally from and retrievable into said plunger and slot and extending axially beyond said lower end, actuating means engageable with said hook upon retractive movement of said plunger into said body for effecting movement of said claws towards each other whereby they may be embedded and retained in a cleaning pad for securing the latter to the bottom end of said body, said bore having an annular radially inwardly projecting rib thereon, said plunger having its lower portion guidedly and slidably received in said rib and having an annular flange on its upper portion slidable in said bore and engageable with said rib for limiting downward sliding of said plunger in said bore, said actuating means comprising a cam surface on said rib engaging said terminal portions and resiliently and radially compressing the latter into said slot upon upward movement of said plunger into said bore.

2. The combination of claim 1 wherein the bottom end of said body has a serrated surface for non-slipping engagement with a cleaning pad when held therewith by said hook.

3. A cleaning pad holder comprising a body having a straight multiple diameter bore therethrough together with a multiple diameter plunger slidably mounted in said bore, said bore having a cylindrical upper portion, an enlarged lower portion and an intermediate inwardly projecting portion at the junction of said upper and lower portions, said plunger having relatively large upper portions, grooves in said slot as shown in FIGURES 2–4 and a relatively small lower portion slidable through said inwardly projecting portion and projectable through said bore lower portion and the bottom end of said body, a resilient hook including a pair of legs carried by and pro-
jecting downwardly and laterally from said plunger, said hook having opposed claws directed towards each other for embedment in a cleaning pad, said legs being disposed for radial compression by said inwardly projecting portion when passed into the latter by sliding movement of said plunger in said bore.

4. The combination of claim 3 wherein said inwardly projecting portion comprises an annular rib.

5. The combination of claim 4 including cooperating abuttingly engageable stop surfaces on said plunger and said inwardly projecting portion limiting sliding movement of said plunger in said bore towards the bottom end of said body.

6. The combination of claim 3 including cooperating abuttingly engageable stop surfaces on said plunger and said inwardly projecting portion limiting sliding movement of said plunger in said bore towards the bottom end of said body.

7. The combination of claim 3 wherein said plunger lower portion has a transverse slot extending upwardly therein from the plunger lower end and opening at the sides of the plunger, said hook being secured in said slot and said legs being radially movable through the slot side openings into and out of the slot.

8. The combination of claim 7 wherein said legs have outwardly bowed intermediate portions having a cam engagement with said inwardly projecting portion.

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