

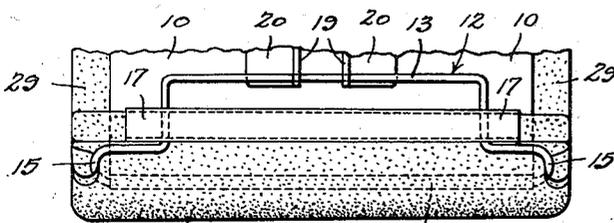
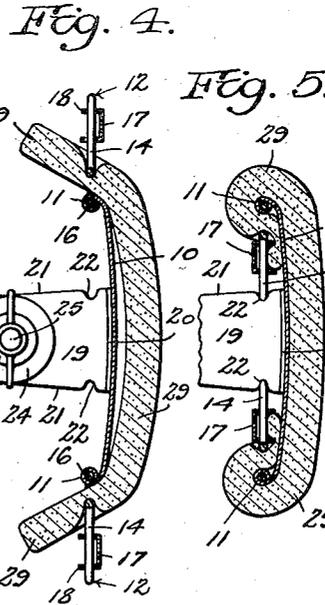
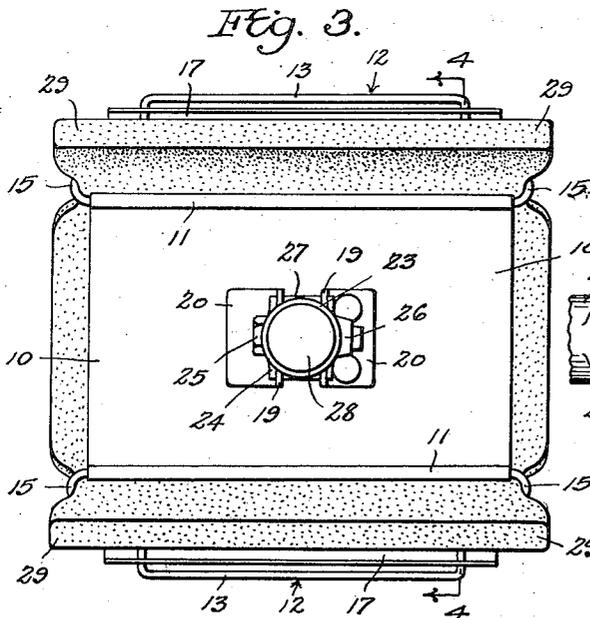
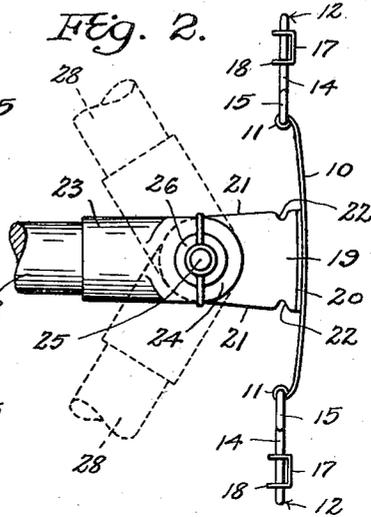
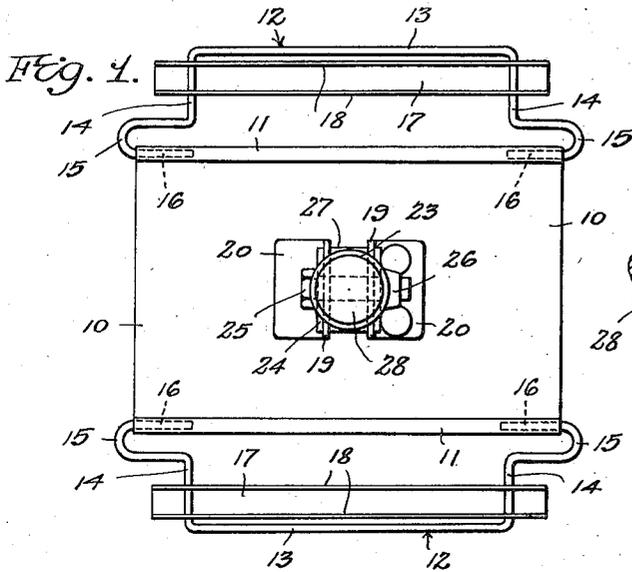
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CLEANING DEVICE

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## CLEANING DEVICE

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16 Claims. (Cl. 15—231)

My invention relates to a cleaning device.

An important object of the invention is to provide a device of the above-mentioned character adapted for cleaning wall paper, window shades, calcimined interiors, upholstery, rugs, and carpets of pile fabric construction.

A further object of my invention is to provide a cleaning device of the above-mentioned character of such shape and construction as to enable the same to be quickly and conveniently used in a variety of positions, to reach inaccessible positions when operated either for close work with the hand gripping the handle ferrule, or when projected on the handle of desired length.

A further object of the invention is to provide means whereby the cleaning element may be used with all sides of substantially equal dimensions, thus permitting of the mounting of the cleaning element in four different ways, namely, two positions on either side, whereby the cleaning capacity of the cleaning element is materially increased and its life greatly prolonged.

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

Figure 1 is a plan view of the device, with the cleaning element removed, the holding elements being shifted to the open position,

Figure 2 is an end elevation of the same,

Figure 3 is a plan view of the device, with the cleaning element inserted within the holding elements, but the holding elements being in the open position,

Figure 4 is a transverse section taken on line 4—4 of Figure 3,

Figure 5 is a similar view with the holding elements shifted to the closed positions,

Figure 6 is a fragmentary plan view of the device, with the holding element in the closed position.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a body portion or head, which is preferably formed of sheet metal, and has its outer surface slightly transversely convex. The longitudinal edges of this head are bent or rolled to provide sleeves or knuckles 11, as shown.

The numeral 12 designates generally U-shaped holding elements, including sides 13 and ends 14. The ends 14 are bent into U-shaped extensions 15, having ends 16 extending into the sleeves or knuckles 11, and pivotally mounted therein. The U-shaped extensions 15 are arranged at the cor-

ners of the head or body portion 10. The numeral 17 designates clamping rails, preferably in the form of channels having their open sides arranged inwardly. These rails or channels are U-shaped in cross-section and their sides 18 are apertured for slidably receiving the ends 14 of the holding elements.

The handle attaching means embodies a pair of spaced plates 19, having bases 20, which are rigidly attached to the inner surface of the head or body portion 10, at its center. Each plate 19 has inclined edges 21, diverging inwardly, and these edges are provided with notches 22, for receiving the sides 13 of the holding elements 12. The handle connecting means further embodies a ferrule 23, carrying a pair of apertured knuckles 24, for the passage of a bolt 25, also extending through openings formed in the plates 19. This bolt 25 may be provided with a winged nut 26. A spacing sleeve 27 surrounds the bolt 25 and is arranged between the plates 19. By adjusting the winged nut 26, the ferrule may have free pivotal connection with the plates 19, or it may be clamped thereto in the selected adjusted position. The ferrule receives a handle 28, as shown.

The numeral 29 designates a cleaning element which is rectangular and is in the form of a sheet or pad, and is preferably made of sponge rubber of proper quality and porosity, although the cleaning element may be made of other suitable material.

In use, the holding elements 12 are shifted to the open position, Figures 1, 2 and 4, and the cleaning element 29 is placed upon the outer surface of the head or body portion 10. One edge of the cleaning element is now passed inwardly over the longitudinal edge of the head 10, the edges or corners of the cleaning element being pulled through the extensions 15. The clamping rail or channel 17 is now shifted inwardly so that it substantially contacts with the U-shaped extensions 15, and the holding element 12 is now swung inwardly upon its pivot, so that the edges of the rail or channel firmly engage the cleaning element 29, Figure 5. The side 13 of the holding element will slide along the incline edges of the plates 19, the body portion or head 10 and the holding element being slightly resilient, until the side 13 springs into the notches 22, at which time the holding element is locked in the closed position. Both holding elements are operated in a similar manner, and the reverse of this operation is employed when it is desired to remove the cleaning element 29. When the holding elements 12 are in the inner

or holding position, the clamping rails or channels 17 securely clamp the folded over portions of the cleaning element in position upon the inner surface of the head or body portion 10, while the U-shaped extensions 15 securely hold the cleaning element at the corners, producing rounded corners, which completely cover the U-shaped extensions from the forward side, thereby eliminating the possibility of the extensions 15 contacting with the surface being cleaned, and scratching the same. With the cleaning element secured to the head or body portion 10, such cleaning element may be conveniently rubbed over the surface to be cleaned, either by grasping the ferrule 23, or by engaging the handle 28. The action of the sponge rubber cleaning element, when moved over the surface to be cleaned, is to erase and absorb the dust and dirt through the vacuum action of its pores or cells. In cleaning heavy wall smudges, a back and forth and rotary motion of the device produces the best results. When the handle is thrown out to contact with one side, and the face of the cleaner is away from the surface, the roll of the element may be effectively applied in cleaning corners and angles between walls and ceilings. The cap of doors and window-frames may be cleaned by reaching up and letting the inside of one end of the cleaning element rest on the ledge, and then drawing the device over the surface with either one or both side rolls of the element in contact.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having fully described my invention, what I claim as new is:

1. In a cleaning device, a resilient head having its outer surface convex, a supporting member carrying the resilient head and having a notch, and a resilient holding element pivotally connected with the head at a location spaced from the supporting member and adapted to have a part of the same shifted into the notch for detachably locking the part within the notch.

2. In a cleaning device, a head, an elongated generally U-shaped holding element having a clamping side and ends, said ends being provided at their ends with inwardly facing contracted U-shaped extensions for receiving the edge portions of a cleaning element, the contracted U-shaped extensions embodying inner sides which are generally parallel with the clamping side of the holding element, means for pivotally connecting the inner sides of the contracted U-shaped extensions with the head so that the holding element may be swung to opened and closed positions with relation to the head, and means to retain the holding element in the closed position.

3. A cleaning device comprising a head adapted to receive a cleaning element upon its forward side and provided at its opposite edges with knuckles, generally U-shaped holding elements, each generally U-shaped holding element having a side and ends, said ends being provided with generally U-shaped extensions adapted for receiving the edge portions of the cleaning element and including inner end portions which are pivotally mounted within the coacting knuckle, a clamping rail for each generally U-shaped holding element and slidably mounted upon the ends thereof to be shifted laterally with relation to

the side of the holding element, a plate attached to the rear side of the head and having notches to receive the sides of the generally U-shaped holding elements, and a handle connected with the plate.

4. A cleaning device comprising a head to receive a cleaning element upon its forward side, oppositely arranged generally U-shaped holding elements, each generally U-shaped holding element having a side and ends, said ends being provided with generally U-shaped portions including inner end portions, means for pivotally connecting the inner end portions of the holding elements with the head near opposite edges of the head, said generally U-shaped portions being adapted to receive the edge portions of the cleaning element, a clamping rail for each holding element and slidably mounted upon the ends of such holding element and shiftable laterally with relation to the side of the holding element, and means for detachable locking engagement with the side of the holding elements.

5. A cleaning device comprising a head adapted to receive upon its forward side a cleaning element, a generally U-shaped holding element pivotally connected with the head and adapted to be swung to opened and closed positions with relation to the head, a clamping element adapted to engage with the cleaning element and adjustably connected with the holding element to be shifted toward and from the pivotal connection of the holding element, and means for securing the holding element in the closed position.

6. In a cleaning device, a head for supporting a cleaning element, oppositely arranged open frame holding elements pivotally connected with the head to be swung to opened and closed positions with relation to the head, each holding element having an outer side and ends provided with restricted socket portions for receiving the edge portions of the cleaning element, and means to retain the holding elements in the closed position.

7. A cleaning device comprising a head for supporting a cleaning element, oppositely arranged generally U-shaped holding elements pivotally connected with the head to be swung to opened and closed positions with relation to the head, each holding element having a side and ends, said ends being provided with generally U-shaped portions for receiving the edge portions of the cleaning element, a rail for each holding element and adapted to engage with the cleaning element and slidably mounted upon the ends of the holding element and adapted to be shifted toward and from the side of such holding element, and means for retaining the holding elements in the closed position.

8. A cleaning device comprising a head for supporting a cleaning element, oppositely arranged generally U-shaped holding elements pivotally connected with the head and adapted to be swung to opened and closed positions with relation to the head, each holding element having a side and ends, a clamping element for each holding element and adapted to engage the cleaning element and slidably mounted upon the ends of such holding element to be shifted laterally with relation to the side of the holding element, and means for retaining the holding elements in the closed position.

9. In a cleaning device, a head for supporting a cleaning element, oppositely arranged holding elements pivotally connected with the head and adapted to be swung to opened and closed posi-

tions with relation to the head, a clamping element for each holding element and adapted to engage the cleaning element and slidably mounted upon the holding element to be shifted laterally with relation to the pivotal connection of the holding element, and means for retaining the holding elements in the closed position.

10. In a cleaning device, a head for supporting a cleaning element, a holding element pivotally mounted upon the head to be swung to opened and closed positions with relation to the head, a clamping element for engagement with the cleaning element and adjustably mounted upon the holding element to be shifted laterally with relation to the pivotal connection of the holding element, and means to retain the holding element in the closed position.

11. In a cleaning device, a head for supporting a cleaning element, a holding element pivotally connected with the head, and a clamping rail adapted to engage the cleaning element and formed U-shaped in cross-section and adjustably mounted upon the holding element to be shifted laterally with relation to the pivotal connection of the holding element.

12. In a cleaning device, a head for supporting a cleaning element, a holding element pivotally connected with the head, and a clamping element for engagement with the cleaning element and slidably mounted upon the holding element to be shifted laterally with relation to the pivotal connection of the holding element.

13. In a cleaning device, a head for supporting a cleaning element upon its forward side, an open frame holding element pivotally connected with the head and adapted to be swung to an inner position upon the rear side of the head, said holding element having an outer side and ends provided with means for receiving and holding the edge portions of the cleaning element, and means to retain the holding element in the closed position.

14. In a cleaning device, a head for supporting a cleaning element upon its forward side, an open frame holding element pivotally connected with

the head and adapted to be swung to a closed position upon the rear side of the head, said holding element having an outer side and ends provided with means for receiving and holding the edge portions of the cleaning element, and a clamping element for engagement with the cleaning element and adjustably mounted upon the holding element to be shifted laterally with relation to the pivotal connection of the holding element.

15. In a cleaning device, a head, a flexible cleaning element to be arranged upon the forward side of the head and being of sufficient size so that opposite end portions of the same extend over and beyond opposite edges of the head, oppositely arranged open frame holding elements pivotally connected with the head near its opposite edges and adapted to be swung to closed positions upon the rear side of the head, each holding element having an outer side and ends provided with means to receive the edge portions of the cleaning element when it is applied in position upon the head for holding the same against displacement, said holding elements having parts to engage with the cleaning element when swung to the closed position to positively retain the cleaning element in position upon the head, and means to retain the holding elements in the closed position.

16. In a cleaning device, a head, a flexible cleaning element to be arranged upon the forward side of the head and having its width substantially equal to its length, said cleaning element being of sufficient size so that its opposite end portions extend over and beyond the opposite edges of the head, oppositely arranged open frame holding elements pivotally connected with the head near its opposite edges and adapted to be swung to a closed position upon the rear side of the head, said holding elements having outer sides and ends provided with portions to receive and hold the edge portions of the cleaning element, and means to retain the holding elements in the closed position.

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