Nov. 6, 1934. M. H. BISSELL 1,979,527

CLEANING AND POLISHING APPARATUS

Filed April 17, 1933

Fig. 1.

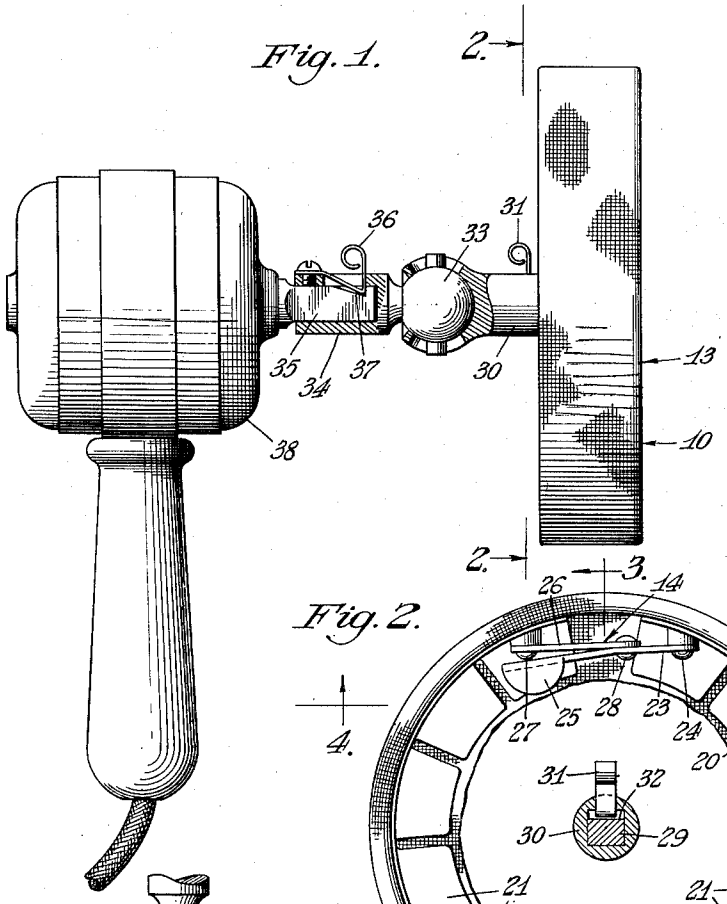


Fig. 2.

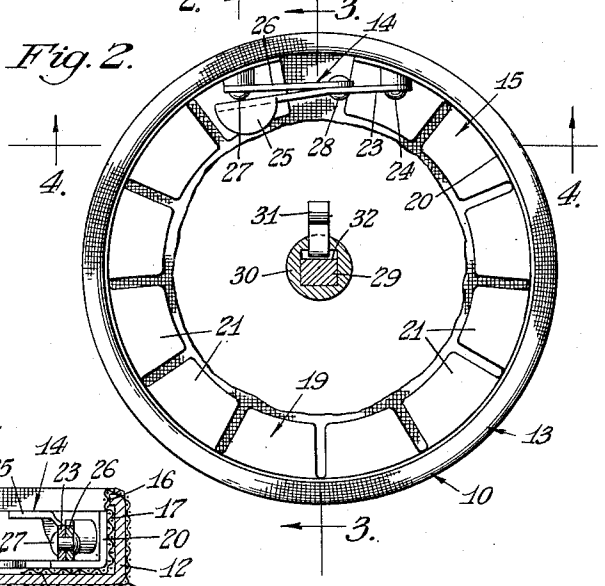


Fig. 3.

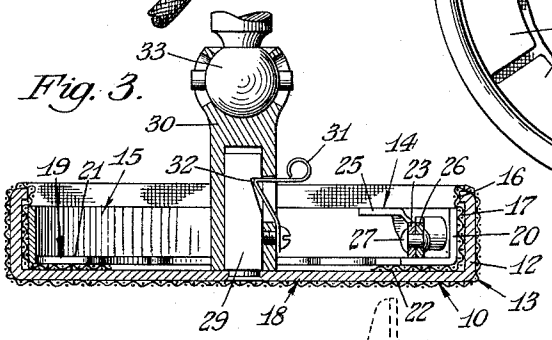
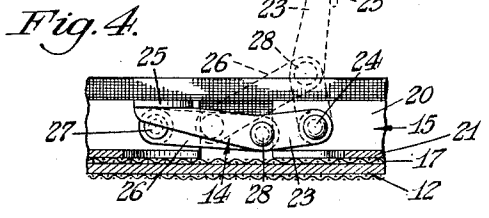


Fig. 4.



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WITNESS:

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CLEANING AND POLISHING APPARATUS

Marion H. Bissell, Chicago, Ill.

Application April 17, 1933, Serial No. 666,605

3 Claims. (Cl. 15—230)

This invention relates to certain novel improvements in a cleaning and polishing apparatus.

An object of this invention is to provide an improved holding device for a flexible cleaning or polishing element such as, for example, a piece of fabric, chamois, or the like.

Another object of the invention is to provide a new holding device of the character described herein whereby a flexible surface treating element, that is, a cleaning or polishing element, may be readily and easily attached to, and detached from, the holding device with a minimum of time and effort.

A further object of the invention is to provide in the new device novel means whereby the same may be readily and easily attached to, and detached from, a rotatable driving shaft, with a minimum of time and effort.

An additional object of the invention is to provide a new and improved surface treating apparatus comprising a flexible cleaning or polishing element, such for example, as a piece of fabric, chamois, or the like, a holder, and means associated with the holder for readily attaching the cleaning or polishing element to, and detaching the same from, the said holder.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing, showing the preferred form of construction and in which:

Fig. 1 is an elevational view of a preferred form of the new device with a part thereof broken away to show one manner of attaching the device to a driving shaft;

Fig. 2 is a view on line 2—2 in Fig. 1, partly in elevation and partly in section;

Fig. 3 is a sectional view on line 3—3 in Fig. 2; and

Fig. 4 is a sectional view on line 4—4 in Fig. 2.

The present application is a continuation-in-part of my allowed United States application, Ser. No. 356,854, filed April 20, 1929.

A preferred form of the new device is shown in the drawing and generally indicated at 10. The new device 10 comprises a cylindrical holder member 18 and the latter includes a plate 11 having an upstanding annular, peripheral rim or flange 12; a resilient split ring 15 arranged upon the plate 11 within the rim 12; a flexible surface treating element 13, that is, a cleaning or polishing element, which may take the form of a piece of fabric, chamois, or the like; and means, generally indicated at 14, for expanding and contracting the resilient split ring 11 into and out of binding engagement with a portion 17 of the flexible surface treating element 13 that is disposed between the ring 15 and rim 12.

The split ring 15 includes a base 19 and a rim 20 integral therewith and upstanding therefrom. The base 19 consists of a series of spaced segmental portions or plates 21 (Fig. 2).

The rim 12 has an internal flange 16. In assembling the new device the flexible surface treating element 13 is extended over the outer surfaces of the plate 11 and its rim 12, as shown. A portion 17 of the flexible surface treating element 13 is then extended over the internal flange 16 and down over the inner surfaces of the rim 12. A portion 22 of the flexible element 13 is then extended over the inner surface of the plate 11. The split ring 15 is then placed upon the plate 11, inside the rim 12, so that the base 19 of the ring 15, that is, the segmental plates 21, bear upon the portion 22 of the flexible surface-treating element 13. The means 14 is then operated, in a manner to be described presently, to expand the split ring 15, thereby forcing the rim 20 thereof into binding engagement with the portion 17 of the surface treating element 13 that is disposed between the rims 12 and 20.

The ring-expanding and contracting means 14, comprises a system of levers that are pivotally mounted on the ring 15 including a lever 23 that has one end thereof pivotally mounted, as at 24, on the rim 20 of the split ring 15. This lever 23 has a finger grip portion 25. Said lever mechanism 14 also includes a link 26 which has one end pivotally mounted on the rim 20, as at 27. The other end of the link 26 is pivotally connected, as at 28, to the lever 23, between the ends of the latter.

To insert the split ring 15 past the flange 16 onto the plate 11 and within the rim 12 the ring 15 is contracted by moving the lever 23 into dotted line position (Fig. 4) relative to the rim 20; whereupon, when the ring 15 is arranged upon the plate 11 within the rim 12, the ring 15 is expanded under the flange 16 and the rim 20 is forced into binding engagement with the portion 17 of the flexible element 13 by pivoting the lever 23 counterclockwise, from dotted to full line position, Fig. 4. When thus expanded the rim 20 projects under the flange 16 of rim 12. The split ring 15 and flexible element 13 are thereby prevented from being removed from the plate 11 until the ring 15 is again contracted, which is ac-

complished, as hereinbefore mentioned, by manipulating the lever 23, counterclockwise, Fig. 4.

The base 19, that is, the segmental portions 21 of the ring 15, enlarge the effective surface or area of the ring 15 that bears against the flexible surface treating element 13, and thereby helps to retain the element 13 on the holder member 18, while the arrangement of the segmental portions 21 allows the base 19 of the resilient split ring 15 to flex with the upstanding ring 20 thereof during the ring contracting and expanding operations.

The plate 11 has a projecting stud 29 at its center for attachment to a collar or sleeve 30. This attachment is effected by means of a latch spring 31 which releasably engages in a notch 32 formed in the attaching stud 29.

The sleeve 30 has universal connection at 33 with a second sleeve 34 and the latter in turn has detachable connection with the shaft 35 of a motor 38. The last-named detachable connection is effected by a latch spring and notch 36—37, similar to the latch spring and detent 31—32; the latch spring 36 being attached to the sleeve 34 and the notch 37 being formed in the motor shaft 35 (Fig. 1). By this means (31—32—36—37) the new device may be readily attached to and detached from the driving shaft of a motor, such as the electric motor 38 or the like.

As used hereinafter in the claims the term "surface-treating element", referring to the flexible element 13, is to be understood to include any type of cleaning, polishing, buffing, waxing, or scouring element that may be detachably mounted on the holder member 18 by the cooperation of the latter with the split ring 15 and the means 14 for expanding and contracting the ring 15; and the said term is not limited to the fabric cleaning element 13 shown in the drawing.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:

1. A device of the character described, comprising the combination of a plate having an upstanding annular rim; a flexible surface-treating element extended over the outer surface of said plate and ring and having a portion extended over the inner surface of said rim; a resilient split ring arranged upon said plate within said rim; and means carried by the said ring for expanding and contracting the same into and out of binding engagement with said portion to releasably attach said element to said plate.

2. A device of the character described, comprising the combination of a holder member including a plate having an annular upstanding rim; a resilient split ring including a base arranged upon the said plate; said base having an upstanding annular rim disposed within the first-named rim; a flexible surface-treating element mounted on the said holder member having a portion extended between the said rims and having a portion extended between the said plate and the said base; and a link mechanism pivotally mounted on the said ring at the ends thereof for expanding and contracting the said ring rim into and out of binding engagement with the first-named portion of the said flexible element.

3. A device of the character described, comprising the combination of a holder member including a plate having an annular upstanding rim; a resilient split ring including a base arranged upon the said plate; said base having an upstanding annular rim disposed within the first-named rim; a flexible surface-treating element mounted on the said holder member having a portion extended between the said rims and having a portion extended between the said plate and the said base; and a link mechanism pivotally mounted on the said ring at the ends thereof for expanding and contracting the said ring rim into and out of binding engagement with the first-named portion of the said flexible element, said base consisting of a series of spaced segmental plates.

MARION H. BISSELL.