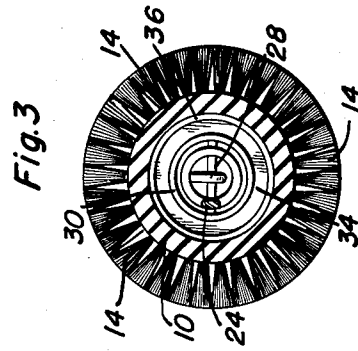
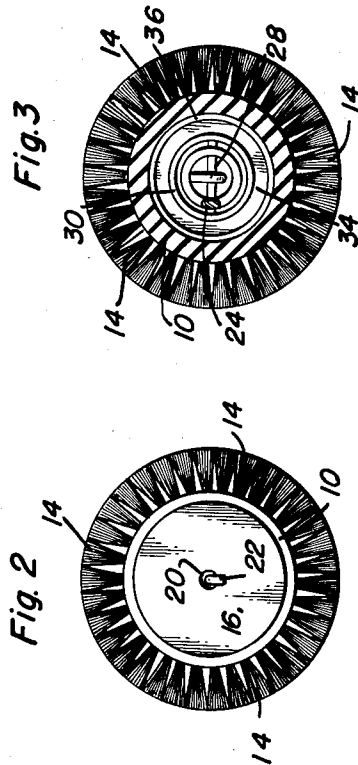
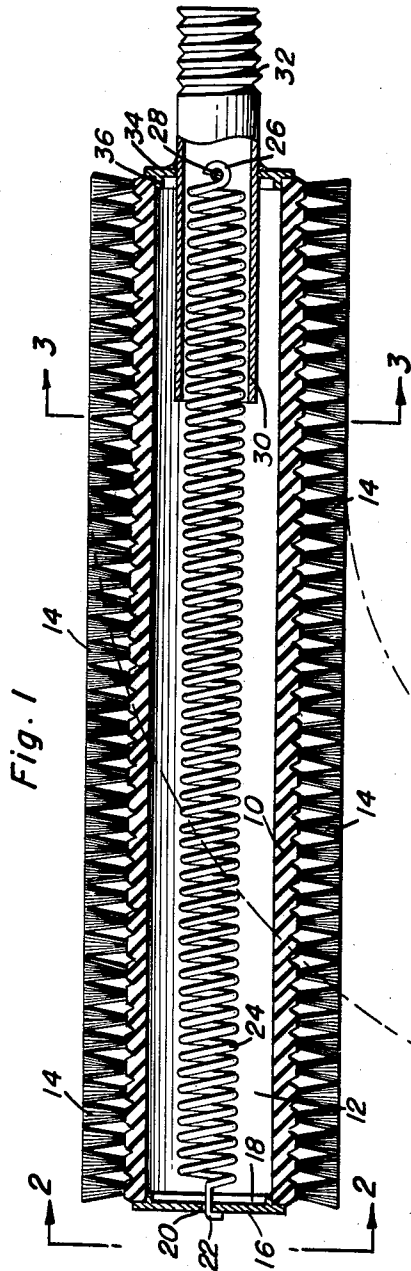


June 8, 1954

L. SORENSEN  
BRUSH HEAD ASSEMBLY  
Filed Jan. 24, 1951

2,680,261



Leonard Sorensen  
INVENTOR.

BY *James A. O'Brien*  
and *Harvey B. Jacobson*  
Attorneys

## UNITED STATES PATENT OFFICE

2,680,261

## BRUSH HEAD ASSEMBLY

Leonard Sorensen, Bruce, Wis.

Application January 24, 1951, Serial No. 207,594

2 Claims. (Cl. 15-179)

1

This invention relates to improvements in flexible brushes.

An object of this invention is to provide an improved brush head assembly adapted to be power operated and designed, especially but not exclusively, for use in cleaning dairy apparatus wherein it is necessary to maintain a high degree of cleanliness and wherein purely manual cleaning or power brush cleaning when employing a rigid type brush causes the cleaning operation to be difficult.

Another object of this invention is to provide improved brush assembly which is provided with a flexible brush casing with a spring in it to prevent whip-lashing and gyrations during cleaning operations and also provided with an improved power application structure.

Ancillary objects and features of importance will become apparent in following the description of the illustrated form of the invention.

In the drawings:

Figure 1 is a longitudinal sectional view of the brush head assembly;

Figure 2 is an end view of the structure of Figure 1 taken substantially on the line 2-2 of Figure 1 and in the direction of the arrows; and

Figure 3 is a transverse sectional view taken substantially on the line 3-3 of Figure 1 and in the direction of the arrows.

As illustrated, there is a flexible tube 10 having a bore 12 therein, the flexible tube being preferably of rubber, metals, alloys or like materials so that it is capable of being bent, as disclosed in phantom in Figure 1. Tufts 14 of bristles are provided on the tube 10 to perform the cleaning operations.

There is a plate 16 with an annular flange 18, the flange being located in the outer end of the bore 12 of the tube 10 and the plate resting on the outside surface of the same end of the tube. This plate is provided with an aperture 20 in which the hook 22 of the spring 24 is disposed. The hook 22 being located in the aperture 20 holds one end of the spring 24 fastened, while the other end of the spring is provided with a hook 26, fastened to the pin 28.

The pin 28 is located in a sleeve 30, extending transversely thereacross and being fastened thereto so that a part of the spring 24 is housed in the sleeve. The portion of the sleeve which houses the spring 24 is disposed in the bore 12, while the outer end part of the sleeve 30 is provided with threads 32 in order to schematically indicate a standard means of coupling the sleeve to a power shaft or chuck. In order to hold the sleeve 30 in place, as a component part of the brush assembly, a plate 34 is fixed thereto intermediate the ends of the sleeve by standard

2

means, as by welding. This plate has a central aperture in which the sleeve 30 is disposed and also has an annular flange 36 rising from the inside surface thereof and fitted in the end of the bore 12 opposite from that end accommodating the flange 18.

The spring 24 is chosen properly so that the plates 34 and 16, which are portions of collars, are pulled firmly against the ends of the flexible tube 10 holding the assembly fixed together. When the tube 10 is rotated by application of power at the threads 32, the power is transmitted from the plate 34 to the tube 10. The torque applied to this end of the tube is transmitted throughout the entire length of the tube to the plate 16 and flange 18. When the tube 10 of the brush assembly or head is bent as for cleaning rather inaccessible regions, the presence of the spring 24 under tension prevents the brush from gyrating or moving in a wiggling fashion. The brush body may be bent as much as ninety degrees and yet operate properly.

Having described the invention, what is claimed as new is:

1. A brush head assembly comprising a flexible tube provided with a bore, a removable collar located at one end of said tube and closing said one end of said bore, a removable collar at the opposite end of said bore and frictionally pressing against said opposite end of said tube, a sleeve fastened to one of said collars, said sleeve having a portion extending into the bore of the tube, a spring disposed in said bore and having one end fastened to the first mentioned collar, the opposite end of said spring being fastened to said sleeve within the portion of the sleeve disposed in the bore for coupling the opposite end of said spring to said sleeve, bristles fastened to the outer surface of said tube, and said sleeve having a portion thereof provided with a means of coupling the sleeve with a source of rotative force.

2. The combination of claim 1 and each of said collars being provided with a flange which is disposed in said bore, said means connected with said sleeve for coupling said sleeve to a source of rotative power being connected so that the power is transmitted through the sleeve, the collar connected with the sleeve, the tube, and the first mentioned collar.

## References Cited in the file of this patent

## UNITED STATES PATENTS

| Number    | Name            | Date           |
|-----------|-----------------|----------------|
| 1,218,005 | Schlemmer       | Mar. 6, 1917   |
| 2,055,287 | Giraud          | Sept. 22, 1936 |
| 2,281,918 | Constant et al. | Mar. 25, 1939  |