Dec. 11, 1951 R. O. HOOBAN 2,578,549

POWER-DRIVEN CLOTHES-CLEANING BRUSH

Filed July 26, 1948 2 SHEETS--SHEET 1

Fig. 1.

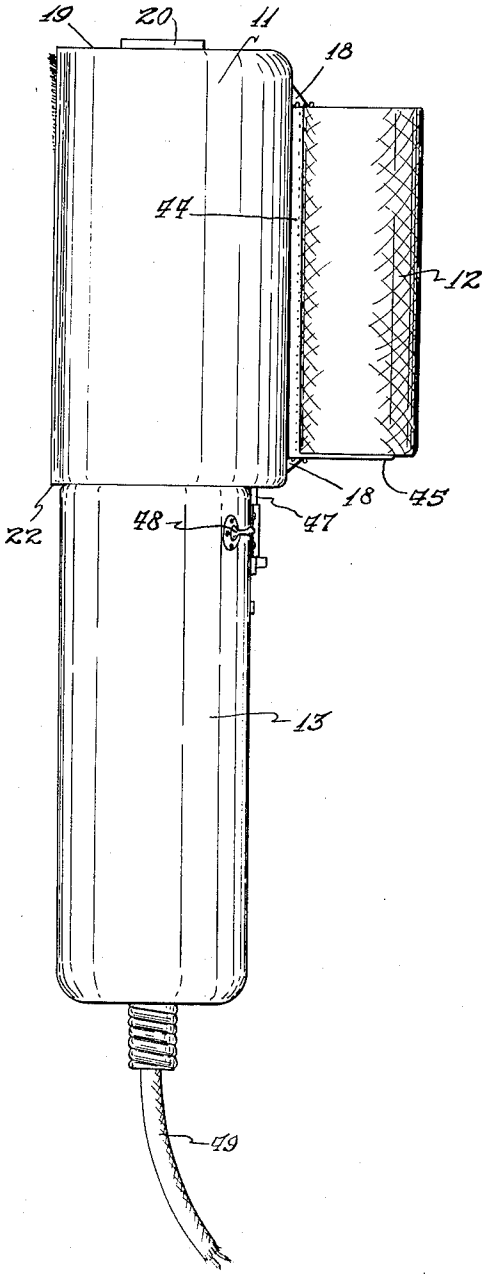


Fig. 2.

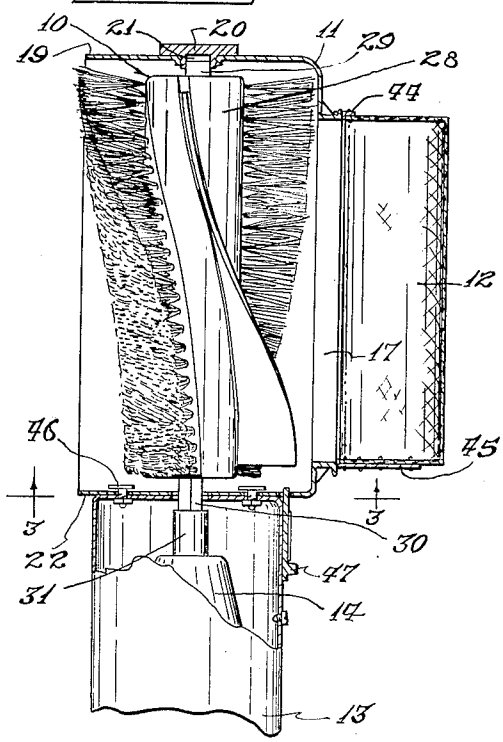
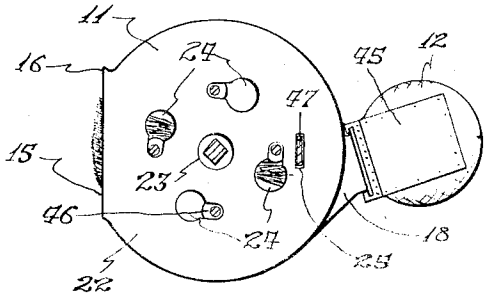


Fig. 3.



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FIG. 4.

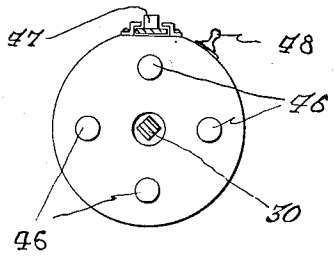


FIG. 5.

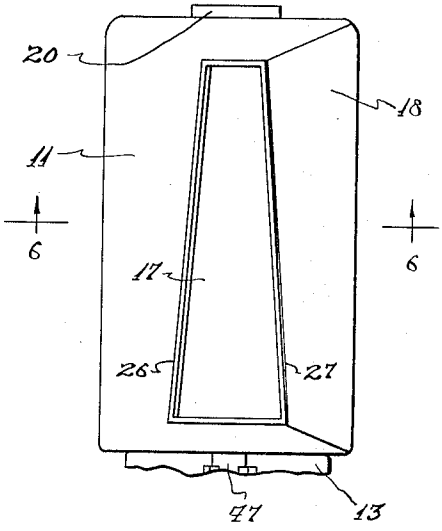
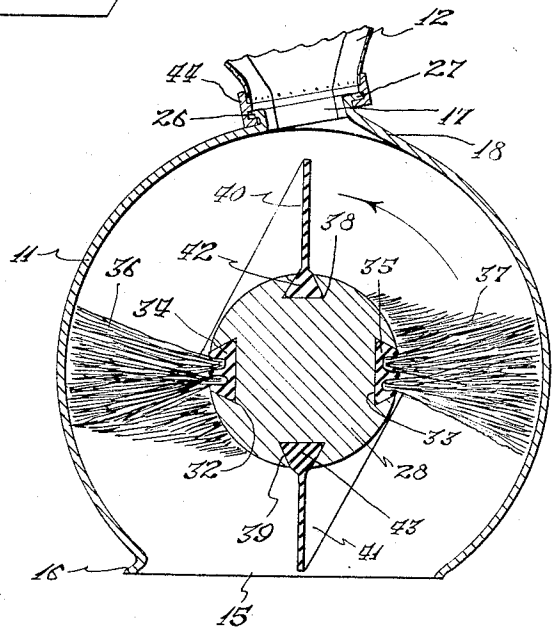


FIG. 6.



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POWER-DRIVEN CLOTHES-CLEANING BRUSH

Robert O. Hooban, Coeur d'Alene, Idaho

Application July 26, 1948, Serial No. 40,692

2 Claims. (Cl. 15—344)

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My invention relates to improvements in a power driven clothes cleaning brush.

I am aware that heretofore a variety of motor operated brushes have been made for cleaning clothes and gathering lint, etc. However, it is the purpose of my invention to provide a novel combination of a brush having parts to create a fan action when it is rotated with a housing and dust bag therefor, and a handle with drive means therein for holding and manipulating the brush.

The novel features of my invention will appear more fully from the following description and the accompanying drawings illustrating a preferred form of the invention.

In the drawings:

Figure 1 is a view in side elevation of a clothes brush embodying my invention;

Figure 2 is a partial longitudinal section through the brush housing and handle, the brush being shown in elevation;

Figure 3 is a sectional view on the line 3—3 of Figure 2;

Figure 4 is a sectional view on line 3—3 looking in the opposite direction to Figure 3;

Figure 5 is a fragmentary plan view illustrating the housing with the dust bag removed; and

Figure 6 is an enlarged sectional view taken on the line 6—6 of Figure 5.

Referring now to the drawings, my improved clothes brush comprises a brush unit 10, a housing 11, a dust bag 12 and a handle 13 which houses a motor 14, the parts being combined and constructed in a novel manner, to be presently described, whereby a simple, inexpensive, power-driven clothes brush is provided. As will be pointed out in detail, the several parts are separably connected to each other in a novel fashion to facilitate removal, cleaning and replacement of the various parts.

The housing 11 preferably is made of sheet material, metal or plastic composition. The housing 11 is substantially cylindrical in shape. It has an opening 15 along one side face with a protruding lip 16 at one side edge of the opening 15. Opposite the opening 15 the housing has a dust bag receiving outlet 17. The brush 10 rotates in the direction indicated by the arrow in Figure 6, and, the housing 11 has the portion 18 of its wall in advance of the outlet 17 raised from the cylindrical outline of the housing and extending approximately tangentially from the cylindrical surface of the housing to the outlet opening 17 so the air and dust

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can move out of the path of the brush in approaching the outlet. This facilitates the flow of air and dust to the bag 12.

One end 19 of the housing 11 has a bearing block 20 threaded therein, which block has a seat 21 for rotatably mounting one end of the brush 10. The other end 22 of the housing 11 has an opening 23 for receiving a brush driving element and has a series of key-hole apertures 24 arranged about the opening 23 to mount the housing 11 on the handle 13. A slot 25 is also provided in the end 22 to receive a locking device to lock the housing 11 to the handle 13.

The housing 11 also has flanges 26 and 27 at the side edges of the opening 17 to slidably receive the dust bag 12. The opening 17 increases in width from the end 19 toward the end 22 of the housing 11 to wedge the bag in place and to cause the air flowing into the bag to flow away from the operator, as will be presently described.

The brush unit 10 comprises a cylindrical body 28, which may be of light metal, wood or plastic composition. One end of the body 10 has a stub shaft 29 that rotatably mounts the brush in the seat 21 of the bearing block 20. The other end of the body 28 has a squared socket (not shown) to receive the squared end 30 of the drive shaft 31 of the motor 14. The body 28 has helical grooves 32 and 33 extending full length thereof. The grooves 32 and 33 are undercut, as shown in Figure 6, to receive resilient bases 34 and 35 of rubber or the like that carry bristles 36 and 37. The bases 34 and 35 wedge in the grooves 32 and 33 and may be removed when the bristles become worn. The body 28 also has undercut grooves 38 and 39 which receive fan blades 40 and 41 of rubber or other suitable material. The blades 40 and 41 have resilient bases 42 and 43 that wedge in the grooves 38 and 39 to removably mount the blades 40 and 41.

The bag 12 has a base portion 44 which is grooved to receive the flanges 26 and 27. The end of the bag toward the handle 13 has a non-porous stiff plate 45 attached thereto for blocking the flow of air toward the operator. The bag 12 may be made of any suitable filter material. The shape and size of the bag may be varied to suit the conditions of use.

The handle 13 has its front end provided with a series of round-headed studs 46, arranged to fit into the key-hole apertures 24 and, by a slight rotation, to hold the handle and housing together. A latch plate 47 is slidably mounted

on the handle 13 to slide into the aperture 25 when the studs are in locking position as shown in Figure 3. This prevents the housing 11 from turning on the handle 13.

The motor 14 preferably is of the type having a built-in reducing gear to turn the shaft 31 at the desired speed. A switch 48 for the motor is provided on the handle 13. A flexible cord 49 is provided for supplying current to the motor under control of the switch 48.

In operation the brush unit 10 is rotated in the direction indicated by the arrow in Figure 6. The fan blades 40 and 41 are spirally arranged so that they tend to move the air, lint, dirt etc. toward the handle end of the housing 11 while the brushes are carrying the dirt upwardly to the outlet 17. The tapered outlet 17 provides the maximum outlet space at the handle end of the housing. The air flow from the housing will be greatest at the handle end of the outlet opening and, the air pressure will likewise be greatest at the handle end of the housing. This will direct the air, when it passes through the outlet, toward the smaller end of the outlet 17 because of the greater pressure and volume of air at the handle end of the housing. The plate 45 prevents flow of air through the end of the bag 12 toward the operator. The other end of the bag 12 is porous so the air can pass through it.

Having thus described my invention, I claim:

1. A device of the character described comprising a substantially cylindrical housing having an inlet opening along the side and an outlet opening diametrically opposite the inlet opening, said housing having a portion thereof adjoining one side of the outlet opening raised from the cylindrical outline of the housing, a combined brush and fan unit in said housing having alternate bristles and fan blades thereon, a bearing block in one end of the housing, a shaft on said unit seated in the bearing block, a handle removably fixed to the other end of the housing, having a motor therein with its shaft extending into and drivingly connected to said unit, and a dust bag on said housing having an inlet opening removably mounted on the outlet opening, the bristles and fan blades being helically arranged on the brush unit to direct air toward the handle end of the housing and the dust bag having a non-porous plate at the handle end to prevent air flow toward the handle from the bag.

2. A device of the character described comprising a substantially cylindrical housing having an inlet opening along the side and an outlet opening diametrically opposite the inlet opening, said housing having a portion thereof adjoining one side of the outlet opening raised from the cylindrical outline of the housing, a combined brush and fan unit in said housing having alternate bristles and fan blades thereon, a bearing block in one end of the housing, a shaft on said unit seated in the bearing block, a handle removably fixed to the other end of the housing, having a motor therein with its shaft extending into and drivingly connected to said unit, and a dust bag on said housing having an inlet opening removably mounted on the outlet opening, the outlet opening increasing in width toward the handle end of the housing and the blades and bristles being helically arranged on the brush unit to direct the air toward the handle end of the housing.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
112,837	Norris	Mar. 21, 1871
479,616	Bennett	July 26, 1892
1,594,685	Osius	Aug. 3, 1926
1,643,823	Sever	Sept. 27, 1927
1,742,375	Bass	Jan. 7, 1930
1,801,620	Bettman	Apr. 21, 1931
1,805,174	Gudka	May 12, 1931
2,052,129	Campbell	Aug. 25, 1936
2,134,396	Campbell	Oct. 25, 1938
2,205,599	Mitchell	June 25, 1940