

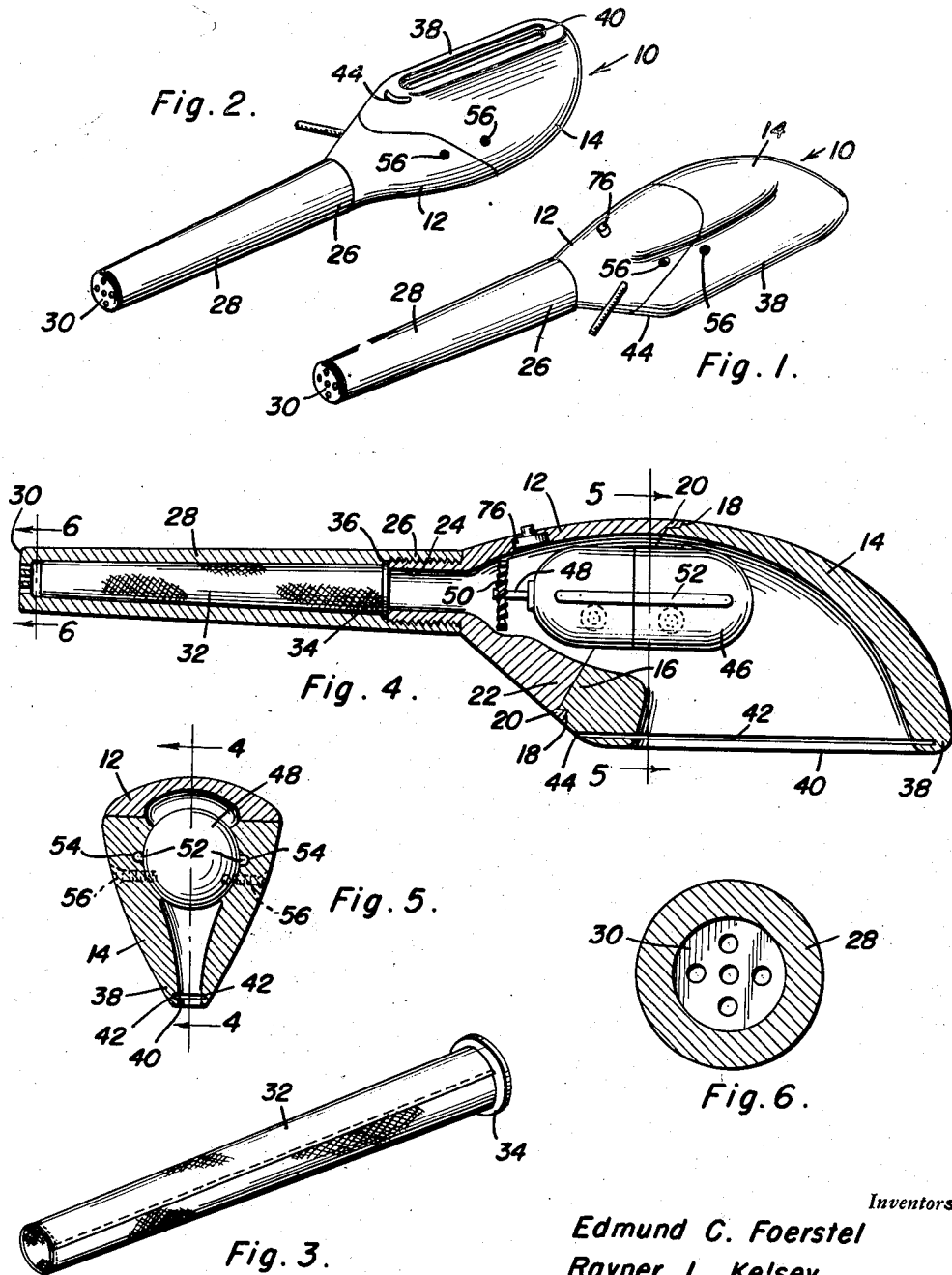
Jan. 12, 1954

E. C. FOERSTEL ET AL
VACUUM CLEANER, INCLUDING SECTIONAL HOUSING
AND FASTENING MEANS THEREFOR

2,665,445

Filed April 13, 1949

2 Sheets-Sheet 1



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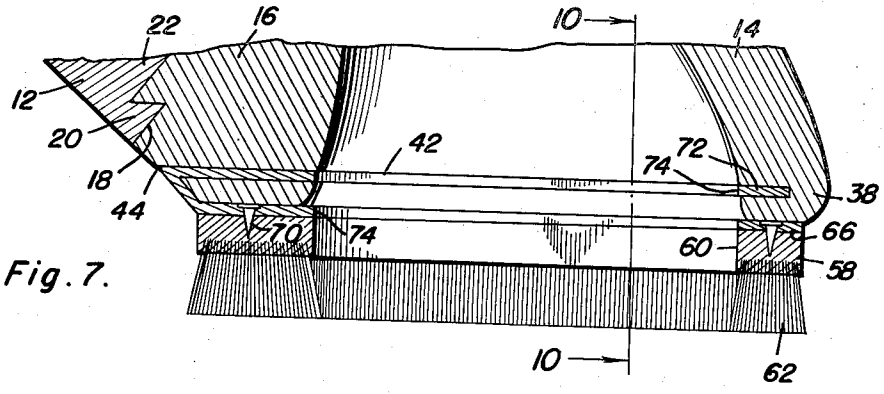


Fig. 7.

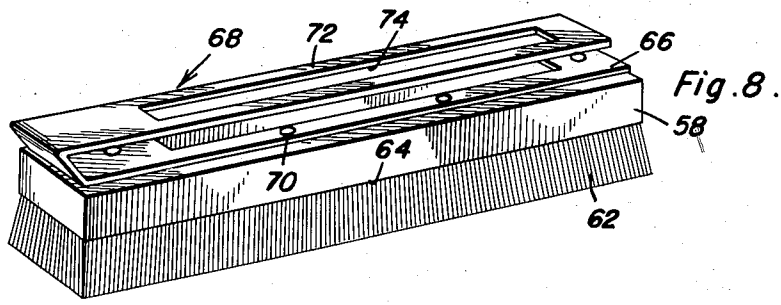


Fig. 8.

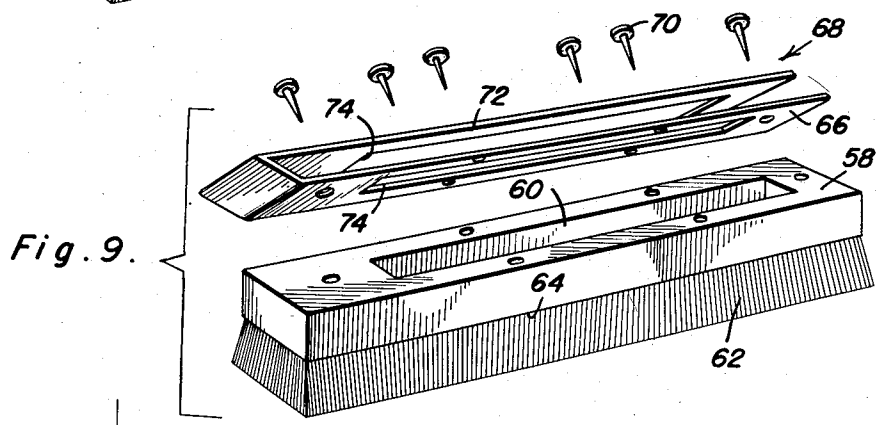


Fig. 9.

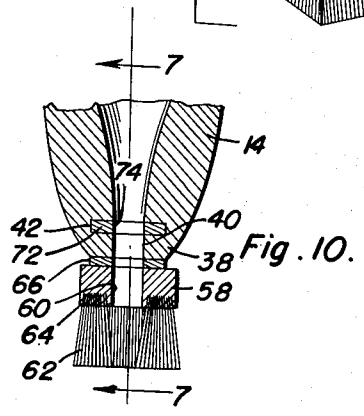


Fig. 10.

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UNITED STATES PATENT OFFICE

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VACUUM CLEANER, INCLUDING SECTIONAL HOUSING AND FASTENING MEANS THEREFOR

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2 Claims. (Cl. 15-344)

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This invention relates to new and useful improvements in cleaning apparatus and the primary object of the present invention is to provide a small and compact electrically operated hand vacuum for cleaning clothes.

Another important object of the present invention is to provide a clothes cleaner including a plurality of sections that are quickly and readily assembled or disassembled in a convenient manner facilitating a replacement, repair or the cleaning of parts and which will also permit the instant structure to be easily packed for shipment or storage.

A further object of the present invention is to provide a vacuum cleaner so constructed as to permit the same to be manipulated by one hand of a user, as a brush, and which embodies in its construction a removable hollow handle that houses a bag for collecting dust and other foreign substances from clothes in order to retain the wear and durability of such wearing apparel.

A still further aim of the present invention is to provide a clothes cleaner of the aforementioned character that is simple and practical in construction, strong and reliable in use, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the upper portion of the instant invention;

Figure 2 is a perspective view of the bottom portion of the present invention;

Figure 3 is a perspective view of the collecting bag used in conjunction with the present invention;

Figure 4 is a longitudinal vertical sectional view of the present invention taken substantially on the plane of section line 4-4 of Figure 5;

Figure 5 is a transverse vertical sectional view of the present invention taken substantially on the plane of section line 5-5 of Figure 4;

Figure 6 is an enlarged transverse vertical sectional view taken substantially on the plane of section line 6-6 of Figure 4;

Figure 7 is an enlarged fragmentary view of Figure 4 and showing the manner in which a brush is secured to the housing, and taken sub-

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stantially on the plane of section line 7-7 of Figure 10;

Figure 8 is a perspective view of the brush attachment used in conjunction with the present invention;

Figure 9 is a group perspective view showing the brush and the attaching bracket for the brush; and

Figure 10 is a transverse vertical sectional view taken substantially on the plane of section line 10-10 of Figure 7.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents a housing, generally of any suitable light weight material, such as plastic or aluminum.

The housing 10 includes a pair of hollow, open-ended sections 12 and 14 and the inclined substantially elliptical end 16 of the section 14 is provided with a continuous recess or groove 18 that receives a continuous substantially elliptical flange 20 projecting from the substantially elliptical end 22 of the section 12. It will thus be seen that the sections 12 and 14 are fitted together in order to form the housing 10.

The section 12 is provided with a reduced, externally threaded sleeve portion or nipple 24 that receivably engages the internally threaded major end 26 of a tubular or hollow frusto-conical handle 28.

The outer end of the handle 28 is provided with a perforated end wall or cap 30 that is preferably integrally formed with the handle. The handle 28, like the housing 10, is constructed of light weight material, such as plastic or aluminum.

The numeral 32 represents a porous collecting bag that is substantially frusto-conical in configuration. The bag 32 is received in the handle 28 and includes a flange or retaining ring 34 at its major end that is positioned against an internal shoulder 36 provided in the major end portion 26 of the handle 28.

The section 14 is tapered toward its lower end 38 and the lower end 38 is provided with an opening 40 through which air is sucked.

A pair of opposed longitudinally extending recesses or grooves 42 are provided in the inner walls of the section 14, adjacent the opening 40 and an entrance slot 44 is cut in the section 42 and extends to the groove 42 for a purpose which will later be more fully described.

A small electric motor 46 is disposed within the housing 10 and includes a drive shaft 48 that supports an impeller blade 50. The blade 50 is

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disposed adjacent the sleeve 24 and when the blade 50 is rotated it will suck air into the housing through the opening 40 and direct the air toward the handle 28.

A pair of longitudinally extending ribs or tongues 52 are secured to the motor 48 and the ribs 52 are received in recesses or grooves 54 provided in the inner walls of the sections 12 and 14 to retain the motor 46 co-axial with the handle and spaced from the inner walls of the housing.

Fasteners or screws 56 extend through the sections 12 and 14 and are secured to the motor 46 to retain the sections relative to each other and to the motor.

The numeral 58 represents a substantially rectangular brush head having a central opening 60. Bristles 62 are secured to and project outwardly from the lower face of the brush head 64 and one leg portion 66 of a substantially U-shaped spring member or attaching bracket 68 is secured to the upper face of the brush head 58 by fasteners 70.

The upper leg portion 72 of the spring member 68 is slidably received in the slot 44 and grooves 42 and the leg portion 66 yieldingly bears against the lower face of the end portion 38 to resiliently retain the member 68 locked to the housing.

The leg portions 66 and 72 are provided with openings 74 that are aligned with the opening 60 in the brush head 58 and the inlet opening 40 in the section 14.

It should be noted that the outer surface of the housing is smoothly contoured and that a suitable switch 76 is partially recessed in the section 12 for controlling an electric circuit to the motor 46. The switch is disposed relatively closed to the handle 28 so that a user having his hand on the handle can conveniently actuate the switch.

In practical use of the present invention, as the brush is moved over a garment, the blade 50, being in rotation, will cause air, dust, lint or the like to be sucked into the housing and directed toward the handle. The handle is quickly removed from the housing for access to the bag 32.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same

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is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed

as new is:

1. A clothes cleaner comprising a housing including a pair of hollow open ended sections having interfitting engagement, a hollow handle detachably secured to one of said sections, a collecting bag received in said handle, a motor mounted in the housing, means securing the motor to each of said sections and retaining the sections assembled, and an impeller blade rotated by the motor for sucking air into the housing and toward the handle, said means including a plurality of ribs fixed to said motor, grooves provided in the inner wall of said sections receiving said ribs and fasteners securing each of said sections to said motor.

2. A clothes cleaner comprising a housing including a first hollow section and a second hollow section, the inner walls of said sections being smoothly curved, said second section having an enlarged air inlet opening therein adapted to function as a vacuum cleaner nozzle, said first section having an air outlet nipple, said sections having interfitting inner ends, a hollow handle threaded on said nipple, a collecting bag confined within the handle, a motor mounted within the housing and extending past the inner ends of said sections, said motor being supported by said sections and including a drive shaft, an impeller blade on said shaft and positioned entirely within said first section in registry with said nipple, and at least one fastener extending through each section and into said motor to hold the motor within the casing and the inner ends of said sections engaged.

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