

July 24, 1951

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2,561,860

POWDER BLOWER WITH SAFETY SWITCH

Filed Aug. 10, 1949

2 Sheets-Sheet 1

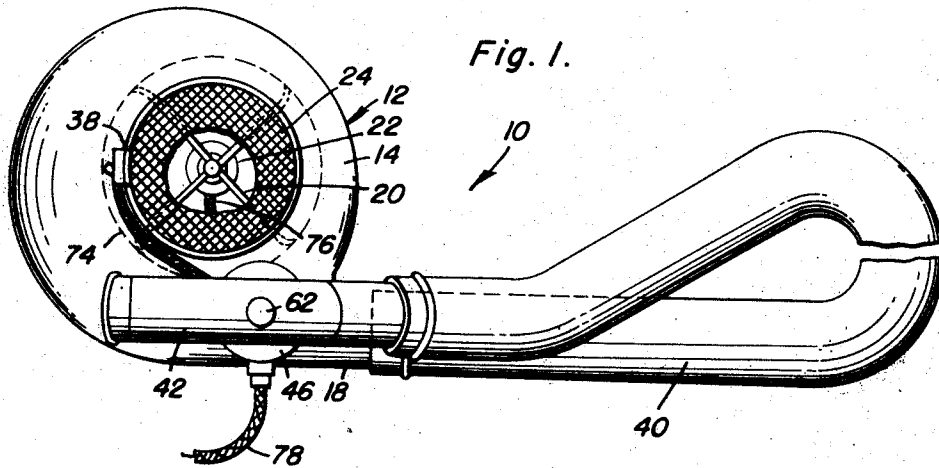


Fig. 1.

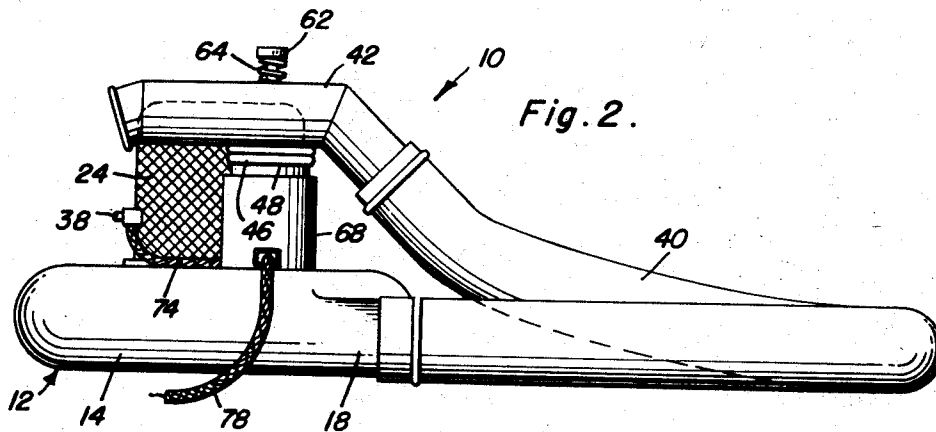


Fig. 2.

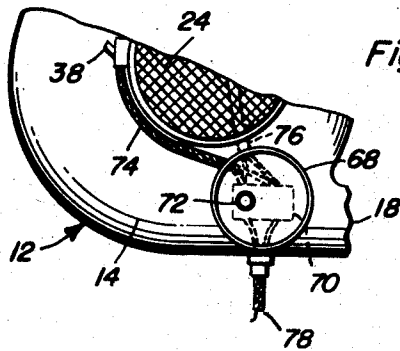


Fig. 7.

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2 Sheets-Sheet 2

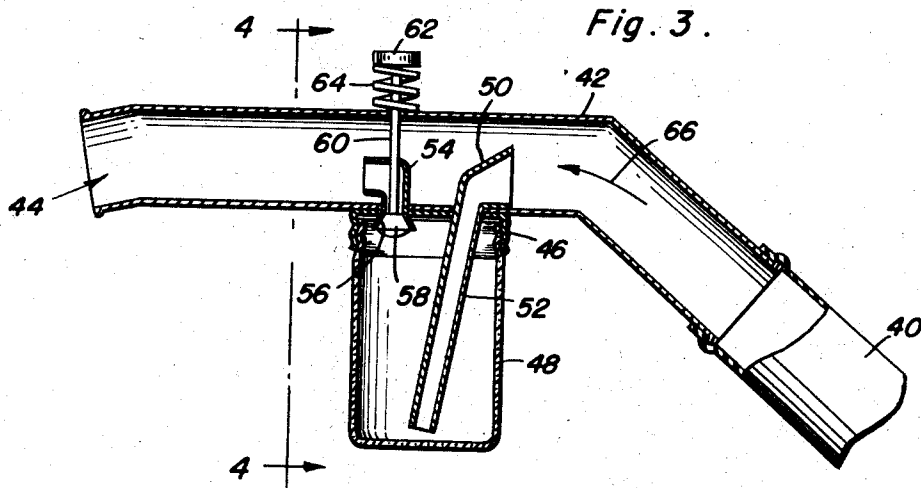


Fig. 3.

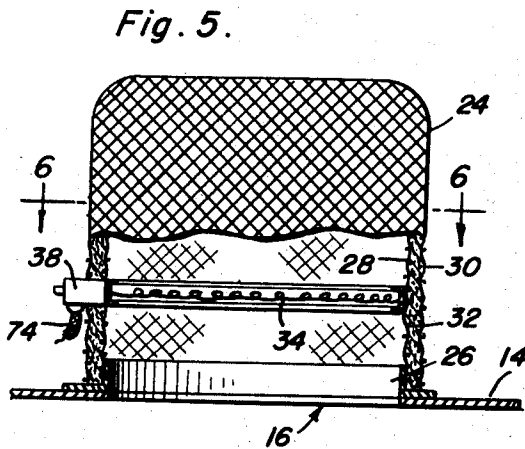


Fig. 5.

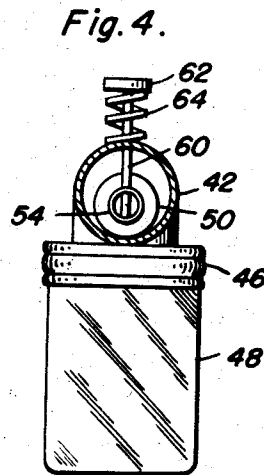


Fig. 4.

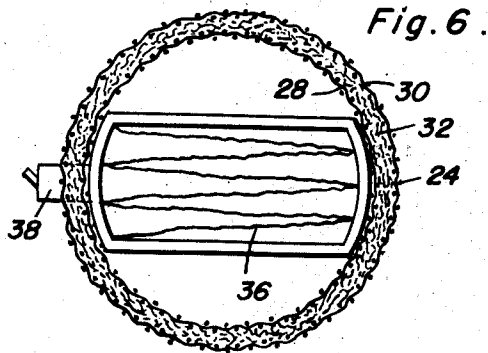


Fig. 6.

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UNITED STATES PATENT OFFICE

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POWDER BLOWER WITH SAFETY SWITCH

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3 Claims. (Cl. 222-193)

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This invention relates to new and useful improvements and structural refinements in air blowers, and the principal object of the invention is to provide a device of the character herein described, such as may be conveniently and effectively employed by barbers, or the like, for blowing a current of air, either hot or cold and with or without powder, to remove loose hair from the neck and face and to dry the skin after moisture has been applied to it.

The primary feature of the invention, therefore, resides in the arrangement of the powder admixing apparatus, while another feature lies in the combination of the lower unit with selectively energizable air heating means.

An additional feature of the invention resides in the provision of an automatic switch means for controlling the operation of the blower unit.

Some of the advantages of the invention lie in its simplicity of construction, in the convenience of its use, and in its adaptability to economical manufacture.

With the above more important objects and features in view and such other objects and features as may become apparent as this specification proceeds, the invention consists essentially in the arrangement and construction of parts as illustrated in the accompanying drawings, in which:

Figure 1 is a side elevational view of the invention;

Figure 2 is a top plan view thereof;

Figure 3 is a fragmentary longitudinal section of the powder admixing apparatus installed on the outlet duct of the blower unit;

Figure 4 is a cross sectional view, taken substantially in the plane of the line 4-4 in Figure 3;

Figure 5 is a top plan view, partially broken away, of the filter and heating element used in the invention;

Figure 6 is a cross-sectional view, taken substantially in the plane of the line 6-6 in Figure 5; and

Figure 7 is a fragmentary side elevational view, similar to that shown in Figure 1 but illustrating the outlet duct and powder receptacle removed from the blower unit.

Like characters of reference are employed to designate like parts in the specification and throughout the several views.

Referring now to the accompanying drawings in detail, the invention consists of what may be referred to as a powder blower, this being designated generally by the reference character 10 and

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embodying in its construction a blower unit 12 including a scroll housing 14 having an inlet port 16 (see Figure 5) and an outlet port or duct 18, the housing 14 containing a rotatable "squirrel cage" type blower wheel 20 mounted on the armature shaft of an electric motor 22.

A dome-shaped filter 24 of foraminous material is mounted on the inlet port 16 of the housing 14 by means of a suitable annulus 26, the filter 24 preferably consisting of spaced inner and outer walls 28, 30, respectively (see Figures 5 and 6), between which there is provided a layer of dust collecting material 32.

Moreover, it is to be noted that an electric heating element 34 of any conventional type is mounted within the filter 24 adjacent the inlet port 16, the operation of this element being controlled by a suitable switch 36.

The outlet 18 of the housing 14, on the other hand, has connected thereto one end of a flexible hose 40, the remaining end of which is connected to an outlet duct 42, configured as is best shown in Figure 3. The duct 42 has an open outlet end 44, and it is to be noted that an intermediate portion of the duct 42 is provided on the outer surface thereof with a screw-threaded cap 46 adapted to removably receive a powder receptacle or container 48.

An air scoop 50 is disposed in the duct 42 facing the hose 40 and is provided with a tubular extension 52 which passes outwardly from the duct and communicates with the bottom portion of the receptacle 48, as illustrated in Figure 3. In addition, an L-shaped powder outlet nozzle 54 extends from the upper portion of the receptacle 48 into the duct 42, facing the outlet end 44 of the latter, it being noted that the portion of the nozzle 54 disposed in the receptacle 48 is flared outwardly so as to provide a seat 56 for a substantially frusto-conical closure member or valve 58 mounted upon a stem 60. This stem, being slidable transversely through the duct 42, is provided with a depressible actuating knob 62, while a compression spring 64 is positioned on the stem between the knob and the duct so as to urge the closure member 58 to its closed position, as will be clearly apparent.

It will be observed that when the blower unit 12 is in operation and a current of air is delivered through the tube 40 and through the duct 42, as indicated at 66 in Figure 3, a certain amount of air under pressure will enter the scoop 50 and the receptacle 48, through the extension 52 of the scoop, thus agitating the powder in the receptacle and, assuming that the valve 58 is opened by de-

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pressing the knob 62, powder from the receptacle will be discharged through the nozzle 54 and admixed with the current of air passing through the duct 42. Needless to say, when the pressure on the knob 62 is relieved, the valve member 58 will automatically return to its closed position, so that only a stream of air may be discharged through the duct, that is, without mixing powder therewith, such as for example, for hair drying operations. On the other hand, when the valve actuating button 62 is depressed, the powder may be admixed with the air, for treating hair and scalp, etc.

If it is desired to deliver comparatively cool air through the duct, the switch 38 may be opened so that the heating element 34 is inactive, and by the same token, the switch 38 may be closed so as to energize the element 34 and heat the air passing into the intake port 16 of the blower, so that the air which is ultimately discharged through the open end 44 of the duct 42 is comparatively warm.

Automatic means may be provided for controlling the operation of the heating element 34 and of the blower actuating motor 22, these means consisting of a cup-shaped holder 68 which is mounted preferably at one side of the housing 14 and has an open outer end into which the receptacle 48 may be slid, as shown in Figure 2. What is generally known as an automatic "momentary contact" switch 70, including a spring-pressed actuating plunger or knob 72, is provided in the bottom of the holder 68 and is operatively connected with the motor 22 as well as with the switch 38 of the heating element 34 in such manner that when the knob or plunger 72 is depressed, the circuit is closed, and vice versa. Accordingly, as long as the invention is not in use and the receptacle 48 of the powder admixing apparatus is disposed in the holder 68, the switch 70 is opened and the entire device is inactive. However, when the receptacle 48 is withdrawn from the holder 68, the switch 70 is closed and the blower motor 22 is automatically energized, this also applying to the heating element 36 providing, of course, that the manual switch 38 is also closed.

In the accompanying drawings, the reference character 74 designates a wire connection from the switch 70 to the switch 38, while the reference character 76 similarly designates the electrical connection between the switch 70 and the motor 22. Finally, the reference character 78 indicates an attachment cord whereby the entire machine may be connected to a source of electric supply.

It is believed that the advantages and use of the invention will be readily understood from the foregoing disclosure, and accordingly further description thereof at this point is deemed unnecessary.

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

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1. In a powder blower, the combination of a blower unit having an outlet port and including an electric motor, a flexible hose connected at one end thereof to said outlet port, an outlet duct at the free end of said hose, a powder receptacle mounted on said duct, means responsive to the passage of air through the duct for delivering powder from said receptacle into the duct, a holder for said receptacle provided on said blower unit, and a normally closed electric switch provided in said holder and connected to said motor, said switch being openable by the application of said receptacle to said holder.

2. In a powder blower, the combination of a blower unit having an outlet port and including an electric motor, a flexible hose connected at one end thereof to said outlet port, an outlet duct at the free end of said hose, a powder receptacle mounted on said duct, means responsive to the passage of air through the duct for delivering powder from said receptacle into the duct, said means including an air scoop positioned in the duct and having an extension communicating with the bottom portion of said receptacle, a powder outlet nozzle extending from the upper portion of said receptacle into said duct, a holder for said receptacle provided on said blower unit, and a normally closed electric switch provided in said holder and connected to said motor, said switch being openable by the application of said receptacle to said holder.

3. In a powder blower, the combination of a blower unit having an outlet port and including an electric motor, a flexible hose connected at one end thereof to said outlet port, an outlet duct at the free end of said hose, a powder receptacle mounted on said duct, means responsive to the passage of air through the duct for delivering powder from said receptacle into the duct, said means including an air scoop positioned in the duct and having an extension communicating with the bottom portion of said receptacle, a powder outlet nozzle extending from the upper portion of said receptacle into said duct, a normally closed valve provided in said nozzle, a holder for said receptacle provided on said blower unit, and a normally closed electric switch provided in said holder and connected to said motor, said switch being openable by the application of said receptacle to said holder.

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

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