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HAND WASHING AND DRYING DEVICE

Filed June 27, 1960

FIG. 1

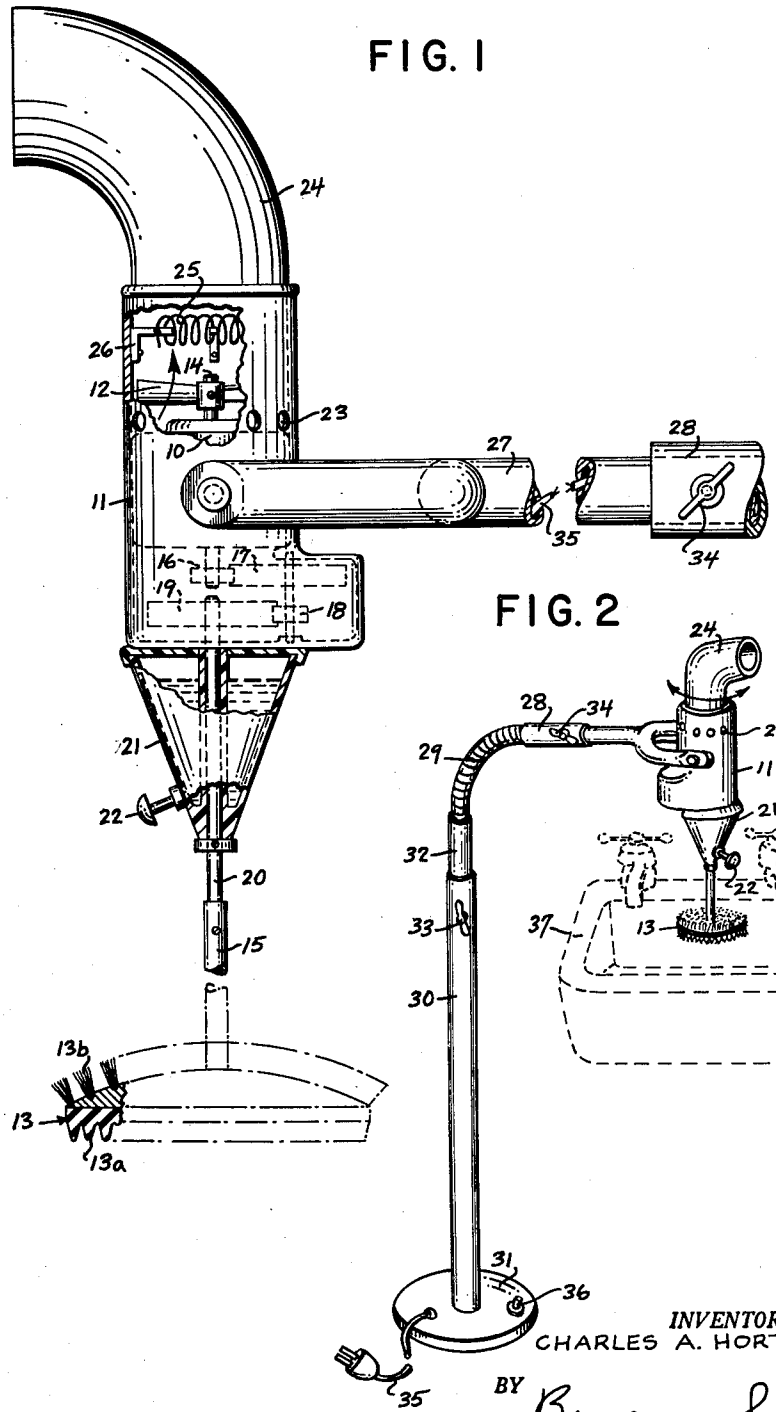


FIG. 2

INVENTOR.
CHARLES A. HORTON

BY Barnes & Seed

ATTORNEYS

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HAND WASHING AND DRYING DEVICE

Charles A. Horton, Box 34, Leavenworth, Wash.

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8 Claims. (Cl. 15—4)

The present invention relates to hand washing and drying devices for disabled persons having only the use of one hand, and particularly aims to provide a said device which can be easily operated by such disabled persons without assistance. Other objects are to provide hand washing and drying apparatus which is of simple and economical construction, and which is portable and can be easily placed in operative position.

With yet additional objects and advantages in view which, with the foregoing will appear and be understood in the course of the following description and claims, the invention consists in the novel construction and in the adaptation and combination of parts hereinafter described and claimed.

In the accompanying drawings:

FIG. 1 is a fragmentary side elevational view of an embodiment of my invention with parts broken away and shown in vertical section; and

FIG. 2 is a perspective view of the device in operative position with respect to a wash basin shown in broken lines.

Referring to the drawings it is seen that my invention employs a motor **10** mounted vertically in a housing **11** for driving a fan **12** and a rotary scrub brush **13**. The fan **12** is driven directly by the motor shaft **14** whereas the shaft **15** for the scrub brush **13** is driven at reduced speed through a gear reduction **16—19** located in the lower part of the housing **11**. From the gear **19** a shaft **20** extends through a center bore in an inverted-conical soap receptacle **21** and detachably connects with the brush shaft **15**. This receptacle is attached to the underside of the housing **11** and has a push valve **22** so as to function as a soap dispenser.

Air inlet ports **23** are formed in the housing **11** for the fan **12** and a duct elbow **24** is fitted at the top thereof which is turnable to give adjustment of the air stream discharging therefrom responsive to action of the fan. This stream is warmed to comfortable hand drying temperature by an electrical heating element **25** mounted between the fan and discharge **24** by thermally insulated brackets **26**. Action of the fan also helps to carry off motor heat.

The housing **11** is supported between the fork arms of a hollow yoke **27** which projects from within a terminal tube **28** at the upper end of a flexible elbow **29** in turn carried by a tubular standard **30** mounted in a portable base **31**. To provide height adjustment of the brush **13** the elbow **29** has an extension **32** telescoping with the standard **30** and locked by a set screw **33**. Similarly, the reach of the yoke **27** is set by a screw **34**.

Wiring **35** carrying power to the motor **10** and heating element **25** by a common circuit, enters the base **31** and is threaded through the standard **30**, elbow **29** and yoke **27**. This circuit is controlled by a foot switch **36** mounted in the base **31**.

The scrub brush **13** may take a variety of forms. For purposes of example I have shown a brush having rubber or pliable plastic prongs **13*a*** at the bottom and conventional bristles **13*b*** at the top.

In FIG. 2 I have illustrated the device in operative position with the brush **13** depending into a wash basin **37** and the air discharge elbow **24** aimed to one side of the basin. This position of the brush can easily be established for the disabled person by manipulation of the flexible elbow **29** and yoke **27**. Once the height and reach have been set, the flexibility of the elbow **29** can be

used to raise the brush out of the confines of the basin if it is desired to temporarily move the device.

To start the unit after it is in operating position, the disabled person need only press the foot switch **36**. He then applies soap to his hand by pressing the valve **22** with his thumb and performs the scrubbing function by bringing his hand into contact with the brush **13**. Water from the faucet may be used for rinsing. By this time the heating element **25** has reached sufficient temperature to warm the air delivered thereto by the fan **12** to hand drying temperature so that the disabled person need only place his hand in front of the warm air stream discharging from the duct **24** to dry it.

It is thought that the invention and its advantages will have been clearly understood from the foregoing detailed description of the preferred illustrated embodiments. Minor changes in the details of construction may be resorted to without departing from the spirit of the invention and it is therefore my intention that no limitations be implied and that the hereto annexed claims be given the broadest interpretation to which the employed language fairly admits.

What I claim is:

1. A hand washing and drying device comprising, a support, a generally vertical motor carried by said support, a rotary fan driven at the upper end of the motor, a depending rotary scrub brush driven at reduced speed beneath said motor, and a heating element above said fan for heating air circulated by the fan.

2. A hand washing and drying device comprising, a housing having spaced air inlet and discharge openings, a rotary fan and a heating element operatively associated between said openings for delivering warmed hand-drying air from said discharge opening, a motor in said housing driving said fan, and a rotary hand-scrubbing brush depending from said housing and driven by said motor.

3. A hand washing and drying device comprising, a housing having an air-discharge duct elbow at the top turnable relative thereto and having air inlet openings spaced beneath said elbow, a rotary fan and a heating element operatively associated between said inlet openings and elbow for delivering warmed hand-drying air from the latter, a motor in said housing driving said fan, and a rotary hand-scrubbing brush, depending from said housing and driven by said motor.

4. A hand washing and drying device comprising, a housing having an air-discharge duct elbow at the top turnable relative thereto and having air inlet openings spaced beneath said elbow, a rotary fan and a heating element operatively associated between said inlet openings and elbow for delivering warmed hand-drying air from the latter, a motor in said housing driving said fan, a soap dispenser depending from said housing, a scrub brush beneath said dispenser and having a drive shaft extending therethrough into the housing, and reduction means in the housing for driving said brush drive shaft from the motor at reduced speed.

5. A hand washing and drying device comprising, a stand providing a reach, a motor carried by said reach, a rotary fan driven at the upper end of the motor, a heating element above said fan for heating air circulated thereby, speed reduction means operatively connected with said motor, and a depending rotary scrubbing brush driven at reduced speed by said reduction means.

6. A hand washing and drying device comprising, a stand providing a reach, means for adjusting the height of said reach, a motor carried by said reach, a rotary fan driven at the upper end of the motor, a depending rotary scrub brush driven at reduced speed beneath said motor, and a heating element above said fan for heating air circulated by the fan.

7. A hand washing and drying device comprising, a

floor stand providing a reach extending from a flexible elbow, a housing carried by said reach, said housing having an air-discharge duct elbow at the top turnable relative thereto and having air inlet openings spaced beneath said elbow, a rotary fan and a heating element operatively associated between said inlet openings and elbow for delivering warmed hand-drying air from the latter, a motor in said housing driving said fan, a soap dispenser depending from said housing, a scrub brush beneath said dispenser and having a drive shaft extending therethrough into the housing, reduction means in the housing for driving said brush drive shaft from said motor at reduced speed, a wiring circuit for said motor and heating element carried by said stand, and a control switch in said circuit mounted on the stand.

8. A hand washing and drying device comprising, a housing having spaced air inlet and discharge openings, a rotary fan and a heating element operatively associated between said openings for delivering warmed hand-drying air from said discharge opening, a motor in said housing driving said fan, a rotary hand-scrubbing brush depending from said housing and driven by said motor, power transmitting means to deliver current to said motor and to said heating element, and switch means by which said current is caused to be delivered at the same time to both said heating elements and said motor, so that when said switch means is operated the brush is immediately caused to rotate and the heating element later becomes sufficiently hot to deliver hand-drying air to the desired temperature.

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