

April 21, 1931.

E. O. KUENDIG

1,801,964

AIR MOVING APPARATUS

Filed Dec. 18, 1928

2 Sheets-Sheet 1

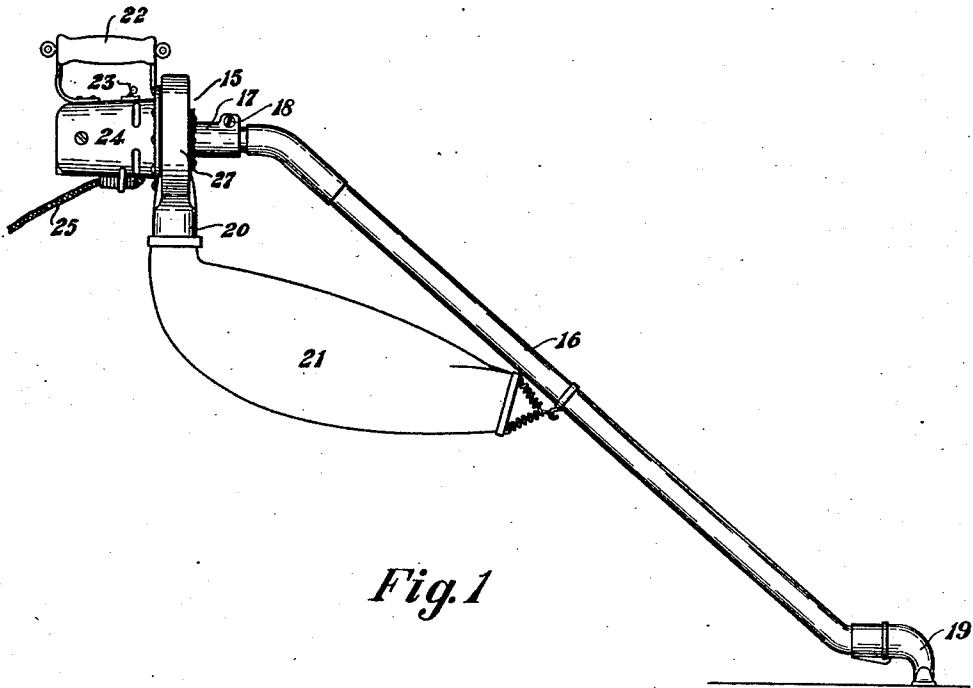


Fig. 1

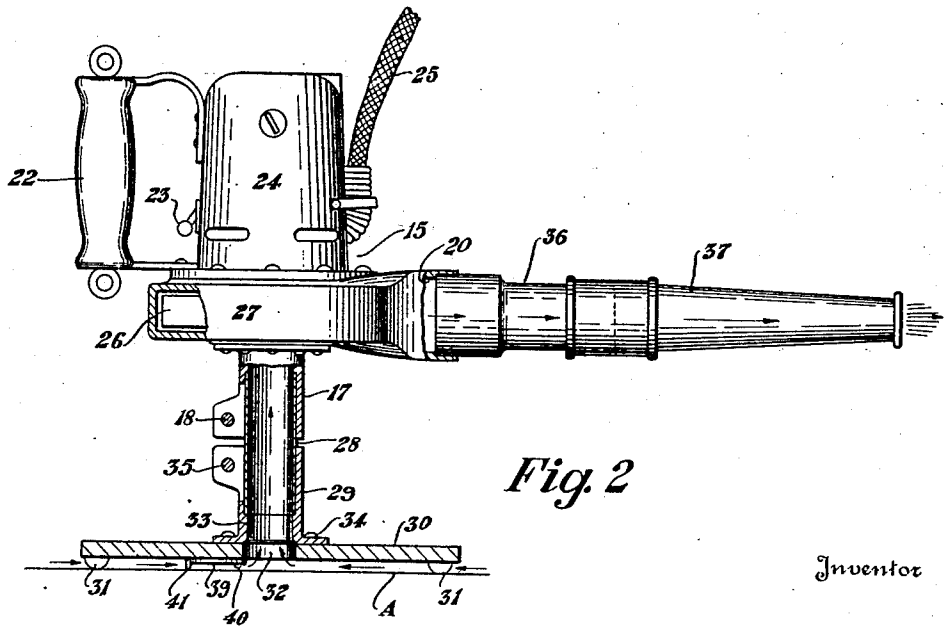


Fig. 2

Inventor

E. O. Kuendig

By

Harry Trease

Attorney

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2 Sheets-Sheet 2

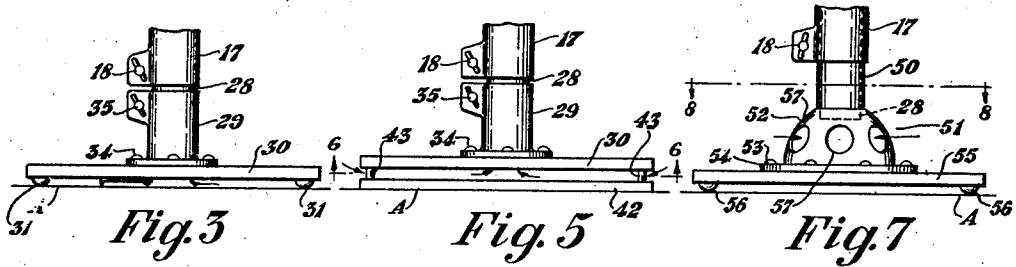
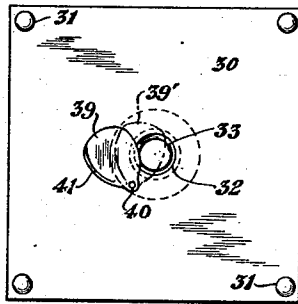


Fig. 4

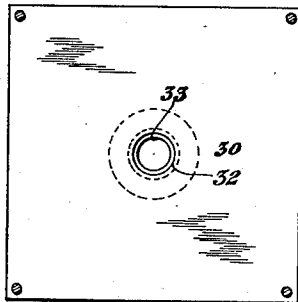


Fig. 6

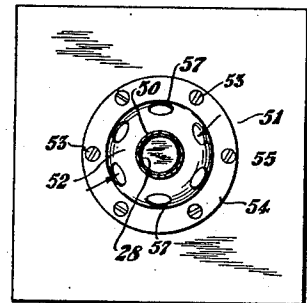


Fig. 8

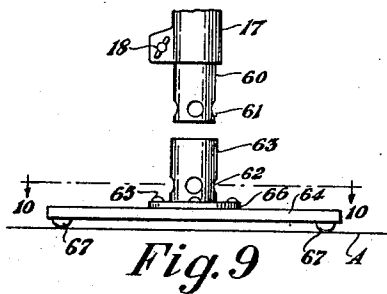


Fig. 9

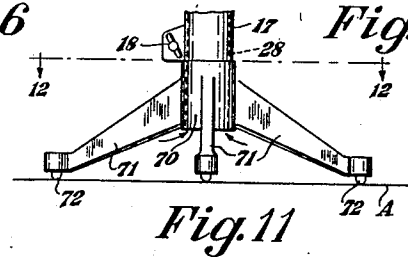


Fig. 11

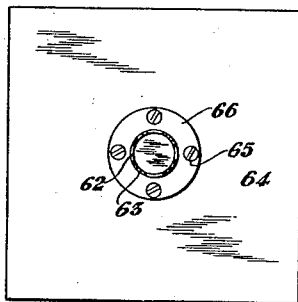


Fig. 10

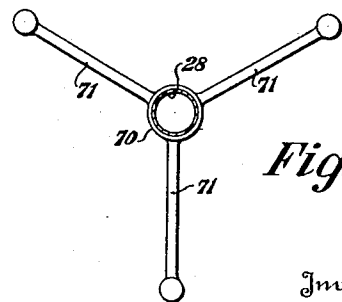


Fig. 12

Inventor

E. O. Kuendig

By *Harry Trease* Attorney

UNITED STATES PATENT OFFICE

EDWARD OSCAR KUENDIG, OF CANTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
ARTHUR S. KOENREICH, OF CANTON, OHIO

AIR-MOVING APPARATUS

Application filed December 18, 1922. Serial No. 326,845.

The invention relates to improvements in air moving apparatus and more particularly to supports for an air displacement unit of a vacuum cleaner such as shown in the application of Walter S. Simpson, for vacuum cleaners, filed September 17, 1928, Serial No. 306,524, by means of which the unit may be utilized as a blower, for drying hair and other air impelling uses.

Almost every home is provided with one kind or another of vacuum cleaner which is used for a short time every day for cleaning purposes. However, the air displacement unit of such cleaner is not adapted for use other than for cleaning purposes, except that they may sometimes be used as blowers in a manner illustrated by Patent No. 1,293,250 issued to Walter G. Trautman.

When such a construction is used as a blower, the blower nozzle has no permanent support and the blower nozzle may not be directed in any direction except through the medium of a person handling, holding, and directing the same. Such use is restricted and encumbered by the presence of the vacuum cleaner handle, nozzle and other parts unnecessary when the cleaner is being utilized as a blower.

For instance if it were desired to use such a cleaner as a hair dryer in the home, it would be necessary to have some person other than the one whose hair is being dried, manipulate and direct the nozzle in proper directions in order that the blast may be used to effectually dry the hair.

The objects of the present invention include the provision of a simple inexpensive support for the air displacement unit of a vacuum cleaner, which may be included as an attachment for the vacuum cleaner when the same is sold, and by means of which the vacuum cleaner may be easily and readily converted for use as a hair dryer, adapted for being conveniently located with reference to the person whose hair is being dried, and for being manipulated and directed in any direction by that person without the aid of another.

These objects are attained by the present improvement, preferred arrangements of

which are hereinafter set forth in detail, and may include a support member for the air displacement unit of a vacuum cleaner, the support having a tubular post for connection with the inlet orifice extension of the air displacement unit, by means of which the unit may be swivelled in or on the tubular post, and the tubular post being provided at one of its end portions with an opening or openings for the admission of air to the air inlet orifice of the air displacement unit.

Valve means may also be provided for the opening or openings in the tubular post for controlling the quantity of air admitted to the air displacement unit inlet orifice.

Several embodiments of the invention are illustrated in the accompanying drawings, in which

Figure 1 is an elevation of a vacuum cleaner, the air displacement unit of which may be easily and readily converted for use as a hair dryer or other air impelling apparatus;

Fig. 2, a longitudinal section of an improved support having the air displacement unit mounted therein for use as a hair dryer, parts of the unit being broken away;

Fig. 3, a side elevation of the support shown in Fig. 2 with a portion of the air displacement unit inlet orifice extension swivelled therein;

Fig. 4, a bottom plan view of the same;

Fig. 5, a view similar to Fig. 3 showing a slightly modified form of support;

Fig. 6, a sectional view as on the line 6—6, Fig. 5;

Fig. 7, a view similar to Fig. 3 showing another form of support;

Fig. 8, a sectional view as on the line 8—8, Fig. 7;

Fig. 9, a fragmentary elevation illustrating another modified form of support;

Fig. 10, a sectional view as on the line 10—10, Fig. 9;

Fig. 11, a fragmentary elevation illustrating a still further modified form of the support; and

Fig. 12, a plan sectional view as on the line 12—12, Fig. 11.

Similar numerals of reference refer to cor-

responding parts throughout the various figures of the drawings.

The air displacement unit generally indicated at 15, is provided with an angled nozzle tube 16, rigidly secured to the inlet orifice extension 17, by the clamping screw 18, and a nozzle 19 is swivelled at the lower end of the nozzle tube 16.

The outlet orifice connection 20, of the air displacement unit 15, may be provided with a dust collector bag 21, and the unit may also be provided with a handle 22 for manipulating the cleaner. Conveniently located adjacent the handle 22, is the switch 23, for the motor 24, of the air displacement unit, and the wires 25 may lead to any suitable source of electric power supply.

The centrifugal impeller fan 26 may be mounted in the fan casing 27 and driven by the motor 24 as shown in Fig. 2 of the drawings.

When it is desired to utilize the air displacement unit 15 of the vacuum cleaner as a blower unit and more particularly as a hair dryer, the nozzle tube 16 may be disconnected from the inlet orifice extension 17 by loosening the clamping screw 18, and the dust collector bag 21 may be disconnected from the outlet orifice connection 20.

The inlet orifice extension 17 may then have a nipple connection 28 rigidly secured thereto, by the clamping screw 18, and a portion of the nipple connection 28, may then be swivelled in the tubular post 29, which may extend vertically of the support indicated at 30.

For admitting air to the air inlet orifice of the air displacement unit 15, the support 30 may be provided with legs 31 for spacing the same from a table or other flat surface A upon which the support rests; and on opening 32 may be provided in the support aligned with the duct 33 of the post 29.

The tubular post 29 may be connected to the support 30 by the screws or rivets 34, and for simplifying the construction of the support, the tubular post 29 may be a casting similar to the inlet orifice extension 17 of the air displacement unit 15; but the clamping screw 35 thereof will not be used to clamp the nipple 28 if the clamping screw 18 is used for that purpose, for it is usually desired to provide a swivel connection between the support 30 and the air displacement unit 15.

A nipple connection 36 may be connected with the outlet orifice 20 of the unit 15, and a nozzle 37 may be applied to one end thereof as shown in Fig. 2 of the drawings. The nozzle 37 may be made of rubber and may be the attachment supplied with the vacuum cleaner for use when cleaning upholstery.

The construction and arrangement shown in Fig. 2 may be readily and satisfactorily used as a hair dryer in which the displaced air flows between the support 30 and the table

A, then upward through the opening 32, the tubular post 29, the nipple 28, and the inlet orifice extension 17, to the impeller fan chamber inside the casing 27, and thence is displaced through the outlet orifice connection 20, the nipple 36, and is expelled through the nozzle 37, as shown by the arrows in Fig. 2 of the drawings.

By this construction, the nozzle 37 may be directed in any direction in the plane of its longitudinal axis by swivelling the unit 15 at the nipple connection between the same and the support 30, and this manipulating or directing of the nozzle may be readily accomplished simply by grasping the conveniently located handle 22.

At times it may be desirable to limit the amount of air displaced by the fan 26, and for this purpose a valve 39 is provided, pivoted at 40 on the support 30. There may also be provided on the valve 39, a depending tongue 41 to be grasped between the fingers for moving the valve to any position.

The valve 39 is shown in dot dash lines at 39' in Fig. 4, in a partially closed position for limiting the quantity of air which may be drawn through the opening 32 to the fan chamber inside the casing 27.

A slightly modified form of support is shown in Figs. 5 and 6, which is the same as the construction shown in Figs. 2, 3 and 4 excepting that there is a sub-base 42 spaced from the support 30 as by the pins 43, for permitting air to enter between the sub-base 42 and the support 30. The air then travels through the opening 32, through the tubular post 29, the nipple 28, and through the air inlet orifice extension 17 to the fan chamber inside the casing 27.

Figs. 7 and 8 show a still further modified form of swivel support for an air displacement unit in which the inlet orifice extension 17 of the unit may be connected by the clamping screw 18, with the nipple 28, which may be inserted into and swivelled in the upper cylindric portion 50, of the tubular post indicated generally at 51.

The lower portion of the tubular post 51, may be flared as at 52, and may be connected by screws 53, through its peripheral flange 54, to the support 55, provided with legs 56 for contact with the table A or other flat surface.

The flared portion 52, of the tubular post 51, may be provided with a number of openings 57 for the admission of air to the lower end of the tubular post as indicated by the arrows in Figs. 7 and 8. The air then travels upward through the nipple 28, and air inlet orifice extension 17 to the fan chamber in the casing 27.

The construction shown in Figs. 7 and 8 does not contain an opening in the support 55, for all of the air enters the interior of the tubular post through the openings 57.

In the construction shown in Figs. 9 and 10, the nipple 60, connected with the air inlet orifice extension 17, by the clamping screw 18, may be provided at its lower portions with openings 61, which may register with openings 62, in the lower portion of the tubular post 63, attached to the support 64, as by screws 65, extending through the peripheral flange 66 thereof.

When the nipple 60 is inserted in the tubular post 63, the openings 61 and 62 may register for the admission of air through the same, then the air travels upward through the nipple 60, and air inlet orifice extension 17, to the interior of the fan casing 27.

When it is desired to limit the quantity of air passing to the fan, the nipple 60 may be swivelled or rotated within the tubular post 63, thereby causing a misalignment of the openings 61 and 62. The support 64 is spaced from the table A or other flat surface as by legs 67.

A still further modified form of swivel support for the air displacement unit 15 is shown in Figs. 11 and 12, which may include a tubular post 70, from which extends tripod legs 71, contacting with a table A or other flat surface by knobs 72. The nipple 28 connected with the air inlet orifice extension 17, by the clamping screw 18, may be swivelled within the tubular post 70, and air is admitted at the lower end thereof as shown by the arrows in Fig. 11.

By any of the foregoing means, a simple and effective support is provided, in which the air displacement unit of a vacuum cleaner may be swivelled, and through which air may be admitted to the inlet orifice of the air displacement unit. Thus the air displacement unit may be effectively utilized as a hair dryer, the nozzle of which may be turned in any direction in the plane of its longitudinal axis.

In the construction shown in the drawings, the axis of the air displacement unit inlet orifice is at right angles with the axis of the air outlet orifice thereof.

I claim:

1. A support for an air displacement unit including wall forming an inlet and outlet orifice, the support including a base adapted to be placed on a table and the like, a tubular member secured at one end to the base and disposed at right angles thereto, means providing a releasable connection between the tubular member and the inlet orifice, and the walls of the tubular member having apertures formed therein for providing communication between the tubular member and the atmosphere.

2. A support for an air displacement unit including an inlet orifice extension member, the support including a base adapted to be placed on a table and the like, a tubular member secured at one end to the base and dis-

posed at right angles thereto, connection means releasably clamped to one of the members and swiveled in the other member, and the walls of the tubular member having apertures formed therein for admitting air into the tubular member.

3. A support for an air displacement unit including an inlet orifice extension member, the support including a base adapted to be placed on a table and the like, a tubular member secured at one end to the base and disposed at right angles thereto, a tubular connection nipple extending into the extension member and into the tubular member, releasable clamping means on one of the members for securing the nipple thereto, the nipple being releasably swiveled in the other member, and the walls of the tubular member having apertures formed therein for admitting air into the nipple.

4. A support for an air displacement unit including an inlet orifice extension member, the support including a base adapted to be placed on a table and the like, a tubular member secured at one end to the base and disposed at right angles thereto, a tubular connection nipple extending into the extension member and into the tubular member, releasable clamping means on one of the members for securing the nipple thereto, the nipple being releasably swiveled in the other member, and the tubular member being provided with means forming a communication between the nipple and the atmosphere.

In testimony that I claim the above, I have hereunto subscribed my name.

EDWARD OSCAR KUENDIG.