

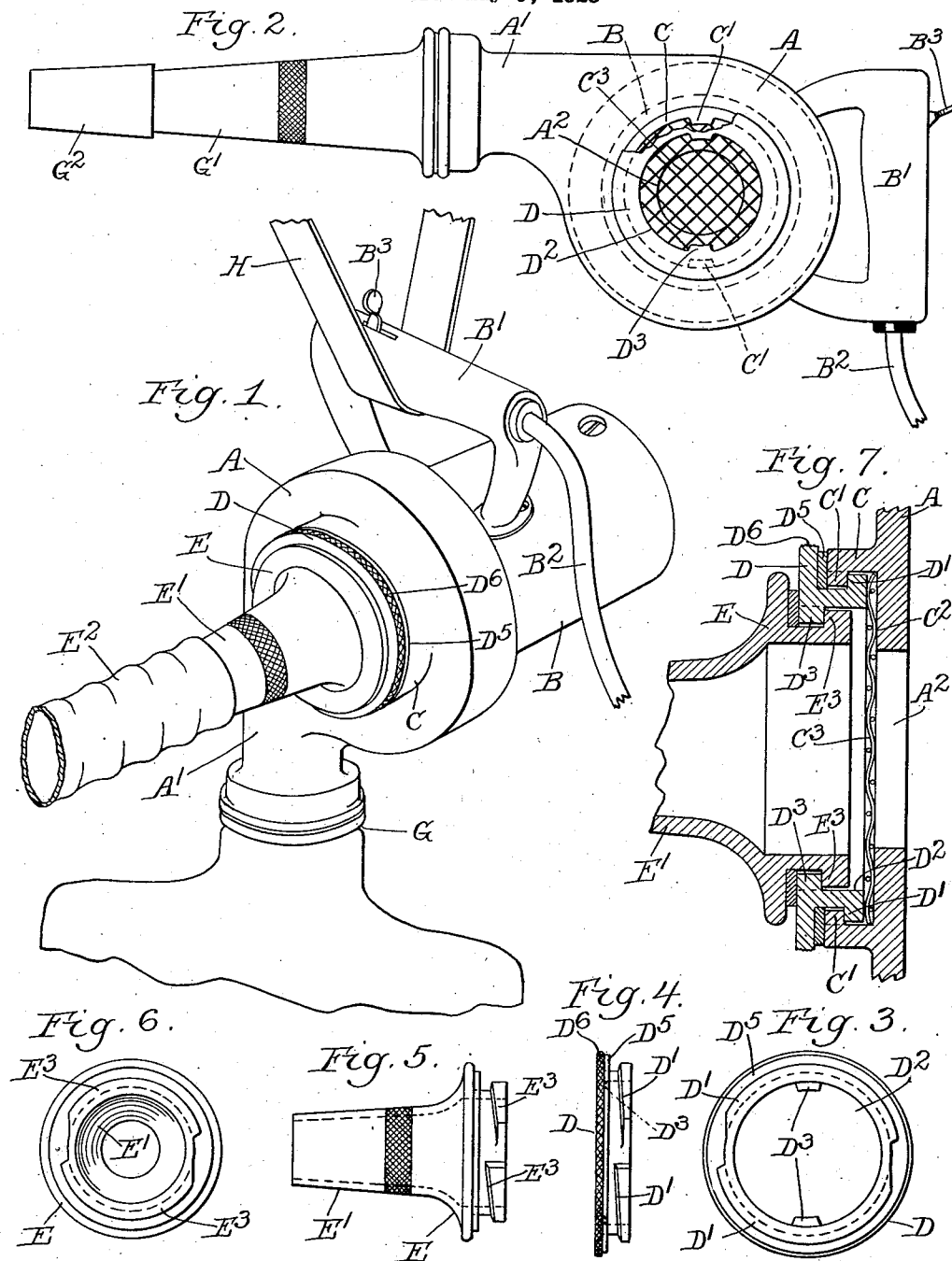
May 4, 1926.

G. CLEMENTS

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BLOWER

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Inventor.
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UNITED STATES PATENT OFFICE.

GEORGE CLEMENTS, OF CHICAGO, ILLINOIS.

BLOWER.

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To all whom it may concern:

Be it known that I, GEORGE CLEMENTS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Blowers, of which the following is a specification.

My invention relates to blowers and has particular relation to blowers which may be converted into suction cleaners. It has for particular object to provide a hand blower for cleaning machinery which may be quickly and easily converted into a suction device. Other objects will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings wherein—

Figure 1 is a perspective view of the blower casing employed as a suction cleaner;

Figure 2 is a side elevation of the blower;

Figure 3 is a front elevation of the suction hose securing ring;

Figure 4 is a side elevation of the ring shown in Figure 3;

Figure 5 is a side elevation of the suction hose connection;

Figure 6 is an axial view of the hose connection in Figure 5, and

Figure 7 is an axial section through the hose connection and securing ring when in place on the blower casing.

Like parts are indicated by like symbols throughout the specification and drawings.

A is a fan casing provided with an air outlet A¹ and the axial air inlet A². Secured to it in any suitable manner is a motor casing B having therein any suitable electric motor, the details of which form no part of the present invention. B¹ is a handle herein indicated as secured to the motor casing and through which passes the electrical connection B² controlled by any suitable handle switch B³.

The aperture A² is surrounded by a circumferential flange C provided with the inclined lugs C¹. Between the inner face of the flange C and the edge of the aperture is the flat, circumferential ledge C² upon which is laid the circular netting C³.

D is a holding or securing ring provided with inclined cam surfaces D¹ in opposition to the inclined cam lugs C¹. When the securing ring is rotated, the action of the cams and cam studs suffices to lock the se-

curing ring D in place against the netting, holding it firmly in place. The securing ring D is provided with the large central aperture D² into which projects the cam studs D³. The yielding washer D⁴ insures an air tight joint. The outer edge of the ring is knurled as at D⁶.

E is a hose connection having a tapered tip E¹ over which the hose E² may be slipped. It is shaped to penetrate the aperture D² and is provided with the inclined cam surface E³ in opposition to the cam studs D³.

The blowing nozzle A¹ terminates in an aperture of the same diameter as the aperture D², provided with cam studs similar to the studs D³ and adapted to receive either a hose connection like E¹ or a similarly formed bag connection G, or the hard nozzle G¹ provided with its soft rubber tip G².

H is a shoulder strap adapted to be passed through the handle B¹, whereby the blower when used as a suction device, may be swung over the shoulder of the operator.

The use and operation of my invention are as follows:

- A hand blower is an efficient cleaner for blowing dust from machinery and for any other cleaning task wherein it is not desired to entrap and dispose of the dust or other material removed by the blower. When it becomes necessary however, to remove the material, a suction device is preferable. While theoretically it is possible to convert the ordinary type of blower into a suction device, in practice this necessitates a very substantial rebuilding of the machine, the unscrewing of the securing ring and the removal of the netting which closes the axial air inlet. A hose connection has to be secured to the air inlet, the whole involving practically a reconstruction of the machine, which will not be undertaken by the ordinary operator using this device. The present invention provides a blower which can almost instantaneously be converted from blower to suction cleaner. The device, when normally used as a blower, is employed, for example with the blowing nozzle G¹ as shown in Figure 2, and the tip G² which serves to prevent the end of the nozzle from short circuiting when used with electrical machinery, and also prevents damage either to the nozzle or to the object to be cleaned when the blower by accident strikes the surface to be cleaned. The nozzle E shown in Figure

5 may also be used interchangeably as a hose connection ring and as a blowing nozzle.

When it is desired to use the blower as a suction cleaner the normal blowing nozzle is removed and a bag is attached to the outlet A¹, it being understood that both the nozzle G¹, the hose connection E and the bag connecting element G are identically formed with the inclined cam surfaces adapted to engage cam studs within the opening to A¹, that opening being in that respect formed like the connecting ring D. The removal of the nozzle and the application of the bag are substantially instantaneous, a twist of the wrist sufficing for each. With equal ease the hose connection E may be inserted into the central opening and the ring D and the rubber or leather packing ring shown in Figure 7 insures a tight joint. It is not even necessary to remove the netting C³ unless papers or similarly relatively large objects are likely to be drawn through the tube E². In that case, the ring D is first untwisted and the netting removed, the insertion being otherwise the same.

It will be obvious that I have provided a convertible air cleaner which may in a moment be converted from a blower to a suction cleaner and vice-versa. When used as a suction cleaner the motor and fan casing are preferably swung over the shoulder by means of the strap H which passes through the handle B¹, both hands being free to manipulate the hose E² and any suitable cleaning tool, if any, which is mounted on the end of it.

It will be realized that while I have illustrated a practical device, many changes might be made in size, number, shape and disposition of parts without departing from the spirit of my invention and I wish the specification and drawings to be taken, therefore, as in a broad sense diagrammatic, and not as limiting me to the specific details and arrangements therein shown.

I claim:

1. In a convertible air cleaner, a motor, a fan chamber and a fan mounted therein, an axial air inlet therefor, a peripheral air exhaust therefor, a protecting netting in said air inlet, a removable securing element therefor, a locking connection between

said securing element and the wall of the fan chamber about said inlet, and means for securing directly to said securing element a suction hose connection, said means comprising in part inwardly projecting cam elements about the central aperture of said securing element, and opposed cam elements on said hose connection.

2. In combination with a blower, a casing having a normal inlet opening and a discharge opening, a screen over said inlet opening and a removable holding ring adapted to hold said screen in place, an engaging flange formed on said blower casing and adapted to receive said holding ring, in combination with a suction attachment adapted to be removably inserted in said holding ring, said holding ring and said suction attachment each provided with a plurality of locking wedges whereby each may be rotated to hold and tighten the same in position, the holding ring on the engaging flange of the blower casing and the suction attachment on the holding ring.

3. A convertible blower comprising a fan and fan casing, a motor and motor casing associated therewith, a handle therefor, an air outlet associated with said fan casing, the casing being provided with an air inlet, a removable screen for said inlet and a removable holding ring adapted to be secured to the casing to hold said screen in place, in combination with a suction attachment adapted to be removably inserted in said holding ring.

4. A convertible blower comprising a fan and fan casing, a motor and motor casing associated therewith, a handle therefor, an air outlet associated with said fan casing, the casing being provided with an air inlet, a removable screen for said inlet and a removable holding ring adapted to engage the inner edge of the air inlet with its outer face and to be thereby secured to the casing to hold said screen in place, in combination with a suction attachment adapted to engage the inside of said holding ring and to be removably inserted therein.

Signed at Chicago county of Cook and State of Illinois, this 28th day of April 1923.

GEORGE CLEMENTS.