

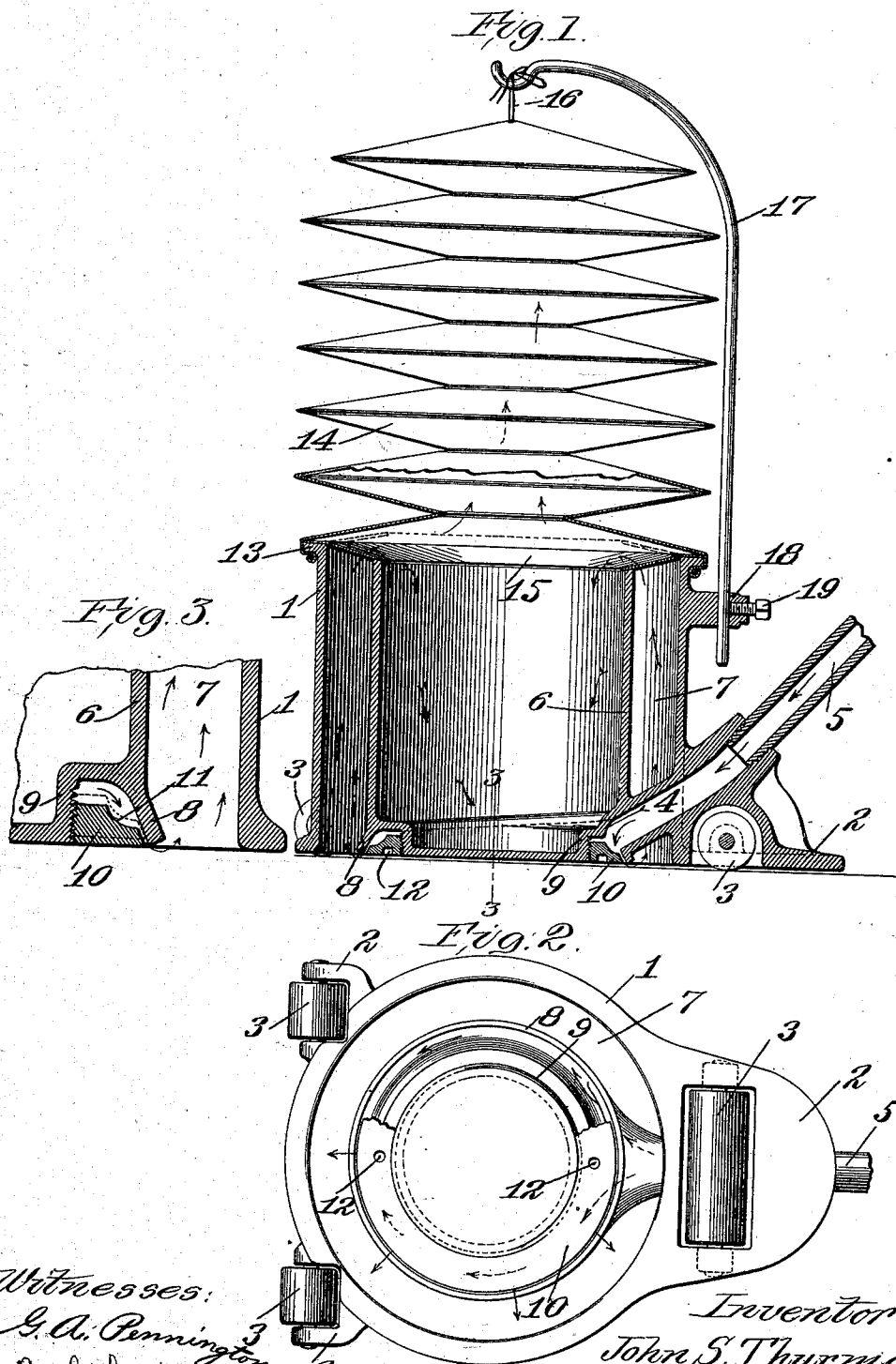
No. 716,313.

Patented Dec. 16, 1902.

J. S. THURMAN.
CARPET RENOVATOR.

(Application filed Feb. 24, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JOHN S. THURMAN, OF ST. LOUIS, MISSOURI.

CARPET-RENOVATOR.

SPECIFICATION forming part of Letters Patent No. 716,313, dated December 16, 1902.

Application filed February 24, 1902. Serial No. 95,363. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. THURMAN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented a certain new and useful Improvement in Carpet-Renovators, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical sectional view through my improved carpet-renovator. Fig. 2 is a bottom plan view of the same; and Fig. 3 is a detail sectional view on line 3-3, Fig. 1.

This invention relates to a new and useful improvement in carpet-renovators, though it is obvious that the device could be used in connection with cleaning tapestry on walls and other fabric articles.

The object of my present invention is to provide a convenient means for adjusting the blast-nozzle at will, whereby the volume of air passing through the nozzle can be regulated when the device is to be used upon different kinds of goods.

Another object is to construct the device in a simple manner, so as to reduce the number of parts and lessen the cost of manufacture.

With these objects in view my invention consists in the construction, arrangement, and combination of the several parts of my device, all as will hereinafter be described, and afterward pointed out in the claims.

In the drawings, 1 indicates the casing, which is preferably cylindrical in shape, said casing being formed with lugs or ears 2, in which are mounted bearing-rollers 3. The purpose of these bearing-rollers is to support the weight of the device and enable it to be moved over the carpet or other article to be cleaned with the least amount of friction. When the device is in operation on a carpet, these rollers embed themselves into the nap thereof, so as to permit the lower edge of the casing to make close contact with the body of the carpet. This lower edge of the casing, as shown in Figs. 1 and 3, is preferably formed with a flange, so as to increase the area of the bearing-face.

4 indicates a nozzle, preferably formed integral with the casing 1, said nozzle being at

the back of the casing and receiving in its outer end a pipe 5, which pipe preferably forms an operating-handle to be operated in the manner shown and described in United States Patent No. 665,983, granted to me January 15, 1901.

The inner end of the nozzle 4 supports a casing 6, said casing being preferably integral with the inner end of said nozzle, as shown. This casing consists of cylindrical side walls spaced from the outer casing 1, so as to provide a continuous circular passage 7 for the dust-laden air. As shown, this inner chamber is held in its central position by the nozzle; but it is obvious that other means could be employed for sustaining said chamber in position within the casing 1. The bottom wall of this inner chamber is imperforate and formed with lips 8, said lips being in the form of a marginal flange flaring downwardly and outwardly, as shown in Figs. 1 and 3. The casing within this marginal flange is extended downwardly, as at 9, and screw-threaded for the reception of an adjustable element 10, which element 10 is in the form of a conical ring. This ring 10, as shown more clearly in Fig. 3, is provided with a conical or beveled outer periphery, which cooperates with the inclined face of the lip 8, so as to form a continuous slot for the emission of air downwardly at an angle into and through the article to be renovated, the dust-laden air being forced upwardly into the passage 7, whence it is delivered into the chamber 6. The upper outer edge of this ring 10 is reduced, as at 11, so as to form in all adjusted positions of said ring a continuous air-passage in the form of a supply-belt, which communicates with the duct or passage through the nozzle 4. The ring is further provided on its under face with means, preferably in the form of recesses 12, for the reception of a wrench, such as a spanner-wrench, whereby the ring may be adjusted vertically to cause its conical face to approach or recede from the flaring lip 8 to regulate the size of the blast or passage through which the air is emitted. In this manner an extremely fine adjustment at the sides of the continuous circular slot may be effected. As shown in Fig. 1, the circular passage for supplying the air to the continuous slot is preferably gradually reduced on each side of the

chamber 6 to a point diametrically opposite the nozzle 4.

13 indicates an outwardly-extending flange at the upper edge of the casing 1. This flange supports in position a dust-arresting bag 14, whose mouth is provided with an elastic band, which is designed to fit under the flange to prevent the escape of air at this point. This flange also supports in position a circular flap-valve 15 in the form of a ring of flexible material, whose inner edge rests on the upper edge of the circular walls of the chamber 6. In this manner when the dust-laden air is forced up through the passage 7 it lifts the valve 15 and is deflected downwardly and inwardly by said valve into the chamber 6. The heavier particles of dirt and dust are deposited in the chamber 6, and the air is then permitted to rise through the top of the chamber and be received in the dust-arresting bag. If there are any fine particles of dust in the rising air and which have not been deposited in the chamber 6, they are arrested on the inner faces of the walls of the bag 14 and the purified air permitted to escape in the room through the meshes of the fabric of which the bag is composed. This dust-arresting bag is so constructed that it presents a large surface area for the escape of air, and in this manner there is no back pressure exerted in the device. As shown, the dust-arresting bag consists of a series of circular rings secured at their inner and outer edges, respectively, so as to form substantially an accordion plait. The lowermost ring is provided with a rubber or elastic gathering-band, which fits under the flange on the casing 1. Its inner edge is secured to the inner edge of the next adjacent ring, the outer edge of the next adjacent ring is secured to the outer edge of the third ring, and so on, the bag being built up forming a series of compartments which communicate with each other at the center. The uppermost piece of fabric or cloth is in the form of a circular disk, to whose center is attached a tape or securing device 16 for engaging a rod 17, whose upper end is provided with a hook, as shown. This rod holds the dust-arresting bag distended at all times and permits the free and uninterrupted entrance of the dust-laden air into all of the compartments of the bag. A lug 18 extends from the casing 1, through which the rod 17 passes, said rod being held in position by a set-screw 19. From the above it will be observed that the dust-chamber 6 is formed integral with the outer casing and that said parts form a circular continuous passage for the dust-laden air; that the valve in the form of a continuous ring of flexible material directs the dust-laden air downwardly and inwardly from all sides into the chamber 6; that the continuous flaring flange 8 and the conical ring 10 render an exceedingly-fine adjustment of the circular emission-slot possible, so that, depending upon the pressure available or the nature of the article to be renovated, said

slot may be quickly and readily adjusted; that the blast of air emanating from between the flaring flange and conical ring is directed downwardly and outwardly in the form of a continuous unbroken sheet and after dislodging the dirt and dust by reason of the contact of the lower edge of the casing 1 with the article being cleaned said dirt and dust is forced upwardly through the passage 7 and into the chamber 6, and that because of the circular form of the blast the device may be manipulated in any direction and be capable of efficient operation. While I have shown rollers, it is obvious that said rollers could be dispensed with and that when the device is moved over the article to be cleaned in any direction the same conditions prevail so far as the emission of the blast is concerned.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device could be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, the combination with a dust-receiving chamber having an imperforate bottom, of a lip extending downwardly therefrom and forming one side of a nozzle-opening, and a vertically-adjustable member forming the other side of said nozzle-opening; substantially as described.

2. In a device of the character described, the combination with a casing, of a dust-receiving chamber formed therein, a passage for the dust-laden air formed between said casing and said chamber, a lip extending downwardly from the bottom of the casing and forming one side of a nozzle-opening, and a vertically-adjustable beveled lip secured to the bottom of said chamber forming the other side of said nozzle-opening; substantially as described.

3. In a device of the character described, the combination with a casing, of a dust-receiving chamber of smaller dimensions arranged within said casing so as to form a continuous passage around said chamber for the dust-laden air, and a valve for closing the upper edge of said passage; substantially as described.

4. In a device of the character described, the combination with a circular casing, of a circular dust-receiving chamber of smaller diameter arranged within said casing and forming a continuous passage for the dust-laden air, and a flexible ring secured to the upper edge of the casing and having its inner free edge cooperating with the upper edge of the chamber; substantially as described.

5. In a device of the character described, the combination with a casing, of a dust-receiving chamber formed therein, of a circular

flange on the bottom of said chamber, and a conical ring cooperating with said flange to form a nozzle-opening; substantially as described.

5 6. In a device of the character described, the combination with a dust-receiving chamber having a flaring flange at its lower edge, and a ring cooperating with said flaring flange to form a nozzle-opening; substantially as described.

10 7. In a device of the character described, the combination with a dust-receiving chamber formed with a flaring flange, of a threaded extension provided on the bottom of said chamber, and a conical ring threaded on said extension and cooperating with said flaring flange to form a nozzle-opening; substantially as described.

15 8. In a device of the character described, the combination with a dust-receiving chamber having a lip-flange, of a conical ring adjustably mounted so as to cooperate with said lip-flange in its different positions, said ring being so formed as to provide a continuous air-passage thereabove; substantially as described.

20 9. In a device of the character described, the combination with a dust-receiving chamber, of a flaring circular flange, a threaded centrally-located projection extending downwardly from said chamber, a conical ring threaded on said projection and vertically adjustable with respect to said flaring flange, and a pressure-supply pipe for conducting compressed air in the chamber formed above said ring; substantially as described.

25 10. In a device of the character described, the combination with a casing, of a dust-receiving chamber, a nozzle connecting said casing and chamber, a lip extending down-

wardly from said chamber, and an adjustable ring cooperating with the lower inner edge of said lip; substantially as described.

11. In a device of the character described, the combination with a casing having a duct or passage for air under pressure, of a dust-receiving chamber formed therein, means for forming an annular blast of air which is directed downwardly and outwardly into and through the article to be cleaned, said chamber being spaced from said casing to form a continuous passage for the dust-laden air, and a dust-arresting bag; substantially as described.

12. In a device of the character described, the combination with a casing, of a dust-receiving chamber formed therein, having a continuous slot leading from a supply-passage arranged around the bottom of said chamber, rollers for supporting the casing above the article to be cleaned, and a dust-arresting bag; substantially as described.

13. The combination with a carpet-renovator, of a dust-arresting bag arranged over the discharge-opening from said renovator, said bag comprising a series of fabric rings connected at their inner and outer edges respectively, a rod overhanging said bag for supporting the same in position and holding the bag distended, and means on the casing providing a mount for said rod; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 22d day of February, 1902.

JNO. S. THURMAN.

Witnesses:

A. V. CANNON,

GEORGE BAKEWELL.