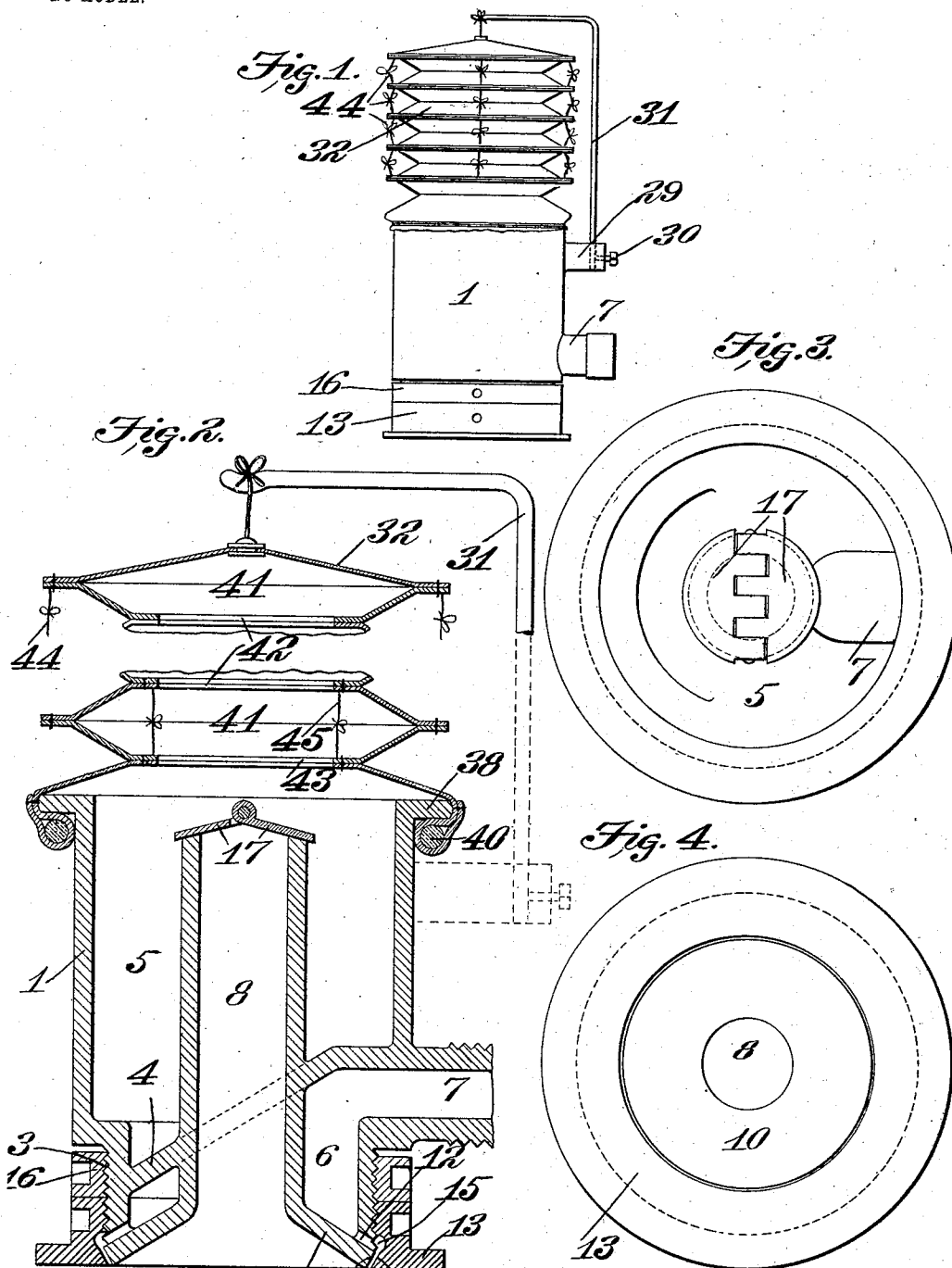


No. 720,084.

PATENTED FEB. 10, 1903.

J. S. THURMAN.
DUST ARRESTING BAG.
APPLICATION FILED APR. 14, 1902.

NO MODEL.



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UNITED STATES PATENT OFFICE.

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

DUST-ARRESTING BAG.

SPECIFICATION forming part of Letters Patent No. 720,084, dated February 10, 1903.

Application filed April 14, 1902. Serial No. 102,781. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. THURMAN, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Dust-Arresting Bags, 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 side elevational view of a renovator, showing my improved dust-arresting bag in position thereon. Fig. 2 is a vertical sectional view through the same. Fig. 3 is a top plan view of the renovator, the dust-arresting bag being removed; and Fig. 4 is a bottom plan view of the same.

This invention relates to a new and useful improvement in dust-arresting bags designed particularly for use in connection with renovators.

The renovator shown in the accompanying drawings is the same as that illustrated in an application for Letters Patent filed by me February 24, 1902, serially numbered 95,364.

My present invention consists in the construction, arrangement, and combination of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In order that the construction and operation of the renovator proper may be understood, I will describe the construction of the renovator shown in the accompanying drawings; but it is obvious that my improved dust-arresting bag can be used in connection with other types of renovator.

1 indicates a cylindrical casing whose lower end is threaded, as at 3. Extending, preferably, obliquely across the said casing is a diaphragm 4, which serves to divide the casing into a dust-receiving chamber 5 and an air-chamber 6, said air-chamber lying between the said diaphragm and the lower end of the casing and having an air-inlet pipe 7 leading thereinto at the larger side of the same. The inclined diaphragm serves to reduce the size of the chamber as the same extends from the air-inlet pipe, and thus the pressure of the air in said chamber is substantially equalized

at all points, notwithstanding the distance of such points from the inlet-port. 8 is a flue which extends upwardly in the casing and through the said diaphragm, the said lower wall of the casing inclining downwardly and outwardly from the lower end of said flue at 10 and having its outer face beveled, as at 11. Discharge-ports 12 lead through the side wall of the casing from the air-chamber 6, and a ring or nut 13 is adjustably supported upon the threaded portion of the casing, said ring having its lower inner edge beveled inwardly and upwardly, as at 14, to lie substantially parallel to the beveled face 11 of the casing. The inner wall of this ring is provided with a channel 15, which when the ring is in place registers with the discharge-ports 12 to provide a passage for the air from said air-chamber to the opening formed between the wall 14 and the face 11. The said wall 14 and face 11 are spaced from each other to provide an outlet-opening for the air, and the size of this opening can readily be regulated by adjusting the ring upon the casing, a locking-collar or jam-nut 16 above the ring serving to firmly lock the same in adjusted position. Upwardly-opening flap-valves 17 are suitably pivoted at the upper end of the flue and serve to normally close the same and to prevent backward flow of the dust-laden air into the apparatus. Adjustably extending through a bracket 29 upon the casing and clamped in position by means of a set-screw 30 is the vertical arm 31 of an angular support for a bag 32. A flange 38 extends outwardly at the upper end of said casing and is integral therewith, whereby the lower portion of the bag can be drawn over said flange and held securely in position, as by means of an elastic or puckering string 40, held in a pocket formed by sewing the cloth of the bag around said elastic.

The dust-arresting bag is composed of a series of horizontally-disposed bellows-fold chambers 41, the said several chambers communicating with each other through openings 42 and the lower or end chamber having an opening 43 in its lower wall and above the upper end of the casing when the said bag is in position. The several chambers of the bag can be held properly spaced apart by means of tying-strings 44 or by sewing tape to the

outer edges at points where the strings are secured, and tying-strings 45 can also be provided between the walls of an individual chamber in order to limit the separation of said walls from each other.

In the operation of my device the discharge-opening from the casing is made of the desired size by suitably adjusting the ring 13, and the bag is properly adjusted and supported above the casing. The casing being placed upon upholstered furniture, a wall, tapestry, or other object desired to be renovated, air is admitted through the hollow handle and enters the air-chamber 6, said air being discharged through the air-eduction opening from the casing and after passing through or against the object being operated upon and dislodging the dirt and dust therein the dust-laden air enters the flue 8 and lifting the valves 17 discharges into the chamber 5 of the casing. The air has an opportunity to settle to some extent in the said chamber 5, and the heavier particles carried by said air fall. The lighter particles are carried by the air-current into the bag 32, and as the air is substantially at rest in said bag said lighter particles have ample opportunity to settle. The said bag is made of cloth of sufficiently close weave to prevent the passage of dust through the same, although the escape of the dust-freed air is allowed.

The air admitted to the apparatus under pressure is derived from some suitable source of compressed-air supply through the medium of a flexible supply-pipe. (Not shown.) In entering the supply-chamber 6 the air is distributed around the "nozzle-opening," as it might be called, in the form of a continuous circular slot, which discharges the air downwardly and inwardly in a circular sheet. Thus the particles of dust and the air have no inclination to be forced out under the edges of the casing; but, to the contrary, a current of air is induced from all sides under the casing, and in this manner the device is rendered more efficient. This blast action is highly advantageous, and by reason of the

circular form of the sheet of air, it makes no difference in what direction the apparatus is moved, as the same conditions prevail with respect to this circular sheet being forced downwardly and inwardly and creating the blast from all sides, as above described.

I am aware that minor changes in the construction, arrangement, and combination of the several parts of my dust-arresting bag can 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, and desire to secure by Letters Patent, is—

1. In a dust-arresting bag of the character indicated, a circular pervious bellows-fold chamber, and means for limiting the separation of the walls of said chamber; substantially as described.

2. In a dust-arresting bag of the character indicated, a circular pervious bellows-fold chamber, and tying-cords secured to the walls of said chamber for limiting their separation from each other; substantially as described.

3. In an apparatus of the character indicated, a dust-arresting bag comprising a series of flexible pervious rings, and members connecting said several rings and holding them properly spaced from each other when the bag is distended; substantially as described.

4. The herein-described dust-arresting bag consisting of a series of fabric rings connected, respectively, at their inner and outer edges, and means connected thereto for insuring regular spacing of said rings apart when the bag is distended; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 12th day of April, 1902.

JOHN S. THURMAN.

Witnesses:

GEORGE BAKEWELL,
G. A. PENNINGTON.