No. 759,452. PATENTED MAY 10, 1904.

A. LOTZ.

PNEUMATIC CARPET RENOVATOR.

APPLICATION FILED JAN. 28, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

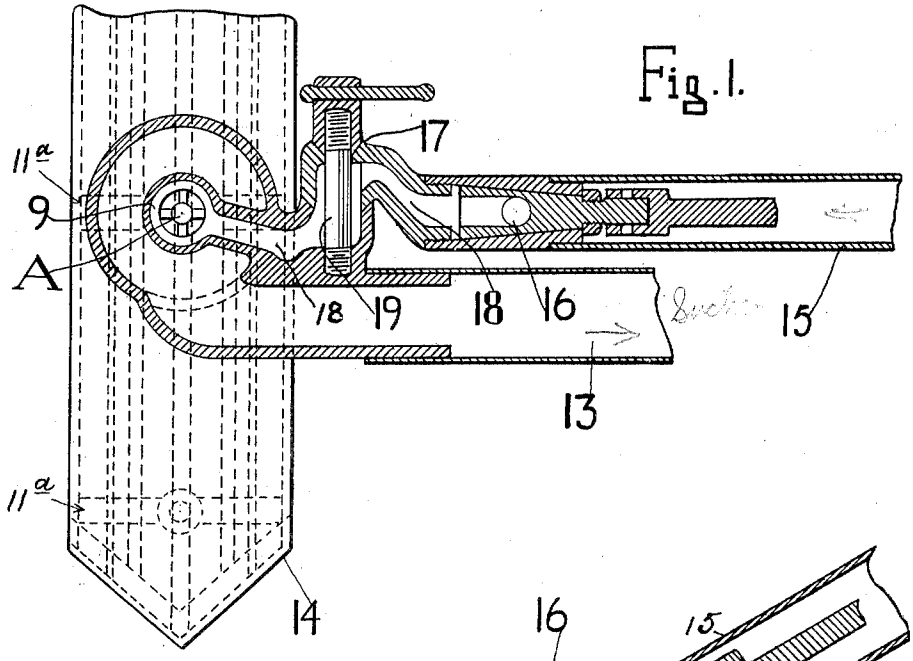
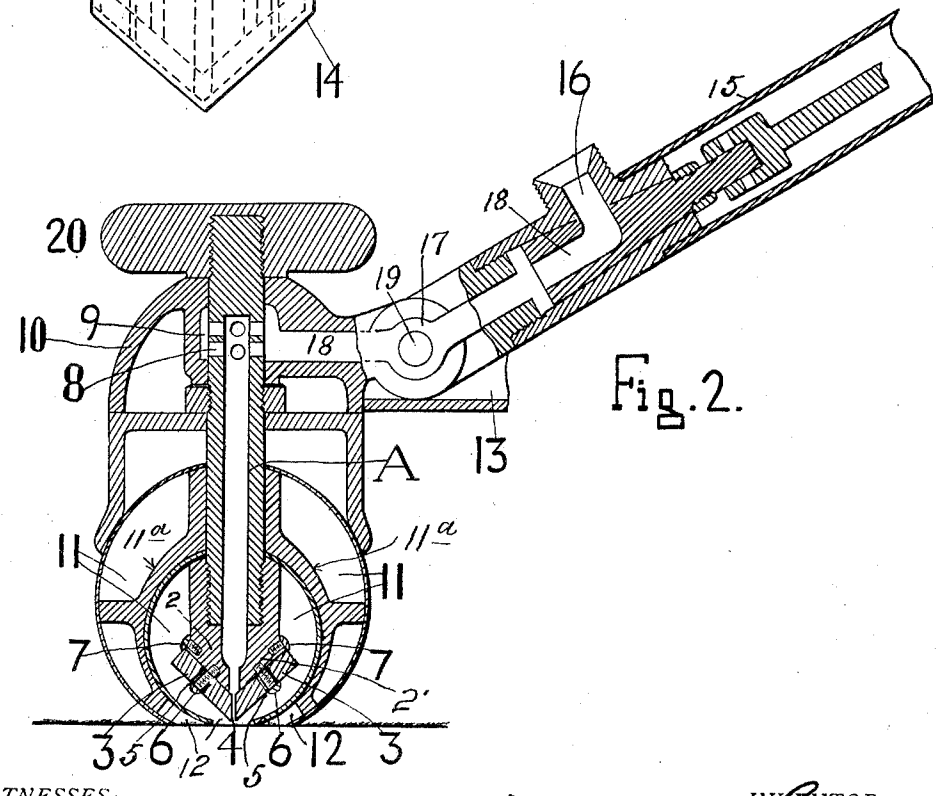


Fig. 2.



WITNESSES:

John Ollig.

INVENTOR.

Augustus Lotz

BY

Geo. H. Strong

ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 759,452. PATENTED MAY 10, 1904.

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PNEUMATIC CARPET RENOVATOR.

APPLICATION FILED JAN. 28, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

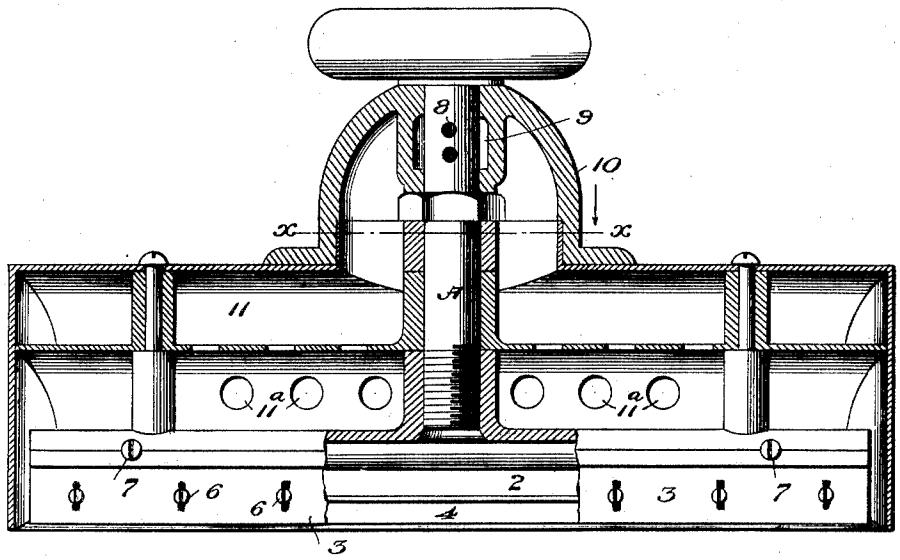


Fig. 5.

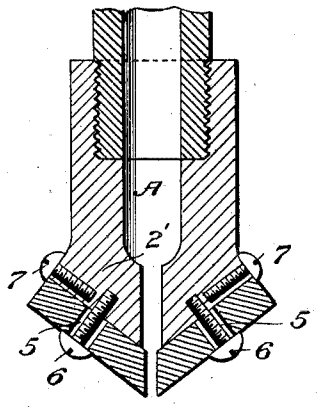
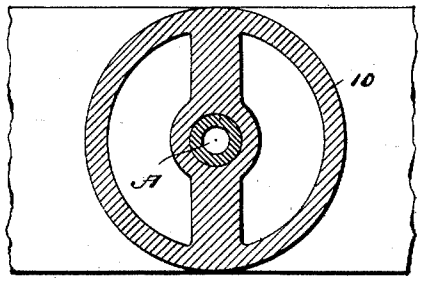


Fig. 4.



Witnesses

Chapman N. Fowler

Inventor

Augustus Lotz

by Dewey, Strong & Co

his Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 759,452. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

AUGUSTUS LOTZ, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO SANITARY COMPRESSED AIR AND SUCTION DUST REMOVING CO., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION.

PNEUMATIC CARPET-RENOVATOR.

SPECIFICATION forming part of Letters Patent No. 759,452, dated May 10, 1904.

Application filed January 28, 1903. Serial No. 140,874. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS LOTZ, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Pneumatic Carpet-Renovators; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus which is designed for the removal of dust and refuse from carpets and like permanently-laid or fixed articles.

The object of my invention is to remove the dust from such fixed fabrics without loosening or taking them from the floor or other place where they may be fixed.

It consists of a centrally-located nozzle in the form of a long narrow slit through which a blast of air or equivalent fluid medium is forcibly directed against the article to be cleansed, whereby the dust is thoroughly loosened and raised from the surface or nap, and in the combination with said blast-nozzle of similar elongated suction-nozzles located upon each side of the blast-nozzle whereby the dust when loosened is instantly drawn into the suction-nozzles and prevented from being spread about or again deposited upon the cleansed article.

My invention also comprises details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a sectional plan view of my invention. Fig. 2 is a sectional end view of same. Fig. 3 is a vertical longitudinal section of the device. Fig. 4 is a horizontal section on the line $x\ x$ of Fig. 3. Fig. 5 is an enlarged sectional view of the head A.

For the purpose of cleansing carpets, cushions, and other fibrous or woven material without removing them from their fixed positions it is desirable to first loosen the dust within the pile or interstices of the material and to then immediately convey it away without allowing any opportunity for it to spread or again settle upon the material. It is also desirable in case of carpets to project the apparatus into the corners of the room, and my invention is designed to carry out these objects.

A is a vertically-disposed hollow stem of suitable diameter and terminating at the lower end in a transverse head 2 of any suitable or desired length for the required purpose. This head is contracted at the lower end preferably, as shown in the present case, by beveling the sides or converging them toward each other, as shown at 2′. Upon these converging sides are fixed the plates 3, the contiguous edges of these plates being so beveled that they form a narrow elongated slit between them, as shown at 4. These plates have slots made through them, as at 5, and through these slots pass screws 6, which are threaded into the faces 2′, so that by screwing them down they may lock the plates 3 in place. The slots 5 allow the plates to be moved to or from each other, and the slit 4 may thus be varied in size to suit the character of the blast and the work to be done. Screws 7 are fitted into the outer sides of the lower part of the head A, and as here shown they are screwed in approximately parallel with the beveled lower faces 2′. The heads of these screws impinge upon the outer edges of the plates 3, and thus hold them in proper adjustment after the size of the slit 4 has been determined and the screws 6 seated.

The upper end of the hollow stem or shaft A has perforations made in it, as at 8. This perforated portion of the hollow stem is located within an inclosing chamber 9, formed in the head 10. This head constitutes the support for the stem, and the stem extends below this head, as shown. Fitted into the lower part of this head and surrounding the slotted lower portion, previously described, are a plurality of channels, as 11, terminating in open slits, as 12, and these slits extend parallel with the slit 4, through which the air is forced. The cylindrical portions containing the passages 11 are thin shells and are supported by interior spiders or frames 11^a. (Shown in section in Fig. 2 and in dotted lines in Fig. 1.) These spiders or frames being open

there is a free passage around them and connecting with the suction-passage by means of an opening in the side of the head 10, as shown in Fig. 1. Any suitable or desired number of these open slits and channels may be employed, and they are located in pairs upon each side of the slit 4 and in close proximity thereto. In the present case I have shown the channels 11 as being made cylindrical, having a length approximately equal to the length of the slit 4 and inclosing it from end to end. The openings or mouths 12 are so constructed as to lie closely upon the carpet or surface to be cleansed. The passages 11 are directly connected with a suction pipe or tube 13, as plainly shown, and this suction-tube is connected with any suitable apparatus by which a sufficient draft and suction may be maintained. By this construction it will be seen that the dust is first thoroughly loosened and raised from the pile or substance of the material to be cleansed by the action of the air-blast through the slit 4, and it is instantly withdrawn through the mouths 12 of the passages 11 and the suction tube or connection 13, and as these mouths 12 are located closely upon each side of the blast-nozzle and when moved over the surface travel so closely in contact therewith there is no opportunity for any escape of dust, which is thus constantly withdrawn as fast as it is raised.

In order to obtain access to the corners of the room and other difficult points, I have shown the ends of the apparatus as being beveled and convergent, as plainly shown at 14 in the plan view. These convergent faces are vertical. The blast and suction passages are extended into these angles to the very end, so that when the device is moved into a corner the operation will be as complete as on any other portion of the surface.

In order to connect the air-blast with the central tubular stem A, a passage is formed through the handle 15, and this is connected with a suitable air-blast apparatus. (Not here shown.) In the present case I have shown an air-inlet made upon one side of the handle portion, as at 16, and through this opening the air is admitted to the lower part of the handle, passing thence through the swiveled joint 17 by a suitably-curved passage, as at 18. This joint 17 allows the handle to be moved up or down about the pivot or journal pin 19, and by the peculiar construction of the passage 18 it is not obstructed by any change of direction of the handle in raising or lowering. The passage 18 extends from this joint and opens directly into the chamber 9, which surrounds the perforated portion of the vertical stem A, thus admitting the air directly into the stem and thence to the discharge-nozzle, as previously described.

In working the machine into corners it is desirable also to turn the handle to one side or the other, and this is effected by swiveling the head portion 10 upon the upper part of the casing, so that by loosening the nut 20, which screws upon the upper end of the stem A, and thus locks the parts together, the handle may be turned to one side or the other and stand at any desired angle horizontally with the blast and suction device.

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

1. The combination in a pneumatic cleaning apparatus of a transversely-extended head having a centrally-located air-blast slit and air-passages connected therewith, a supplemental head inclosing the first-named head and having a plurality of suction-channels with their mouths located substantially parallel with and upon each side of the air-blast slit, plates upon opposite sides of the slit and movable toward and from each other to adjust the size of the slit and means connecting with said channels for the discharge of dust which is drawn into them.

2. The combination in a pneumatic cleaning apparatus of a head having a centrally-located blast-slit and air-passages connected therewith, and oppositely-inclined plates one upon each side of the blast-slit said plates movable toward and from each other to adjust the size of the slit.

3. The combination in a pneumatic cleaning apparatus of a head having a centrally-located blast-slit and air-passages connected therewith said head provided with convergent sides, slotted plates fitting said convergent sides, locking-screws passing through said slots whereby the plates may be adjusted to or from each other to adjust the size of the slit, and other screws impinging against the outer edges of the adjustable plates to retain them in position when the size of the slit is determined.

4. The combination in a pneumatic cleaning apparatus of a head having an elongated adjustable central slot, a vertical hollow stem, the lower end of which connects with the head, said stem having holes made through the upper end connecting with the hollow interior, a chambered head within which the perforated portion of the stem is located, and means forming an air-blast passage connecting with said chamber.

5. The combination in a pneumatic cleaning apparatus of an elongated head having an adjustable centrally-located slot in the bottom, and connections whereby an air-blast is delivered therethrough, means forming suction-openings upon the sides of said air-blast passage and adapted to withdraw the dust outwardly therefrom, the ends of said head being tapered whereby the apparatus may be operated in corners.

6. A pneumatic cleaning apparatus comprising a head having a substantially central adjustable slot extending from end to end, a

vertical tubular stem from which air under pressure is delivered thereto, a supplemental head inclosing the first-named head and having a plurality of channels with open mouths located upon each side of the central slot, and a suction-passage connecting with said surrounding channels, a handle, a connection between the compressed-air conductor and the lower part of the handle, said handle having a tortuous passage extending through it, and a chamber surrounding the upper part of an air-conducting stem with which said passage connects said stem having perforations located within said chamber whereby the air is transmitted to the discharge-slit.

7. In an apparatus of the character described and in combination with blast and suction devices, a horizontally-turnable cap, having a blast-passage, and a handle connecting with said cap and having a swiveled joint whereby it may be raised or depressed, said handle having an air-blast passage through it and connecting with the passage in said head.

In witness whereof I have hereunto set my hand.

AUGUSTUS LOTZ.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.