

A. LOTZ.

PNEUMATIC DEVICE FOR CLEANING CARPETS, FLOORS, OR THE LIKE.

APPLICATION FILED FEB. 16, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

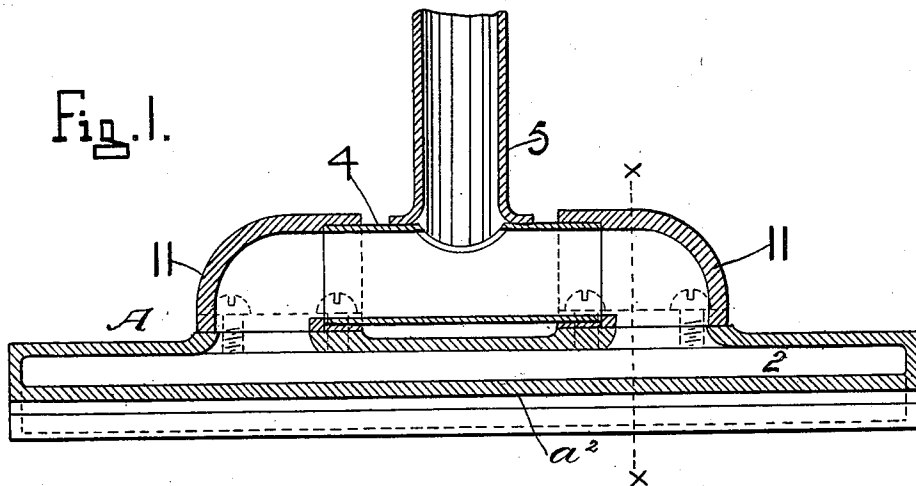


Fig. 2.

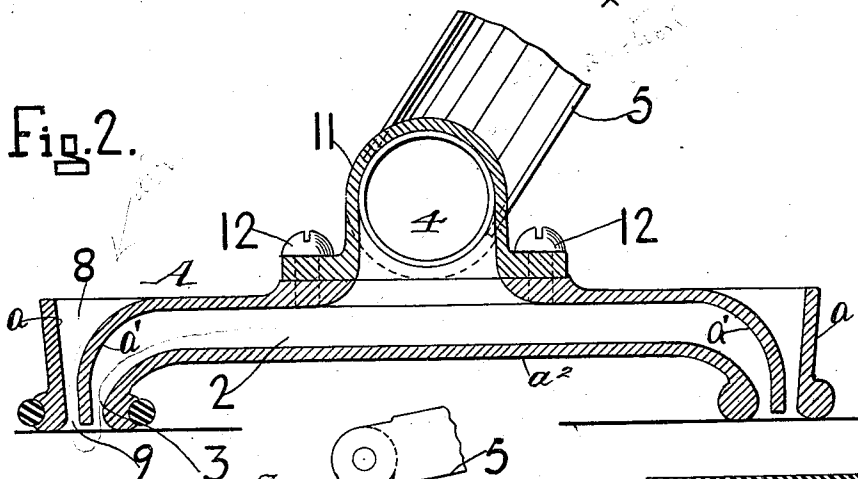
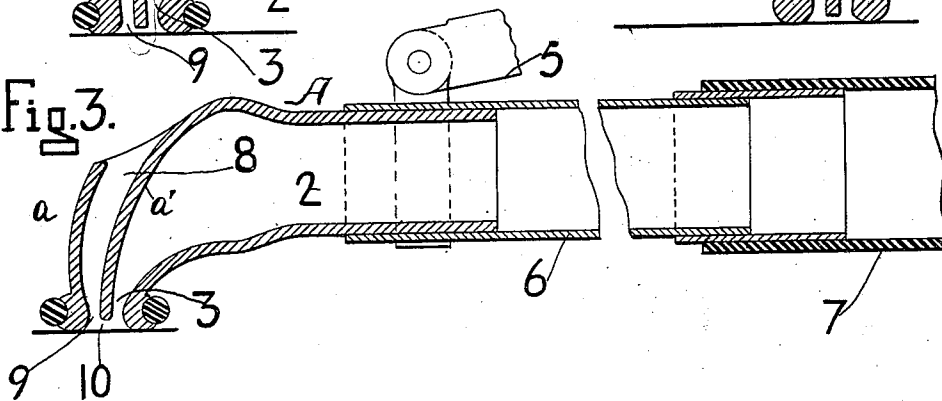


Fig. 3.



WITNESSES:

John Miller.
B. Romse

INVENTOR.

Augustus Lotz
By *Geo. H. Strong*
ATTORNEY.

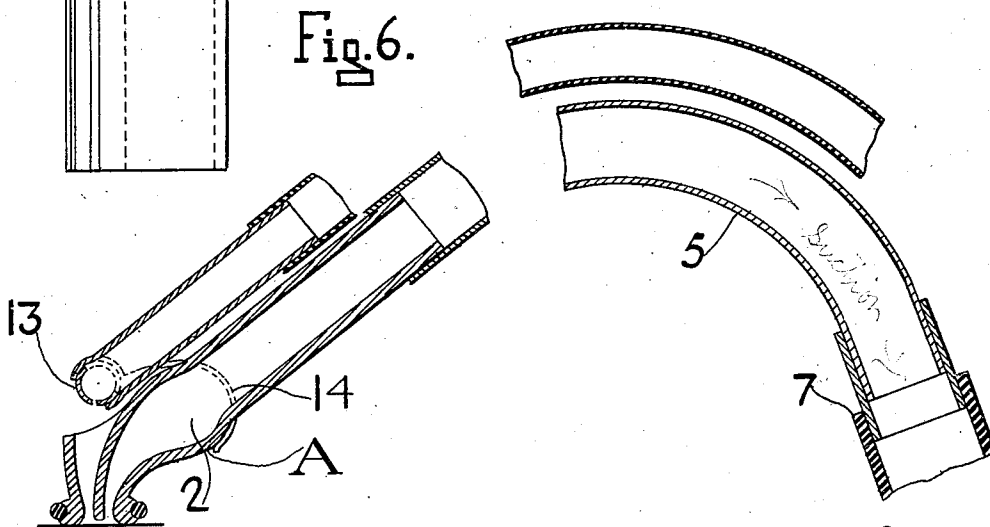
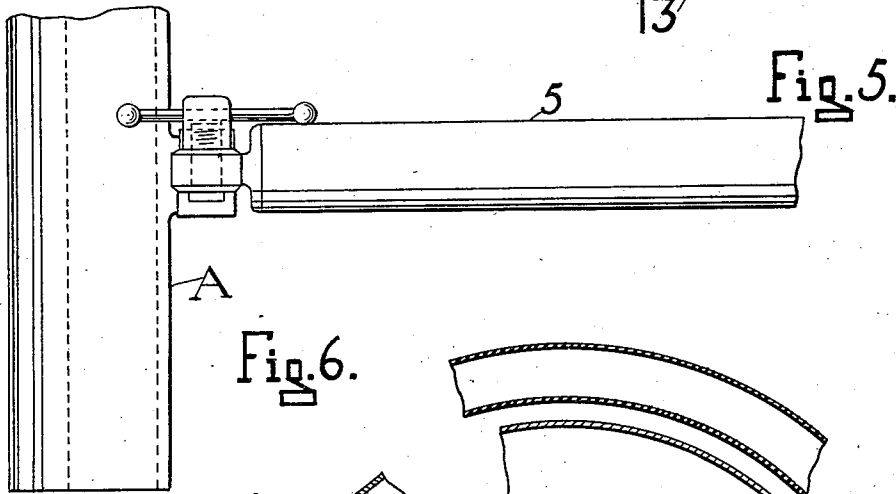
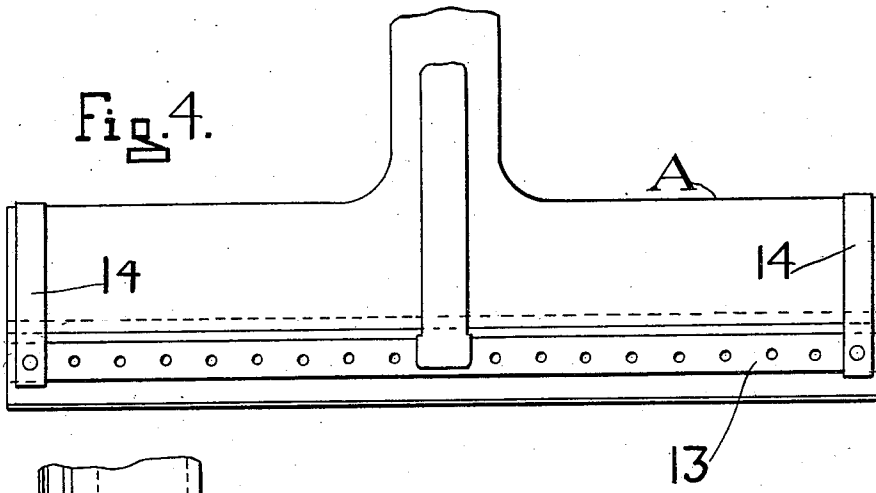
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APPLICATION FILED FEB. 16, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

John Oller.
James

INVENTOR.

Augustus Lotz
By *Geo. H. Strong.*
ATTORNEY.

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 DEVICE FOR CLEANING CARPETS, FLOORS, OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 742,880, dated November 3, 1903.

Application filed February 16, 1903. Serial No. 143,553. (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 Devices for Cleaning Carpets, Floors, or the Like; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in means for cleaning and renovating carpets, upholstery, and like fabrics and for washing and cleaning marble, mosaic, or other floors. Its object is to provide a device of simple construction in which the dirt and dust will be carried away by suction, but in which there may be a constant indraft from the surrounding atmosphere or into which there may be directed a stream of water concentrated over and impinging upon a limited portion of the area to be cleaned, the blast from said indraft or the inflow of water coacting with the suction induced through the discharge-pipe to cleanse the surface thoroughly, in the case of an air-blast removing all the dust from the room, as well as from the carpet, and in the case of a water-jet sucking up the water from the floor, leaving the floor perfectly dry an instant after the apparatus has passed over it.

The invention consists of the parts and the construction and combination of parts hereinafter more fully described, having reference to the accompanying drawings, in which—

Figure 1 is a sectional view longitudinally through one form of apparatus. Fig. 2 is a section on line *xx* of Fig. 1. Fig. 3 is a sectional view of a modification. Fig. 4 is a front view of same with sprinkling attachment. Fig. 5 is a top view of apparatus, showing handle adjustment. Fig. 6 is a section through the cleaner and sprinkling attachment.

A represents a narrow elongated head or casing inclosing a chamber 2, whose front

and rear walls converge downwardly to form a narrow slit-opening 3. This chamber communicates either through the pivot 4 and handle 5 of the device, as in Figs. 1 and 2, or through a separate tube 6, as in Fig. 3, with a suitable suction discharge-pipe 7. Between the front *a* of the casing and the front wall *a'* of chamber 2 is a narrow contracted passage 8, having a slit-like mouth 9 at the bottom in close relation to and coincident in length with the suction-inlet 3. Passage 8 is open at the top to the outer atmosphere, and the walls of the passage form, in fact, a funnel for the free admission of air from the outer atmosphere or for the reception of a stream of water from a hose, as the case may be. The lower edges of the casing are in the same plane, so that they will rest flush on the surface of the carpet or floor, except that the front wall *a'* of chamber 2 does not extend quite to the bottom, whereby a narrow passage 10 is left between the lower edge of said wall and the floor, through which air or water is induced through slit 3 from funnel-passage 8. The effect of such a construction is that instead of using a forced draft to blow the dust out of the carpet into the surrounding space or into a closed receiving-chamber or sucking air in from all sides beneath the edges of the casing, as in many pneumatic cleaners, the cleansing fluid is taken in through passage 8 and made first to impinge upon the surface to be cleaned and then switched beneath the lower edge of wall *a'*, to be drawn in through slit 3, and thence off through suction-pipe 6, carrying with it all the dirt and dust and giving no opportunity for the dust to be blown into the room.

Figs. 1 and 2 show a form of the device where larger and more powerful suction means are employed and where the surface to be cleaned is acted upon twice during a single passage of the machine over it. In this instance the casing A comprises a rectangular shell inclosing the air-chamber 2, having front and rear slits 3 between the down-

wardly-curved ends of the bottom plate a^2 and the corresponding curved ends of the top a' . An open-top funnel-passage 8 is formed at each end relative to slits 3. Communication between the chamber 2 and the air-suction pipe is had through handle 5 and through the two ends of the hollow swiveled yoke or pivot 4.

Access is easily had to the interior of the casing by removing the sleeves 11, which are closed at their outer ends and embrace the ends of yoke 4 and are secured to the top of the casing by any suitable means, as the screws 12.

In the operation of my invention a strong suction is induced through pipe 7 or 5, as the case may be, and as the apparatus is moved over the surface to be cleaned—as, for instance, a carpet—the air is drawn from the room downward through passages 8, made to impinge upon a long narrow surface of the carpet, and is thence deflected at right angles across beneath the end of a wall a' , up through slit 3, and away through the discharge, carrying the dust and dirt with it.

For cleaning marble or mosaic floors the apparatus is operated similarly as in cleaning carpets, except that in addition to the air drawn in through a funnel 8 a small stream of water from the nozzle or sprinkler 13 is directed into the funnel, Figs. 4 and 6.

The nozzle consists of a pipe-section closed at the ends, in length approximately that of the funnel-opening and having perforations in its under side discharging into the funnel. A hose held in the hand of the operator connects centrally with the nozzle, and the latter is easily attachable to and removable from the casing by means of the spring-clamps 14. Thus a spray of water is directed upon and distributed easily over the surface to be cleaned; but by reason of the suction through the apparatus the water almost as soon as it strikes the floor is whisked beneath the end of a' and up through slit 3 and away with the dirt and dust collected by it.

In the form of apparatus shown in Fig. 2 water may be let in only through the front funnel, so that the rear funnel sucking dry air will leave the floor perfectly dry after the machine has passed over it.

The funnel-openings 8 in each form of the apparatus serve as an equalizing means to the force of the suction.

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 casing or head having its under periphery flush with the surface to be cleaned, said head provided with a narrow slit in the bottom communicating with a suction discharge-pipe, and an inlet means through which cleansing fluid is induced by

means of the suction in said pipe and made to impinge upon the surface passed over by the apparatus.

2. The combination in a pneumatic cleaning apparatus, of a casing inclosing an air-chamber, communications between the latter and an air-suction discharge-pipe, said chamber having a slit-like inlet in juxtaposition with the surface passed over by the apparatus, and a correlative open-top funnel through which a draft is induced downward upon the surface passed over and thence through said slit-inlet by the suction in the discharge-pipe.

3. The combination in a pneumatic cleaning apparatus, of a casing inclosing an air-chamber, said chamber communicating with a suction discharge-pipe, and having a narrow elongated slit in the bottom, adjacent to the surface passed over by the apparatus, and a wall a convergent in relation to the front wall of said chamber, the space between said walls being open at the top and communicating at the bottom through a narrow slit relative to and coincident in length with the opening in the bottom of said chamber.

4. The combination in a pneumatic cleaning apparatus, of a rectangular casing having its under periphery flush with the surface passed over by the apparatus, said casing inclosing an air-chamber, communicating with a suction discharge-pipe and having contracted slit-inlet openings at front and rear of said casing and adjacent to the aforesaid surface, and funnels having their discharge-openings relative to said inlet-openings through which a current of air is induced and made to impinge upon the surface beneath the apparatus by the suction in the discharge-pipe.

5. The combination in a pneumatic cleaning apparatus of a casing inclosing an air-chamber, a hollow handle, swivel connections of said handle and casing, communication of said chamber with a flexible suction discharge-pipe through said swivel connection and handle, the front and rear walls of said chamber contracted to form a narrow slit-inlet adjacent to the surface beneath the apparatus, and an open-top funnel-like extension of said casing having a discharge at the bottom relative to said slit-inlet, the walls of said chamber and funnel comprising one integral structure.

6. The combination with a pneumatic cleaning apparatus, of a casing inclosing a receiving-chamber connected with a suction-discharge, said chamber having a contracted portion to form an inlet-slit in its bottom, and having a fluid-supply passage contracted to form a slit-opening adjacent to the first-named slit, the wall of the casing forming the partition between said slits and beneath which partition the fluid passes from the supply-passage into the receiver whereby an imping-

ing and sweeping action of the cleansing fluid is produced upon and over the surface to be cleaned.

5 7. The combination in a pneumatic cleaning apparatus, of a casing inclosing a receiving-chamber connected with a suction-discharge, said chamber having an inlet adjacent to the surface to be cleaned, means forming a supply-passage whose outlet is adjacent

to the inlet of said chamber, and means whereby said supply-passage may receive a spray of water.

In witness whereof I have hereunto set my hand.

AUGUSTUS LOTZ.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.