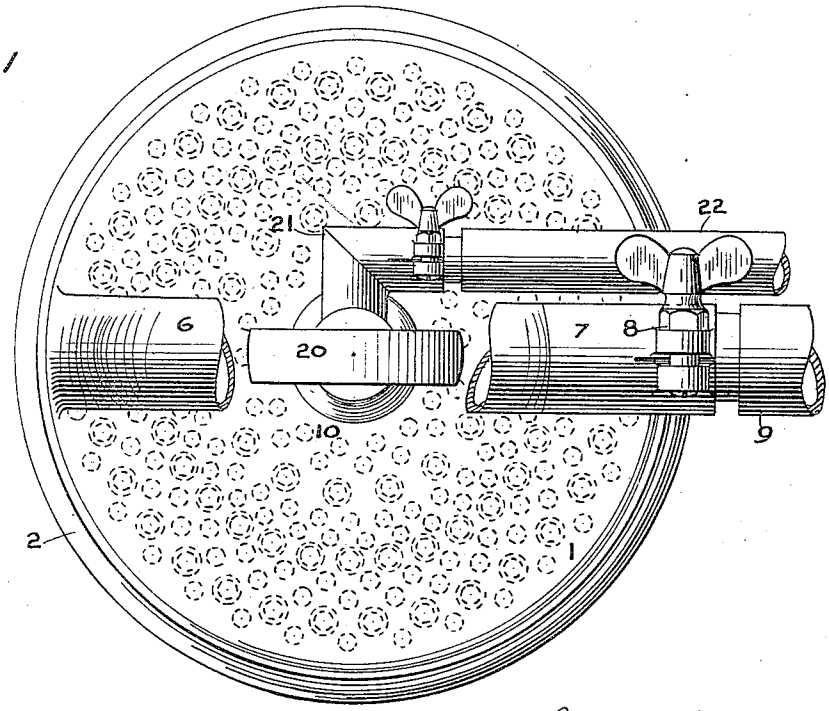
A. E. MOORHEAD.

PNEUMATIC DEVICE FOR CLEANING IRREGULAR SURFACES.

APPLICATION FILED AUG. 10, 1909.

955,467. **Patented Apr. 19, 1910.**

FIG. 1



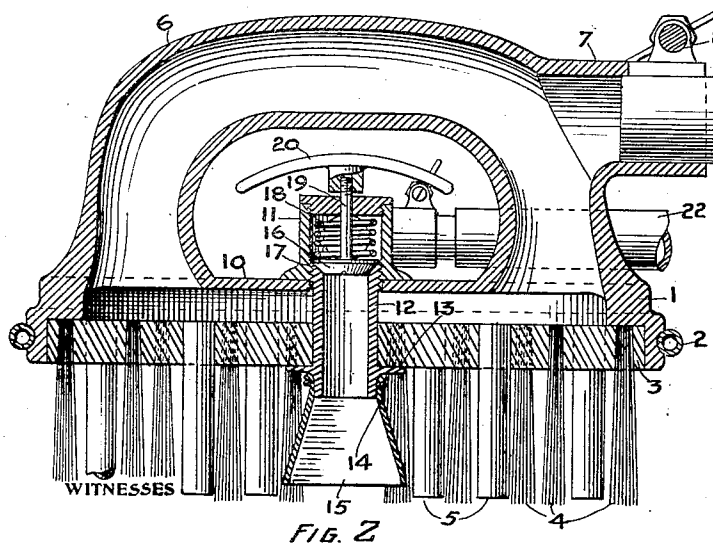


FIG. 2

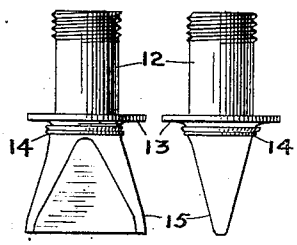


FIG. 3 FIG. 4

INVENTOR

A. E. Moorhead,

BY

F. M. Wright,

ATTORNEY

N. B. Keating

Leon Bolles

UNITED STATES PATENT OFFICE.

ALBERT E. MOORHEAD, OF SAN FRANCISCO, CALIFORNIA.

PNEUMATIC DEVICE FOR CLEANING IRREGULAR SURFACES.

955,467. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed August 10, 1909. Serial No. 512,185.

To all whom it may concern:

Be it known that I, ALBERT E. MOORHEAD, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented new and useful Improvements in Pneumatic Devices for Cleaning Irregular Surfaces, of which the following is a specification.

The object of the present invention is to provide a device, to be used in connection with pneumatic cleaning apparatus at present in common use in office buildings and the like, for the purpose of cleaning irregular surfaces, such as that of lincrusta or other embossed or raised surfaces.

In the accompanying drawing, Figure 1 is a broken plan view of the device; Fig. 2 is a longitudinal section thereof; Figs. 3 and 4 are side views, at right angles to each other, of the compressed air nozzle detached.

Referring to the drawing, 1 indicates a hollow casing, which is of a general circular form, and the lower edge of which is encompassed by a rubber tube 2 for the purpose of avoiding abrasion or injury to articles of furniture or the like. Within the circular opening at the bottom of said casing is secured a back 3, within which are secured tufts of, bristle 4 and also rubber tubes 5, which tubes are open at both ends and conduct air and dust commingled therewith into the interior of the casing 1. Said casing is formed at the top with a hollow handle 6, tubular in form and having a central part adapted to be grasped by the hand of the operator, the ends of the tube opening into the main portion of the casing. Said handle also has a rearward extension 7 to which can be connected, by the usual clamping device 8, a tube 9 leading to a suction pump. Upon the upper wall 10 of said casing is, in the center beneath the handle, a valve casing 11 in which is screwed a tube 12 thereby securing the valve casing in position, said tube 12 having a flange 13 fitting against the under side of the brush back 3, and upon the lower end of said tube is secured, by a wire band 14 a rubber nozzle 15. Within said valve casing is a conical valve 16 normally pressed against a seat 17 by a spring 18 and having a stem 19 to which is attached a finger piece 20 by which the valve can be raised against said spring. From said valve casing extends an elbow 21, to which can be clamped a tube 22 leading from a compressed air pump.

In use the operator grasps the instrument by the handle 6, and at the same time passes one or two fingers beneath the finger piece 20 to raise the valve 16 from its seat and allow compressed air to pass down the central tube 12. The amount of compressed air may be varied according to the character of the surface from the crevices of which it is desired to remove the dust. The bristles of the brush remove the greater part of the dust from the surface to be cleaned and the blast of air emerging from the nozzle 15 blows the dust out of the crevices and other parts which cannot be reached by the bristles, which dust is then sucked through the tubes 5 into the interior of the casing 1 and thence to the suction pump.

An important feature of the invention is that the surface of the instrument to be applied to the part to be cleaned contains no metallic or hard parts which would be liable to injure or abrade the surface being cleaned. The bristles and the ends of the tubes wear away together, and the device will continue to do its work until these parts have worn away to a very considerable extent.

I claim:—

1. An apparatus of the character described comprising a hollow casing arranged to be connected to a suction pipe, rubber tubes extending from a lower wall of said casing and open at both ends, a compressed air tube arranged centrally in said casing, a compressed air pipe leading thereto, a valve for controlling said tube, and a handle for said device arranged adjacent to said valve, substantially as described.

2. An apparatus of the character described comprising a hollow casing arranged to be connected to a suction pipe, rubber tubes extending from a lower wall of said casing and open at both ends, a compressed air tube arranged centrally in said casing, a compressed air pipe leading thereto, a flexible nozzle for said compressed air tube, a valve for controlling said tube, and a handle for said device arranged adjacent to said valve, substantially as described.

3. An apparatus of the character described comprising a hollow casing arranged to be connected to a suction pipe, rubber tubes extending from a lower wall of said casing and open at both ends, bristles secured to said casing and surrounding said tubes, a compressed air tube arranged centrally in said casing, a compressed air pipe

leading thereto, a valve for controlling said tube, and a handle for said device arranged adjacent to said valve, substantially as described.

4. The combination of a hollow casing, tubes connected with said casing, a hollow handle secured to said casing, connected with the interior thereof, a suction pipe connected to said handle, a compressed air tube in said casing, a nozzle therefor, a valve controlling said tube, and a finger piece for said valve arranged in proximity to said handle, substantially as described.

5. The combination of a hollow casing, tubes connected with said casing, bristles around the said tubes, a hollow handle secured to said casing, connected with the interior thereof, a suction pipe connected to said handle, a compressed air tube in said casing, a nozzle therefor, a valve controlling said tube, and a finger piece for said valve arranged in proximity to said handle, substantially as described.

6. The combination of a hollow casing, tubes connected with said casing, a hollow handle secured to said casing, connected with the interior thereof, a suction pipe connected to said handle, a compressed air tube in said casing, a rubber nozzle therefor, a valve controlling said tube, and a finger piece for said valve arranged in proximity to said handle, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALBERT E. MOORHEAD.

Witnesses:
FRANCIS M. WRIGHT,
D. B. RICHARDS.