No. 890,514. PATENTED JUNE 9, 1908.

J. O. JOHNSON.

COMBINED CARPET BEATER AND DUST PUMP.

APPLICATION FILED JAN. 11, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

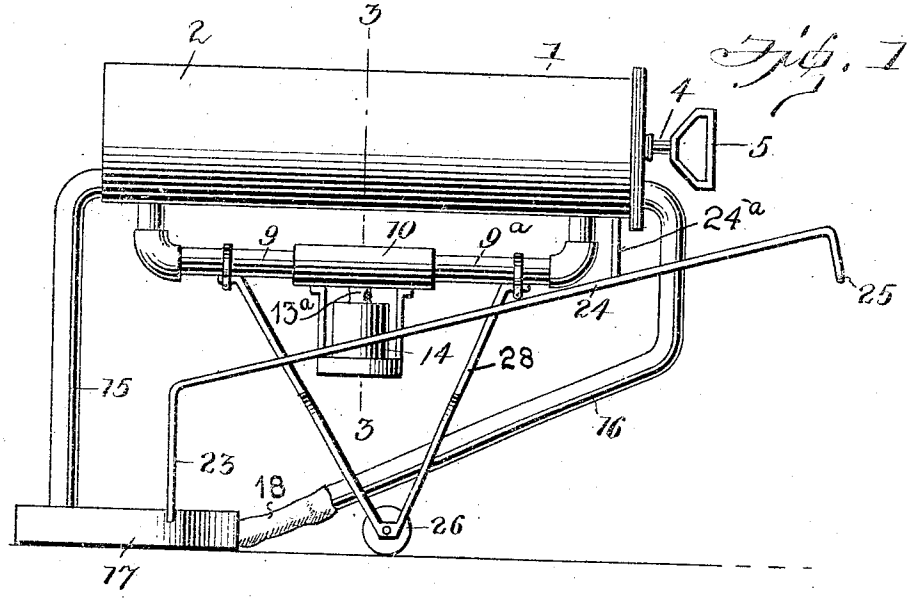
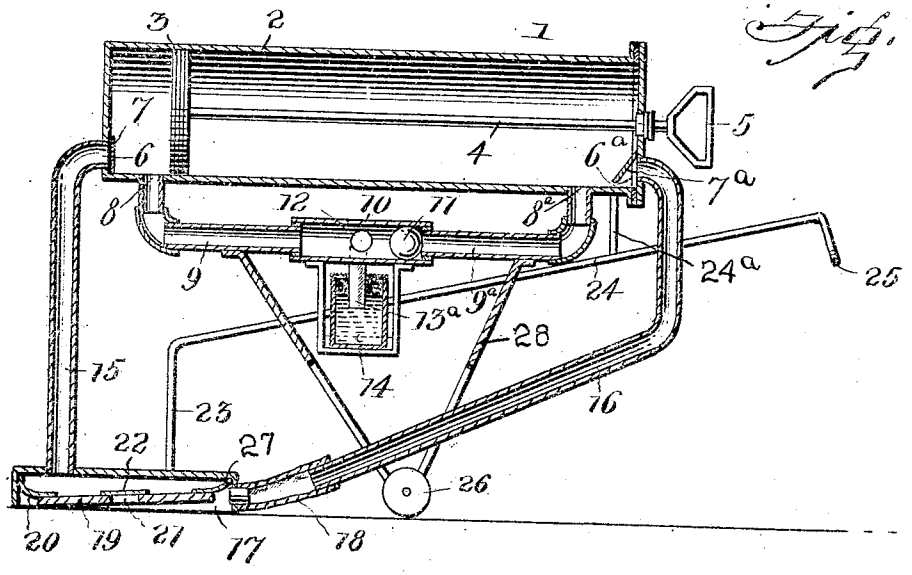


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

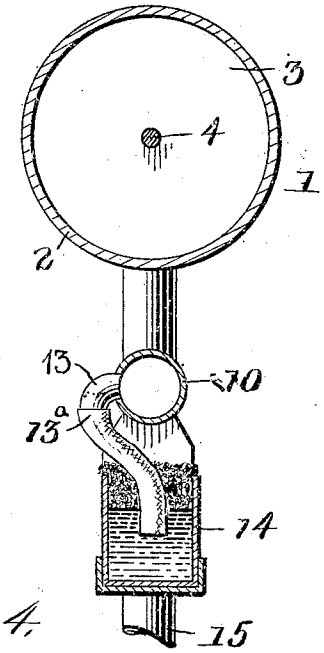
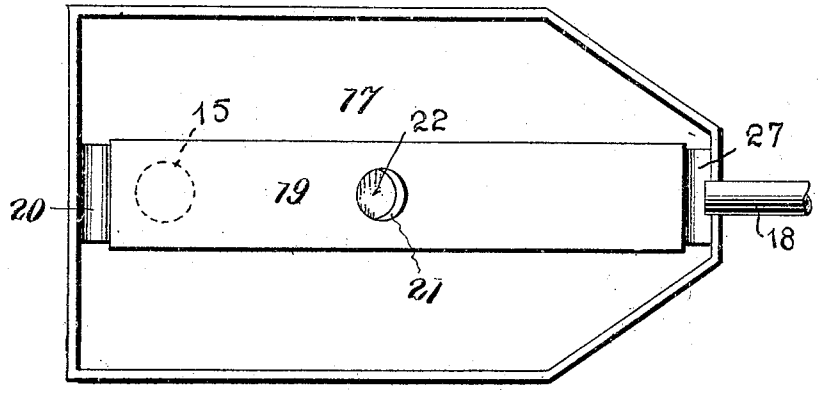


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH OLIVER JOHNSON, OF SAN FRANCISCO, CALIFORNIA.

COMBINED CARPET-BEATER AND DUST-PUMP.

No. 890,514. Specification of Letters Patent. Patented June 9, 1908.

Application filed January 11, 1906. Serial No. 295,622.

To all whom it may concern:

Be it known that I, JOSEPH OLIVER JOHNSON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in a Combined Carpet-Beater and Dust-Pump; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to combined carpet beaters and dust pumps.

The object of the invention is to provide means whereby a carpet may be whipped or beaten and the dust removed therefrom without detaching the carpet from the floor, and means whereby the dust may be collected and readily disposed of. Furthermore, to provide a machine of this character which may be readily moved over a carpet or other surface to be cleaned and which will be light, durable and simple in construction and not liable to become deranged from long-continued use.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination and arrangement of parts of a combined carpet beater and dust pump, as will be hereinafter fully described and claimed.

In the accompanying drawings forming part of this specification, and in which like characters of reference indicate corresponding parts,—Figure 1 is a view in side elevation of a combined carpet beater and dust pump constructed in accordance with the present invention; Fig. 2 is a central vertical longitudinal sectional view of the same; Fig. 3 is a vertical transverse sectional view, on an enlarged scale, taken on the line 3—3, Fig. 1; and Fig. 4 is a bottom plan view of a dust box on an enlarged scale.

Referring to the drawings, 1 designates the pump which consists of a horizontally-disposed cylinder 2, in which is arranged a reciprocatory piston 3, the rod 4 of which projects through a stuffing-box in one end of the cylinder and has arranged thereon a handle 5. Arranged at opposite ends of the cylinder are inlet ports 6 and 6^a, that are adapted to be closed by inwardly-opening valves 7 and 7^a. In the underside of the cylinder, adjacent to its ends are formed discharge ports 8 and 8^a, with which are connected the outer ends of discharge pipes 9 and 9^a, the inner ends of which are connected to a casing 10, in which is arranged a ball valve 11. In the center of the valve casing is arranged a discharge opening 12, in which is secured one end of a pipe 13, the other end of which has connected with it a flexible section of pipe 13^a, the free end of which is disposed within a collecting tank or receptacle 14 that contains water to receive the dust and collect it and in which tank is placed a sponge or other porous closure adapted to be kept damp thereby to permit the escape of air but to retain all dust and foreign matter.

Connected to the inlet ports 6 and 6^a are the upper ends of suction pipes 15 and 16, the lower ends of which communicate with a dust box 17. The pipe 15 is directly connected with the top of the dust box adjacent to its forward end, while the pipe 16 is connected with the rear end of the dust box by a flexible section of pipe 18. The dust box may be of any preferred construction and formed of any suitable material, and is open on its underside and is adapted to hug or contact closely with the carpet being cleaned, the sides of the box being shown in the present instance as tapered at their rear ends.

Arranged within the box 17 is a vibratory beater, which is here shown, and is preferably, in the form of a flat bar or plate 19, which is loosely or flexibly connected at its rear end to the inner side of and near the top of the rear end of the box above the opening of the pipe 18 by a hinge 27, preferably of leather. The forward end of the beater is flexibly connected by a strap 20 to the inner side of the forward end of the box, beneath the opening of the pipe 15. In the plate or bar, at a point intermediate its ends, is formed a centrally-disposed aperture 21, that is covered on the upper side of the plate by a leather or other flexible cover 22. Connected to the box 17 are upwardly-projecting braces 23, to which are connected handle bars 24. These bars are connected by braces 24^a with the pump, and provided with a suitable handle 25, by which the device may be pushed or pulled over the carpet or other surface being cleansed. To the pump is connected a supporting frame 28, in the lower end of which is journaled a roller or

wheel 26, adapted to roll on the floor or carpet, as the machine is pushed or pulled over the same.

In the operation of the device, the rear end of the beater, 19, is held in position above the surface by means of the strap, 27, while the forward end of the beater is adapted to lie in contact with the carpet, or other surface over which the device operates. When the piston is pushed forwardly, the air is exhausted from the box, 17, through the pipe, 16, and the valve, 7^a opens and permits the air from the dust box to pass into the cylinder, 2, bringing with it the dust that has previously collected in the dust box under the action of the beater. As soon as the air is exhausted from the dust box, the beater tends to fall by gravity into contact with the carpet, this movement of the beater being accelerated, due to the suction created in the box by the exhaustion of air therefrom. When the piston is moved forwardly, the valve 7 is closed and dust in advance of the piston is forced through the port, 8, and pipe, 9, to the casing, 10, and thence through the pipes, 13 and 13^a to a tank, 14, in which the dust is collected and from which the air is permitted to escape through the sponge, the ball valve, 11, during this movement of the piston being in the position shown in Fig. 2. Upon movement of the piston in the reverse direction, the valve, 7^a, will be closed and the valve 7 opened, thereby causing the dust which has just been drawn into the cylinder, to be forced through the port, 8^a, and pipe, 9^a, into the casing, 10, and, at the same time, move the ball valve, 11, to the opposite end of the casing for closing communication between the latter and the pipe, 9. During this movement of the piston, the valve 7 is opened and the suction created in the pipe, 15, serves to lift the forward end of the beater toward the top of the dust box in position to again swing downwardly into contact with the carpet when the piston is again moved forwardly. The rearward movement of the piston serves, of course, to exhaust the dust from the box, 17, through the pipe, 15, and to draw the same into the cylinder, 2.

It will be understood that a rapid manipulation of the piston will cause the beater to vibrate with such speed as to effect the thorough beating of the carpet for properly cleaning the latter.

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

1. An apparatus of the class described, comprising a pump cylinder, an open-bottom dust box, a vibratory beater loosely hung within the latter, suction pipes connecting the ends of the pump and the dust box, one of said pipes communicating with the dust box in a plane below that of the adjacent end of the beater, and the other communicating with the dust box immediately over the other end of the beater, and a piston operable in the pump cylinder for alternately establishing suction in the suction pipes, thus to effect simultaneously the removal of the dust and the actuation of the beater.

2. An apparatus of the class described, comprising an open bottom dust box, a vibratory beater loosely hung therein, a pump, suction pipes connecting the ends of the dust box and the pump, one of said pipes communicating with the dust box in a plane below that of the adjacent end of the beater and the other communicating with the dust box immediately over the other end of the beater, and a dust collecting receptacle communicating with said pump.

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

J. OLIVER JOHNSON.

Witnesses:
A. W. LEWIS,
H. F. CRIGER.