Apr. 10, 1923. 1,451,553

J. O. REED

PNEUMATIC CLEANING NOZZLE

Filed Jan. 4, 1923

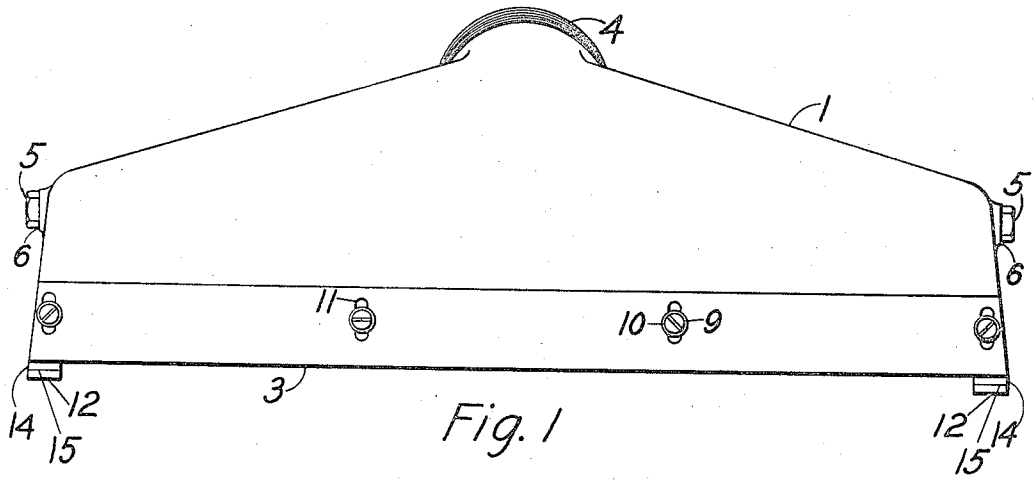


Fig. 1

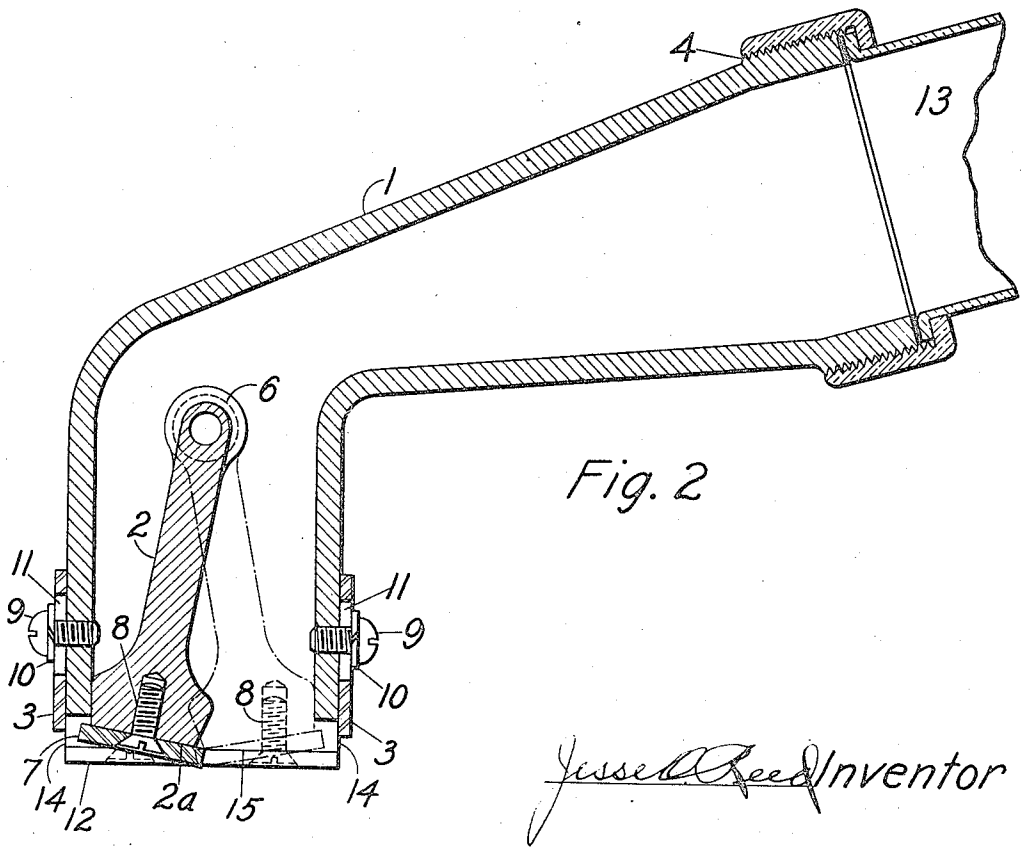


Fig. 2

Jesse O. Reed Inventor

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UNITED STATES PATENT OFFICE.

JESSE O. REED, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO ASSISTANT SECRETARY OF AGRICULTURE OF THE UNITED STATES OF AMERICA.

PNEUMATIC CLEANING NOZZLE.

Application filed January 4, 1923. Serial No. 610,710.

(FILED UNDER THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

To all whom it may concern:

Be it known that I, JESSE O. REED, a citizen of the United States of America, and an employee of the United States Department of Agriculture, residing in the city of Washington, District of Columbia (whose post-office address is care of United States Department of Agriculture, Washington, D. C.), have invented a new and useful Pneumatic Cleaning Nozzle.

This application is made under the act of March 3, 1883, chapter 143 (22 Stat. 625) and the invention herein described and claimed may be used by the Government of the United States or any of its officers or employees in the prosecution of work for the Government, or any person in the United States, without payment to me of any royalty thereon.

The accompanying drawing which is in two figures shows in Fig. 1 a front elevation of the pneumatic cleaning nozzle, and in Fig. 2, in a preferred form, a vertical sectional side view of the same.

The nozzle shown in the drawings consists mainly of a casing 1, constructed preferably of aluminum, equipped with an air control valve 2 and two regulating plates 3. Casing 1 has a screw connection 4, although any other tight connection would suffice, for attaching the device to a tubular handle 13 which is connected to the supply pipe or hose (not shown) of a pneumatic or vacuum cleaning system. Air control valve 2 extends the entire width of casing 1, is adapted to swing within said casing from side to side, and it controls the direction of air flow under the regulating plates 3. This valve 2 swings on bolts 5 screwed and fixed to said valve and turning in replaceable bushings 6 fitted to casing 1. This valve 2 is swung from side to side of the casing 1 by dragging action on floor of replaceable wearing shoe 7 fastened securely to the lower end 2^a of valve 2 by counter-sunk screws 8. As the nozzle is moved across the floor in one direction the oscillating valve 2 moves in the opposite direction and seats against that side of the casing 1 causing the inrushing air to enter the casing 1 under the plate on the opposite side of the casing 1. It can be seen, therefore, that the flow of air into the casing 1 is in a direction opposite to which the nozzle is being drawn over the floor, that the air control valve 2 practically supports the entire weight of the nozzle and has the additional feature of acting as a scraping member within the interior of the nozzle thereby holding and finally bringing the heavier particles on the floor in such a position that they will be finally gathered up by the high velocity air currents at that point.

The quantity of air admitted to the casing 1 and its velocity is controlled and regulated by adjustable plates 3 attached to each side of the said casing 1 and made adjustable vertically by screws 9 and lock washers 10 in slots 11 made in the adjustable plates 3. In addition to controlling the quantity and velocity of air admitted to the casing 1 these adjusting plates 3 may be set so that the nozzle will operate effectively at the level most convenient to the operator, for the type and nature of the material to be handled, and for the kind of floor to be cleaned.

In order to keep the nozzle in a steady position on the floor and to prevent air from entering the ends 14 of the mouth of the said nozzle, the said ends are fitted with replaceable wearing strips 12 held by counter-sunk screws 8 to protect the faces of these ends 14 and extend to the floor or to the level of the vertical position of valve 2.

I claim:

An improved pneumatic cleaning nozzle, comprising a casing adapted to receive air, a valve affixed to the interior of said casing, said valve extending to the mouth of said casing and adapted to be swung in a lateral direction to either side of the casing, and adjustable plates affixed to the sides of the casing at the mouth thereof, adapted to regulate the flow of air into said casing.

JESSE O. REED.