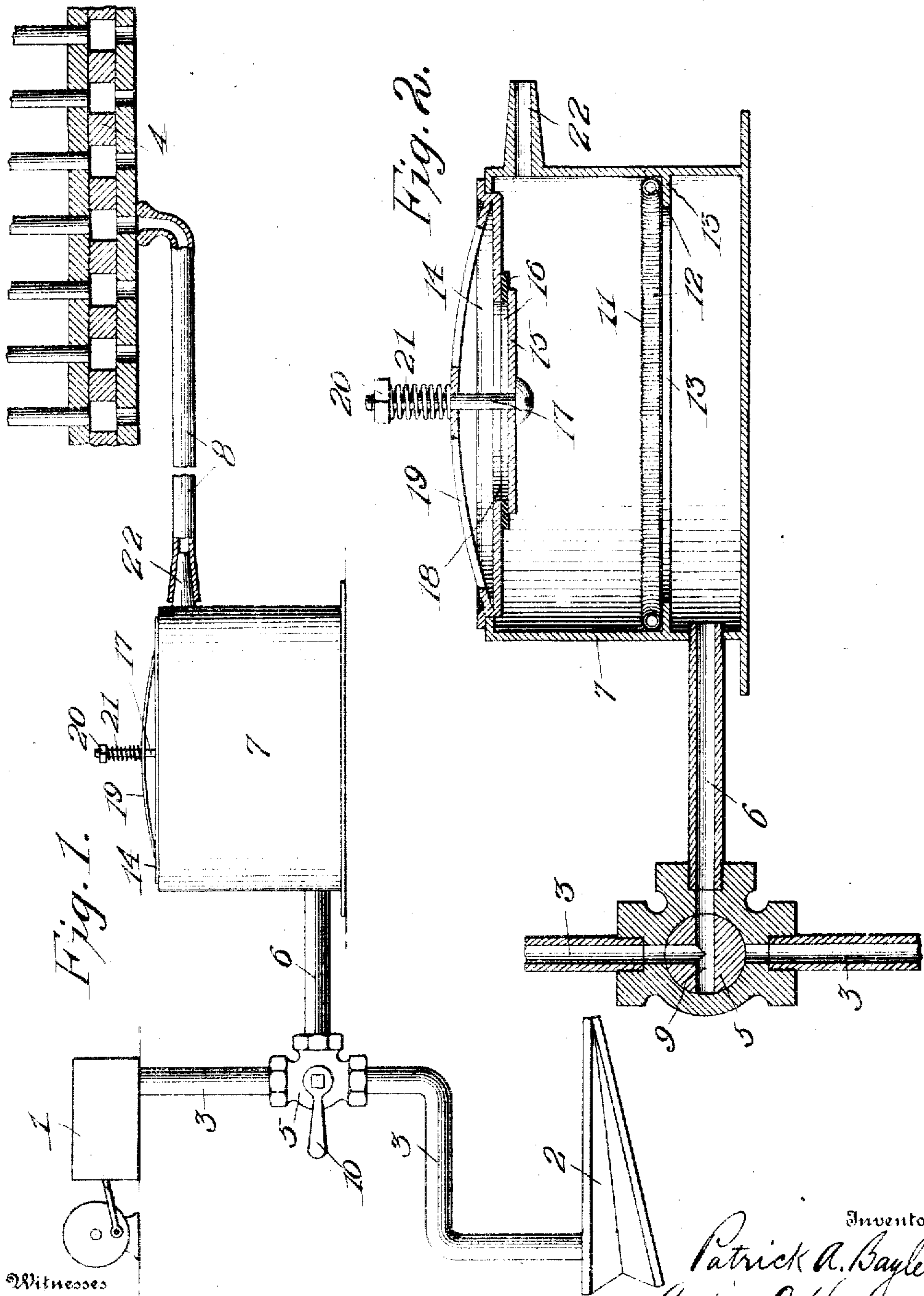


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CLEANING DEVICE.
APPLICATION FILED MAY 25, 1908.

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Patented Aug. 3, 1909.



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UNITED STATES PATENT OFFICE.

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CLEANING DEVICE.

No. 929,746.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed May 25, 1908. Serial No. 434,832.

To all whom it may concern:

Be it known that we, PATRICK A. BAYLESS and ARTHUR C. HEIN, citizens of the United States, residing at Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful improvements in Cleaning Devices, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to improvements in pneumatic or suction cleaning devices and more particularly to one especially adapted for use in connection with an automatic or pneumatically operated piano or similar instrument for cleaning the air tubes and other parts of the same.

The object of the invention is to provide a simple, practical and efficient cleaning device of this character which may be in the form of an attachment for ready application to an automatic piano and which may employ the suction pump of the instrument to accomplish the cleaning operation.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of devices hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic view illustrating the manner in which our invention is connected to the parts of an automatic or pneumatically operated musical instrument; and Fig. 2 is an enlarged sectional view through the invention.

In the drawings 1 represents the suction pump of an automatic or pneumatically operated piano, 2 represents its governing bellows, 3 represents the main suction pipe between the pump and bellows and 4 represents the tracker board of such piano. Said governing bellows is connected to the vacuum or suction pump and the wind chest of the piano, to which wind chest all of the pneumatics are attached. When the piano is not playing none of the pneumatics will be working and said governing bellows 2 will keep a uniform vacuum in the wind chest. The above parts are conventionally illustrated since they are old and well known and form no part of the present invention.

In the practice of our invention we arrange a three way valve 5 in the pipe 3 and connect its third branch 6 to a vacuum chamber and dust collector 7 from which leads a cleaning or suction tube 8. The

valve 5 is here shown in the form of a rotary plug having a T-shaped duct or passage 9 and provided with a suitable operating handle 10 which when turned in one position causes the cross portion of the T-shaped passage to register with the two sections or branches of the main pipe 3 to afford free communication between the pump 1 and the bellows 2, the third branch 6 of the valve being closed by the solid portion of the plug. When said handle is given a quarter turn the cross portion of the passage 9 is brought into communication with the branch pipe 6 and the third branch of said passage 9 is brought into register with that section or branch of the pipe 3 which leads to the pump 1, thereby throwing the latter in communication with the vacuum chamber and dust collector 7.

The vacuum chamber and dust collector 7 may be arranged at any suitable point within the piano or instrument and may be of any suitable form and construction. The pipes or tubes 6 and 8 are connected to it at opposite points and arranged within it between such points is a suitable screen 11 which serves to prevent the dust from passing to the pump. As illustrated, said screen is composed of fabric arranged upon a coil spring 12 which serves to hold it extended and in close contact with the wall of the chamber or casing 7 immediately above an inwardly projecting stop flange or shoulder 13 arranged within the same, as clearly shown in Fig. 2. The vacuum chamber and dust collector 7 is provided with a removable cover 14 to permit the dirt and dust to be removed from the same and it is also provided with a safety or regulating valve 15. The valve 15 is designed to prevent injury to the suction pump by admitting air into said chamber in the event that the tube 8 becomes stopped up, and while it may be of any suitable form and construction and arranged at any desired point, we preferably locate it in the cover 14 and construct it of a plate or disk covered with rubber, leather, or the like 16 and fixed upon a sliding stem 17 which projects through a valve opening 18 in the cover and is slidable in an arched cross bar 19 arranged over said valve opening. The projecting end of the valve is screw threaded to receive an adjusting nut 20 and arranged upon the stem between the nut and the guide or cross bar 19 is a coil spring 21 which serves to hold the valve

seated. The tension of the spring may be regulated by the nut so as to control the suction within the chamber 7. The cover 14 for said chamber is air tight and while it
 5 may be of any suitable form and construction, we preferably make it as illustrated so that it will be frictionally retained in an opening in said chamber or casing 7. The suction tube 8 is preferably flexible and has
 10 one end connected to a nipple 22 projecting from the chamber 7 and its other or free end may be suitably shaped so that it can be passed over the tracker board 4 or other parts of the instrument which are to be
 15 cleaned.

In operation, when it is desired to clean the air tubes leading from the tracker bar 4 of the piano, or any other parts of the latter, the handle 10 is operated to turn the valve
 20 to cut off the bellows 2 and to throw the vacuum chamber and dust collector 7 in communication with the suction pump 1. The instrument is then operated so that the pump will suck air through the tube 8, the
 25 chamber 7, the pipe 6, the valve 5, and the branch of the pipe 3 leading to the pump. The mouth, or free end of the tube 8 is then passed over the tracker bar to clean the latter and to suck the dirt from the tubes in com-
 30 munication with the openings in the tracker bar. After the instrument is cleaned, the valve 5 is turned to its normal position to cut out the chamber 7 to throw the pump into communication with the bellows.

35 From the foregoing it will be seen that our invention provides an exceedingly simple,

practical, convenient and effective means for cleaning a pneumatically operated piano or analogous machine. It may be readily ap-
 40 plied to the piano and enables the suction pump of the latter to perform the cleaning operation. It will occupy but little space within the instrument and when not in use does not in any way affect the operation of
 45 the same. By employing the suction pump of the instrument, a steady suction is obtained through the cleaning tube 8 so that the cleaning will be effectively done.

Having thus described our invention what we claim is;

50 In a device of the character described, the combination of a combined vacuum chamber and dust collector having an opening at one end and a shoulder within the same inter-
 55 mediate its ends, an air tight closure for the opening, a fabric screen, a coil spring arranged upon the screen and adapted to hold it against the walls of the chamber or col-
 60 lector and against said shoulder, a flexible suction tube connected to the chamber or collector on one side of the screen and an air
 exhaust pipe connected to the chamber or collector upon the other side of said screen.

In testimony whereof we hereunto affix our signatures in the presence of two wit-
 65 nesses.

PATRICK A. BAYLESS.
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Witnesses:

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