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SUCTION ATTACHMENT FOR PLAYER PIANO MECHANISM.

APPLICATION FILED NOV. 30, 1917.

1,380,473. Patented June 7, 1921.

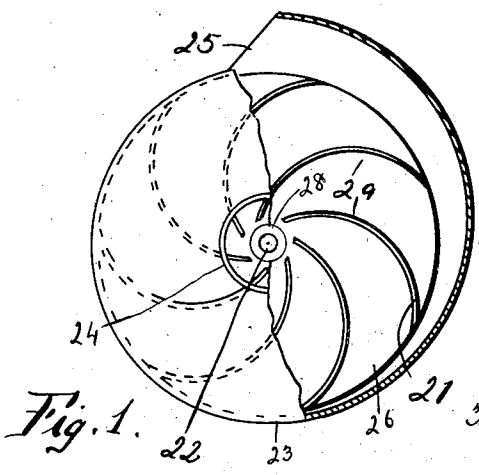


Fig. 1.

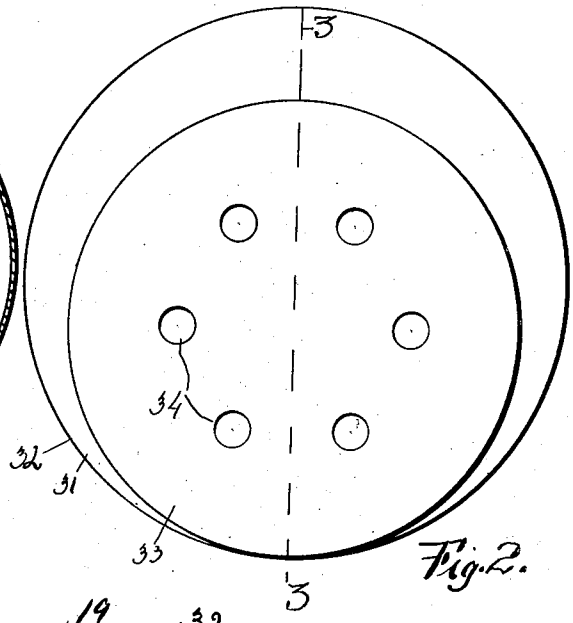


Fig. 2.

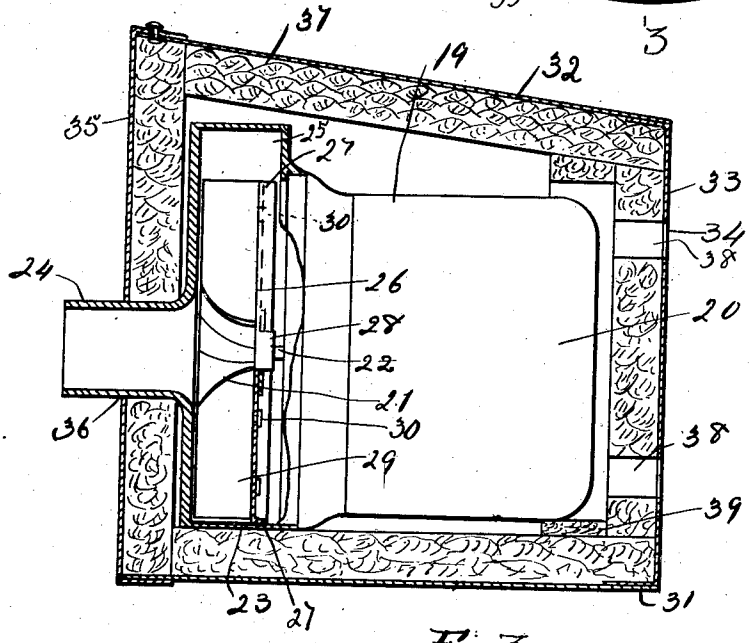


Fig. 3.

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SUCTION ATTACHMENT FOR PLAYER-PIANO MECHANISM.

1,380,473. Specification of Letters Patent. Patented June 7, 1921.

Application filed November 30, 1917. Serial No. 204,758.

To all whom it may concern:

Be it known that I, ROBERT A. GUARNIERY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Suction Attachments for Player-Piano Mechanism, of which the following is a specification.

My invention relates to new and useful improvements in player-piano mechanism, and has for its object to provide for a player-piano containing any ordinary pneumatic action for operating the piano keys, an electrically operated vacuum-producing device or an exhausting appliance connected to some suitable portion of the air conduit or passageway of the piano, whereby the pneumatic action may be operated without the tedious and tiresome operations of pedaling or foot pumping.

A still further object of the invention is to provide a muffler for the exhausting appliance whereby the sounds caused by the operation of the device will be deadened and prevent interference with the musical sounds.

A further object of the invention is to provide a fan housing having an inlet located at the center thereof and having an outlet leading from the outer circumference, said outlet gradually increasing in size.

With these ends in view, this invention consists in the details of constructon and combination of elements herein after set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail referring by numerals to the accompanying drawings forming a part of this application in which:—

Figure 1, is a front elevation of the exhausting appliance with a portion thereof broken away to illustrate the relation of the fan to its housing.

Fig. 2, is an end view of the muffler showing the exhaust openings, and

Fig. 3, is a section at the line 3—3 of Fig. 2.

In the accompanying drawing in which is illustrated the preferred embodiment of the invention, the exhausting appliance 19 comprises an electric motor 20 having a centrifugal fan 21 mounted directly upon the shaft 22 of the motor which is inclosed by a housing 23 attached to the motor and having an inlet nozzle 24 projecting from the outer face thereof and to this inlet nozzle is directly fastened the flexible conduit which with the valve and fitting forms a direct air communication between the conduit 3 and the exhausting appliance. The housing 23 is provided with a gradually increasing eccentric outlet 25 formed on the outer circumference of the housing, as plainly shown in Fig. 1.

The centrigugal fan 21 comprises a disk 26 having an inturned flange 27 and a hub 28 for connection with the shaft 22 of the motor. To the outer face of the disk are secured the fan blades 29, said blades being provided at their inner edges with tangs 30 which pass through the disk 26 and are bent over, headed or riveted for securely fastening the parts together.

The exhausting appliance which consists of the motor and the fan with its housing is inclosed in a muffler 31 formed from some suitable fibrous material such as papier-mâché and consists of a conical body 32, one end of which is closed by an end wall 33 having openings 34 therein, the other end being normally closed by a detachable cover 35 having an opening 36 therein through which projects the inlet nozzle 24 of the fan housing. The interior faces of the muffler are covered with a suitable sound-deadening material or insulation 37 such as felt and that portion of the insulation covering the permanent end wall has holes 38 therein which aline with the holes 34 in the end wall 33. Further a ring of felt or other suitable material 39 is placed at the inner end of the muffler and on this rests the inner end of the motor.

When the motor is running, the centrifugal fan will draw the air into the inlet nozzle 24 and the air will be exhausted from the fan housing through the oulet 25 into the interior of the muffler, after which it will pass to the atmosphere through the holes 38 and 34.

Of course I do not wish to be limited to the exact details of construction as herein shown as these may be varied within the limits of the appended claims without departing from the spirit of my invention.

Having thus fully described my inven-

tion what I claim as new and patentable is:—

1. In a suction producing device the combination of a container inclosed at the front and having an opening at the back, an air inlet in the front of the container, an electric motor in the rear portion of the container, a fan casing mounted directly upon the casing of the motor at the front of the container and forming a continuation of the motor casing and having a reduced air inlet opening in its front wall, and a plurality of rotary fan blades operating within the fan casing and actuated by the motor.

2. In a suction producing device, the combination of a container inclosed at the front and having an opening at the back, an air inlet in the front of the container, an electric motor in the rear portion of the container, a fan casing mounted directly upon the casing of the motor and forming an enlarged continuation of the motor casing and having a reduced air inlet opening in its front wall, said air inlet opening being in line with the shaft of the motor and a plurality of rotary fan blades mounted on the motor shaft and actuated by the same.

3. In a suction producing device the combination of a container inclosed at the front and having an opening at the back, an air inlet in the front of the container, an electric motor in the rear portion of the container, a fan casing mounted directly upon the casing of the motor at the front of the container and forming a continuation of the motor casing and having a reduced air inlet opening in its front wall, and a plurality of rotary fan blades operating within the fan casing and actuated by the motor, and a cushioning ring of sound deadening material surrounding the motor and cushioning the same and the fan housing and rotary blades.

In testimony whereof, I have hereunto affixed my signature.

ROBERT A. GUARNIERY.