

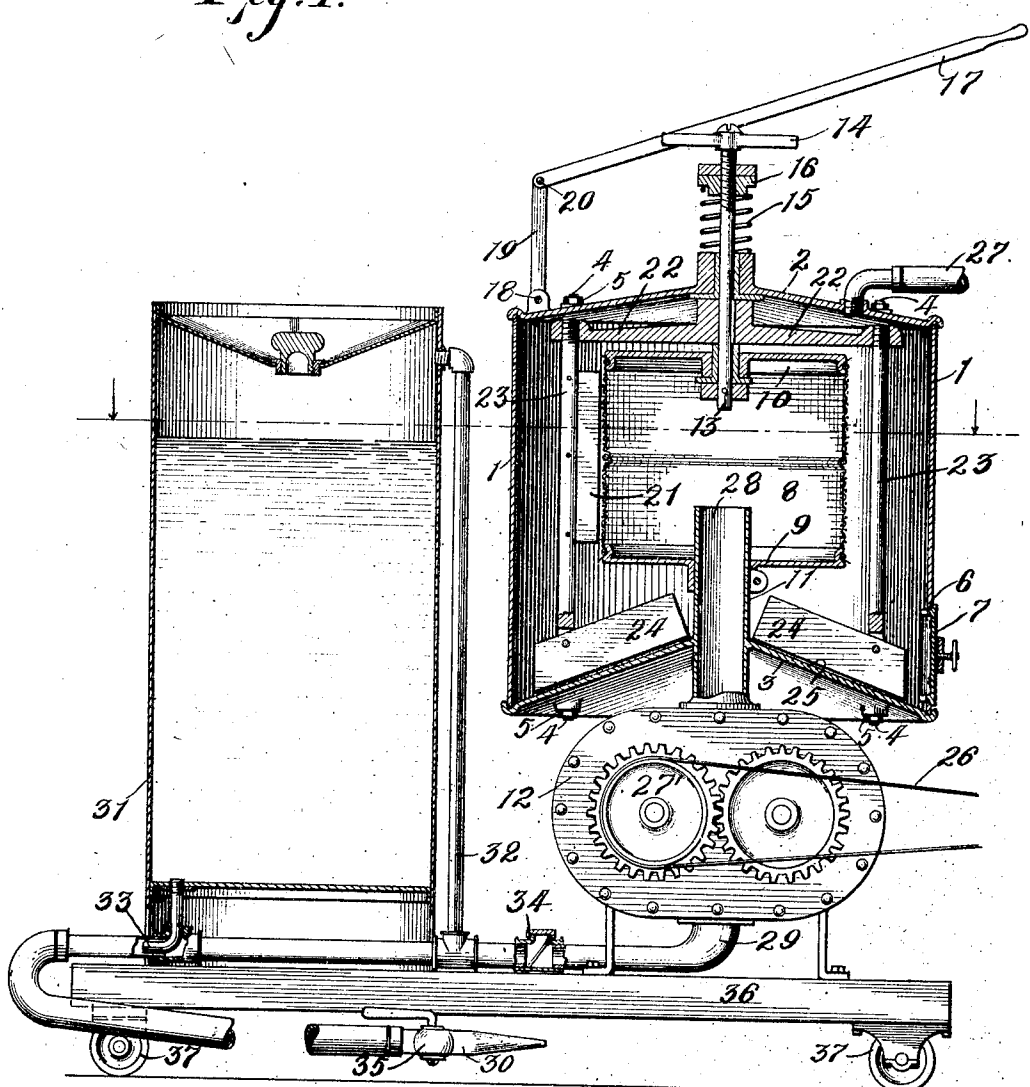
J. KUBOSCH.
PNEUMATIC CLEANER.
APPLICATION FILED DEC. 22, 1909.

1,056,033.

Patented Mar. 18, 1913.

3 SHEETS-SHEET 1.

Fig. 1.



Inventor

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Witnesses

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J. T. Bremer.

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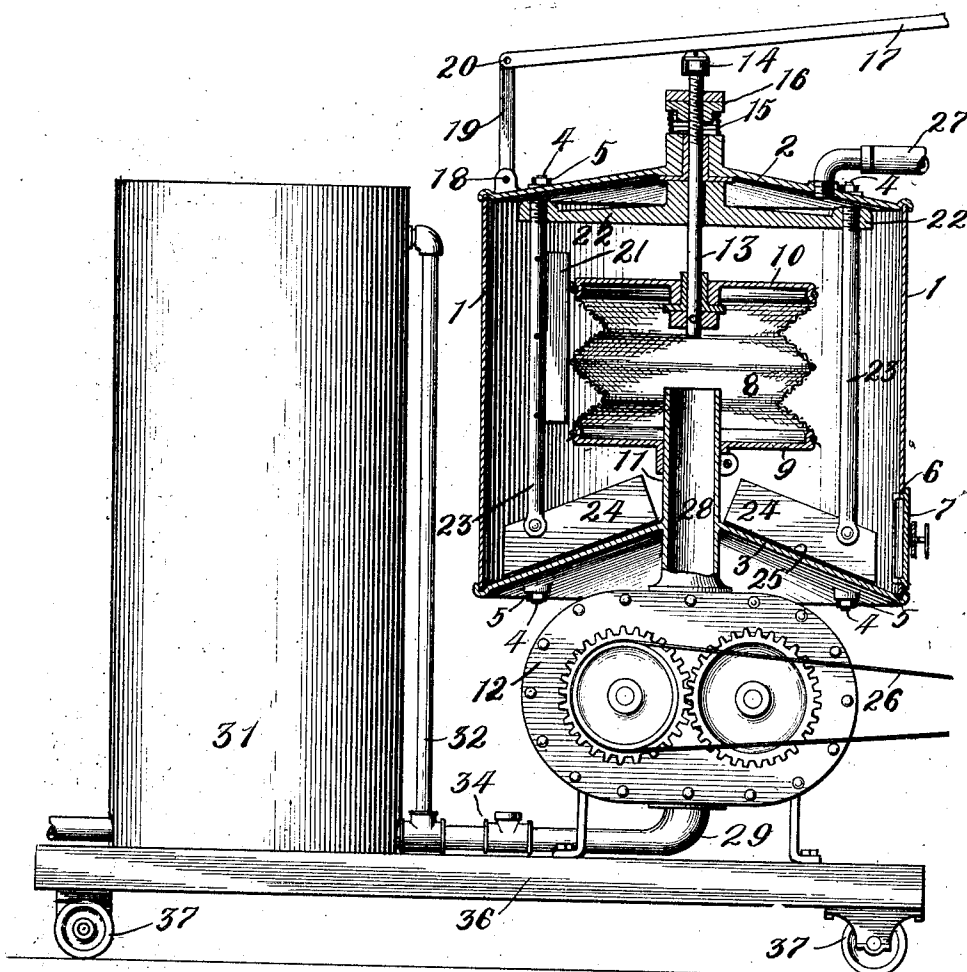
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3 SHEETS—SHEET 2.

Fig. 2.



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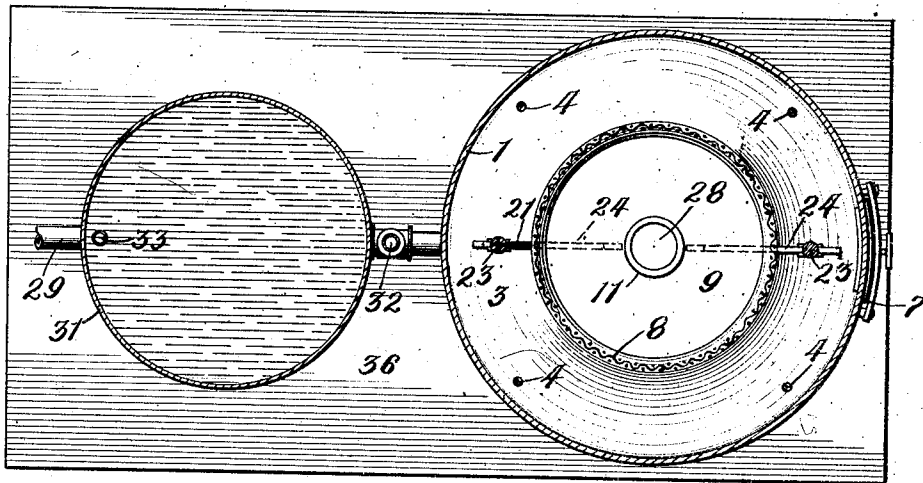
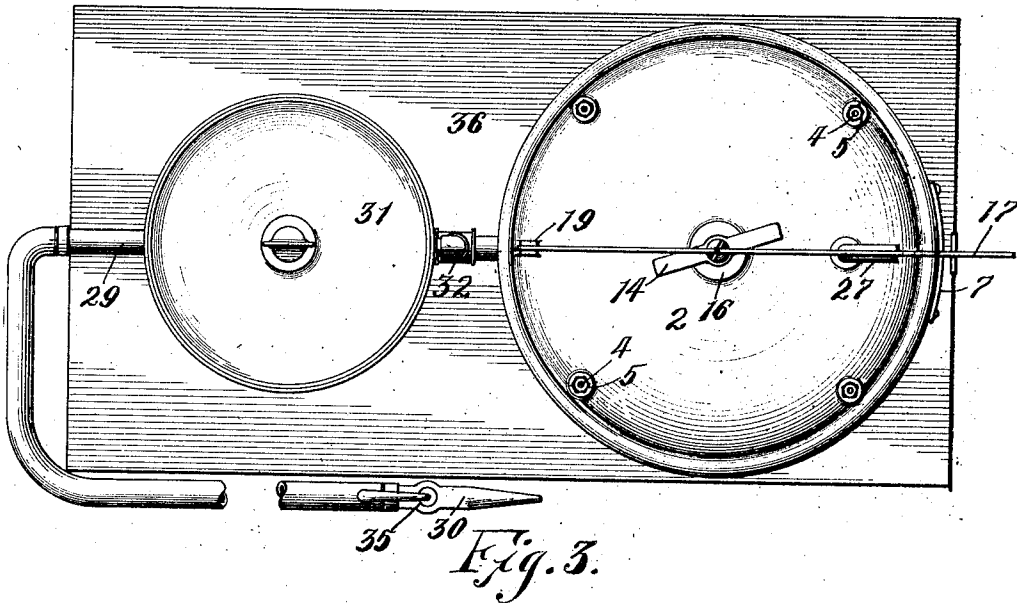
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3 SHEETS-SHEET 3.



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Fig. 4.

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UNITED STATES PATENT OFFICE.

JOSEPH KUBOSCH, OF MILWAUKEE, WISCONSIN.

PNEUMATIC CLEANER.

1,056,033.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed December 22, 1909. Serial No. 534,450.

To all whom it may concern:

Be it known that I, JOSEPH KUBOSCH, a citizen of the United States, residing at Milwaukee, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Pneumatic Cleaners, of which the following is a specification.

My invention relates to improvements in that class of pneumatic cleaners, which is used for cleaning carpets, furniture and the like, and it pertains more especially, among other things, 1st, to the device for removing the dust from the surface of the dust screen; 2nd, to the device for cleaning the mesh of the screen; 3rd, to the device for removing the accumulated dust from the vacuum chamber, and 4th, to the device for commingling moisture with the air as it escapes from the vacuum chamber, whereby such minute particles of dust as may pass through the screen with the air, will be thoroughly saturated and may be either discharged into a receptacle in the same apartment or conducted from the building, whereby the unsanitary effects of permitting the dry air and dust to exhaust together as heretofore in the dwelling, which is being cleaned, is avoided.

My invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a vertical section thereof in connection with a rotary air compressor of ordinary construction. Fig. 2 represents a similar view to that shown in Fig. 1 in which the screen, which is collapsible, is shown as partially compressed as the same appears in the act of removing the dust from the mesh of the screen. Fig. 3 is a top view, and Fig. 4 is a transverse section.

Like parts are identified by the same reference numerals throughout the several views.

The vacuum chamber comprises the cylindrical walls 1 and heads 2 and 3, which heads are connected together and held in close contact with the upper and lower ends of the cylinder 1 by a plurality of retaining rods 4. The rods are respectively provided with nuts 5, which as they are turned down on the rods, serve to bind the cylinder and heads securely together, the cylinder and heads being preferably made detachable for the purpose of inserting the operative mechanism. The cylinder 1 is provided upon one side with a hand hole 6, having a removable door 7, whereby the accumulated dust may

from time to time be removed. The dust screen is hollow and comprises the collapsible fabric 8, stationary head 9 and movable head 10. The fabric 8 is permanently connected at its upper end lower edges with the periphery of said heads. The lower head 9 is permanently clamped to the periphery of the outlet duct 11, while the head 10 is connected to the rod 13. The rod 13 has slidable bearings in the head 2 and is provided on its upper end with an operating handle 14, whereby an upward and downward reciprocating movement may be communicated through said rod 13 to the upper head 10 of the screen, whereby the fabric of the screen is collapsed and moved from the position shown in Fig. 1 to that shown in Fig. 2, when it is obvious that by a succession of quick rapid movements of the rod 13, such dust as may accumulate in the meshes and upon the surface of the screen is readily shaken off.

For convenience in shaking the screen, I preferably interpose a spiral spring 15 between the upper head 2 and the nut 16, which nut 16 has threaded bearings near the upper end of the rod, whereby when said rod is forced down and released, it will be thrown back by the recoil of said spring. As a convenient means of operating the reciprocating rod, I preferably provide a lever 17, which lever is pivotally connected with the upper head 2 of the vacuum chamber by the pivotal bolt 18, link 19 and pivotal bolt 20, whereby it is obvious that the operating rod 13 may be readily reached and operated from one side of the vacuum chamber.

21 is a screen wiper, which is connected with the operating rod 13 through one of the radial arms 22 and vertical rods 23, whereby as the rod 13 is revolved by the handle 14, said brush 21 is caused to pass over and in contact with the cylindrical walls of the screen, and whereby such dust as may be accumulated on the surface of the walls is scraped off and caused to drop to the bottom of the vacuum chamber, while such dust as may have accumulated in the meshes of the screen is shaken therefrom by the vertical reciprocating movements of the rod 13, as stated. 24, 24, are scraping blades, which are pivotally connected with the lower ends of the rods 23 and serve to scrape the bottom of the vacuum chamber, whereby such dust as may have accumulated in the bottom of such chamber, may be brought to the hand

hole 6; preparatory to being removed therefrom.

27 is an inlet duct which is connected at one end to the vacuum chamber and is adapted to be connected at its opposite end with the ordinary suction head, not shown, as the latter is moved across the surface of a carpet or other fabric to be cleaned.

The vacuum pump 12 is of ordinary construction, and motion is adapted to be communicated thereto from a motive power not shown, through the belt 26, and pulley 27 in the ordinary manner, whereby a partial vacuum is formed within the screen and vacuum chamber. Thus it will be obvious that when the vacuum pump 12 is operated, air will be thereby caused to flow from the interior of the screen through the air outlet duct 28, when it is forced from said pump out through the exhaust duct 29, as herein-after explained, whereby air and dust will be caused to enter the suction head, not shown, and from thence to pass through the duct 27 into the vacuum chamber 1, when air will be caused to pass from thence through the fabric of the screen 8 and from thence through the duct 28 into the vacuum pump, whereby such dust as cannot pass through the meshes of the screen will accumulate upon its surface preparatory to being shaken off, as stated, while the air which has been thus drawn through the vacuum chamber and screen into the vacuum pump will be forced out through the exhaust duct 29 and discharge nozzle 30.

It is a well known fact that with the finest screen that can be used, a small portion at least of the finest particles of dust are liable to be carried with the air through such screen and into the vacuum pump and be forced therefrom through the exhaust duct and to provide for saturating such dust as may thus pass through the screen, I preferably connect the exhaust duct 29 with a water tank 31 by an inlet air duct 32 and an outlet water duct 33. It will be obvious that air will pass from the exhaust duct 29 through the duct 32 above the surface of the water, whereby an equilibrium of pressure will be established in said tank, which will permit the water to flow therefrom of its own gravity through the duct 33 into the exhaust duct 29, whereby such dust as might otherwise escape with the air will be saturated and may be discharged with the air from the room or deposited in a receptacle therein.

34 is a check valve, which is adapted to prevent water from flowing from the tank 31 into the vacuum pump and chamber, as it might otherwise do in seeking its level.

35 is a valve which may be used for closing the outlet to the nozzle 30.

For convenience of operation, I preferably support the vacuum pump and water

tank, together with the other cooperating parts, upon a truck comprising the platform 36 and supporting rollers 37. While the tank 31 is adapted to be used for storing water, for the purpose of saturating the escaping dust, it is obvious that the same may, if desired, be used for storing disinfectants, white wash, paint or other liquids, and experience has shown that liquids when thus stored, may by my device be converted into a fine spray and uniformly distributed for disinfecting fabrics, distributing paint, white wash and for a great variety of other purposes.

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

1. A dust separator, comprising a casing, an air pump connected with the casing, a tubular standard within the casing leading from the air pump connection, a stem slidably mounted through the wall of the casing, disk-shaped heads mounted on the tubular standard and the stem respectively, a cylindrical strainer cloth connected with said disk shaped heads and forming a strainer therewith with the tubular standard communicating with the interior thereof, a spring for moving the stem to give tension to the strainer cloth, and means for depressing the stem against the action of the spring and releasing the same to cause the movable head to jerk the strainer cloth and eject the accumulated dirt therefrom.

2. In a device of the described class, the combination of a vacuum chamber, a collapsible screen located in said chamber, one or more screen wipers revolubly supported within said chamber in contact with said screen, means adapted to be operated from the exterior for compressing and expanding said screen and also for moving said screen wipers over its surface, means for conducting air and dust to said vacuum chamber upon the exterior of said screen, and means for exhausting the air from the interior of said screen.

3. In a device of the described class, the combination of a vacuum chamber, a collapsible screen located in said chamber, one or more screen wipers revolubly supported within said chamber in contact with said screen, means adapted to be operated from the exterior for compressing and expanding said screen and also for moving said screen wipers over its surface, means for conducting air and dust to said vacuum chamber upon the exterior of said screen, means for exhausting the air from the interior of said screen, and means for scraping the dust from the bottom of said vacuum chamber.

4. In a device of the described class, the combination of a vacuum chamber, a collapsible screen located in said chamber, one or more screen wipers revolubly supported

within said chamber in contact with said screen, means adapted to be operated from the exterior for compressing and expanding said screen and also for moving said screen
5 wipers over its surface, means for conducting air and dust to said vacuum chamber upon the exterior of said screen, means for exhausting the air from the interior of said screen, means for scraping the dust from

the bottom of said vacuum chamber, and 10 means for saturating the air and dust as they pass through the exhaust duct.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH KUBOSCH.

Witnesses:

JAS. B. ERWIN,
O. R. ERWIN.