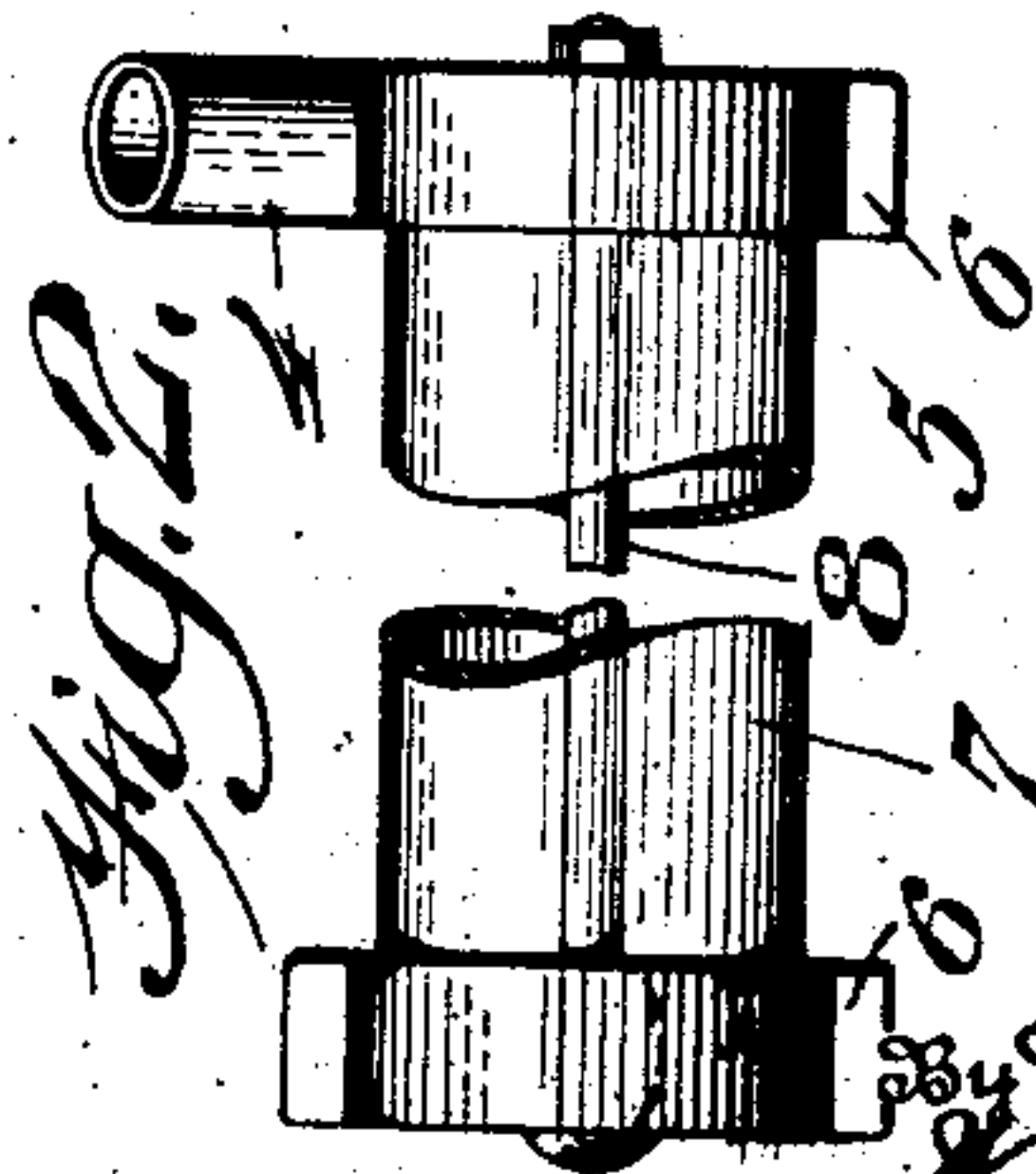


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2 SHEETS--SHEET 1.



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VACUUM CLEANER.

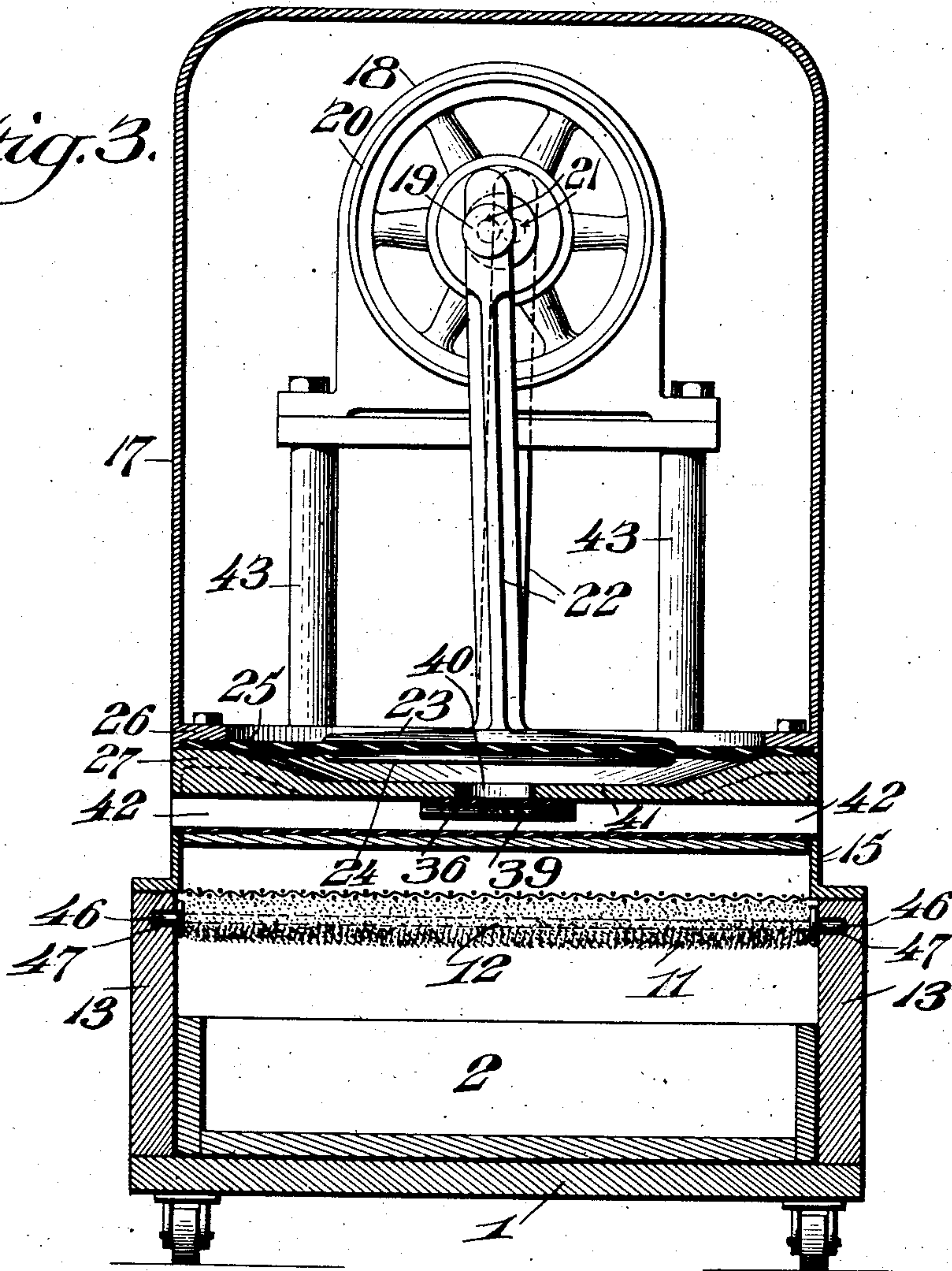
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939,117.

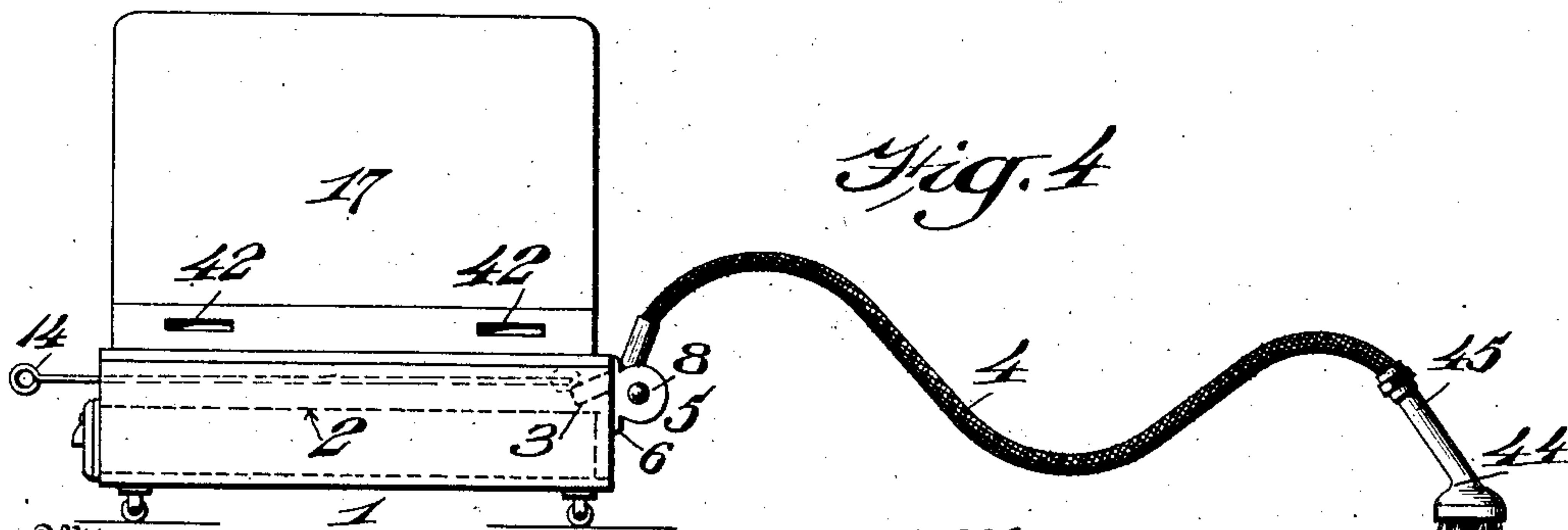
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2 SHEETS—SHEET 2.

*Fig. 3.*



*Fig. 4*



Witnesses

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# UNITED STATES PATENT OFFICE.

THEODORE WIEDEMANN AND JOSEPH H. TEMPLIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO KELLER MANUFACTURING COMPANY, A CORPORATION OF DELAWARE.

## VACUUM-CLEANER.

939,117.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed March 10, 1908. Serial No. 420,174.

*To all whom it may concern:*

Be it known that we, THEODORE WIEDEMANN and JOSEPH H. TEMPLIN, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Vacuum-Cleaner, of which the following is a specification.

Our invention consists of a novel construction of a vacuum cleaner and our object is to provide a simple inexpensive and effective machine, which is compact and readily portable and takes up but a minimum amount of space, provision being made for actuating the principal operative parts of the device by means of an electric or other motor.

We employ a removable tray, a separating device for the dust and air above the tray and a rotary brush located in proximity to and beneath said separating device and guided substantially parallel therewith and a vacuum pumping device operated by said motor and disposed above the separating device.

For the purpose of illustrating our invention, we have shown in the accompanying drawings one form thereof which is at present preferred by us, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which our invention consists can be variously arranged and organized and that our invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a vertical sectional view partly in elevation of a vacuum cleaner embodying our invention. Fig. 2 represents a side elevation of the observation device seen at the right hand of Fig. 1. Fig. 3 represents a section on line *x-x*, Fig. 1. Fig. 4 represents on a reduced scale, a diagrammatic view of the apparatus showing the manner of using the same.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates the base of the apparatus upon which is supported the removable drawer or tray 2 above which is located the inlet pipe 3 by means of which the air commingled with the dust, dirt, etc. is conveyed into the ap-

paratus from the suction pipe 4 which latter leads into the observation device 5. The observation device 5 consists of the heads 6 between which is located the cylinder or casing of glass or other transparent material 7, as will be understood from Fig. 2, the above parts being held in assembled position by means of the rod or other fastening device 8. The commingled air and dust, dirt and other impurities is initially received in the dust chamber 9 above which is located the dust separator or screen 10 which may be composed of cloth, canvas, wire gauze or other suitable material and below said screen is located the cleaning device 11 which in its simplest form may be a rotary or other brush supported upon the rod or rods 12 which may be guided in the wall 13, the outer extremity of the said rod being provided with an eye or handle 14 whereby the brush or other cleaning device 11 can be readily reciprocated along the underside of the screen 10 for the purpose of cleaning the same according to requirements.

15 designates the base or bed of the vacuum pumping apparatus which is preferably supported upon the walls 13 and is provided with the outlets 42 leading to the atmosphere, said bed 15 supporting the outer casing 17 which incloses the motor and its adjuncts. The motor 18 is provided with the main shaft 19 to which are secured the crank disks 20 each of the latter having the crank pins 21 upon which are mounted the upper ends of the connecting rods 22, whose lower ends terminate in the heads or flanges 23 between which and the rings or plates 24 are held the diaphragms 25, the construction shown in the present instance appearing as one continuous strip of leather or other suitable material which is held in position at its extremities between the flanges 26 and 27 while the intermediate portion of said diaphragm is held between the fastening devices 28 and 29.

30 designates a pair of inlet valves which are each held in position between the flanges 31 and the plates 32 by means of the screws or other fastening devices 33, said inlet valves being each provided with the valve seats 34, it being apparent that when the device is in operation a suction is created through the ports 35.



36 designates the discharge valves, each of which is secured against the flange 37 by means of the screws or other fastening devices 38 which pass through the plates 39 it being apparent that each of said discharge valves controls the ports 40 and normally rests upon the valve seat 41 whereby when the device is in operation the air is discharged through the ports 40 into the outlets 42 and thence through said outlets to the atmosphere.

We have shown the motor 18 as being supported upon the standards 43 but it will be apparent that the same may be supported in any suitable manner and that the source of electric energy may be communicated to the motor from any desired point such as the ordinary electric light, gas fixture or other equivalent device.

In Fig. 4 we have shown the manner in which our device is used, it being apparent that the hose 4 is connected to a suitable brush or nozzle 44 and provided with a suitable handle 45 for the purpose of directing or applying the nozzle to any desired point.

It will be apparent to those skilled in the art that our device is especially applicable for removing dust or dirt from surfaces such as floors, walls, ceilings of dwelling houses, office buildings, factories and warehouses, bookcases and shelves and books or removing dust from objects or articles as carpets, rugs, furniture, clothing, passenger coaches, sleeping cars, drawing room cars and the like and that by our invention we have produced an apparatus by which the cleaning or removing of dust may be accomplished in an effective and rapid manner with ease and despatch and we are enabled to practically clean any suitable surface, object or article from every adhering particle of dust or dirt which can be removed.

In the construction shown in Fig. 4 we have shown the manner in which our apparatus can be practically used and it will be apparent that in lieu of the handle 45 we may employ an elongated handle if desired and it will be also apparent that while we have shown a flap valve employed as the suction and discharge valve, other forms of valves may be employed if desired.

The casing sections 15 and 17 may be cast in a single casting if desired and the motor 18 may be supported by different devices than that shown. In the preferred manner of assembling the cleaning device 11 we have shown the same as mounted upon the bearings or trunnions 46 which may be supported by the oppositely located grooves 47 but it will be apparent that the cleaning device 11, which may be a rotary or other brush may be supported in various other ways than that shown, without departing from the spirit of our invention.

It will be apparent that while in our present invention suction is utilized so that the dust or dirt is sucked into the apparatus and entirely removed from the compartment or room in which the dust was originally, we do not desire to be restricted in every instance to the exact construction we have herein shown and described but reserve to ourselves the right to make all such changes as will come within the scope and spirit of our invention.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character stated, the combination with a portable support, of a removable tray therein, a separating device for the dust and air above said tray, a rotatable brush located in proximity to and beneath said separating device, substantially parallel ways below said separating device serving as a guiding means for said rotary brush, an inlet pipe for conveying the dust, dirt etc. from a suction pipe above the said tray, and a vacuum pumping device disposed above said separating device, and a motor for actuating said vacuum pumping device.

2. In a device of the character described, a casing, a screen located therein, a vacuum pump located at one side of said screen, a rotatable cleaner located at the opposite side of said screen, and longitudinally extending, guiding means below said screen in which the ends of said rotatable cleaner are mounted, whereby said cleaner is adapted to have both a rotary and reciprocatory movement imparted thereto.

3. In a device of the character described, a casing a separating device within the receptacle, a rotatable cleaner, means for moving said cleaner bodily backward and forward below said separating device and guiding devices extending substantially parallel to said separating device for maintaining the cleaner in contact with the underside of the separating device whereby said cleaner may be rotated and moved bodily in a line parallel with said separating device.

4. In a device of the character described, a portable support, a removable tray therein, a screen for the dust above said tray, a rotatable cleaner for said screen engaging the underside thereof, a guide for enabling said cleaner to be reciprocated in a line substantially parallel with said screen, inlet and exhaust passages below and above said screen, and a vacuum pump above the separating device.

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