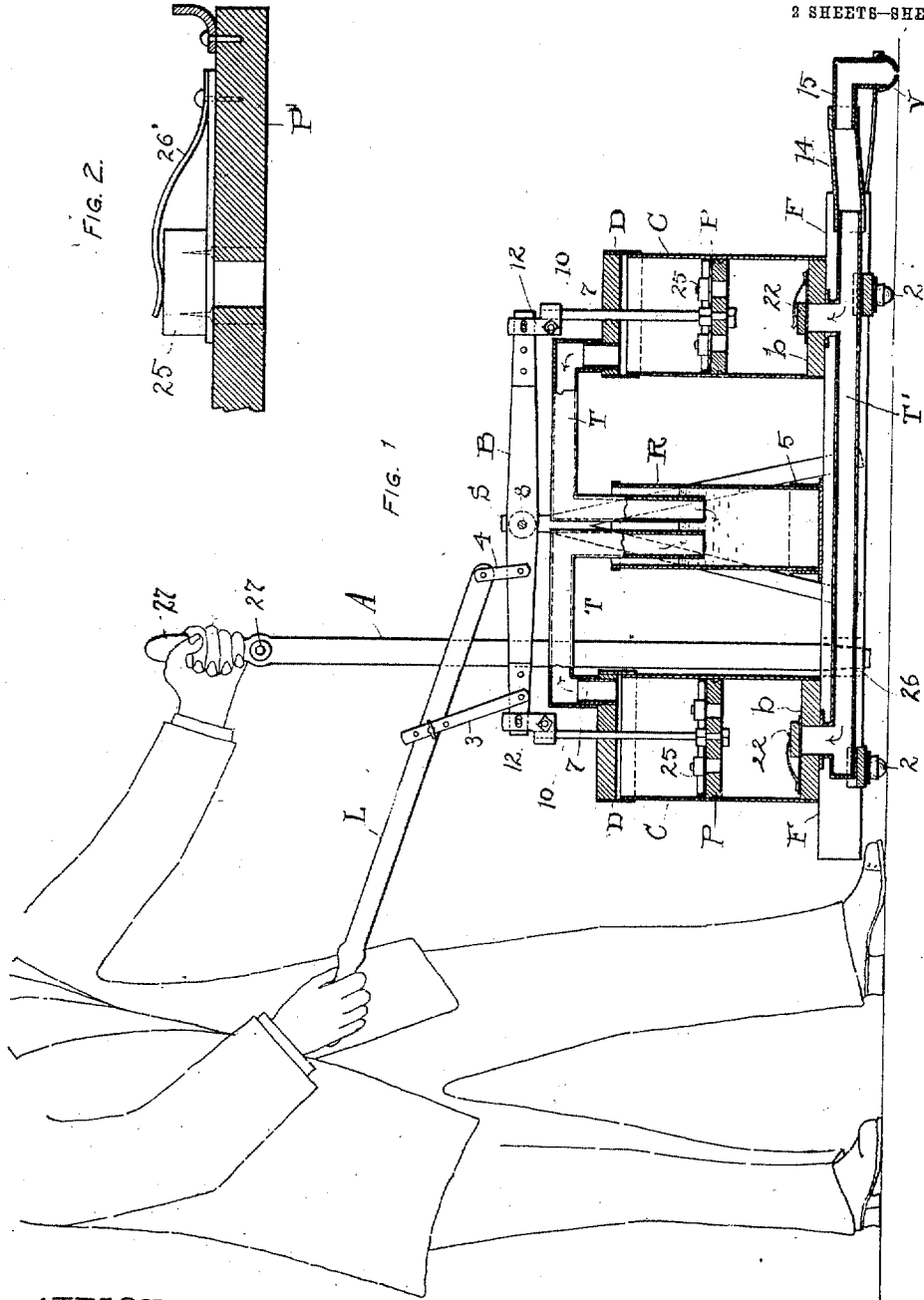


F. C. WHEELER.
VACUUM CLEANER.
APPLICATION FILED JUNE 11, 1910.

984,628.

Patented Feb. 21, 1911.

2 SHEETS—SHEET 1.



ATTEST

J. C. Mueser
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INVENTOR

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BY Fisher & Moore
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2 SHEETS-SHEET 2.

FIG. 3.

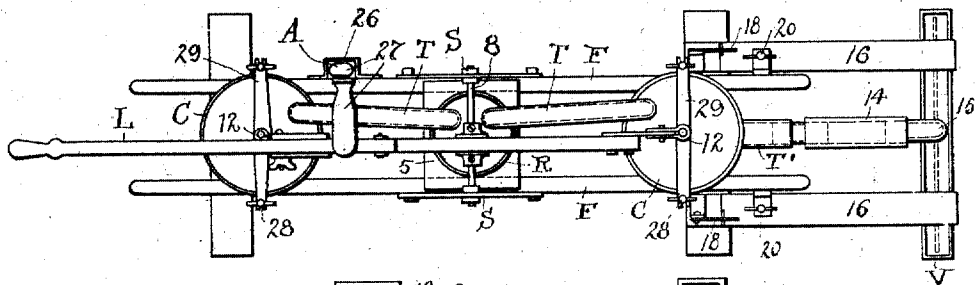


FIG. 4.

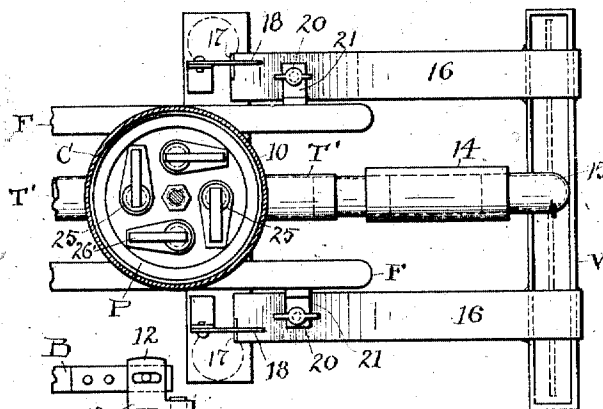


FIG. 5.

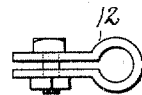
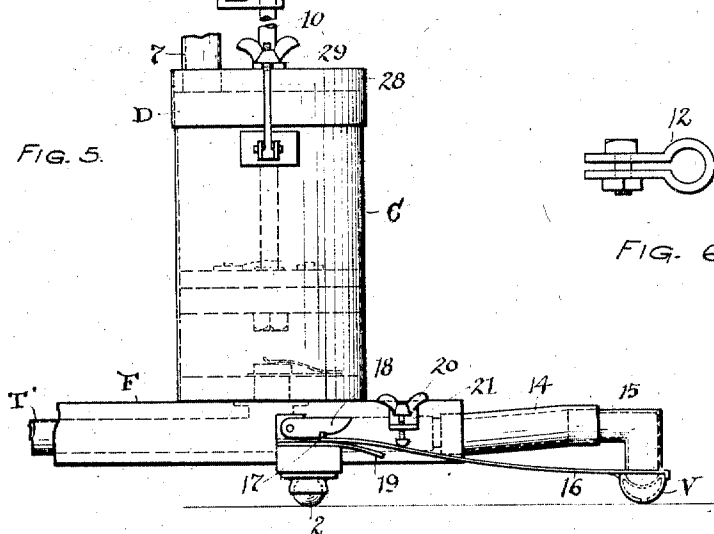


FIG. 6.

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UNITED STATES PATENT OFFICE.

FRANKLIN C. WHEELER, OF CLEVELAND, OHIO.

VACUUM-CLEANER.

984,628.

Specification of Letters Patent. Patented Feb. 21, 1911.

Application filed June 11, 1910. Serial No. 566,299.

To all whom it may concern:

Be it known that I, FRANKLIN C. WHEELER, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vacuum-Cleaners, of which the following is a specification.

My invention relates to vacuum cleaners, and the object of the invention is to provide the public, and particularly housewives, with a vacuum cleaner which is simple in construction, easy to operate and cheap in price, especially when considered with the labor it is adapted to save and the efficient service it performs, all as hereinafter more fully described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical central longitudinal section of the cleaner with all the parts in operating position and showing by the figure of a man how the hand parts are grasped for operating purposes. Fig. 2 is an enlarged sectional detail of a portion of one of the pump pistons and a valve therein. Fig. 3 is a plan view of the machine, and Fig. 4 is an enlarged sectional plan of the front pump cylinder and the forward parts of the machine including the suction tool. Fig. 5 is a side elevation of the front part of the machine. Fig. 6 is a plan view of the clamp for the piston rods on the walking beam.

These views illustrate the invention in its entirety with the details thereof in the present preferred form, and the invention as shown comprises a main frame F mounted on casters or rollers 2 and adapted to run over the floor or the carpet or rug as it is being cleaned by the machine. Upon the front and rear, respectively, of the said frame I mount two pumps, and between these at the middle of the machine a reservoir or tank adapted to receive the dust forced thereinto by the said pumps with an operation which will now be seen. Thus, the said pumps comprise each a cylinder C having its bottom 5 fixed upon or secured to frame F and a piston P operated from walking beam B by hand lever L. Two links, 3 and 4 respectively, connect said lever or handle with said beam, and link 3 is adapted to adjust the said lever or handle to different elevations to suit the height of the user. Both links are fixed to the rear end of said beam and in such way that the lever in fact becomes a

working extension of the beam but with the handle part at the desired elevation. The tank R is a removable receptacle seated in a cup 5 or equivalent support fixed upon frame F and is adapted to be used either with a fluid to absorb the dust that is pumped into it or as a mere dust receiving receptacle without liquid or water. However, for the present I regard the use of water for wetting the dust as a very important and valuable portion of my invention. Operatively the said pump and said tank are connected by double elbow tubes T, one arm of which dips into the said fluid tank the requisite distance, say relatively as shown or possibly not quite so deep, the ideal arrangement being to have only the immediate ends or tips of said tubes immersed in the water and no more. Then as the dust is blown into the tanks it must pass into the water under the pressure from behind and is absorbed thereby, but a slight dip of the tube in the water answers this purpose best, as it does not agitate the water as a deeper immersion of the tube would and contributes to ease of operation. Both said tubes T are removable, and their shorter arms are sleeved over or upon the short delivery tubes 7 in the tops of the pumps. To this end also the walking beam B is pivoted on its support at one side of the center of the machine, as seen in Fig. 3, a pair of side standards S, and a cross rod or shaft 8 supporting said beam from frame F. This exposes both said tubes at the top and they are free to be removed and replaced when the said cylinder or tank R has to be emptied.

The ends of the walking beam and the piston rods 10 have substantially L shaped clamping members or links 12 as shown herein, and said rods are rigidly fixed in said links but the links themselves are both pivoted to swing on the walking beam and have a slotted engagement on the pins that connect them with the beam to compensate for the difference between the direct vertical movement of the piston rods and the rocking movement of the walking beam. Any suitable connection at this point may be adopted with provision for setting the rods 10 by set screw or the like in said links. At the bottom of the machine I connect the said pumps with the vacuum member V by means of a tube T', which has openings to said pump and is connected by a tube extension or coupling 14 with the tubular elbow 15

of the said tool V. The said tube extension or coupling 14 preferably is flexible, say a piece of rubber hose to accommodate it to the spring or flexible arms 16 which carry the said vacuum tool from main frame F and work with a tendency to hold the tool down upon the floor at work. The said vacuum tool and the spring carrying arms 15 are preferably soldered together so as to be rigid one with the other and removable from frame F together whenever removal becomes necessary. To these ends the said arms 16 have their inner ends provided with upturned portions or flanges or their equivalent 17 and adapted to be engaged with or by the pivoted latches or catches 18 and guide plates 19 beneath serve as under supports for said arms. Tension on the arms to maintain uniformity of action in or by the tool V is regulated by set screws 20 in brackets 21 on the projecting ends of frame F. There is a measure of spring action in rubber coupling 14 to keep the tool down, but hardly enough for all purposes, and any equivalent coupling to 14 may be adopted whether of rubber or other material.

A suitable check valve 22 is provided at the bottom of each pump cylinder through which the dust laden air is drawn into the pump and with which direct connection with vacuum tool V is made by tube T'. Each pump piston likewise has one or more check valves 25, four to each piston as herein shown, and the construction of which is plainly disclosed in Fig. 2. This construction or its equivalent can be used, and there are no other valves in the machine as the pump forces the air directly into tank R without obstruction in the passages.

This machine is designed to be pushed over the floor very much as is customary with the commonly used floor sweepers, but for several reasons I do not rely on the handle L alone for this purpose. In the first place the said handle is designed especially for operating the pumps, though it helps in guiding the machine and in moving it along, but the main reliance for this purpose is in the fixed guide standard or arm A. Said standard or arm is a rigid part re-

movably set into a somewhat tapered socket or bracket 26 at the side of main frame F, and having two distinct handle portions or grips 27 at its top, at right angles to each other. So it follows that with one hand on said grip and the other on handle L, as shown in Fig. 1, the machine is easily directed and operated, and having the said grip available to cooperate with handle L makes the entire operation easy. The cylinders C have air tight covers D removably secured by swivel screws 28 with thumb nuts engaged in the slotted ends of cross-bars 29 on said cylinder covers or their equivalent. In the event that water be not used for receiving the dust I provide some sort of a suitable stuffing about the down stems of tubes T in the dust receptacle or can have a cover for the receptacle with holes to insert said tubes and such packing or the like as to make the receptacle dust proof.

What I claim therefore as my invention and desire to secure by Letters Patent is:

1. A hand controlled vacuum cleaning machine comprising a main frame having casters to run on, pumping means and a dust receptacle mounted on said frame and tubular connections between said pumping means and said receptacle, in combination with a vacuum tool mounted in front of said frame transversely thereof, spring supports fixed to the ends of said tool and removably attached to the frame and a flexible tubular connection with said tool in operating connection with said pumps.

2. A vacuum cleaning machine comprising a frame and a vacuum tool at the front thereof, separate spring supports fixed to the ends of said tool and removably attached to said frame, a suction pump on said frame and a flexible and separable tubular air conveying coupling between said pump and the said tool.

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

FRANKLIN C. WHEELER.

Witnesses:

R. B. MOSER,
F. C. MUSSUN.