

E. L. ABRAMES & J. H. CORYELL.
VACUUM CLEANER.

APPLICATION FILED FEB. 19, 1912.

1,077,947.

Patented Nov. 4, 1913.

Fig. 1.

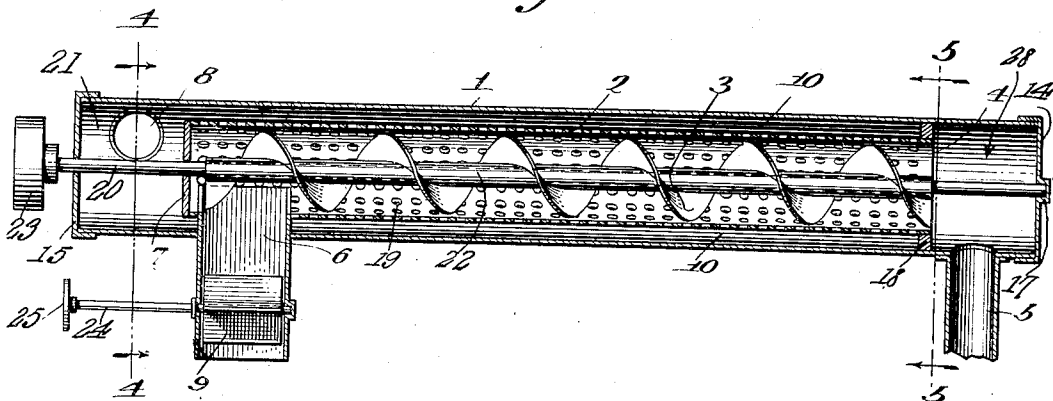


Fig. 4.

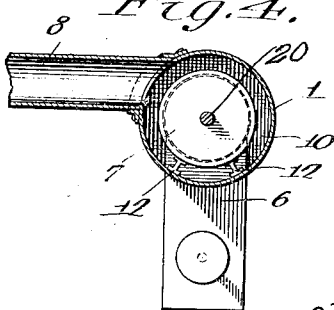


Fig. 2.

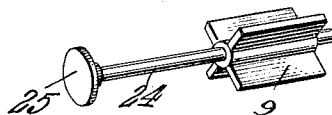


Fig. 5.

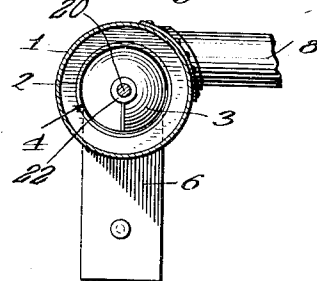
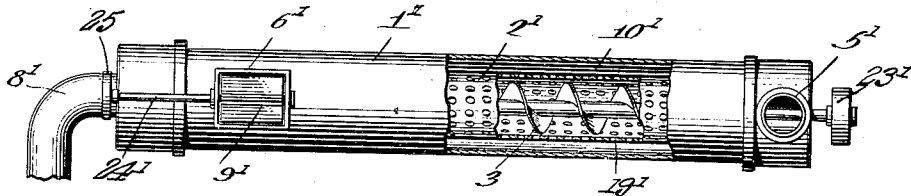


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ERLE L. ABRAMES AND JOE H. CORYELL, OF HAYWARD, OKLAHOMA.

VACUUM-CLEANER.

1,077,947.

Specification of Letters Patent.

Patented Nov. 4, 1913.

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To all whom it may concern:

Be it known that we, ERLE L. ABRAMES and JOE H. CORYELL, citizens of the United States, residing at Hayward, in the county of Garfield, State of Oklahoma, have invented a new and useful Vacuum-Cleaner, of which the following is a specification.

The device constituting the subject matter of this application is adapted to be employed for removing dust and foreign matter from cotton and the like.

The invention aims to provide novel means for directing the material through the cleaner, and to provide means for conducting the air out of the material as the material is advanced.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawing: Figure 1 shows one form of the invention in longitudinal section; Fig. 2 is a perspective of the combined check and feed member; Fig. 3 is a plan showing a modified form of the invention, parts being broken away; Fig. 4 is a transverse section on the line 4-4 of Fig. 1; and Fig. 5 is a transverse section on the line 5-5 of Fig. 1.

In the drawing there is shown a main cylinder 1, closed at one end by a cap 14, the cylinder 1 being closed at its other end by a cap 15, and the cap 14 being provided with a thrust bearing 17. Projecting laterally from the main cylinder 1, adjacent the cap 14, is an inlet 5, through which the cotton, and air under pressure are introduced into the main cylinder 1. Adjacent its other end, the main cylinder 1 is provided with an air outlet 8.

Located within the main cylinder 1, adjacent the cap 14, is an annular gasket 18, receiving one end of an auxiliary cylinder 2. The other end of the auxiliary cylinder 2 is supported upon legs 12 which are connected with the main cylinder 1. One end of the auxiliary cylinder 2 which is adjacent the cap 14 is open, as indicated at 4, the opposite end of the auxiliary cylinder 2 being closed as indicated at 7. The auxil-

iary cylinder 2 is provided with a plurality of perforations 19, extended, preferably, the full length of the cylinder. The auxiliary cylinder 2 is concentric with the main cylinder 1, and a space 10 exists between the cylinders. The end wall 7 of the auxiliary cylinder 2 is spaced from the cap 15 of the main cylinder 1 to define an air chamber 21, the gasket 18 being spaced from the cap 14, to define an air chamber 28.

Journalled for rotation in the cap 15, in the end 7 of the auxiliary cylinder 2 and in the thrust bearing 17 is a shaft 20, located within and secured to a tubular shaft 22, carrying a spiral conveyer 3 located within the auxiliary cylinder 2. The end of the shaft 20 which protrudes through the cap 15 is provided with a pulley 23 or like device, whereby rotatory movement is imparted to the shaft.

Extended through the main cylinder 1 and communicating with the interior of the auxiliary cylinder 2 is a discharge chute 6. Disposed transversely of the discharge chute 6 and journalled for rotation therein is a shaft 24, provided at one end with a pulley 25, whereby, if desired, rotatory movement may be imparted to the shaft 24 from the shaft 20; although the shaft 24 may be rotated otherwise, when desired. The discharge chute 6 is preferably of rectangular contour, and the shaft 24 carries a plurality of resilient vanes 9, adapted to move in close relation to the walls of the chute 6. The vanes 9 may be fashioned from leather, rubber or the like.

In practical operation, the cotton and air under pressure enter the compartment 28 by way of the inlet 5, passing thence into the interior of the perforated auxiliary cylinder 2. The cotton is advanced along the interior of the auxiliary cylinder 2 by means of the spiral conveyer 3, rotatory movement being imparted to the conveyer through the medium of the shaft 20 and the pulley 23. The cotton will ultimately be deposited in the discharge chute 6, by the action of the spiral conveyer 3, and when rotatory movement is imparted to the shaft 24, the vanes 9 will serve to advance the cotton out of the chute 6. At the same time the vanes 9 will prevent a draft of air through the chute 6. The air which enters the auxiliary cylinder 2 along with the cotton, will flow outwardly through the perforations 19 into the space 10 which is between the cylinders 2 and 1,

the air ultimately entering the chamber 21, and passing out through the outlet 8, it being within the scope of the invention, to apply suction at the outlet 8. The dust and

5 comminuted foreign matter which is within the cotton will, therefore, pass outwardly through the outlet 8, the cotton, in a cleaned condition passing away through the discharge chute 6.

10 In Fig. 3 of the drawing, a slight modification is shown, the parts hereinbefore described being indicated by the same numerals as previously applied, the numerals, however, in Fig. 3 being primed. The modification disclosed in Fig. 3 consists in plac-

15 ing the outlet 8' in one end of the main cylinder 1', the driving pulley 23' being located adjacent the air and cotton inlets 5', instead of being located adjacent the air

20 outlet 8'.

Having thus described the invention, what is claimed is:

1. In a device of the class described, a main cylinder; a perforated auxiliary cylinder in the main cylinder, the auxiliary cylinder having one end open and one end closed; a gasket extended between the walls of the cylinders adjacent the open end of the auxiliary cylinder, the ends of the auxiliary cylinder being spaced from the ends of the main cylinder, there being openings in the main cylinder, beyond the ends of the auxiliary cylinder; a spiral conveyer journaled for rotation within the auxiliary cylinder; and a chute extended through the main cylinder and communicating with the interior of the auxiliary cylinder.

2. In a device of the class described, a main cylinder; a perforated auxiliary cylinder within the main cylinder, the auxiliary

cylinder having one end open and one end closed; a gasket extended between the walls of the cylinders adjacent the open end of the auxiliary cylinder, there being openings in the main cylinder, adjacent the ends of the auxiliary cylinder; a discharge chute extended through the wall of the main cylinder and entering the auxiliary cylinder adjacent the closed end of the auxiliary cylinder; a spiral conveyer journaled for rotation in the auxiliary cylinder; and a shaft journaled for rotation in the discharge chute, the shaft being provided with a plurality of resilient vanes.

3. In a device of the class described, a main cylinder closed at both ends; a perforated auxiliary cylinder within the main cylinder, the auxiliary cylinder having one end open and one end closed; a gasket extended between the walls of the cylinders adjacent the open end of the auxiliary cylinder, the ends of the auxiliary cylinder being spaced apart from the ends of the main cylinder to define air chambers, and the main cylinder being provided with openings communicating with the air chambers; a shaft journaled for rotation in both ends of the main cylinder and in the closed end of the auxiliary cylinder; and a spiral conveyer carried by the shaft and located within the auxiliary cylinder.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

ERLE L. ABRAMES.
JOE H. CORYELL.

Witnesses:

FERN MILES,
IRA F. MOREE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."