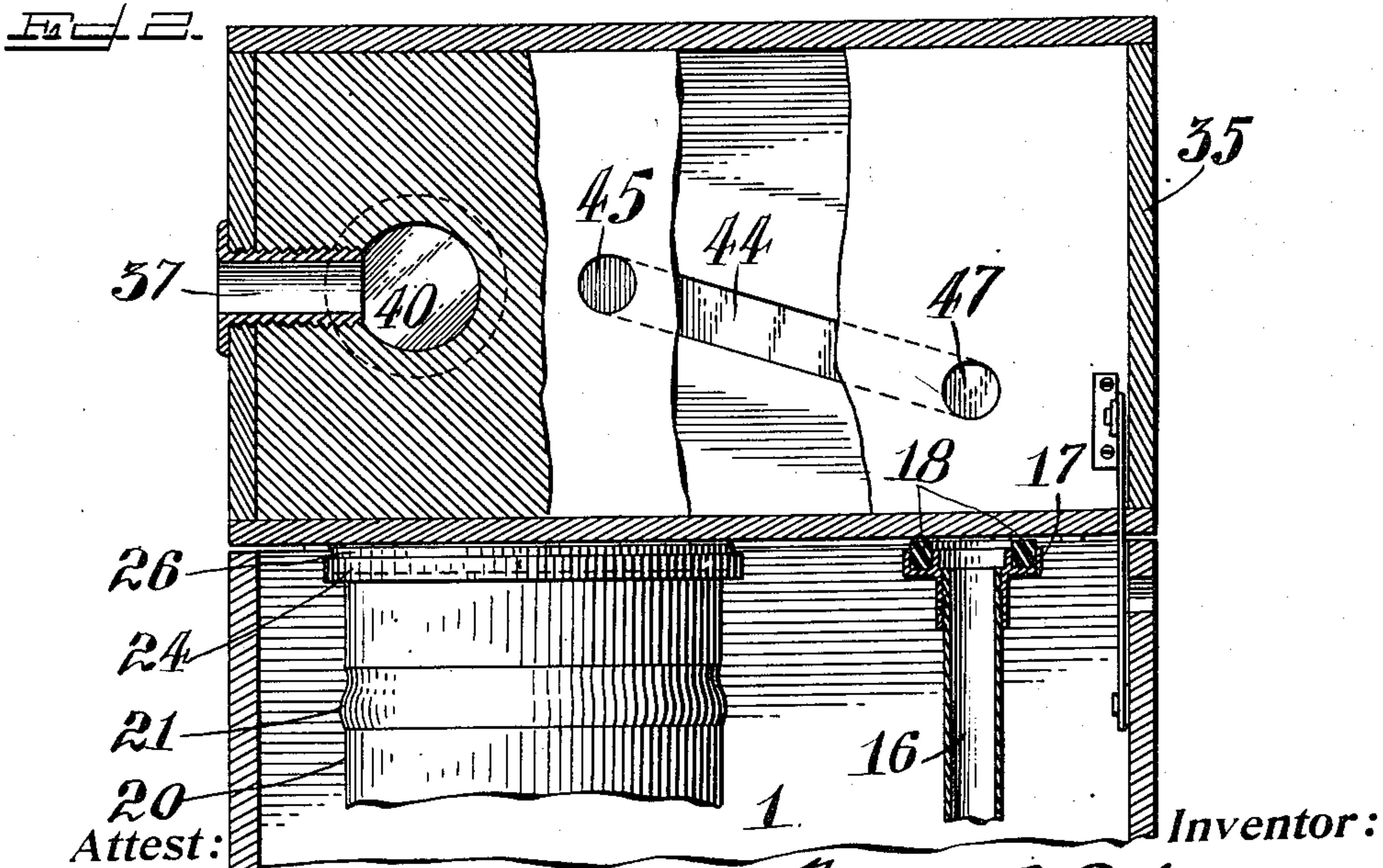
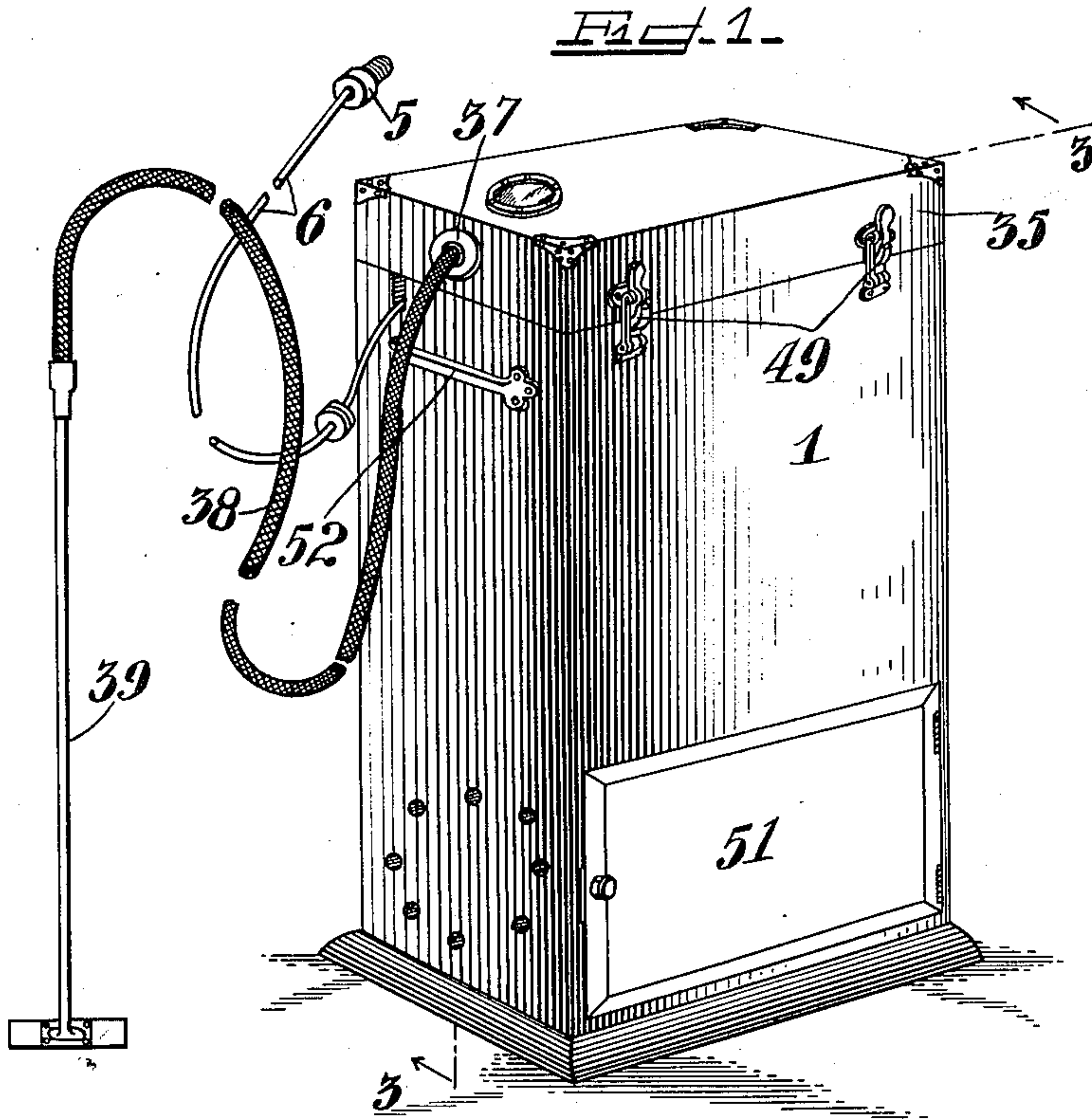


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VACUUM CLEANING APPARATUS.
APPLICATION FILED JULY 8, 1909.

975,396.

Patented Nov. 15, 1910.

3 SHEETS—SHEET 1.



Attest:
B. Jemelicht
Wm. H. Shaw

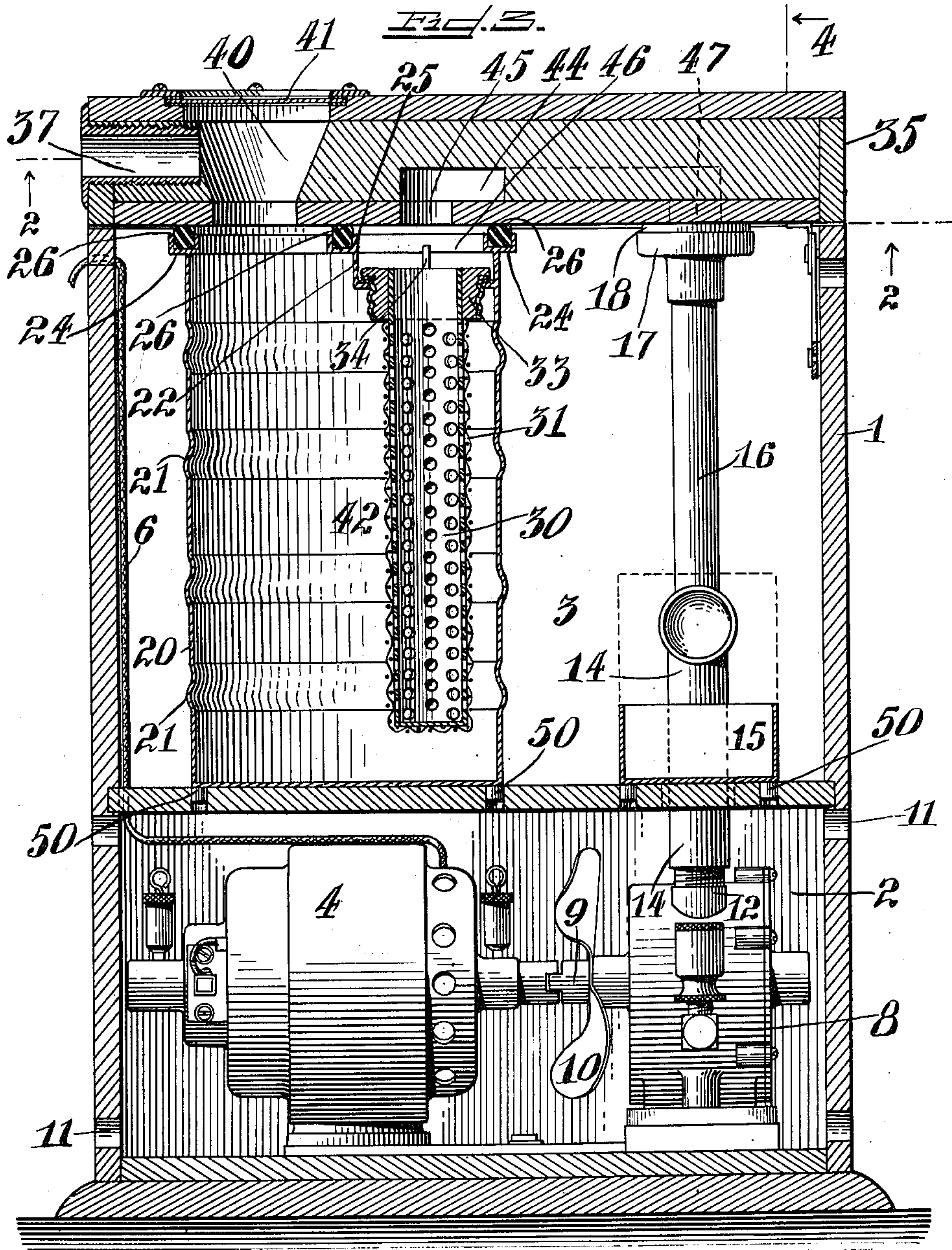
Inventor:
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3 SHEETS—SHEET 2.



Attest:

B. Stearns
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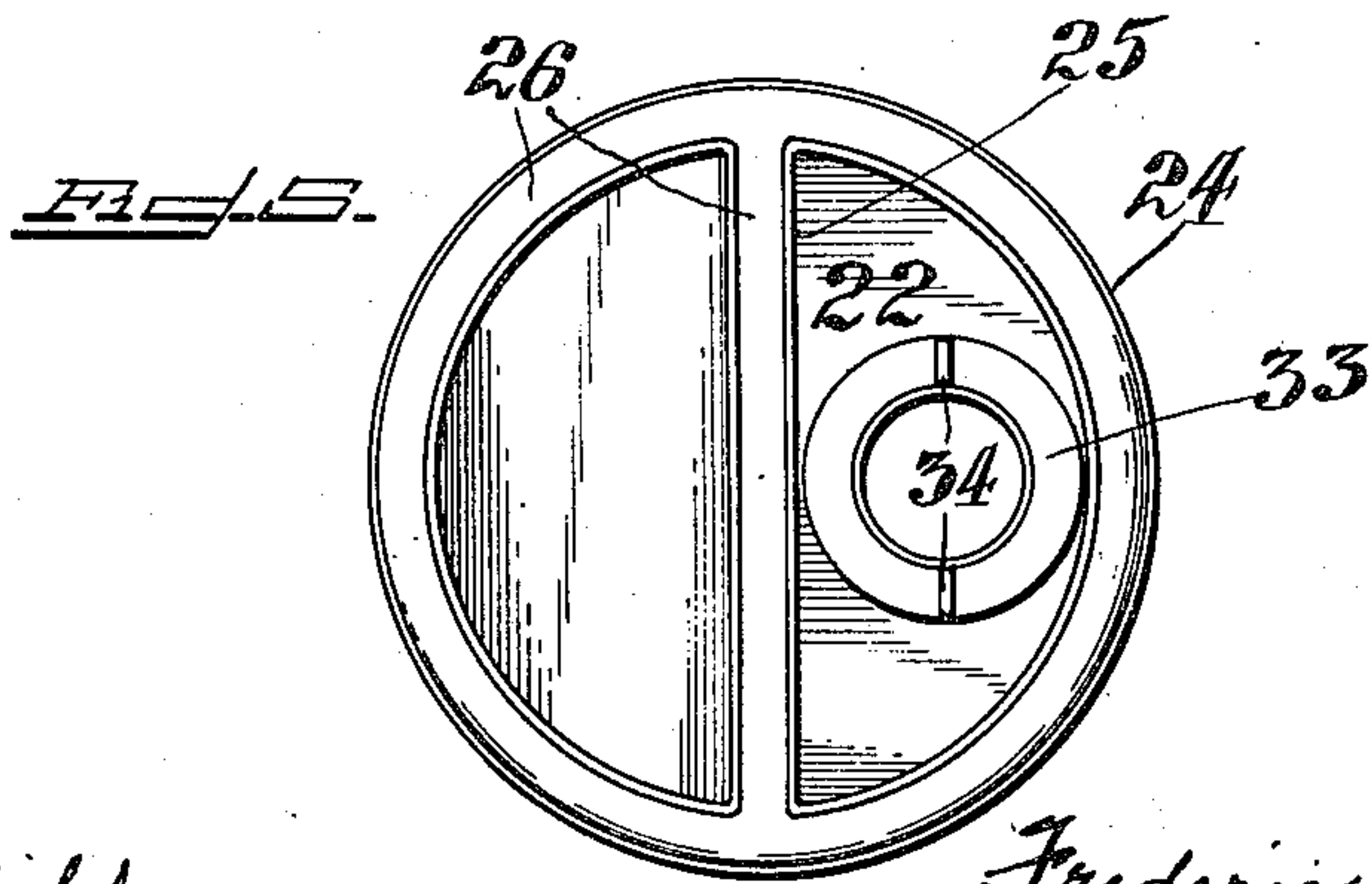
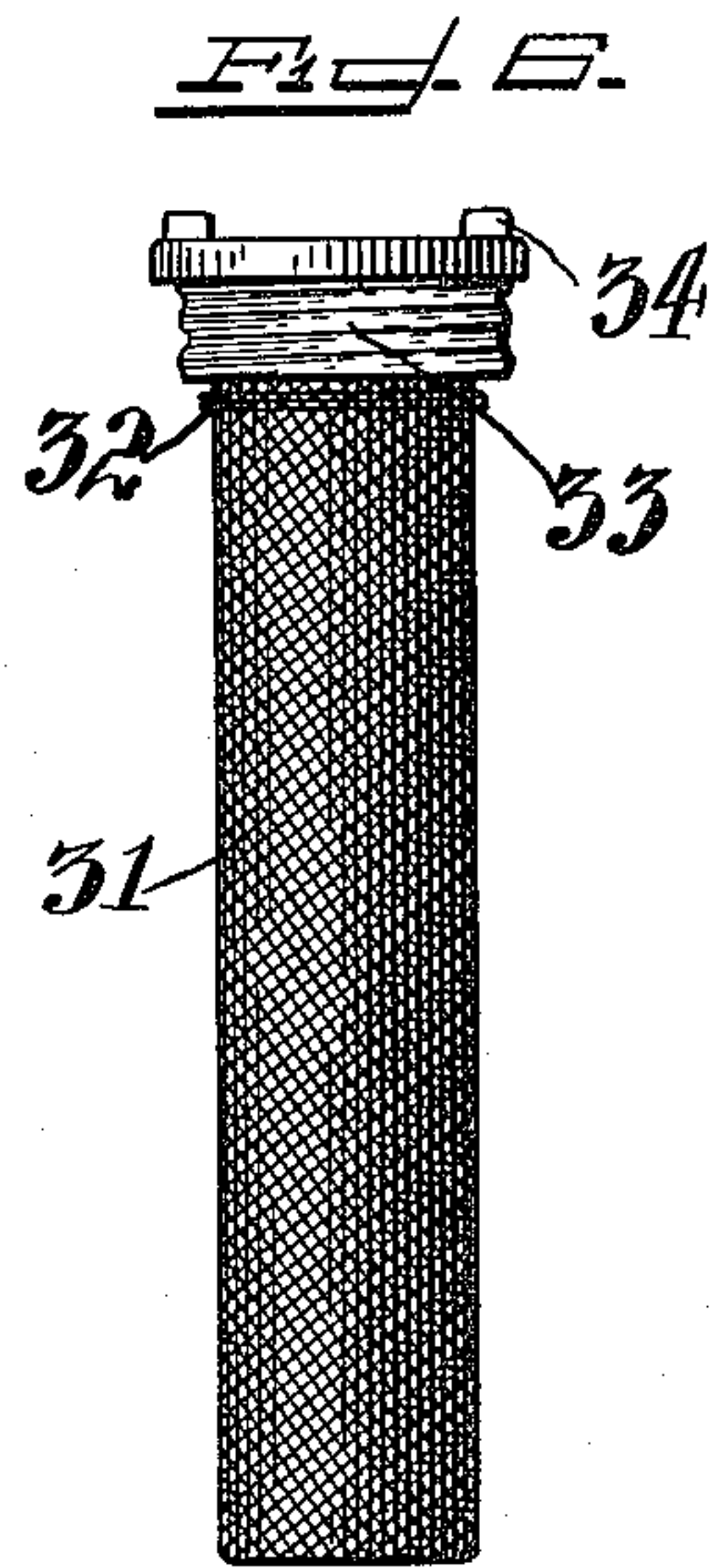
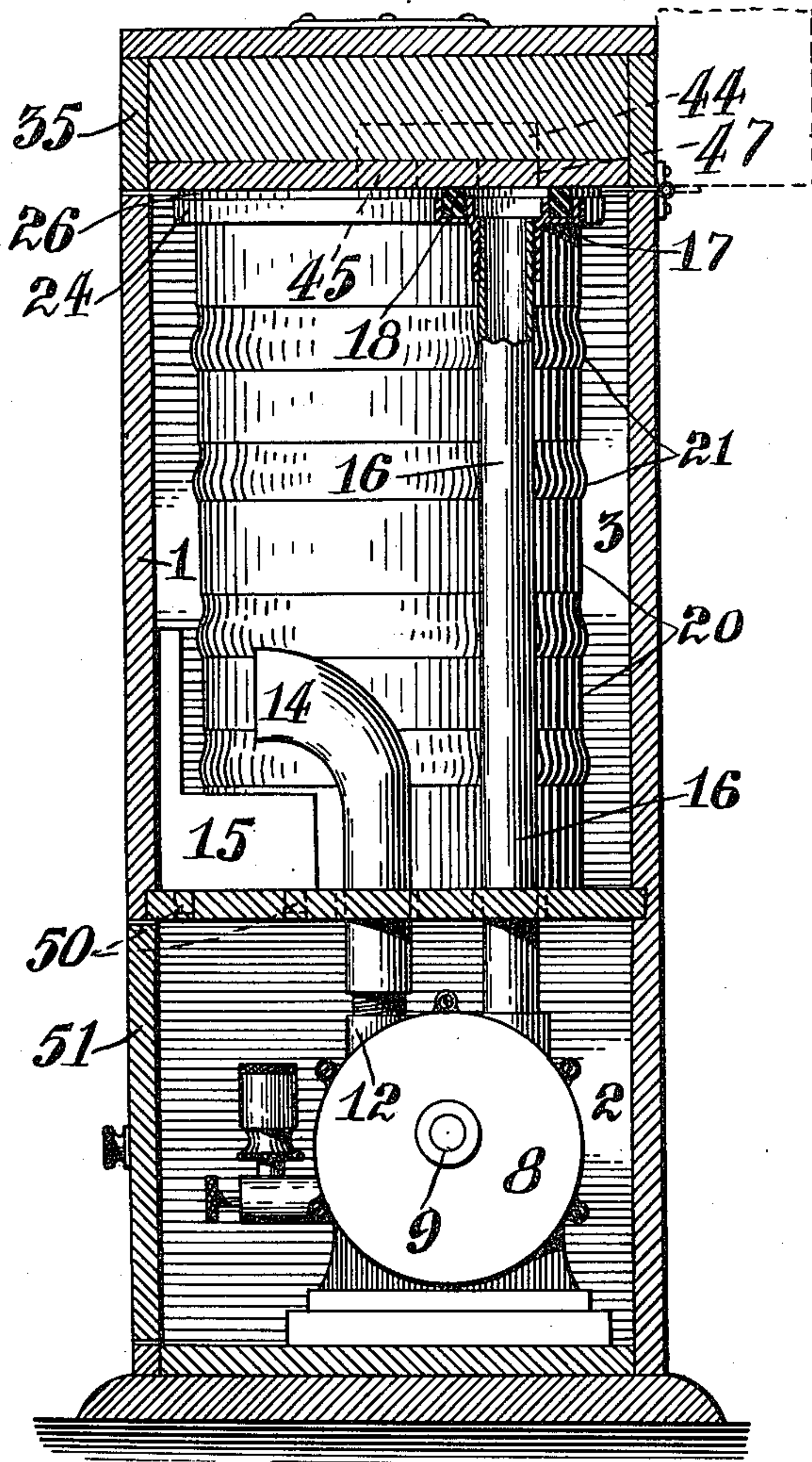
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3 SHEETS-SHEET 3.



Attest:
B. Feuerlicht
Hm. H. Shaw

by

Inventor:
Frederic B. Cochran
[Signature]
Atty

UNITED STATES PATENT OFFICE.

FREDERIC B. COCHRAN, OF NEW YORK, N. Y.

VACUUM CLEANING APPARATUS.

975,396.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed July 8, 1909. Serial No. 506,524.

To all whom it may concern:

Be it known that I, FREDERIC B. COCHRAN, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Vacuum Cleaning Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to apparatus for pneumatic or so-called vacuum cleaning, and the object thereof is the provision of a simply constructed, efficient, portable apparatus of that character, suitable for domestic use.

The invention, of which a preferred form is illustrated in the accompanying drawings, comprises the novel features of construction and arrangement and combination of parts hereinafter described and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a complete apparatus; Fig. 2 is a sectional view of the upper part of the apparatus, with the cover raised and shown partially in section on the line 2—2, (Fig. 3); Fig. 3 is a vertical section on the line 3—3, (Fig. 1); Fig. 4 is a vertical section on the line 4—4, (Fig. 3); Fig. 5 is a plan view of the top of the collecting receptacle, and Fig. 6 is an external view of the dust separator.

Similar reference characters are employed to designate like parts in all the views.

In the particular form of apparatus illustrated, the operating parts are inclosed in a case or cabinet 1, which comprises two compartments 2 and 3. In the compartment 2, is mounted a motor 4, which, as shown, is an electric motor adapted for connection with a suitable source of energy by the plug 5, and connections 6. A rotary pump 8, is also mounted in the compartment 2 and its shaft 9, is coupled to the shaft of the motor. A fan 10, is mounted on the pump shaft, and the sides of the case 1 are provided with apertures 11, so that the fan 10, will maintain a forced circulation of air through the compartment to prevent the motor from becoming overheated. To the discharge port 12, of the pump 8 is con-

nected a tube 14, which extends upwardly through the partition separating the compartments 2 and 3, and its end projects over a pan 15, in the compartment 3, into which any oil or dirt which may pass through the pump will be discharged. The suction port of the pump is connected with a stand pipe 16, which extends upwardly to the top of the case 1, and at its upper end is provided with a flange 17, which is provided with a circumferential channel, in which is held a gasket 18, of resilient material, such as soft rubber.

A dust receptacle and separator are removably mounted in the compartment 3 and comprise a cylindrical vessel 20, preferably of metal, stiffened by corrugations 21, and divided into two compartments by a partition 22, which extends partially across the vessel near its upper end and is then extended upwardly to the top of the vessel. The top of the vessel 20, and of the diametrically extending partition 22, are provided with channeled flanges 24 and 25, in which is held a gasket 26, of soft rubber or other suitable material. These flanges are preferably formed of sheet metal, bent into the proper shape to hold the gaskets firmly.

The dust separator consists of a perforated tube 30, covered loosely with a tubular bag 31, preferably of loosely woven textile material, which will obstruct dust and dirt but will permit the passage of air without materially reducing the capacity of the pump. The bag 31, may be held on the tube 30 by a clamping band 32. The upper end of the tube 30 is provided with a threaded flange 33, which screws into a threaded bushing in the partition 22. The flange 33 is formed with finger pieces 34, which permit the convenient screwing and unscrewing of the parts. By this construction, a tight joint is secured and yet the tube and its envelop may be readily removed bodily from the apparatus for cleaning, when necessary.

The case 1, is provided with a cover 35, which serves the purpose of closing the case and sealing and connecting pneumatically the various elements of the apparatus already described. In one edge of the cover is secured a thimble 37, which receives the end of the suction hose 38, to which the cleaning

tool 39, is attached. The thimble 37, communicates with a conical chamber 40, formed in the cover 35, and the top of which is hermetically closed by a glass plate 41, which enables the operator to observe the operative efficiency of the apparatus at all times. The open, lower end of the chamber 40, when the parts are in position, communicates with compartment 42 of the vessel 20.

A channel or duct 44, is formed in the cover 35 and at one end, through the opening 45, communicates with the compartment 46 of the vessel 20, while at the other end, through the opening 47, it communicates with the standpipe 16. The cover 35 is preferably hinged at one side of the case and releasable lever-catches 49, are provided at the opposite side so that when the cover is closed, its under side will be held down firmly on the gaskets 18 and 26, which will form hermetically sealed joints at these points.

The dust receptacle or vessel 20, may be provided with lugs 50, which enter recesses in its supporting partition, enabling it to be accurately placed to register with the openings in the cover 35. Similar lugs may also be provided for the drip pan 15.

Access to the compartment 2, containing the motor and pump, is had by means of a door 51. Handles 52, are attached to the sides of the case 1, by means of which it can be lifted and carried from place to place.

In order to operate the apparatus, the cover is fastened in position by the catches 49, the cleaning tool 39, is connected by means of a flexible tube 38, (which is provided with a suitable coupling for that purpose), with thimble 37. The motor 4, is then started to operate the pump 8, which will create a partial vacuum in the pipe 16, duct 44, receptacle 20, suction hose 38 and cleaning tool 39. If now the cleaning tool be applied to the surface or object to be cleaned, the dust and dirt therefrom will be drawn through the tool and suction hose into the receptacle 20, where it will be deposited, the air passing on through the separator 31, tube 30, duct 44, pipe 16, pump 8 and out through the discharge pipe 14. When the cleaning operation is completed, the motor is stopped, the cover 35 is unfastened and lifted, the receptacle 20 is removed from the compartment 3, and emptied. In case it should be desired to clean the surface of the separating envelop 31, the tube 30 on which it is supported, is unscrewed and removed bodily from the receptacle 20 and all dust adhering to the surface of the separating envelop can be instantly removed, after which the tube is replaced and the apparatus is ready for another operation.

As will be observed, the apparatus is compact, relatively light and may be readily re-

moved from place to place, thus adapting it for domestic use.

I claim:

1. In a vacuum cleaning apparatus, the combination with a dust receptacle and separator, comprising a vessel provided with a partition extending partially across the upper portion thereof, dividing the vessel into two compartments, of a dust filter and a support therefor suspended from said partition and a cover provided with air inlet and outlet passages which are brought into operative relation to establish communication between said compartments through the filter when said cover is closed.

2. In a vacuum cleaning apparatus, a vessel provided with a peripheral flange at its top and having a compartment formed therein by a partition extending from the side of the vessel partially across its upper end, a transverse flange connected with said partition, a dust filter removably supported by said partition, a movable cover for said vessel provided with inlet and outlet passages communicating with said vessel on opposite sides of said partition when the cover is closed, and a gasket between said cover and said flanges.

3. In a vacuum cleaning apparatus, the combination of an inclosing case, a dust receptacle and separator therein comprising a vessel having two compartments, a dust filter comprising a support and a foraminous covering suspended in one of said compartments and opening into the other compartment, and a cover for said case provided with air inlet and outlet passages which are brought into operative relation to establish communication between said compartments through the filter when the cover is closed.

4. In a vacuum cleaning apparatus, the combination of an inclosing case, a suction producing device and operating means therefor located in the case, a suction pipe fixed in the case, one end of which is connected with the suction producing device and the other end of which opens at the top of the case, a dust separator within the case, comprising a vessel having two compartments, a dust filter suspended in one of said compartments and opening into the other of said compartments, and a cover for said case provided with air inlet and outlet passages, said inlet passage being brought into operative relation with one of said compartments, and said outlet passage being brought into operative connection at one end with the other of said compartments and at the other end with the suction pipe, by the closing of the cover.

FREDERIC B. COCHRAN.

Witnesses:

F. S. BON,
W. R. PERRY.