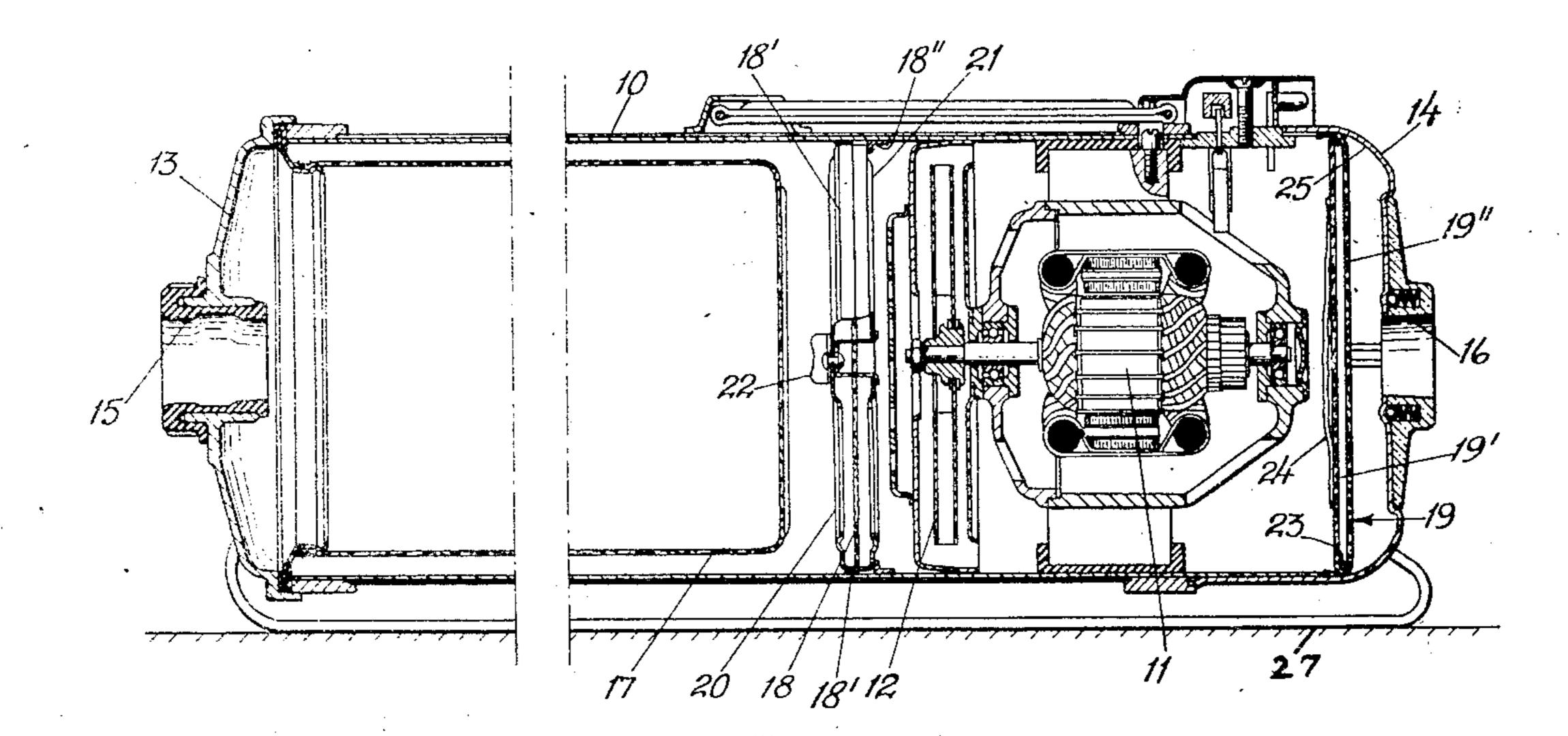
VACUUM CLEANER

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art and has particular reference to vacuum ond filter which consists of one or more filter cleaners of the portable type.

One object of the invention consists in the 5 provision of three or more filters in the air stream produced by the vacuum cleaner.

Another object of the invention is to provide a vacuum cleaner with three or more filters, each being individually separable 10 from the cleaner casing.

A further object of the invention is to

15 the motor chamber in a dust tight manner.

Further objects and advantages of my in-friction between parts 18 and 10. vention will be apparent from the following The third filter 19 consists of two layers specification considered in connection with 19' and 19" of fibrous material, such as felt, the accompanying drawing which forms a flannel or the like, which layers are stretched

cylindrical barrel portion of a vacuum clean- serve as a packing when the filter is arlet 15 and the air outlet 16. The casing is 19'. 35 horizontally mounted in known manner as From the drawing it will be evident that 85 by runners 27.

casing includes at least three filters. In the 18 and 19. embodiment shown, two filters 17 and 18 are One of the filters, preferably the last one, 40 located within the member 10 whereas a third may be manufactured of germ catching ma- 90 or dust bag.

All filters mentioned are arranged to be I do not claim as my invention what is 95 easy manner. The first filter counted in the 1,847,233, granted March 1, 1932 to T. E. D. direction of the air stream produced by fan Bilde. 12 (from left to right, as shown) i. e. the What I claim is: 30 dust bag 17, may in known manner be re- 1. A vacuum cleaner comprising a casing 100

My invention relates to the vacuum cleaner moved after removal of cover 13. The seclayers 18 of flannel or the like is interposed between two perforated plates 20 and 21 which are held together by means of a lock- 55 ing member 22. As soon as cover 13 and dust bag 17 have been removed, filter 18 may be removed from the casing and exchanged. The filter layer 18 has a larger diameter than plates 20 and 21 whereby the outstanding of edge of the filter layer 18 forms a packing provide an electrically operated vacuum between plate 20 and member 10 as shown at cleaner with two or more filters besides the 18'. Plate 21 abuts against a flange 18" secommon dust separator, which filters enclose cured to member 10 and the whole filter unit 18, 20, 21 is kept in position by means of 65

20 part thereof and in which a longitudinal over a ring-shaped member 23 which may 70 cross-section of a vacuum cleaner embodying be resilient. The filter layers 19', 19" are a preferred form of my invention is shown. sewn together over said member 23 whereby In the drawing, numeral 10 denotes the the outstanding edge formed thereby will 25 er casing in which, as usual, an electric mo- ranged in cover 14. As shown in the drawtor 11 and a fan 12 are mounted. Member ing, cover 14 has at its rear end a curved 10 is, at both its ends, provided with covers shape as at 25 and the filter is forced by the 13 and 14 in which suction and blowing open- air stream flowing through the cleaner ings 15 and 16 respectively are provided. against this curved surface, which aids in 20 The casing formed by barrel portion 10 and holding the filter in place. In order to re- 80 the end covers 13 and 14 provides a straight move the last filter 19, cover or cap 14 is recylindrical chamber of substantially uni- moved and the filter taken out of the cap by form diameter extending between the air in-pulling a handle 24 fixed to the filter layer

the chamber in which the motor 11 is on-According to the invention, the cleaner closed is made dust tight by means of filters

filter 19 is arranged in cover 14 between mo- terial, or such material may be provided betor 11 and blowing opening 16. Filter 17 tween the filter layers 19' and 19". The last forms the ordinary dust separating member filter may be arranged within or outside the outlet opening of the cleaner.

individually separable from the cleaner in an disclosed and claimed in Patent No.

including a cylindrical barrel portion of therein so that all air passing through said substantially uniform diameter, end covers chamber is forced to pass through said dust on said barrel portion having air inlet and bag, a filter on the outlet side of said sucair outlet openings therein, said casing pro- tion means extending tranversely across the 5 viding a straight cylindrical chamber of substantially uniform diameter extending sub- frame and a plurality of spaced layers of stantially between the air inlet and the air cloth stretched on said frame and in fricoutlet, air suction means in said chamber including a fan and a motor for driving said 10 fan, a dust bag in said chamber on the inlet side of said suction means and mounted end covers, and a second disc-shaped filter therein so that all air passing through said between said dust bag and said suction means chamber is forced to pass through said dust extending across the full width of said chambag, a filter on the outlet side of said suction ber and including a frame and a layer of 15 means extending transversely across the full cloth held on said frame and in frictional 80 width of said chamber and including a contact with the inside surface of said casframe and a plurality of spaced layers of ing. cloth stretched on said frame and in friction- 4. A vacuum cleaner comprising a casing al contact with the inside surface of the cas- including a horizontally supported cylindri-20 ing, and a second disc-shaped filter between cal barrel portion of substantially uniform 85 said dust bag and said suction means ex- diameter, end covers on said barrel portion tending across the full width of said cham- having air inlet and air outlet openings ber and including a frame and a layer of therein, said casing providing a straight cycloth held on said frame and in frictional lindrical chamber of substantially uniform 25 contact with the inside surface of said cas- diameter extending substantially between the 90 ing.

fan, a dust bag in said chamber on the inlet side of said suction means and mounted therein so that all air passing through said 40 chamber is forced to pass through said dust bag, a filter on the outlet side of said suction means extending transversely across the full width of said chamber and including a frame and a plurality of spaced layers of 45 cloth stretched on said frame and in frictional contact with the inside surface of one of said covers, and a second disc-shaped filter between said dust bag and said suction means extending across the full width of 50 said chamber and including a frame and a layer of cloth held on said frame and in frictional contact with the inside surface of said casing.

3. A vacuum cleaner comprising a casing 55 including a cylindrical barrel portion of substantially uniform diameter extending sub- the full width of said chamber and including 125

full width of said chamber and including a 70 tional contact with the inside surface of the casing, said filter being held in position between said barrel portion and one of said 75

air inlet and the air outlet, air suction means 2. A vacuum cleaner comprising a casing in said chamber including a fan and a motor including a cylindrical barrel portion of for driving said fan, a dust bag in said chamsubstantially uniform diameter, end covers ber on the inlet side of said suction means 30 on said barrel portion having air inlet and and mounted therein so that all air passing 95 air outlet openings therein, said casing pro- through said chamber is forced to pass viding a straight cylindrical chamber of sub- through said dust bag, a disc-shaped filter stantially uniform diameter extending sub- on the outlet side of said suction means exstantially between the air inlet and the air tending transversely across the full width outlet, air suction means in said chamber in- of said chamber and including a frame and 100 cluding a fan and a motor for driving said a plurality of layers of fabric mounted on said frame and held thereby in vertical position, and a second disc-shaped filter between said dust bag and said suction means extending across the full width of said chamber and 105 including a frame and a layer of fabric mounted on said frame and held thereby in vertical position.

5. A vacuum cleaner comprising a casing including a cylindrical barrel portion of sub- 110 stantially uniform diameter, end covers on said barrel portion having air inlet and air outlet openings therein, said casing providing a straight cylindrical chamber of substantially uniform diameter extending sub- 115 stantially between the air inlet and the air outlet, air suction means in said chamber including a fan and a motor for driving said fan, a dust bag in said chamber on the inlet side of said suction means and mounted there- 120 stantially uniform diameter, end covers on in so that all air passing through said chamsaid barrel portion having air inlet and air ber is forced to pass through said dust bag, a outlet openings therein, said casing provid- disc-shaped filter on the outlet side of said ing a straight cylindrical chamber of sub- suction means extending transversely across stantially between the air inlet and the air a frame and a layer of fabric mounted on said outlet, air suction means in said chamber frame and held thereby in vertical position, including a fan and a motor for driving and a second disc-shaped filter between said said fan, a dust bag in said chamber on the dust bag and said suction means extending 65 inlet side of said suction means and mounted across the full width of said chamber and in- 130

cluding a frame and a layer of fabric mounted on said frame and held thereby in vertical

position.

6. A vacuum cleaner comprising a casing including a cylindrical barrel portion of substantially uniform diameter, end covers on said barrel portion having air inlet and air outlet openings therein, said casing providing a straight cylindrical chamber of substantial-10 ly uniform diameter extending substantially between the air inlet and the air outlet, air suction means in said chamber including a fan and a motor for driving said fan, a dust bag in said chamber on the inlet side of said 15 suction means and mounted therein so that all air passing through said chamber is forced to pass through said dust bag, a disc-shaped filter on the outlet side of said suction means extending transversely across the full width 20 of said chamber and including a frame and a plurality of layers of fabric mounted on said frame and held thereby in vertical position and in frictional contact with the inside surface of the casing, and a second disc-25 shaped filter between said dust bag and said suction means extending across the full width of said chamber and including a frame and a layer of fabric mounted on said frame and held thereby in vertical position and in fric-30 tional contact with the inside surface of said casing.

7. A vacuum cleaner comprising a casing including a cylindrical barrel portion of substantially uniform diameter, end covers on 35 said barrel portion having air inlet and air outlet openings therein, said casing providing a straight cylindrical chamber of substantially uniform diameter extending substantially between the air inlet and the air 40 outlet, air suction means in said chamber including a fan and a motor for driving said fan, a dust bag in said chamber on the inlet side of said suction means and mounted therein so that all air passing through said cham-45 ber is forced to pass through said dust bag, a disc-shaped filter on the outlet side of said suction means extending transversely across the full width of said chamber and including a frame and a layer of fabric mounted on said 50 frame and held thereby in vertical position and in frictional contact with the inside surface of the casing, and a second disc-shaped filter between said dust bag and said suction means extending across the full width of said 55 chamber and including a frame and a layer of fabric mounted on said frame and held thereby in vertical position and in frictional contact with the inside surface of said casing.

In testimony whereof I affix my signature.

SVEN ERIC LAMBERT.