Sept. 30, 1952 A. P. BUQUOR 2,611,913

CARPET SWEEPER WITH DISPOSABLE DUST RECEPTACLE

Filed July 2, 1948 2 SHEETS—SHEET 1

FIG. 1.

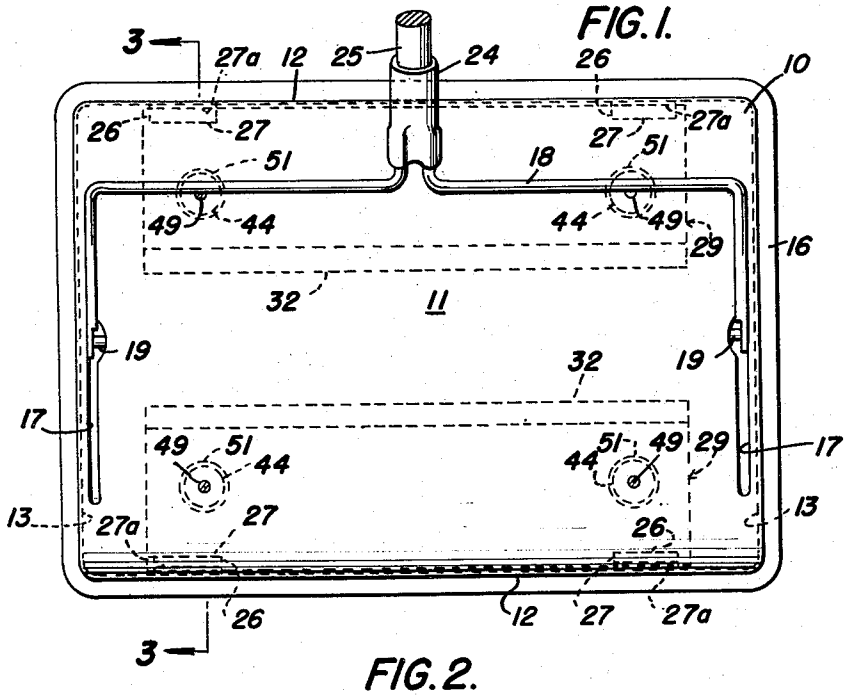
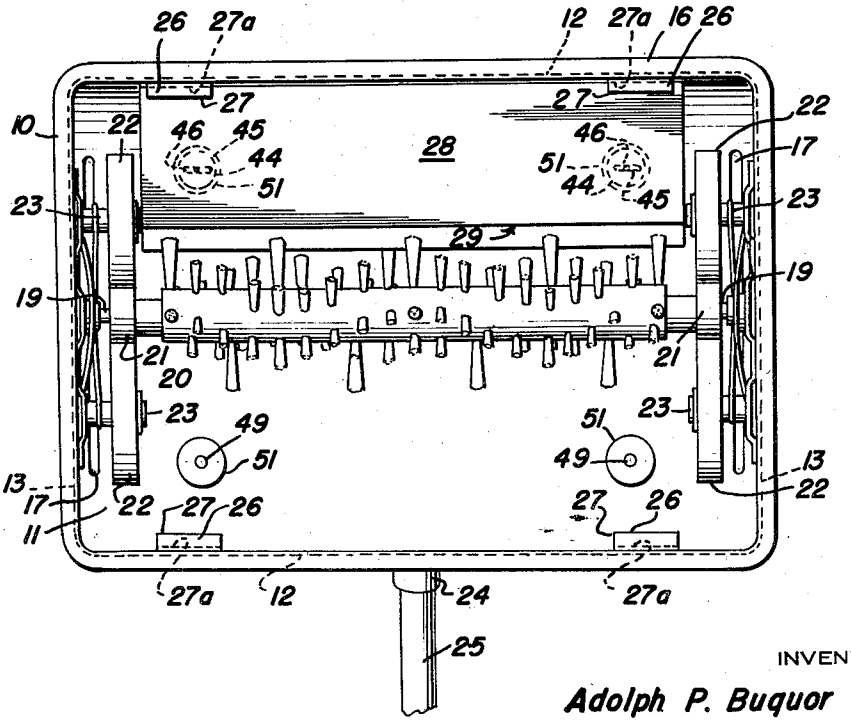


FIG. 2.



INVENTOR.

Adolph P. Buquor

BY Bacon + Thomas

ATTORNEYS.

Sept. 30, 1952 A. P. BUQUOR 2,611,913

CARPET SWEEPER WITH DISPOSABLE DUST RECEPTACLE

Filed July 2, 1948 2 SHEETS—SHEET 2

FIG. 3.

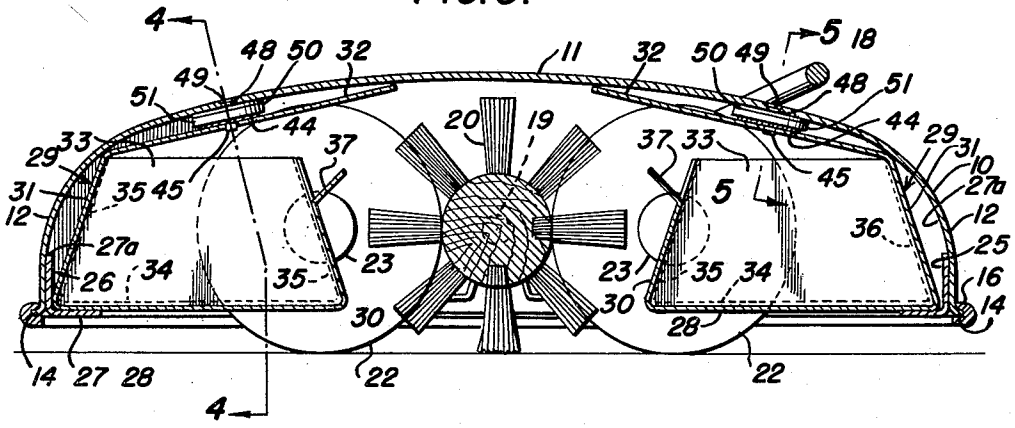


FIG. 4.

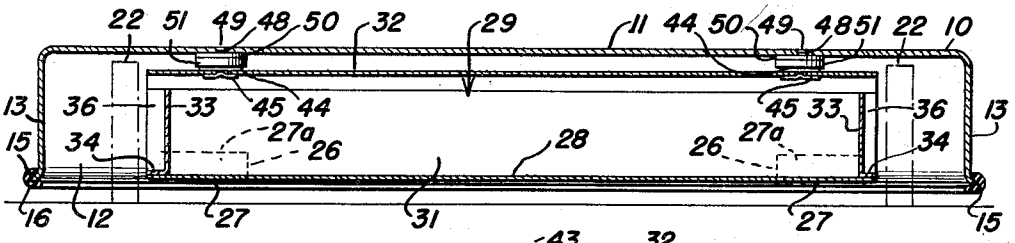


FIG. 6.

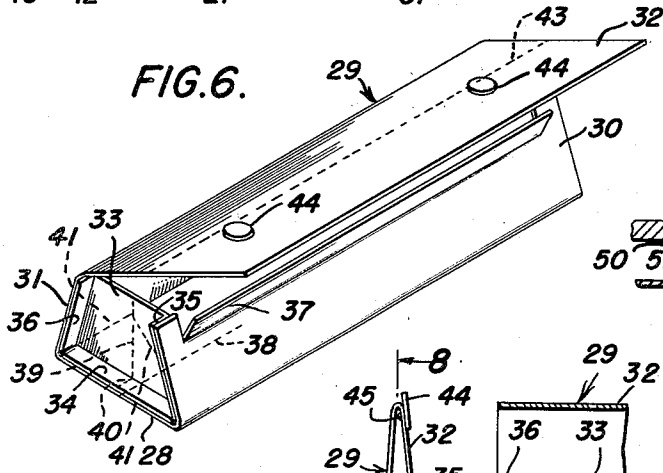


FIG. 5.

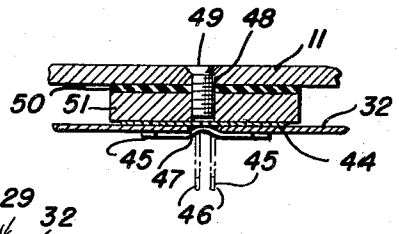


FIG. 7.

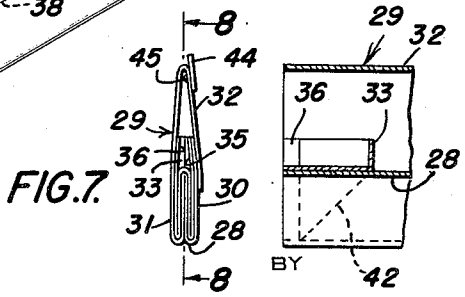


FIG. 8.

INVENTOR.

Adolph P. Buquor

Bacon & Thomas

ATTORNEYS.

Patented Sept. 30, 1952 2,611,913

UNITED STATES PATENT OFFICE

2,611,913

CARPET SWEEPER WITH DISPOSABLE DUST RECEPTACLE

Adolph P. Buquor, Washington, D. C.

Application July 2, 1948, Serial No. 36,576

6 Claims. (Cl. 15—41)

1

The present invention relates to a novel carpet sweeper including a disposable dust receptacle, and to cooperating means embodied in the carpet sweeper and dust receptacle for removably retaining said dust receptacle in position within the carpet sweeper and for maintaining said dust receptacle in open condition to receive material swept up by the rotating brush of the carpet sweeper.

More specifically, the invention relates to a carpet sweeper including a housing of simplified construction, said housing having a plurality of permanent magnets mounted therein; and to a disposable dust receptacle insertable through the open bottom of the housing, one on either side of the brush, each receptacle having a cover flap provided with at least one ferrous metal disc adapted to engage with a permanent magnet on the housing to retain the cover flap in open condition when in use.

The invention further relates to a disposable dust receptacle which is constructed so that it can be folded into a substantially flat condition for convenience in packaging and shipping.

The principal object of the invention is to provide a simplified carpet sweeper construction in which the sweeper housing is not required to have a hinged or removable top to afford access to the dust-collecting means within the housing.

Another object of the invention is to provide a carpet sweeper having a dust-collecting receptacle that can be readily removed and discarded when substantially full, and readily replaced by a fresh, unused receptacle.

Another object of the invention is to provide a dust receptacle for use in carpet sweepers that can be made of cheap paper or any other suitable material and discarded after use.

Still another object of the invention is to provide a dust receptacle adapted for use in carpet sweepers or the like constructed so that it can be folded into a flat condition and thus occupy a minimum of space in packaging, shipping, etc., but which, nevertheless, can be readily distended for use.

A still further object of the invention is to provide a carpet sweeper including permanent magnets arranged so that they serve the dual purpose of (1) aiding in retaining a disposable dust receptacle in position within the housing and (2) maintaining the top flap of the dust-collecting receptacle in open position.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings, in which:

2

Fig. 1 is a plan view of a carpet sweeper including dust-collecting receptacles embodying the principles of the present invention;

Fig. 2 is an inverted plan view of the carpet sweeper, with one of the dust receptacles removed;

Fig. 3 is a vertical, transverse sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a longitudinal sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is an enlarged sectional view taken on the line 5—5 of Fig. 3, and particularly illustrating the manner in which the permanent magnets are secured to the housing;

Fig. 6 is a perspective view of one of the dust receptacles;

Fig. 7 is an end view of the dust receptacles showing the same when in its collapsed or folded condition; and

Fig. 8 is a sectional view through the dust receptacle, taken on the line 8—8 of Fig. 7.

Referring now to the drawings, the housing of the carpet sweeper is generally identified by the numeral 10 and is preferably made in the form of a one-piece sheet metal stamping, including an integral arcuate top wall portion 11 and longitudinally extending side walls 12 which merge into said top wall portion. The housing 10 also includes end walls 13, which extend downwardly from the top wall portion 11 and also connect with the longitudinal side walls 12. The side walls 12 and the end walls 13 extend outwardly at their lower edges to form flanges 14 and 15, respectively, which serve as a support for a continuous protective rubber ring 16 adapted to prevent the marring of furniture when the carpet sweeper is in use. Thus, the housing 10 is open for its full area at the bottom end thereof, and its top is devoid of a hinged door or removable panel as in conventional carpet sweeper constructions.

The top wall portion 11 (Figs. 1 and 2) is provided with a transversely extending slot 17 adjacent each of the end walls 13. The ends of a bail 18 extend through the slots 17 and are pivotally connected with a shaft 19, which rotatably supports a conventional sweeper brush 20. The sweeper brush 20 includes cylindrical end portions 21 (Fig. 2), which are engaged by brush-driving wheels 22 rotatably supported on studs 23 mounted upon the end walls 13 in any suitable or conventional manner. The bail 18 has a socket 24 mounted thereon, as best shown in Fig. 1, and a handle 25 is threaded into said socket, and provides means whereby the sweeper can be moved back and forth across a floor while supported

upon the wheels 22 to effect rotation of the brush 20, in a manner well understood in the art.

A pair of longitudinally spaced brackets or supports 26 is adapted to be mounted interiorly of the housing 10 upon each of the side walls 12. Thus, each of the brackets 26 includes an upwardly extending flange 27a which is welded or otherwise secured to the side walls 12, and an inwardly extending flange 27 disposed in substantially the same plane as the flanges 14. The flanges 27 of each pair of brackets 26 are adapted to support and to be engaged by the bottom wall 28 of a disposable dust receptacle 29.

The dust receptacle 29 may be made of any suitable material, but is preferably made of inexpensive paper, thereby making it economically feasible to discard the receptacles when they have become substantially filled with dust, or other material, swept thereinto by the brush 20. The dust receptacle 29 may be made from liquid-absorbent paper, thereby making it possible to impregnate the same with a moth repellant and/or a suitable oil facilitating the adherence of dust particles to the walls of the receptacle. However, it will be understood that the dust receptacle need not be impregnated with any material at all.

The dust receptacle 29 may be made in a number of ways, but it is preferred to construct the same in a manner that will enable the same to be folded into a substantially flat condition for convenience in packaging and yet be readily distendable prior to insertion into the carpet sweeper. In one operative example, the dust receptacle 29 is formed from a suitably folded blank to provide the bottom wall 28, the side walls 30 and 31 which converge upwardly from said bottom wall, and a top flap 32 consisting of a continuation of the side wall 31. The dust receptacle 29 also includes identical end walls 33 formed from suitable blanks to provide a bottom flange 34, which is adhesively or otherwise secured to the bottom wall 28, and side flanges 35 and 36, respectively adapted to be adhesively or otherwise secured to the walls 30 and 31 of the receptacle 29. The wall 30 is provided with slits (Fig. 6) disposed inwardly of the end walls 33 in order to provide a lip portion 37 adapted to be adjustably bent out of the plane of the wall 30 and toward the sweeper brush 20.

The bottom wall 28 is provided for its full length with a fold line 38 (Fig. 6) intermediate its edges, and each end wall 33 is provided with fold lines 39 disposed perpendicular to the fold line 38. Each of the flanges 34 is also provided with a fold line 40 parallel with and disposed directly above the fold line 38. Diagonal fold lines 41 are also formed in the end walls 33, thereby enabling said end walls to be folded and collapsed and folded in a manner similar to a "satchel" fold. Thus, it will be apparent from Figs. 6 and 7 that upon upward folding of the bottom wall 28 and the flange 34, along the fold lines 38 and 40, respectively, and upon simultaneous inward folding of the end walls 33 along the vertical fold lines 39, a portion of the end walls 33 folds down against the bottom wall 28, and other portions of the end walls 33 fold along the diagonal fold lines 41 and form tucks 42, which are disposed upon either side of the fold line 38 of the bottom wall 28, as will be apparent from Figs. 7 and 8. The top flap 32 is also provided with a fold line 43, thereby enabling a portion of said top flap to be folded down against the front wall 30.

A pair of thin, ferrous sheet metal discs 44 is mounted upon the top flap 32 of each of the dust receptacles 29. A U-shaped clip 45 (Fig. 5) is soldered at the base of the U to the center of each of the metal discs 44, and the legs 46 of said clip are extended through an opening 47 in the top flap located adjacent the fold line 43 and inwardly of the ends of the top flap 32. The legs 46 are spread apart and bent back against the inner side of the top flap 32 to assemble the discs 44 with said top flap.

The top wall portion 11 of the housing 10 is provided with four holes 48 for the reception of brass screws 49, which are non-magnetic. Each of the brass screws 49 extends through a disc 50 of insulating material and is threaded into a hole in a circular permanent magnet 51. A pair of the permanent magnets 51 is arranged along each side of the housing 10 and the spacing of the permanent magnets of each pair corresponds with the longitudinal spacing of the metal discs 44 carried by the flaps 32 of the dust receptacles 29. It will be understood that in certain instances a single magnet 51 will be installed at each side of the housing to cooperate with only a single disc 44 on the top flap 32 of the dust receptacle 29. In the carpet sweeper disclosed herein, the transverse spacing of the permanent magnets 51 is such that the discs 44 are substantially concentric therewith when the dust receptacles 29 are mounted within the housing 10.

In mounting the respective open dust receptacles 29 within the housing 10, the flap portion 32 is first inserted through the open bottom of said housing so that it is disposed on the upper side of the brush 20, and then the portion of the receptacle having the side wall 31 is moved inwardly and in a direction toward the housing side wall 12 so that the bottom wall 28 of the receptacle clears the flange 27 of the brackets 26, and comes to rest thereupon. The permanent magnets 51 will, of course, automatically attract the discs 44 so that the top flap 32 assumes the position shown in Fig. 3, thereby maintaining said top flap in its open or raised position. At the same time, the magnets 51 aid the brackets 26 in maintaining the dust receptacle 29 in place by holding the side wall 31 thereof adjacent the housing wall 12. It will be noted that the extremity of the top flap 32 lies close to the inner surface of the top wall portion 11 of the housing 10 and that the lip portion 37 extends toward the brush 20, so that any dust or other material picked up by the brush 20 as it is being rapidly rotated will be directed into the dust receptacle 29.

The removal of either of the receptacles 29 can be readily effected by grasping the receptacle 29 and moving it toward the brush until the bottom wall 28 clears the flanges 27 of the brackets 26, and then bodily withdrawing the receptacle from within the housing 10. The permanent magnets 51 are of such strength that no difficulty is presented in detaching the discs 44 therefrom by the withdrawing movement of the dust receptacles 29 from the housing 11. The filled receptacles can be discarded and replaced by fresh, unused receptacles.

It will be understood that changes may be made in the arrangement and details of construction of both the carpet sweeper and the disposable dust receptacle disclosed herein, without departing from the spirit of the invention or the scope of the annexed claims.

I claim:

1. A carpet sweeper, comprising: a housing; a rotatable brush in said housing, said housing being open at the bottom thereof to receive a pair of disposable dust receptacles; a pair of non-ferrous disposable dust receptacles in said housing, one located on each side of said brush; and means supporting said dust receptacles in said housing including magnetic means removably retaining the respective receptacles in said housing, whereby said receptacles are individually removable.

2. A carpet sweeper, comprising: a housing; a rotatable brush in said housing; a dust receptacle in said housing at one side of said brush; means supporting said dust receptacle in said housing, said dust receptacle being open at its top to receive material swept up by said brush and having a flap portion overlying said open top; said supporting means including a ferrous metal plate mounted upon said flap and a magnet mounted in said housing arranged to be engaged by said plate to maintain said flap in open position so that material swept up by said brush will be deposited in said dust receptacle.

3. A carpet sweeper, comprising: a housing containing a rotatable brush, said housing being open at the bottom thereof; a dust receptacle having a cover flap, means supporting said dust receptacle in said housing, said dust receptacle being insertable through the open bottom of said housing into a position at one side of said brush with the free end of said cover flap disposed toward said brush; said supporting means including a ferrous metal plate mounted upon said cover flap and a magnet carried by said housing positioned to be engaged by said plate to maintain said flap in open position so that material swept up by said brush will be deposited in said dust receptacle.

4. A carpet sweeper, comprising: a housing; a rotatable brush in said housing, said housing being closed at its top but open at the bottom thereof to receive a dust receptacle; an open-top dust receptacle in said housing on one side of said brush, said receptacle including a flap overlying said open top; a ferrous metal plate carried by said flap; a magnet carried by said housing arranged to be engaged by said plate for retaining said flap in open position so that material swept up by said brush will be deposited in said dust receptacle; and means carried by said housing engaging the bottom of said receptacle and removably retaining said receptacle in said housing.

5. A carpet sweeper, comprising: a housing containing a rotatable brush, said housing being open at the bottom thereof; bracket means secured to said housing at the open bottom thereof; a dust receptacle having a cover flap, said dust receptacle being insertable through the open bottom of said housing into a position at one side of said brush with the free end of said cover flap disposed toward said brush and with the bottom of said receptacle resting upon said bracket means; at least one ferrous metal plate mounted upon said cover flap; and at least one magnet carried by said housing and adapted to be engaged by said plate to maintain said flap in its open position so that material swept up by said brush will be deposited in said dust receptacle.

6. A carpet sweeper, comprising: a housing; a rotatable brush in said housing, said housing having a top wall and side and end walls but being open at the bottom thereof to receive a dust receptacle; an open-top dust-collecting receptacle in said housing at one side of said brush and including a body portion having bottom, front, rear and end walls, said receptacle bottom wall being provided with a longitudinally extending fold line medially of the longitudinal edges thereof, each of said receptacle end walls being provided with a vertical fold line disposed in a plane common to the fold line of said bottom wall, each of said receptacle end walls also being provided with diagonally extending fold lines extending toward each other from the lower corners of said end walls and terminating at said vertical fold line; a cover flap constituting an extension of said receptacle rear wall, said cover flap having the free end thereof extending toward said brush; at least one ferrous metal plate mounted upon said cover flap; at least one permanent magnet mounted upon the inner side of the top wall of said housing and being engageable by said metal plate to hold said cover flap in open position; and means carried by said housing supporting said body portion of said dust receptacle.

ADOLPH P. BUQUOR.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
220,018	Gates	Sept. 30, 1879
655,896	Davis	Aug. 14, 1900
665,464	Phillips	Jan. 8, 1901
709,386	Young	Sept. 16, 1902
715,026	Crowford	Dec. 2, 1902
919,660	Weber	Apr. 27, 1909
1,076,955	Colegate	Oct. 28, 1913
1,198,227	Hinchey	Sept. 12, 1916
1,516,264	Bliss	Nov. 18, 1924
1,790,676	Potter	Feb. 3, 1931
1,985,111	Shofer	Dec. 18, 1934
2,101,133	Dilliard	Dec. 7, 1937
2,206,429	Redfearn	July 2, 1940
2,227,104	Parker	Dec. 31, 1940
2,240,035	Catherall	Apr. 29, 1941
2,240,684	Berger	May 6, 1941
2,288,688	Dubilier	July 7, 1942
2,327,532	Krupp	Aug. 24, 1943