Nov. 25, 1947. J. O. BARKL 2,431,452

DUST RECEIVER FOR MOPS

Filed Oct. 14, 1944

FIG. 1.

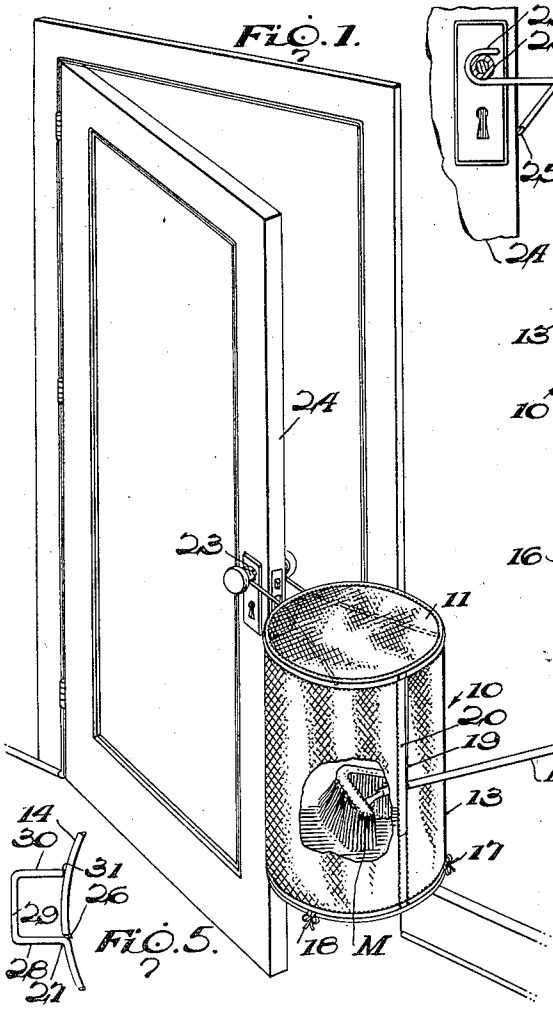


FIG. 3.

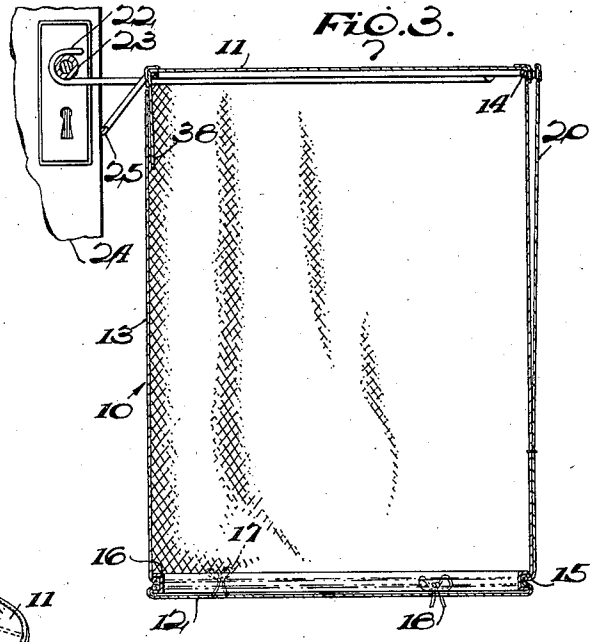


FIG. 5.

FIG. 2.

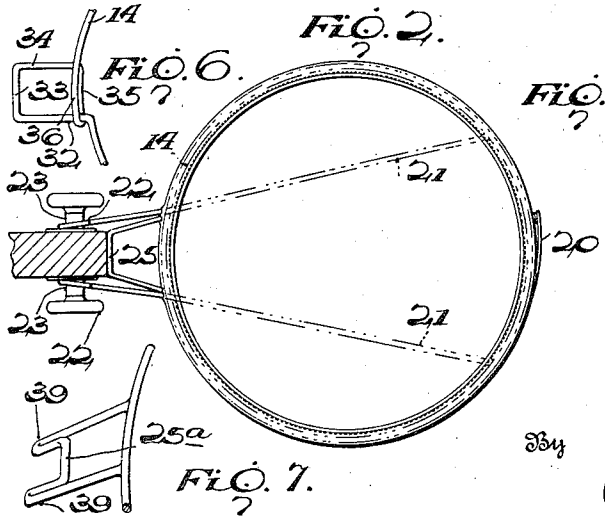
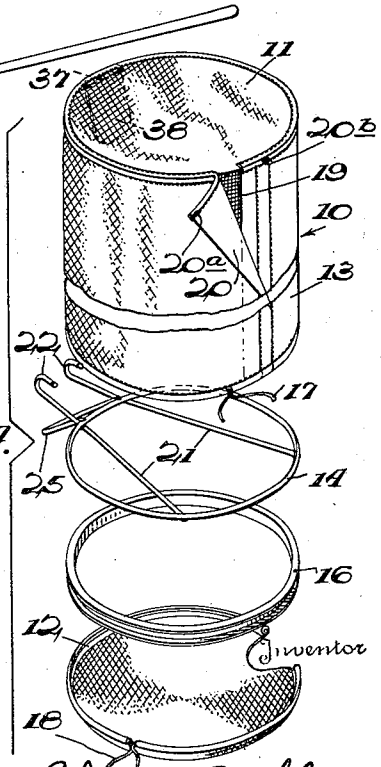


FIG. 6.

FIG. 7.

FIG. 4.



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DUST RECEIVER FOR MOPS

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4 Claims. (Cl. 15—257)

1

The present invention relates to dust receivers for dry mops and the like and aims to provide an inexpensive bag type of receptacle which can be collapsed for storage in a space of small volume when not in use and which can be readily expanded to provide a capacious chamber into which the head of a mop or the like may be inserted and shaken to dislodge adhering dust therefrom.

An incidental object of a preferred embodiment of the invention is to provide the structure with novel hanging means by which the receiver may be readily mounted in any room in expanded condition for receiving a mop head to be shaken.

Housewives and other persons engaged in the use of dust mops and the like to clean the floors of rooms experience considerable difficulty and annoyance in attempts to clean the mops during use. Efficient cleaning of almost any room requires that the cleaning operation be interrupted one or more times, even when a relatively small room is being cleaned, to free the mop of accumulated dust. It is frequently not convenient to carry the mop to a more or less distant dust receiver, and there are obvious objections to shaking the mop out of an open window.

The prior art affords a number of examples of receivers in which a dust mop may be shaken, but all such receivers with which I am acquainted are subject to certain inherent objections and none of them has become very popular or come into general use. Most of them are bulky, expensive, and hard to handle and operate.

Among the objects of the present invention is the provision of a receiver for the purpose indicated which will be extremely simple in structure and inexpensive to make, which will provide a large chamber in which a mop can be very effectively shaken so as quickly to free it of all loose dirt, which can be collapsed compactly when not in use and stored in a small space, which will be light and very easily moved from room to room about the house, which can be easily opened to discharge an accumulated deposit of dust, and which will be provided with simple and effective mounting means by which the receiver can be instantly hung in secure operative position in any room of a house.

Other objects and advantages will be apparent to those skilled in the art from a consideration of the accompanying drawing and the following specification which, taken together, disclose certain preferred embodiments of the invention.

In the drawing,

Figure 1 is a perspective view of a dust receiver

2

constructed according to the principles of the invention mounted in operative position with a dust mop inserted therein in position to be shaken in the cleaning operation;

Fig. 2 is a top plan view of the structure mounted in operative position;

Fig. 3 is a vertical central section of the structure mounted in operative position;

Fig. 4 is an exploded perspective view of the elements of the structure;

Figs. 5 and 6 are detail top plan views showing two of the numerous ways in which the top frame may be formed; and

Fig. 7 is a detail perspective view showing a modified form of bearing member.

But these figures and the following description of them are to be understood as intended merely to explain certain preferred forms of embodiment of the invention which have been tested and found entirely satisfactory in practical use and which at present I therefore prefer. This disclosure is not to be taken as limiting the invention to these specific forms. On the contrary, the broad principles of the invention are capable of embodiment in other forms and modifications, and all such, to the extent that they embody the principles defined by the appended claims, are to be deemed within the scope and purview thereof.

The invention consists essentially of a collapsible bag having an opening through which a mop head may be inserted for shaking and provided with means for supporting the structure in operative position with the bag uncollapsed or expanded so as to constitute a dust-receiving chamber.

To this end the device may include certain frame elements for supporting the flexible fabric of which the bag is made, and in preferred forms of embodiment one of these frame members is provided with means for hanging the structure from a conventional door which, of course, is to be found in substantially every room where a floor cleaning operation must be performed.

In the preferred embodiment of the invention best shown in Figs. 1, 3 and 4, I provide a substantially cylindrical bag, generally designated 10, formed of any suitable cloth or other fabric, which is best made substantially dust proof by being tightly woven, or by being coated or impregnated or otherwise. It is convenient to make the bag in three principal parts, comprising a top wall 11, a bottom wall 12 and a side wall 13. As shown, the top and bottom walls are circular and the side wall is cylindrically curved, but this

is largely a matter of design, and other specific shapes might be adopted.

The top wall 11 is rigidified by a frame member 14, conveniently formed as a hoop of heavy wire stock or other stiff, form-maintaining material, such as metal, wood, plastic or the like. The hoop will of course be circular if the bag is to be cylindrical. It can however be elliptical or polygonal if a bag of other shape is desired.

The top wall 11 of the bag is stretched over the top frame member 14 and is continued down down therefrom, either integrally or by a line of stitching, to form the side wall 13, which terminates in a free, preferably hemmed lower edge 15 which will have the same plane figure shape as the top frame 14. This lower edge is permanently or removably connected to a bottom frame member 16, which will conform to the general shape of the top frame member 14 and which can be conveniently made as an endless, outwardly facing channel, as shown in Figs. 3 and 4, which may be made of material like that used for the top frame member.

The bottom edge 15 of the side wall is connected to the bottom frame member 16, either permanently or removably, in any convenient way, for example, by the draw string 17. It may be stitched to the frame, or it may be held thereto by an elastic cord contained, like the draw string 17, in the hem at its bottom.

The bottom wall 12 of the receiver is best made removable from the rest of the bag to facilitate discharge of accumulated dust from it, and a convenient way to effect this arrangement is that shown in the drawing, which consists in providing a draw string 18 in a hem formed on the bottom wall so that the margin of this wall may be inserted in the channel of the bottom frame member 16 and the string tied to secure the connection or opened to release it.

Of course it is to be understood that numerous other types of detachable connection can be employed for the bottom wall, or the bottom may be provided with any sort of closure through which dust may be discharged, or it may be permanently connected in the structure and the dust discharged out of the opening through which the mop head is inserted.

This latter opening is best formed in the side wall 13, although it might be formed in the top wall 11. As shown in the drawing, it consists of a vertical slit 19 extending a considerable distance down the side wall and formed by the overlapping edges thereof. This structure will be plainly evident from Fig. 4, where it is seen that the side wall may be formed of a single length of material wrapped at its upper and lower edges around the two frames and overlapped at its vertical edges. The overlapped parts are sewed together through a part of their length, say at the bottom portion, above which one of the parts extends as a free flap 20 which may be closed by snap fastener elements 20*a*, 20*b* or other securing means at the top end of the opening. The connection of the overlapping parts may be a permanent one, since their sole purpose is to provide a slit which can be widened to insert a dust mop head M and which will tend to close about the handle H of the mop and permit the head to be shaken vigorously up and down in the slit while substantially closing the slit above and below the handle as it is moved up and down.

It will be evident that if such a receiver as has been thus far described is properly supported so that it hangs in open or expanded position a

mop head may be inserted and shaken to free all loosely adhering dust, which will be deposited in the bottom of the receiver.

In order to provide extremely convenient means for hanging the receiver in expanded condition practically anywhere in a house, I associate with the top frame member 14 a bracket device for connection with the knob shafts of a door. This device may take any one of a number of forms, but it consists essentially of the combination of hook means for hanging from the knob shafts and a brace adapted to bear against the door edge. Certain preferred forms of this device are shown in the drawing. As illustrated in Figs. 1, 2, 3 and 4, the top frame is braced by a pair of stout rods or the like secured as chords 21 to the top frame member by welding, soldering, or otherwise, projecting in substantial parallelism from a side of the top frame member and terminating in upwardly and inwardly opening hooks 22. These are disposed in more or less vertically parallel planes and are spaced sufficiently to be fitted around the oppositely projecting knob shafts 23 of a door 24. Extending outwardly and downwardly from the top frame member between the projecting ends of the brace members 21 is a bearing element 25 which is adapted to rest against the edge of the door 24 and hold the top frame member 14 in a substantially horizontal plane when the hooks 22 are engaged with the knob shafts 23.

It will be evident that with the top frame member 14 thus mounted, the bottom frame member 16 will hang in substantial alignment therewith and the side wall 13 of the receiver will be more or less stretched between the top wall 11 and the bottom wall 12 to form therewith an expanded dust-receiving chamber.

This chamber will be used in the manner indicated hereinabove, and when it has served the purpose, in any given room, of receiving all the dust collected on the mop from the operation of cleaning that room, it can very readily be disconnected from the door and moved to another room for similar use there. At the end of the whole cleaning operation the receiver can be taken out of the house and emptied by disconnecting the bottom and dumping the accumulated dust therefrom. Or, if the bottom is not detachable, the dust can be emptied through the slit 19. Then the receiver can be folded by bringing the top and bottom frame members together, with the side wall 13 collapsed between them, and the whole structure, thus compressed into a very flat volume, can be hung in a closet or laid away on a shelf.

The hook and bearing formations 22, 25 may be formed as shown in any of the figures, or in any number of other ways. In Figs. 4 and 5 the top frame hoop is formed from a single length of heavy wire stock which may be considered as beginning at 26, then extending around the circle to a shoulder 27 abutting the end 26. From the shoulder 27 the stock is turned downwardly and outwardly to form the short length 28, thence right angularly to form the bight 29 of the bearing member, and then right angularly upwardly, parallel to the length 28, to form the portion 30 which terminates in a soldered or welded connection at 31 with the hoop 14. The hook elements 22, omitted from Fig. 5 for clarity of the view, may be soldered or welded to the shoulder 27 and at the similar angle where the connection 31 is located.

Another way to form this structure is shown in

Fig. 6, where the stock of the hoop 14 is turned outwardly and downwardly to form the portion 32, then right angularly to form the bight 33, then back toward the hoop to form the portion 34 parallel to the portion 32, then back in alignment with the circle of the hoop to form the portion 35, then around the portion 32 and back on itself to form the portion 36 which is also part of the circle of the hoop. The ends of the single length of stock used in making this type of hoop may be butted together and secured at any point on the circle. In this arrangement also it will be understood that the hooks 22 project as has been explained in connection with Fig. 5.

Obviously any other convenient arrangement may be adopted.

It may be considered desirable to arrange for removing the bag material from its frames for washing. This can be easily effected by providing an opening 37 (Fig. 4) to pass the bearing member 25 and closing this opening by an overlapping flap 38 to make it reasonably dust tight.

The door shown in Figs. 1 and 2 is a more or less conventional one provided with the usual two knobs and knob shafts. Some doors, including principally those used for closets, have on their inside a sort of button instead of the customary knob, but as a rule the shaft on which this button is mounted is sufficient to receive one of the hooks 22. Some few other doors have no knob or knob shaft at all on one side, and it might seem that some difficulty would be experienced in hanging the bag on the single knob shaft of such a door. However, I have found that in actual practice the bag hangs quite securely on such a door with one or the other of the two hooks engaging the single knob shaft and the idle hook bearing against the plain side surface of the other side of the door, thereby steadying the top frame of the bag and keeping it from swinging toward the knob shaft which is engaged by the other hook. The effect will be well understood by considering Fig. 2 and assuming that one knob and its shaft are lacking from the construction. It will be evident that lateral displacement of the frame structure is prevented by the bearing of one of the hooks against the knobless side of the door.

However, if desired or thought necessary, the bearing element structure may be made as shown in Fig. 7, where the bearing portion 25*a* has projecting forwardly from it a pair of side fingers or prongs 39, thus providing a sort of pocket which is adapted loosely to receive the edge of any door and positively prevent lateral or other displacement of the bag under any conditions of hanging.

I claim:

1. A dust receiver for mops comprising a normally closed bag of flexible sheet material having a lengthwise slit opening in a side wall having flexible overlapping margins of said sheet material which may be pushed aside by a mop head inserted through the opening with the mop handle projecting to the outside for manual shaking movement with the flexible margins tending to keep the slit closed about the handle, in combination with a detachable end wall which may be removed from the bag to discharge an accumulation of dust shaken from the mop, and in combination with a rigid top frame member for holding said side wall expanded to provide a capacious chamber for receiving the mop head.

2. A dust receiver for mops comprising a bag of flexible sheet material having substantially circular top and bottom end walls and a substantially cylindrical side wall, rigid frames at the junctions of the side wall with the top and bottom walls respectively for maintaining the shapes of all the walls when the bag is hung from a support, one of said walls having an opening formed in the bag material and having flexible overlapping margins of said sheet material which may be pushed aside by a mop head inserted through the opening with the mop handle projecting to the outside for manual shaking movement, and means for detaching one of said end walls so that it may be removed from the side wall to discharge an accumulation of dust shaken from the top.

3. In a dust receiver for mops, a top frame comprising a rigid hoop, a pair of hooks extending in substantial parallelism outwardly from the hoop and adapted to be engaged with the two door knob shafts oppositely extending from an open door, a brace between the hooks extending downwardly from the hooks and adapted to bear against the edge of the door so that the hoop will be supported in a substantially horizontal plane from the edge of the door, and a bag carried by the hoop and held thereby in generally expanded condition into which a mop may be inserted for shaking.

4. In a dust receiver for mops, a top frame comprising a rigid, generally circular hoop, a pair of struts disposed as chords of the hoop and extending in substantial parallelism from a side thereof so as to terminate in a pair of hooks adapted to be engaged with the two door knob shafts oppositely extending from an open door, a brace between the hooks extending downwardly from the hooks and adapted to bear against the edge of the door so that the hoop will be supported in a substantially horizontal plane from the edge of the door, and a bag carried by the hoop and held thereby in generally expanded condition into which a mop may be inserted for shaking.

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