Sept. 10, 1935. C. E. ANDERSON 2,014,098

DUST COLLECTOR FOR DUST MOPS

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Fig. 1.

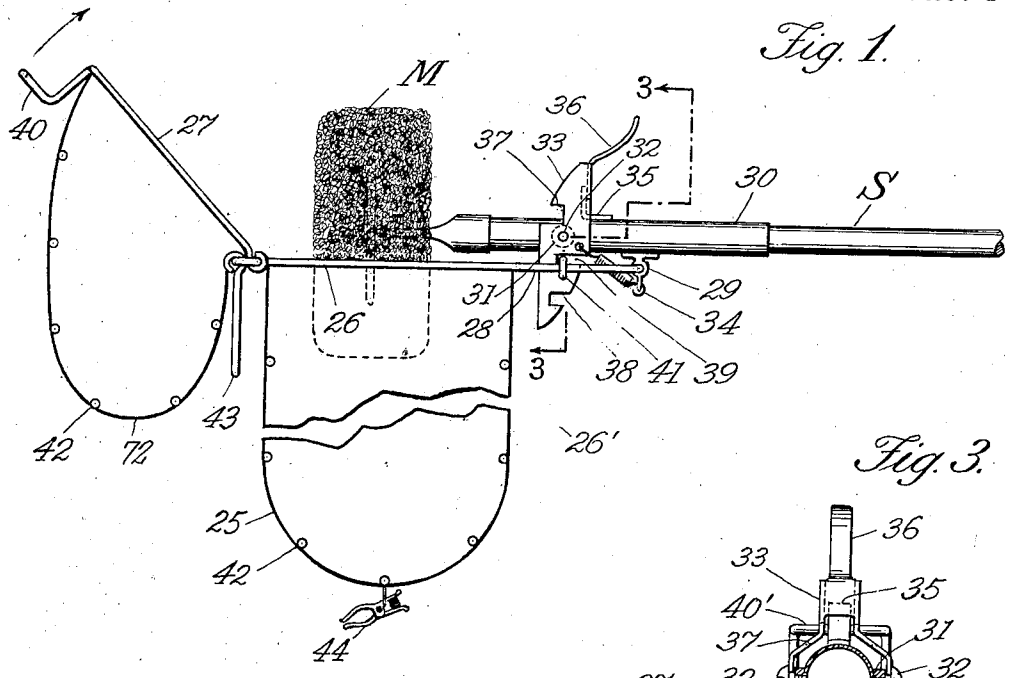


Fig. 3.

Fig. 2.

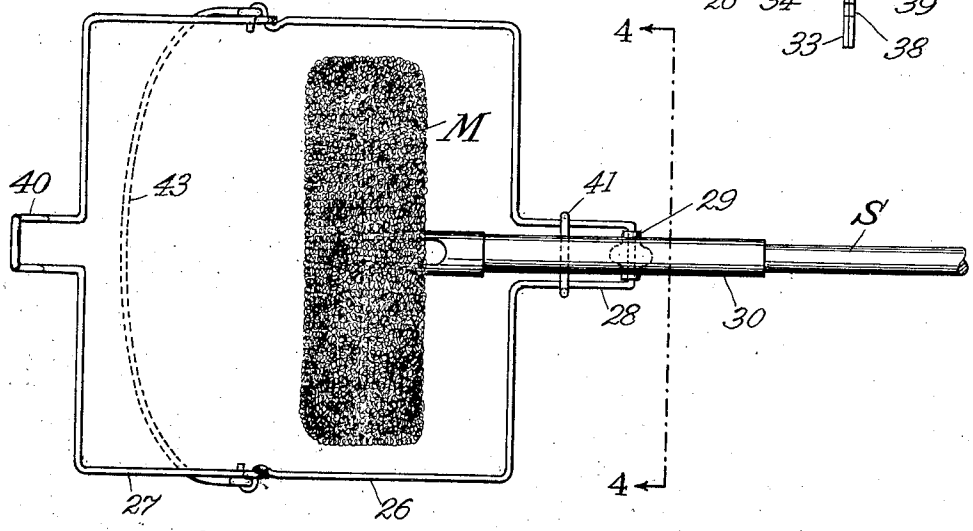
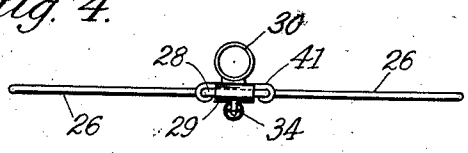


Fig. 4.



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Fig. 5.

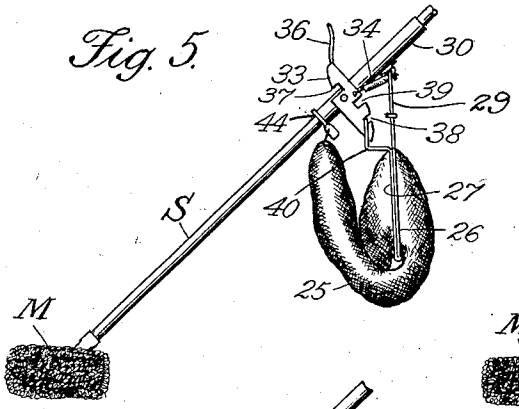


Fig. 6.

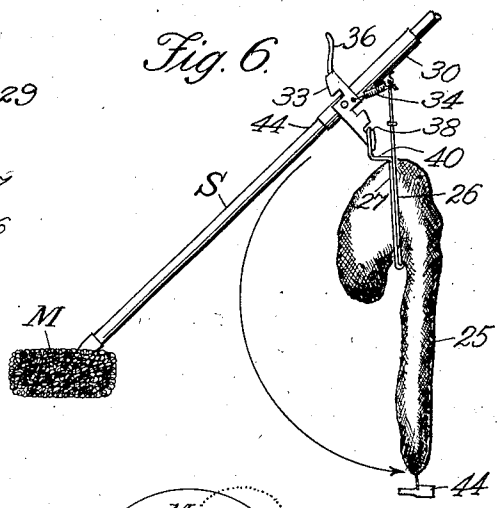
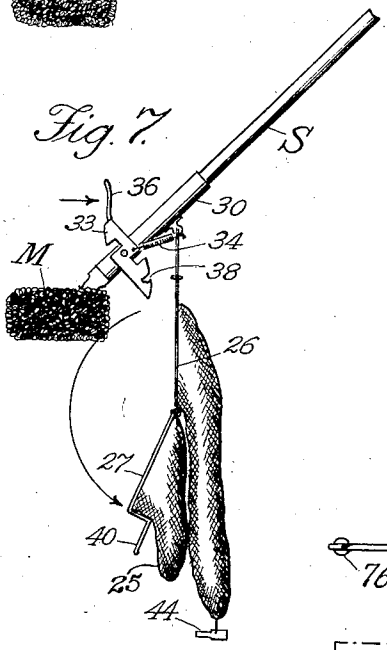


Fig. 7.



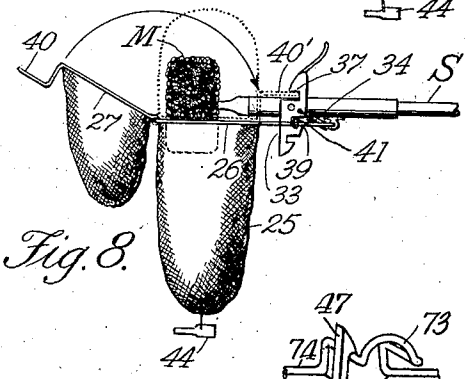


Fig. 8.

Fig. 22.

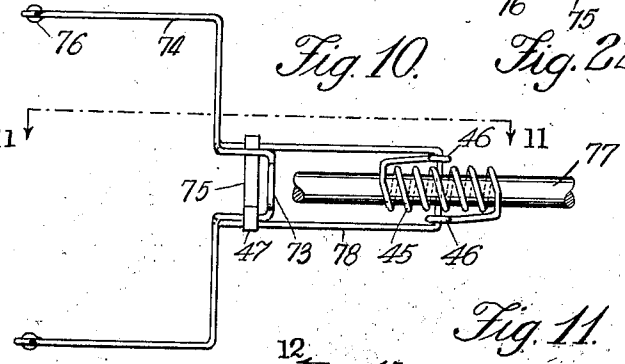


Fig. 10.

Fig. 9.

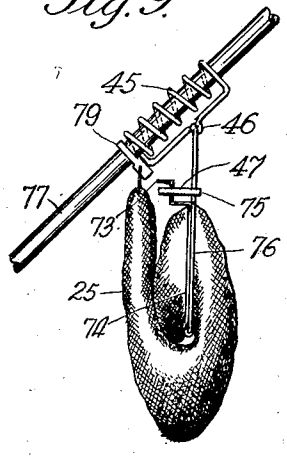


Fig. 11.

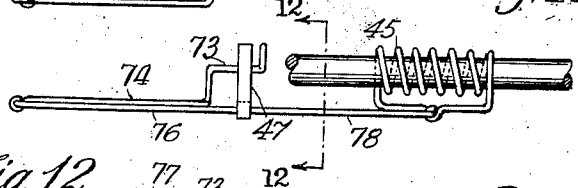
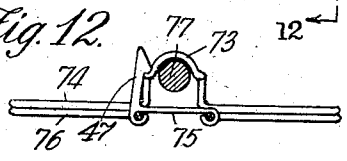


Fig. 12.



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Fig. 13.

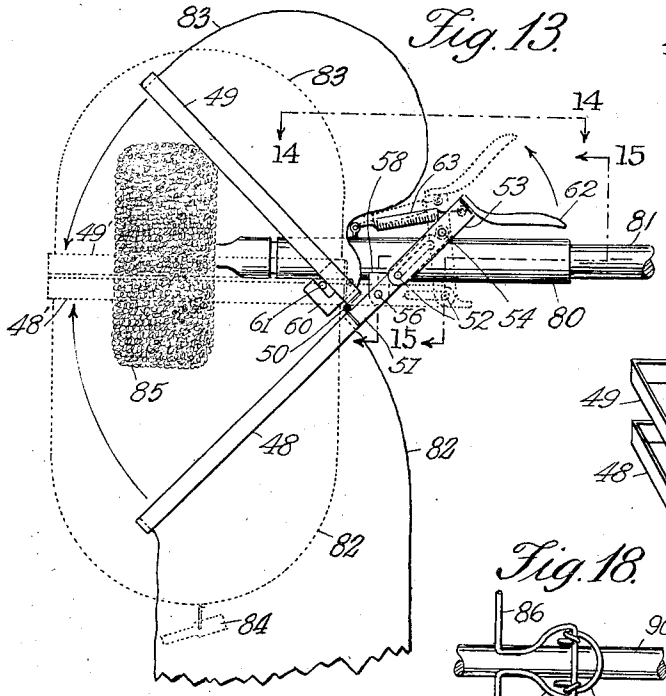


Fig. 14.

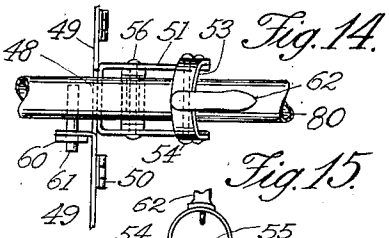


Fig. 15.

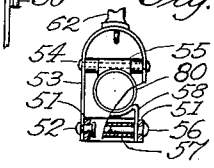


Fig. 16.

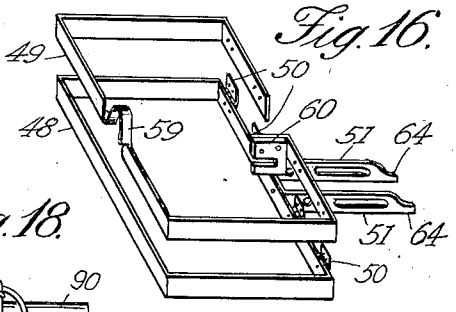


Fig. 18.

Fig. 19.

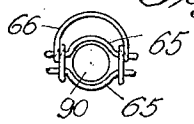


Fig. 17.

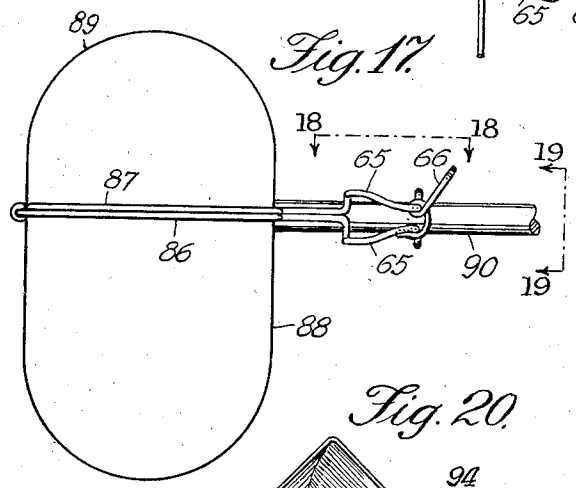


Fig. 21.

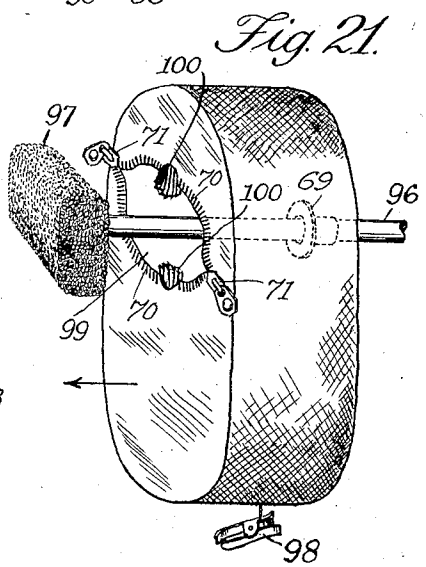
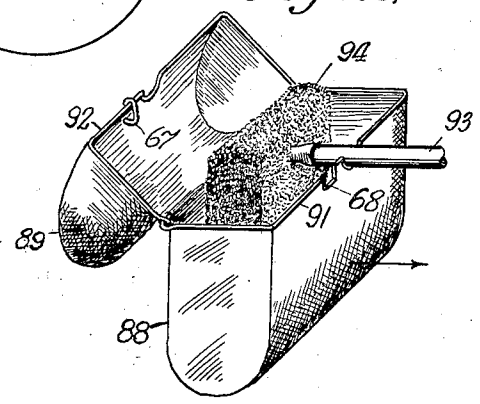


Fig. 20.



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UNITED STATES PATENT OFFICE

2,014,098

DUST COLLECTOR FOR DUST MOPS

Carl E. Anderson, Eatontown, N. J.

Application February 21, 1933, Serial No. 657,760

14 Claims. (Cl. 15—105)

This invention relates to dust collectors for dust mops, particularly for floor mops consisting of a mop-head attached to a long stick, its object being to provide a simple and convenient device which can be carried on the mop stick while using the mop and which can be readily placed in position for cleaning the mop-head, so that the mop may be cleared of dust as often as required without leaving the room that is being mopped and without discomfort to the user and to others, the same device also serving as a receptacle for the dust from which the latter can be easily removed at the convenience of the user.

These objects, in the present invention are achieved by attaching a closable bag adapted to completely surround the mop-head and preferably being made with a hinged frame, to a tubular member adapted to slide on the mop stick, and by providing said sliding member with an operating lever for opening and closing the bag, the bottom of the latter carrying means attachable to the mop stick for stopping the sliding member in any desired position, thereby enabling the bag to be folded up away from the mop-head when not in use, to be unlocked and opened by moving the operating lever against a pressure of a spring, and to be locked by the said spring after the bag has been placed into working position at the head of the mop stick. For most effective operation, the fabric of the bag is provided with spaced weighting members, such as wire ribs or individual weights sewed at proper intervals, which beat the mop when shaking or twirling the mop stick; and the bag in addition carries a hinged beating member adapted to strike the bag when shaking the mop stick.

In the accompanying drawings which show a number of different ways of carrying this invention into effect,—

Fig. 1 is a side elevation of a preferred construction embodying certain novel features of the improved dust collector;

Fig. 2 is a top view of the dust collector shown in Fig. 1;

Fig. 3 is an end-elevation in enlarged scale taken on line 3—3 of Fig. 1;

Fig. 4 is an end-elevation on line 4—4 on Fig. 2;

Fig. 5 is a side elevation showing the position of the dust collector on the mop stick when the mop is being used;

Figs. 6 to 8 are side elevations showing the various stages in the manipulation of the device;

Fig. 9 is a side elevation showing a simplified construction of the improved dust collector;

Fig. 10 is a top view of the dust collector shown in Fig. 9;

Fig. 11 is a side elevation of Fig. 10;

Fig. 12 is an end elevation on line 12—12 of Fig. 11;

Fig. 13 is a side elevation of a modified construction in which the problem of placing the bag around the mop-head is solved in a different manner;

Fig. 14 is a top view seen from line 14—14 of Fig. 13;

Fig. 15 is an end view from lines 15—15 of Fig. 13;

Fig. 16 is a perspective view of the bag frame employed in Fig. 13;

Fig. 17 is a side elevation showing another simplification of the improved dust collector;

Fig. 18 is a top view on line 18—18 of Fig. 17;

Fig. 19 is an end view on line 19—19 of Fig. 17;

Fig. 20 is a perspective view of a closable bag adapted to be so placed on a mop stick from the head end as to completely surround the mop-head;

Fig. 21 is a perspective view of a closable bag adapted to be placed over the mop-head from the stick-end of the mop; and

Fig. 22 is a perspective view showing details of the latch 47.

Referring to Figs. 1 to 4, the improved dust collector consists of a split bag having a lower portion or member 25 supported by a bottom frame 26. A top frame 27 is hinged to the frame 26 and carries an upper portion or member 72 of the bag. The two bag members 25 and 72 are adapted to embrace and form a closed bag about the mop M when the two frame portions 26 and 27 are brought together with the loop 40 in engagement with the notch 37. In this position in Figs. 1 and 3 the loop 40 is shown dotted as 40'. The bag may also be closed without including the mop M by swinging the frame portion 26 down as shown in Fig. 7 and swinging the frame portion 27 to the position shown in Fig. 6 with the loop 40 engaging the notch 38. With the bag closed excluding the mop it may be carried on the stick or handle without interfering with the use of the mop per se, as will presently be described. The bottom frame 26 is provided with a longitudinal extension 28 by which it is hinged to an eyepiece 29 attached to a tube 30 adapted to slide on the stick S on which the mop-head M is mounted. Bosses 31, affixed at right angles with the eyepiece 29 to the tube 30, carry screws 32, on which is pivoted a latch 33 held by a spring 34, anchored on the eyepiece 29, against a stop 35 attached to

the tube 30. The latch 33 is formed of two plates encircling the tube 30 and joined together above and below the same, a handle 36 being inserted between the top ends. This latch has three transverse notches 37, 38 and 39, one above and two below the pivot axis. The upper notch 37 registers with an extension loop 40 of top frame 27 when in position as shown in Fig. 8 in which the bag members 25 and 72 are closed to embrace the mop-head M. The lowermost notch 38 registers with the loop 40 shown in Figs. 5 and 6 when in position 40'' in which the bag is closed while suspended from the mop stick S in the operating position of the mop. The middle notch 39 registers with a cross strap 41 on extension 28 when the lower frame 26 of the bag is raised into mop-head inclosing position at the end of the mop stick, as shown in Figs. 1 and 8.

Into the fabric of the bag members 25 and 72 are sewn wire ribs 42, and to the lower frame member 26 is swingably attached a beater 43 which hits the bag when the mop is shaken. To the bottom of bag 25 is attached a spring clip 44 adapted to be clamped on to the mop stick S for the purpose of arresting the slide 30 in any desired position when the dust collector is not in use, the action of so supporting the slide thus at the same time folding up the bag, so as to be out of the way when using the mop.

The manipulation of this device is as follows: When using the mop, the bag 25, 74 is positioned upon the mop stick S apart from the mop-head M, as shown in Fig. 5, the clamp 44, or other suitable stopping means being placed at any desired position on the mop stick, thereby preventing the tube 30 from sliding down beyond that point. The stopping means 44 being attached to the bottom of the bag, the lower part of the latter is thus folded up out of the way. The frame 27 in this position is closed against frame 26, the loop 40 of the former being held in the notch 38 of latch 33 by the spring 34. To place the bag 25 into position for cleaning the mop M, first the clamp 44 is removed from the mop stick S, Fig. 5, thereby permitting the bag to drop from the position shown in dotted lines into the position shown in Fig. 6, and the tube 30 to slide down on the stick S until arrested by the mop-head M, as shown in Fig. 7. When arrived in this position, the handle 36 of latch 33 is depressed, thereby releasing loop 40 from notch 38 and allowing the top frame 27 to drop, thus opening bag members 25 and 72. Next, the mop handle S is raised into horizontal position and the frame 26 with the member 72 is swung upward and about the mop as indicated by the arrow in Fig. 8. The cross strap 41 catches in notch 39 of latch 33 and is held therein by the pressure of spring 34. In this position the bag member 25 surrounds the lower portion of mop-head M, and it is now only necessary to swing frame 27 towards frame 26 as indicated by the arrow in Fig. 8, in order to close the bag 25, 72 completely around the mop-head. In the closed position shown in Figs. 1 and 8 with the upper member 72 in dotted lines, the loop 40 shown in dotted lines at 40' snaps into notch 37 of latch 33 and is held locked therein by the spring 34. The mop can now be cleaned of dust and fibrous matter by shaking and twirling the mop stick, the bag, owing to the loose fit of slide 30, always remaining in upright position. Upon cleaning the mop, the bag, by a reversal of the manipulations described above, is replaced into its out-of-the-way position on the mop stick as shown in Figure 5 and mopping may be resumed. After a number of cleanings, the bag is removed by sliding tube 30 off the mop stick so that the accumulated dust can be conveniently emptied.

By omitting the spring latch 33 and providing a suitable fastening means between the loop 73 of frame 74 and the cross strap 75 of frame 76, the simplified construction shown in Figs. 9 to 12 is obtained. Here, the slide or tube 30 is replaced by a wire coil 45, the ends of which are bent back to the middle of the coil and are shaped into loops 46, one at each side of the mop stick 77, these loops receiving the extension 78 of bag frame 76 and replacing the eye-piece 29 shown in Figs. 1 to 4. The cross strap 75 shown in Figures 9 to 12 inclusive of frame member 76 in the simplified device is of slightly different form from the cross strip shown in the preceding figures and is extended upwards and formed into a hook 47 adapted to engage the loop 73 of frame member 74, thereby locking the two members together when the bag is closed. The loop 73, Figures 9 to 12, corresponds to loop 40 in Figures 1 to 8.

The manipulation of this simplified device differs from that of the first described embodiment in that, after removing the clamp 79 from the mop stick in the mopping position shown in Fig. 9, the bag must be opened by hand by disengaging the hook 47, and, after sliding it to the end of the mop stick, the lower frame 76 must be held with one hand while the upper frame 74 is passed over the mop-head with the other hand, the loop 73, owing to the resiliency of the frame work, snapping into engagement with hook 47 when the two frame members are pressed together. The hook 47 may be made integral with the cross strap 75 of the frame 76 and as viewed in Fig. 12, the loop 73 may be pressed downward to the stick 77. The resiliency of the two frames 76, 74, that of the loop 73, and that of the member 75, will allow the hook 47 to move aside and as soon as the loop 73 passes below the hooked portion it will be engaged thereby. The resiliency of the frames also allows the user to move the hook to the left (Fig. 12) with a thumb, for releasing the loop 73 from the hook 47.

Instead of arranging the bag hinge at the leading or forward side of the bag and swinging the top frame back over the mop after passing the latter, as is done in the embodiments thus far described, the present invention can also be carried into effect by making the bag frame with its hinge at the trailing or rearward side and sliding the open bag over the mop directly on its forward move.

In Figs. 13 to 16, the lower frame member 48 to which the upper frame 49 is attached at its rearward side by hinges 50, has a forked rearward extension 51, the slotted ends of which engage with pins 52 carried by an operating lever 53 pivoted to slide 80 on the mop stick 81 by means of a pin 54 supported in a block 55 attached to tube 80. The frame extension 51 is pivoted to slide on 80 by means of a pin 56 carried in a spacer 57 by a forked bracket 58 attached to the slide. The upper frame 49, at the center of its forward side, is bent into a loop 59 so as to fit around the mop stick 81 when the bag is closed in its out-of-use position, and near the middle of its rearward side carries a slotted plate 60 engaging with a guide pin 61 protruding horizontally from slide 80 so arranged that the movement of the lower frame by the lever 53 effects a corresponding swing of the upper frame. The operating lever 53 is equipped with a handle 62 and is held in tension against the

ends of the slots in frame extension 51 by a spring 63 attached to slide 80, thereby keeping the bag in the closed position 25b, shown in dotted lines in Fig. 13. The downward movement of handle 62 is stopped by the engagement of projections 64, provided at the fork ends of extension bracket 51, with block 55 carrying the pin 54, when the frames 48 and 49 are in the open position shown in full lines, ready to receive the mop-head M.

The manipulation of this device is as follows: To bring the bag 82, 83 into dust collecting position upon removing the slide stopping means 84 from the mop stick 81, the handle 62 of lever 53 is depressed to the limit of its movement and the thereby opened bag is moved forward to the end of the mop stick where the still depressed handle is released, allowing the spring 63 to close the bag 82, 83 over the mop-head 85. The lower frame 48 is swung up into the dotted position by the return motion of lever 53 subsequent to its release, and the upper frame 49 is brought down into the dotted position by the consequent action of plate 60 on guide pin 61.

By dispensing with the function of the improved dust collecting device to remain on and be carried around with the mop stick when not in use, the slide member and its attachments may be eliminated, resulting in still more simplified devices than that shown in Figs. 9 to 12.

In Figs. 17 to 19, the swinging frames 86 and 87 of bag 88, 89 have rearward extensions terminating in loops 65 fitting loosely over the mop stick 90 when the bag is closed over the mop-head. One of the loops 65 carries a locking member 66 adapted to engage with the other loop so as to hold the closed bag loosely on the mop stick when in its locked position. When finished with shaking the mop, the lock 66 is disengaged, the frame 87 is swung up, and the bag is removed from the mop, ready to be reattached as further cleanings of the mop become necessary.

In Fig. 20, the frames 91 and 92 have no rearward extensions and the locking member 66 is replaced by a hook 67 pivotally attached to frame 92 and adapted to engage with a loop 68 on frame 91. Thus, in this form, the dust collector simply consists of a closable bag arranged to be loosely locked on the mop stick 93 after closing it around the mop-head 94.

The bag shown in Fig. 20 is placed over the mop-head from the head-end of the mop stick in the direction of the arrow. By providing the bag 95 with a circular sleeve outlet 69 at one side and with a closable slit 70 at the other, as shown in Fig. 21 the bag may be placed on the mop stick 96 from the stick end and passed, with the slit 99 open, over the mop-head 97 when all that is required to put the device into operating condition is to close the slit 70 by suitable means. The bag in this case may be entirely frameless and, if provided with slit closing means arranged to operate from both ends towards the center, such as a "zipper" equipped with two manipulators 71, may even be left on the mop stick while using the mop. The bottom of the bag then carries the clamp 98 for folding it up and holding it away from the mop-head on the mop stick.

The cloth of the bag is left loose or puckered around the openings 69—70 so that when the mop stick is not in these openings, they are closed for all practical purposes and dust will not escape. This is shown in Figure 21 in which the loose or puckered cloth 73 is shown for closing the opening 70. A similar arrangement may be provided in connection with the opening 69. This latter arrangement would not have to be split.

Having thus described my invention, I make the following claims:

1. A dust collector for a dust mop having an elongated handle comprising a pair of frames hinged together and slidably supported on the handle, and a two part flexible bag, the open ends of which are secured to said frames whereby the latter may be moved to the mop end of said handle and brought together with said bag embracing and completely enclosing said mop.

2. In combination, a dust collector for a dust mop having an elongated handle, a member adapted to slide on said handle, a two-part hinged frame movably supported by said member and adapted to be folded together, locking means including a lever pivoted on said member adapted to secure said frame together, a two-part flexible bag having its open ends secured to said frame in such manner that when the frame is folded together the bag is closed, and a plurality of notches in said lever, one of which is adapted to engage and hold said frame parallel to said handle and the other of which is adapted to engage and hold said frame in angular relation to said handle.

3. A dust collector as claimed in claim 2 in which a clamp is carried on the bottom of the bag and adapted to be attached to the mop stick to hold said bag away from the mop head when the mop is used for dusting.

4. A dust collector for a dust mop having an elongated handle, comprising a pair of frames hinged together, a two-part flexible bag carried on said frames, a slidable support for said frames carried on said handle, clamping means for retaining said bag, frame and support on said handle in a position apart from the mop head when the mop is used for dusting, and means partly carried by said support for securing said frames with the bag embracing the mop head whereby the same may be shaken in said bag and the bag removed and closed while supported on said handle.

5. The combination with a mop having an elongated handle, of two frames hinged together and slidably supported on said handle, a two-part bag having its open ends secured to said hinged frames in such manner that when the latter are closed together the bag is closed, and clamping means for retaining said bag on the handle in a closed position permitting the mop to be used, said bag adapted to be moved to embrace the mop and so secured by said clamping means whereby dust may be collected from the latter, after which the bag may be restored to its original position on said handle.

6. A dust collector for a dust mop having an elongated handle, comprising a two-part flexible bag, frames for and secured to the open ends of both said parts, a support movably mounted on the mop handle, one of said frames being pivotally secured to said support, and means for locking said frames together with the bag enclosing said mop.

7. A dust collector for a dust mop having an elongated handle, comprising a two-part flexible bag, frames for and secured to the open ends of both said parts, said frames being hinged together, a supporting member movably carried on the mop handle and forming a support for one of said frames, and means carried by said supporting member for locking said frames together with the bag enclosing said mop.

8. A dust collector for a dust mop having an elongated handle comprising, a two-part flexible bag, frames for and secured to the open ends of both said parts, said frames being hinged together, a supporting member movably mounted on the mop handle, one of said frames being pivotally supported on said member, and a locking member carried by said supporting member and having a plurality of notches formed therein and secured to said support, one of said notches at one side of the supporting member adapted to engage the other of said frames to lock said frames together parallel to the mop handle with said bag enclosing said mop, and the other of said notches at the other side of the supporting member adapted to engage said last frame for locking the frames together in angular relation to the mop handle without enclosing the mop.

9. A dust collector as claimed in claim 8 in which a beater is pivotally mounted on one of the frames for beating against the bag when the entire assembly is shaken with the bag embracing the mop.

10. A dust collector as claimed in claim 8 in which one part of the bag is provided with a clamp adapted to engage the handle of the mop for holding the supporting member in any desired location along the length of said handle.

11. A dust collector as claimed in claim 8 in which the bag is provided with a plurality of spaced ribs forming members for beating the mop when the handle is shaken or twirled.

12. A dust collector as claimed in claim 7 in which the locking member is provided with notches some adapted to engage one of said frames in a plurality of positions of the latter, and one adapted to engage the other frame in at least one of its positions.

13. In combination, a mop head, a handle, a two-part flexible bag, a frame for the open end of each part of said bag, one of said frames being hinged to the other, a supporting member slidably mounted on said handle and forming a support for one of said frames, the other of said frames having a loop formed therein, a locking member having a plurality of notches formed therein, and pivot screws pivoting said member on said support, one of said notches adapted to engage said loop and lock the frames together with the bag embracing said head, and the other of said notches adapted to engage the loop and lock the frames together with the head excluded from the bag.

14. An attachment for a dust mop of the type having an elongated handle, comprising a dust container having an opening therein to permit passage of the mop head into said container, means to close said opening, and means to movably mount said container on the handle whereby the container may be moved from a position wherein the container embraces the mop head to a position removed from and uncovering said mop head.

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