

May 25, 1954

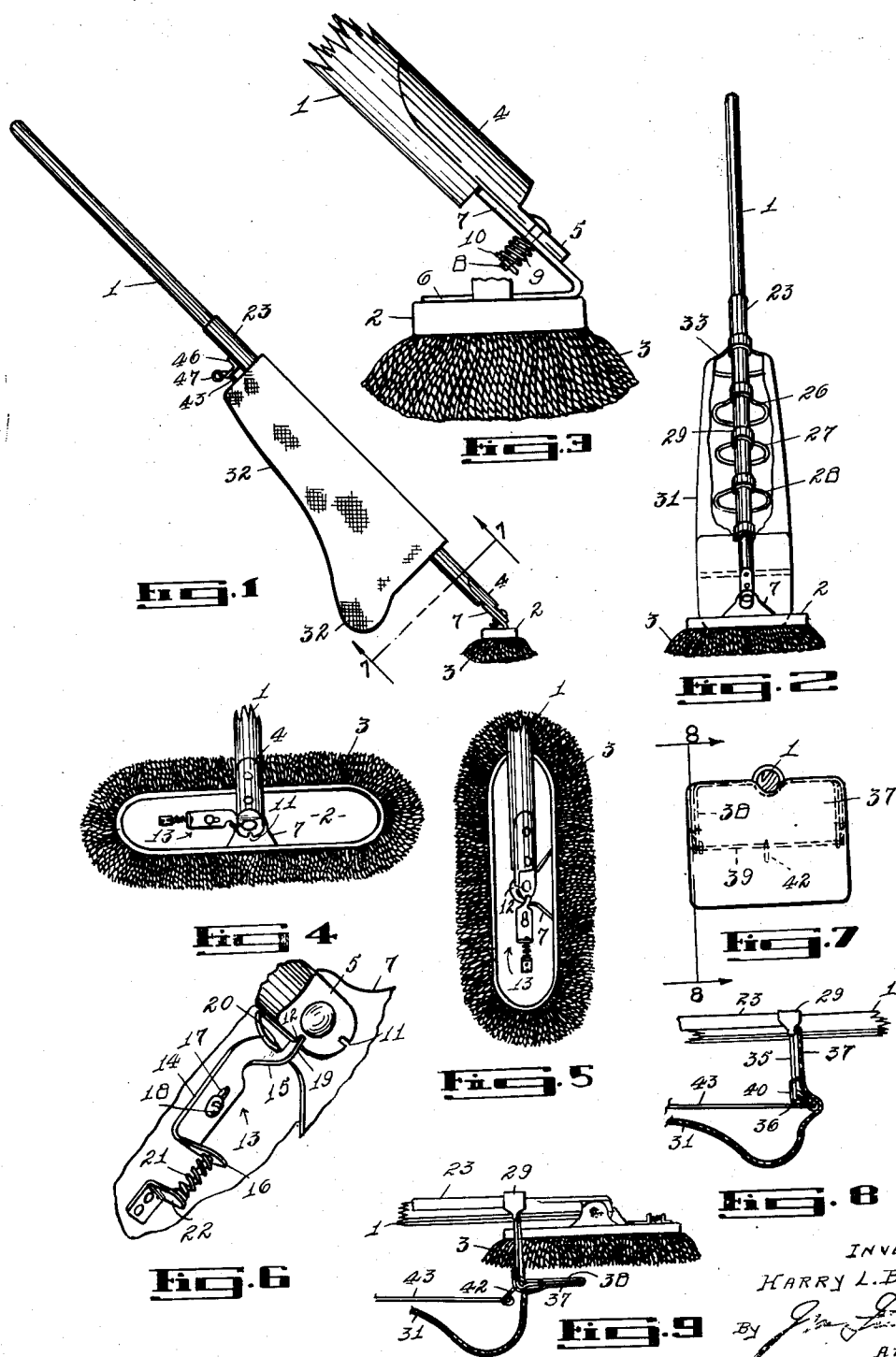
H. L. BRAUN

2,679,062

COMBINED DUST MOP, MOP SHAKER, AND DUST BAG

Filed Sept. 24, 1948

2 Sheets-Sheet 1



May 25, 1954

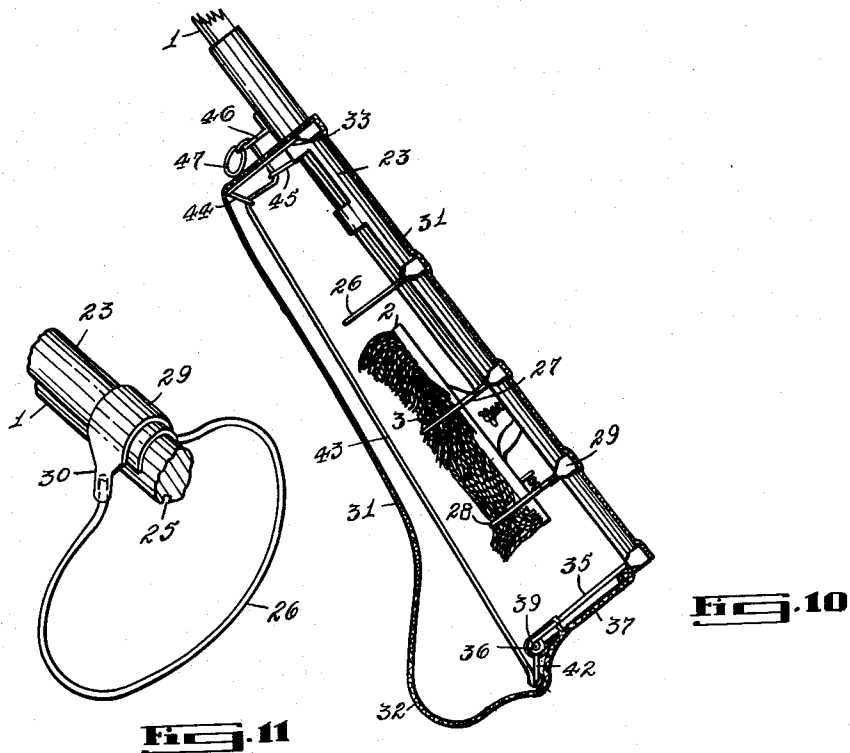
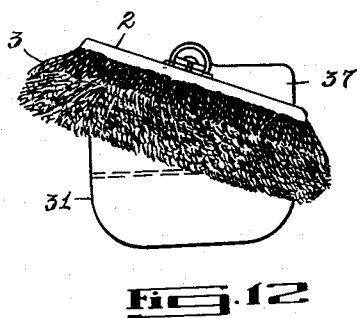
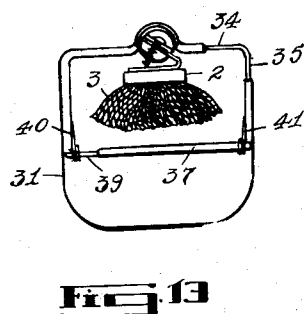
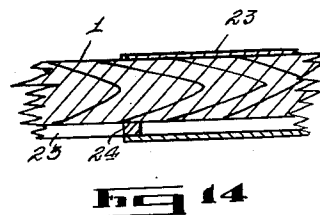
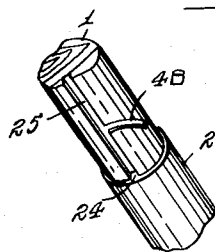
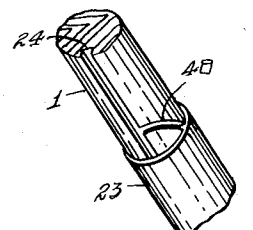
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UNITED STATES PATENT OFFICE

2,679,062

COMBINED DUST MOP, MOP SHAKER, AND DUST BAG

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3 Claims. (Cl. 15—118)

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The invention relates to improvements in dust mops as described in the present specification and shown in the accompanying drawings that form a part of the same.

The main object of the invention is to provide simple and efficient means constituting a permanent part of the mop whereby the mop head may be cleaned as often as may be desired during the dusting operation and the dust accumulated through successive cleanings stored for subsequent disposal at a convenient time and place.

Another object of the invention is to provide a simple and easily adjustable connection between the mop head and the handle whereby the mop head may be easily moved from its normal operating position across the handle to a position parallel with the longitudinal axis of the handle whereby it can be readily drawn into the dust collecting bag which constitutes an essential part of the device and which, due to the aforesaid connection may be so compact in form as not to interfere with the proper manipulation and functioning of the mop nor to greatly increase its weight, although providing ample room for the mop head and the cleaning elements and the dust collected from repeated cleaning of the mop head.

A further object of the invention is to provide simple means for effectually acting on the mop strings to thoroughly remove the dust therefrom quickly.

A still further object of the invention is to provide easily operated means for opening the dust bag and for effectually sealing the bag against the escape of dust other than during the removal of the accumulated dust therefrom.

And generally the objects of the invention are to provide efficient and convenient means for cleaning the mop head within the room being dusted or mopped, without danger of scattering the dust and without discomfort to the user or to others, such as is occasioned where the dust mop is shaken from a window, and to further provide a device of the type specified which will be compact in form and which can be produced at small cost.

With the above and other objects in view the invention consists in the novel features of construction, arrangements and combinations described in the present specification and more particularly pointed out in the claims for novelty following.

In describing the invention reference will be made to the accompanying drawings, in which:

Figure 1 is a side elevation of my improved dust mop.

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Figure 2 is a front view with a portion of the dust bag broken away.

Figure 3 is an enlarged side elevation of the mop head and the connected portion of the handle.

Figure 4 is a plan view of Figure 3.

Figure 5 is a plan view of the structure shown in Figure 4, with the mop head in its alternate position.

Figure 6 is an enlarged fragmentary view in perspective of the latch mechanism for the mop head.

Figure 7 is a cross sectional view taken on the line 7—7 of Figure 1.

Figure 8 is a fragmentary sectional view taken on the line 8—8 of Figure 7.

Figure 9 is a sectional view taken on the same line as Figure 8 but with the bag end open and the mop head in passage therethrough.

Figure 10 is a central longitudinal sectional view through the dust bag showing the mop head engaged by the cleaning elements.

Figure 11 is an enlarged view showing a portion of the mop handle and one of the cleaning elements.

Figure 12 is a front view showing the relative positions of the bag and mop head prior to adjustment of the bag after the cleaning operation.

Figure 13 is a front view of the device with the bag open and the mop head positioned for entry therinto, a portion of the dust bag material being broken away.

Figure 14 is a longitudinal sectional view through a portion of the mop handle and bag holder.

Figure 15 is a perspective view of a portion of the mop handle and bag holder in one of their related positions.

Figure 16 is a perspective view of a portion of the mop handle and bag holder in another of their related positions.

Like numerals of reference indicate corresponding parts in the various figures.

Referring to the drawings in which for purposes of illustration one embodiment of the invention is shown, 1 indicates a mop handle and 2 indicates a mop head having the usual complement of strings or other dust collecting devices 3.

The mop head 2 is adapted for alternate positions in relation to the handle 1, the one being the usual position across the handle for dusting, as is shown most clearly in Figures 2 and 4, and the other being parallel to the longitudinal axis of the handle for compactness and adapt-

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ability for cleaning purposes, as is shown in Figure 5.

The transition of the head from one to its alternate position according to requirements is permitted by the novel connection between the handle 1 and the head 2, in which the handle is provided with a metal bracket 4 having an extension 5 from its lower end in the form of a rigid strap-like tongue positioned midway of the top and bottom surfaces of the handle, and the head 2 has secured thereto a bracket 6 of substantially semi-inverted V-shape, positioned with its apex at the outer side edge of the head, one of the arms of the V being rigidly secured across the head in the centre of the latter and the other arm, designated as 7, being extended parallel with the lower face of the tongue 5 and secured to said tongue in such manner as to permit said arm 7 to rotate with respect to said handle.

The present preferred form of connection between the tongue 5 and the arm 7 of the bracket 6 comprises a headed bolt, or pin 8 of somewhat greater length than the combined thickness of the said tongue and arm, extended loosely through aligned openings in said tongue and arm and projecting beyond one or other of such elements according to whether the bolt is extended downwardly or upwardly, and a helical spring 9 encircling the projecting end of the bolt and confined in compression between the adjacent element and a suitable confining element 10 carried by the said bolt, whereby the said tongue and the said arm will be held in contact with one another but will be permitted to rotate in relation to one another.

By referring to Figure 3 of the drawings it will be noted that in the operative position of the mop head, that is when it is in position crosswise of the handle, the said handle extends at an angle of approximately 45 degrees in respect to the horizontal plane of the head and that as the head is rotated on its pivot 3 it will, due to the angle of the arm 7 in relation to the plane of the head, swing upwardly towards the handle and when in its position lengthwise of the handle will lie close to the under face of the handle.

The tongue 5 is provided with two slots 11 and 12 respectively, the slot 11 being positioned in the extreme outer end of the tongue and the slot 12 being in the side of the tongue.

A latch mechanism indicated broadly by the numeral 13 and carried by the mop head and including means spring-pressed towards the edge of the arm 7 of the bracket 6 for entry into one or other of the slots 11 or 12 according to the position of the head in respect to the mop handle, provides means for locking the head to the handle in either of its alternate positions.

The latch mechanism 13 comprises a metal strap 14 having an intermediate flat portion adapted to lie flat on the top face of the head 2 for sliding movement therealong towards and away from the edge of the arm 7, and upwardly turned end portions 15 and 16 respectively.

The intermediate flat portion of the strap 14 is provided with a longitudinal slot 17 adapted to loosely embrace a pin, or other device, 18 extending upwardly from the head 2 and providing a guide for said strap.

The upwardly turned end portion 15 is twisted slightly to present an edge portion or finger 19 lying at right angles to the edge of the arm 7 and is cut away or slotted inwardly, as at 20, to straddle said arm whereby the said finger may enter the slot 11, or the slot 12, according to the position of the head in respect to the handle.

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A helical spring 21 confined between the outer face of the upwardly turned end 16 of the strap 14 and a suitable bracket 22 anchored to the mop head exerts continual influence on the strap 14 in the direction of the arm 7 whereby the finger 19 will be forced into one or other of the slots 11 or 12 immediately upon a slot being brought into alignment with said finger through the movement of said head.

The upwardly turned end 16 of the strap 14 provides means easily engageable by the finger of the user whereby to exert pressure on the strap in a direction away from the arm 7 to cause withdrawal of the finger 19 from the slot in which it has last rested, so as to permit rotary movement of the head to its other position.

23 is the main support for the cleaning apparatus and the dust bag in which said cleaning apparatus is located. This support 23 is preferably of tubular shape in cross section for at least a portion of its length from its end nearest the top end of the handle to loosely receive said handle, whereby either one of such members may be reciprocated in relation to the other, as and for the purpose to be described in detail hereinafter.

The tubular portion of the member 23 is provided with an interior projection 24 extending upwardly from its lower face and loosely entering a slot 25 in the handle 1, which slot extends longitudinally of the handle from end to end of the latter, this projection and cooperating slot being for the purpose of keeping the said support from turning on the handle out of a predetermined alignment with the mop head when the latter is extended parallel with the mop handle, as during the operation of cleaning the mop.

26, 27 and 28 are the mop cleaning elements, of which there may be any desired number carried by the member 23 extending inwardly therefrom at right angles to the member 23 in suitably spaced relation to one another longitudinally of said member. These cleaning elements are in the form of loops of substantially oval shape transversely of the handle, and are made of a stiff wire and are of sufficient width to readily permit of the passage of the solid head of the mop when the said head has been turned to a position parallel with the mop handle, but being so shallow that in the passage of the head therethrough they will lie in the path of the strings or other form of dusting device depending from the head, with the result that said strings or other dusting device will be thoroughly disturbed to the extent that all dust particles carried thereby will be dislodged.

The looped cleaning devices are preferably so connected to the carrier 23 that they may be readily removed and replaced, or others substituted therefor, in case of distortion, breakage, or for any other reason, and to this end a holder 29 is provided for each cleaning element, each such holders consisting of a substantially inverted U-shaped bracket saddling the member 23 and having a reduced portion 30 extending at each side of said member, and such reduced portion has an opening in its lower end into which the one end of a cleaning element is adapted to be forced, as is clearly shown in Figure 11.

31 is a dust bag through which the mop handle extends and which is adapted to enclose the cleaning members 26, 27 and 28 and to extend beyond the endmost cleaners a considerable distance whereby to provide ample space to permit of reciprocation of the mop head within the bag.

The dust bag extends over the top of the mem-

ber 23 and depends downwardly below the cleaners 26, 27 and 28 and at its lower end is enlarged downwardly to provide a pouch 32 into which the dust particles falling from the duster in the cleaning operation are eventually deposited due to the inclination of the bag.

The dust bag is held extended at its top end by means of a frame member 33 carried by the member 23 and positioned within the bag and over which the bag is stretched.

The upper portion of the bag 31 adjacent to the lower end thereof is extended over a wire frame 34 carried by the member 23. The frame member 34 extends crosswise of the member 23 and is turned downwardly equidistant from each side of said member 23 to provide legs 35 spaced apart a considerably greater distance than the width of the mop head, as is clearly shown in Figure 13. The legs 35 have their outer ends curled backwardly, as at 36, to provide aligned bearings.

The lower end wall of the dust bag is slit along its top edge for the length of the cross portion of the member 34 and is also slit downwardly parallel with the legs 35 whereby to provide an opening of rectangular shape transversely of the mop handle, through which the mop head in its position parallel with the mop handle may pass into and out of the bag. The material forming the top and side edges of the opening in the bag is fastened in any desired manner to the cross member 34 and the legs 35.

It will be seen that the material of the bag between the cross slit and the side slits provides a flap 37 adapted to fold over a line between the bottom ends of the side slits and thus provides an opening in the end of the bag of rectangular shape transversely of the mop handle, adapted to permit of the passage of the mop head lengthwise into and out of the bag. The flap 37 when turned back to the position it assumed before the material of the bag was slit will provide a closure for the opening in the bag.

38 is a rectangular wire frame corresponding substantially in size and shape to the opening in the bag and to the flap 37. This frame 38 has its bottom member 39 extended crosswise of the mop handle and supported at its ends for rotation in the bearings provided by the curled portions 36 of the lower ends of the legs 35. The side and top edges of the flap 37 are secured by stitching, or otherwise, to the side and top members of the frame 38 so that as the said frame is rotated in its bearings in the legs 35 it will swing the said flap across the mop head opening in the bag, or outwardly and downwardly away from the opening, according to the direction in which the bottom member 39 of the frame 38 is rotated.

Members 40 and 41 of spring material are positioned one at each side of the mop head opening in the dust bag, each such members having an intermediate portion coiled around the cross member 39 of the frame 38, and upwardly extended end portions, one of which latter is anchored to the corresponding side leg of the frame 34 and the other of which is anchored to the adjacent side member of the frame 38, whereby the said frame 38 which carries the flap is continually urged to its upward position with the flap closing the mop head opening in the bag.

An arm 42 extends forwardly and downwardly from the cross member 39 of the flap carrying frame 38 and has attached to the lower end thereof an operating cord 43 which extends lengthwise of the bag and projects through the top end

thereof at a point below the tubular handle portion of the member 23, where it is readily accessible to the user for the purpose of drawing the arm 42 to rotate the flap holding frame 38 and thus cause the flap to be swung downwardly away from the mop head opening.

Suitable eye-pins 44 and 45 carried by the members 33 and 23 respectively and through which the cord 43 is threaded provide means for directing the said cord to its desired point of projection from the bag, and an eye-pin 46 positioned without the bag and carried by the member 23 holds the end of the cord so that it can be readily grasped by the user. If desirable a hand grip, such as a metal ring 47, may be secured to the end of the cord.

It will be noted that in the movement of the mop head from one of its positions to the other its angular relation to the handle 1 changes and that when the member 23 carrying the cleaning elements and the dust bag is in its position with the interior projection 24 in the slot 25 in the handle whereby the said handle and the cleaning apparatus can be readily reciprocated, the mop head when in its position lengthwise of the handle, will be properly aligned for entry into and lengthwise reciprocation within the dust bag, as shown in Figure 13, but that in such described relative positions of the member 23 and the mop handle the mop head would, if in its usable position across the handle, be positioned diagonally of the end of the dust bag, as is shown in Figure 12. In this latter position the device would be difficult to use as the dust bag would be tilted and would have a tendency to tilt the mop head in relation to the surface on which it is used.

It is therefore necessary to provide means to compensate for the change of angular relationship of the mop handle and the cleaning apparatus carried thereby and the mop head whereby on the return of the mop head to its usable position crosswise of the handle 1, after the cleaning operation, the member 23 carrying the cleaning devices and the dust bag can be righted in respect to the mop head, as shown in Figure 2.

To permit of effecting this change in the angular relationship of the member 23 and the handle to square the bag with the mop head in its position crosswise of the handle the said handle is provided with a short slot 48 leading outwardly from the slot 25 in a direction towards the mop head so that when the member 23 is moved to the point that the interior projection 24 registers with the mouth of the slot 48 and the member 23 is twisted slightly in the direction of the slot 48 and is pushed along the handle towards the mop head the member 23 will be moved into a position square with the mop head, in which position it will remain until the member 23 is again drawn outwardly of the handle 1, in preparation for the next cleaning operation.

In the use of this invention, assuming that the mop head is in its usable position crosswise of the handle 1 and it is desired to clean the strings 3 of dust, the member 23 is drawn outwardly on the handle 1 until the projection 24 has moved out of the slot 48 into the slot 24, thereby bringing the dust bag to the position shown in Figure 12 in relation to the mop head. The mop head is then brought into parallel with the handle 1 by simply rotating it on its bearing 8 after it has been unlocked from the tongue 5 by moving the strap 14 against the pressure

of the spring 21 to remove the finger 19 from the slot 12 in the tongue 5. Release of the plate 14 after movement of the mop head will permit of the said finger 19 entering the slot 11 upon the mop head reaching its new position. By pulling on the cord 43 the frame 33 is then rotated to swing the flap 37 downwardly and thus provide an opening in the end of the bag through which the mop head may be drawn by simply pulling on the handle 1 while holding the member 23 stationary, or vice versa.

When the mop head has progressed into the dust bag the pull on the cord 43 is discontinued and the flap 37 allowed to resume its position over the opening in the bag through the action of the springs 40 and 41. The mop handle and the member 23 are then moved rapidly backwardly and forwardly in relation to one another causing the mop head to be moved backwardly and forwardly through the cleaning elements 26, 27 and 28 which thoroughly agitate the strings carried by the mop head and cause the dust particles and other foreign matter to be knocked therefrom. The particles falling from the mop will finally be deposited in the pouch-like portion 32 of the dust bag for subsequent disposal at a convenient time and place.

After the mop has been thoroughly cleaned the flap 37 is again swung downwardly through the use of the cord 43, and the mop head is then moved to its position without the bag, upon which the flap is allowed to return to its closing position and the head is then returned to its position crosswise of the handle, after the latch mechanism has been released to permit of such movement, upon which the finger 19 again will, through the pressure of the spring 21, enter the slot 12 and hold the mop head crosswise of the handle. The member 23 is then moved to bring the interior projection 24 into the mouth of the slot 48 whereupon by slightly turning the said member and pushing it downwardly on the handle the dust bag will be brought into proper angular relation to the mop head.

While I have illustrated and described the present preferred form of construction for carrying out my invention, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself

of such variations and modifications as come within the scope of the appended claims.

What I claim is:

1. In a device of the character described, a mop head, dust collecting means depending from said mop head, an elongated handle having a pivotal connection at its lower end with said mop head, said handle having a groove extending lengthwise thereof, an elongated dust bag support receiving said handle for relative sliding movement, said dust bag support having a projection lying within said groove to restrain said dust bag support from rotation with respect to said handle, a plurality of cleaning elements comprising loops of rigid material depending from said dust bag support in spaced relation to one another lengthwise of said support, the said cleaning elements being of lesser interior depth than the combined depth of said mop head and said dust collecting means so that when the handle is drawn inwardly in the dust bag support the mop head will pass freely through the cleaning elements but the dust collecting means will be impinged thereby and shaken, a dust bag carried by said dust bag support enclosing said cleaning elements and receiving the matter dropping from said dust collecting means, the said dust bag having an opening for the passage of said mop head and said dust collecting means, and a spring influenced closure for said opening.

2. A dust mop according to claim 1, in which said dust bag is of elongated tubular form throughout the greater portion of its length and at its lower end is enlarged downwardly to provide a storage pouch.

3. A dust mop according to claim 1, in which each said cleaning elements is removably secured to said dust bag support.

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