Nov. 18, 1958 F. M. LEAVELLE 2,860,360

SWEEPING MOP

Filed Sept. 21, 1955

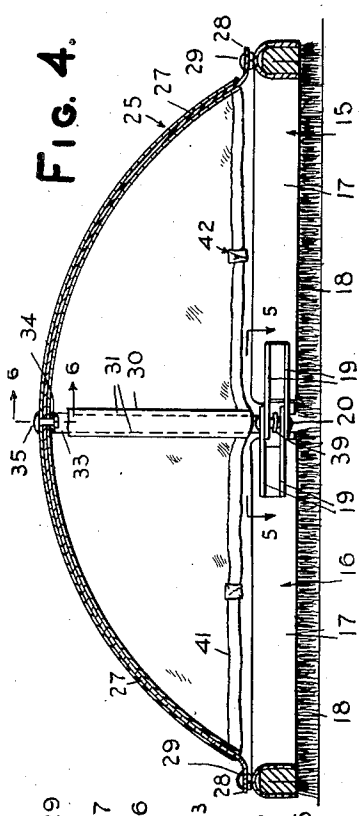


FIG. 4.

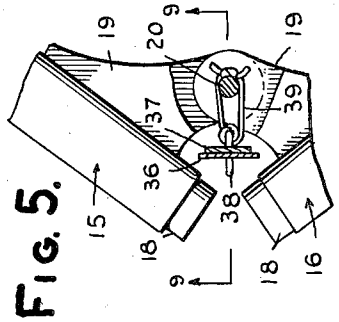


FIG. 5.

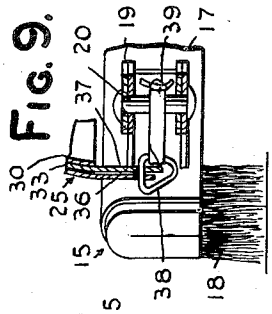


FIG. 9.

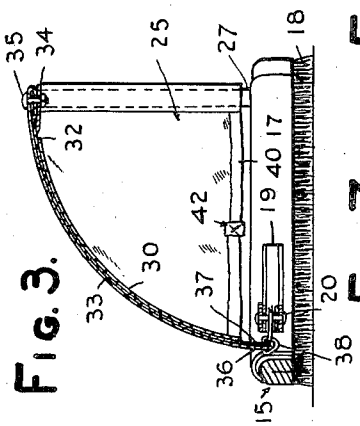


FIG. 3.

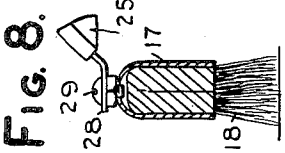


FIG. 8.

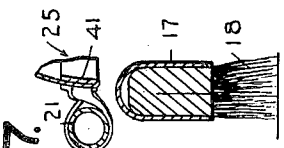


FIG. 7.

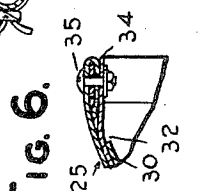


FIG. 6.

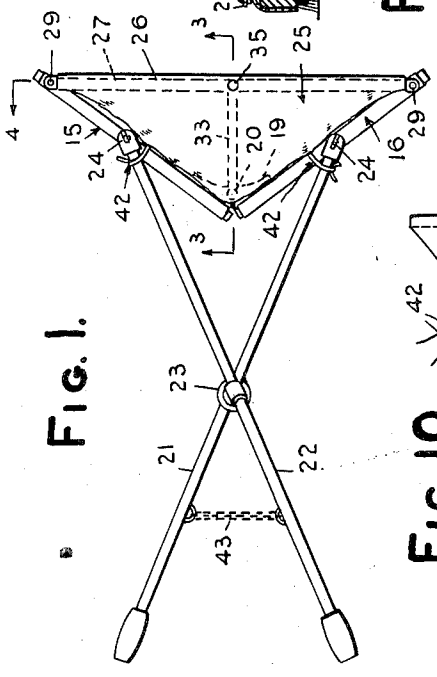


FIG. 1.

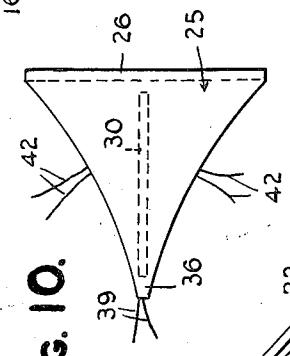


FIG. 10.

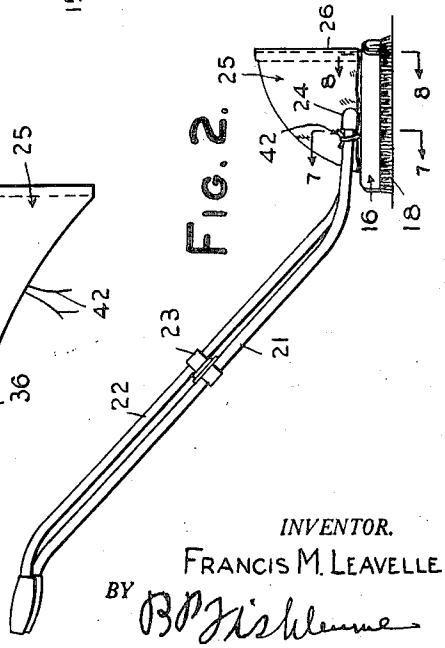


FIG. 2.

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2,860,360

SWEEPING MOP

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Application September 21, 1955, Serial No. 535,555
2 Claims. (Cl. 15—221)

My invention relates to improvements in sweeping mops, and the like.

A primary object of the invention is to provide a mop for sweeping waste material from the floors of cotton mills and the like, as well as for other uses, and adapted to handle relatively large quantities of waste material as when cleaning the aisles in a cotton mill.

A further object of the invention is to provide a sweeping mop of the above-mentioned character having means to enclose and partially cover the waste material during sweeping so that the material cannot be blown over and behind the mop by wind, mechanical blowers or the like.

Another object is to provide a device in the nature of an attachment or hood for an existing sweeping mop, which hood effectively prevents the waste material from being blown rearwardly from the mop during sweeping and also facilitates lifting the waste material from the floor for depositing in a waste receptacle.

A still further object is to provide a mop of the above-mentioned character having a greatly increased capacity for handling wastage as compared to existing mops.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a plan view of a sweeping mop embodying my invention,

Figure 2 is a side elevation of the mop,

Figure 3 is an enlarged vertical section taken on line 3—3 of Figure 1,

Figure 4 is an enlarged vertical section taken on line 4—4 of Figure 1,

Figure 5 is an enlarged fragmentary horizontal section taken substantially on line 5—5 of Figure 4, parts broken away,

Figure 6 is an enlarged fragmentary vertical section taken on line 6—6 of Figure 4,

Figure 7 is an enlarged fragmentary vertical section taken substantially on line 7—7 of Figure 2,

Figure 8 is a similar section taken substantially on line 8—8 of Figure 3,

Figure 9 is a vertical section taken on line 9—9 of Figure 5, and,

Figure 10 is a plan view of a fabric hood removed.

In the drawings, where for the purpose of illustration is shown a preferred embodiment of the invention, the numerals 15 and 16 designate companion heads or mop sections which are elongated and horizontally disposed in use for sweeping a floor or the like. Each mop section may comprise a sheet metal holder or body portion 17, inverted U-shaped in cross section, and receiving and holding a suitable fabric or strand mop element 18, removably held therein.

The mop sections 15 and 16 are forwardly divergent in use, as shown, with their rear ends in closely spaced

relation. The body portions 17 are provided upon their inner sides and near their rear ends with pairs of interfitting plates 19 forming hinge knuckles, and rigidly secured to the members 17 by welding or the like. The interfitting plates 19 are apertured near their inner ends for the reception of a vertical pintle 20, serving to hingedly connect the rear ends of the mop sections or heads 15 and 16 for horizontal swinging movement.

A pair of handles 21 and 22 are provided for the mop, and these handles are crossed and pivotally secured together near their longitudinal centers for scissor-like action by any suitable means as indicated at 23. The forward ends of the handles 21 and 22 have swivelled connections with the tops of the body portions 17 at 24, near the longitudinal centers of the members 17 whereby the handles may be pivoted vertically with respect to the members 17, and these members may also swing or pivot horizontally with respect to the handles.

The construction thus far described is that of a presently existing and known sweeping mop of the scissors type, and for this reason, a further detailed description of the mop structure is unnecessary.

I provide a generally triangular flexible hood or cover 25 for the mop formed of canvas or the like, as shown in the drawings. The forward transverse edge of the hood 25 is sewn to provide a tubular hem 26 transversely of the hood for its full width. The tubular hem 26 receives a resilient bowed frame member 27 therein, suitably formed of a section of band saw steel or the like. End horizontal extensions or feet 28 of the frame member 27 are disposed over the members 17 near their forward ends, and the feet 28 are apertured for receiving screws 29 or the like, serving to rigidly secure the feet 28 to the tops of the members 17. The frame member 27 is preferably highly resilient and readily bendable. It is thus seen that the resilient bowed frame member 27 has an intermediate high portion and low end portions or feet 28. The resilient bowed frame member is arranged in a substantially vertical plane positioned at the forward ends of the mop sections 15 and 16 and extends transversely between the forward ends of the mop sections 15 and 16.

The hood 25 is provided at its transverse center and upon its lower side with a longitudinal fabric strip 30 stitched thereto by lines of stitching 31 for forming with the hood a longitudinal flexible pocket extending for the major portion of the length of the hood 25. The fabric strip 30 may terminate somewhat short of the transverse hem 26, as at 32, Figure 3, and somewhat short of the rear extremity of the hood 25, if desired. In any event, the fabric strip 30 provides a flexible longitudinal pocket extending for the major portion of the length of the hood, at right angles to the tubular hem 26.

Within the pocket formed by the fabric strip 30 is arranged a longitudinal highly resilient arcuate frame member 33, suitably formed of a section of band saw steel or the like. This frame member 33 extends entirely through the pocket afforded the strip 30 and has its forward end underlying the hem 26 and transverse frame member 27 as shown at 34, Figure 3. The frame member 33 is arranged at right angles to the frame member 27 and extends longitudinally rearwardly thereof, as shown. The forward end 34 of the frame member 33 is rigidly secured to the underside of the hem 26 and frame member 27 at the longitudinal center of the latter by means of a bolt 35, screw or the like. The rear extremity 36 of the fabric hood 25 and the rear end portion 37 of frame member 33 are apertured for the reception of a metal ring 38, or the like. This ring 38 is disposed between the rear converging ends of the mop

sections 15 and 16, and rearwardly of the pintle 20, Figure 9. The ring 38 is preferably tied to the pintle 20 by means of a flexible tying tape 39, cord or the like, as shown in Figure 9 between the upper and lower plates 19 of the pairs of plates. The rear end portion 37 of the resilient frame member 33 and the rear extremity 36 of the hood 25 are thus disposed just forwardly of the rear converging ends of the mop sections 15 and 16. The resilient frame member 33 is longitudinally curved and is vertically inclined and has a high end secured to the intermediate high part of the frame member 27 and a low end which is secured to the rear ends of the mop sections through the medium of the pintle 20 and associated elements.

When the hood 25 is assembled onto the mop with the frame members 27 and 33 in the bowed condition as shown in the drawings, the lower edge 40 of the hood is generally horizontal and extends just above the tops of the mop sections 15 and 16 throughout substantially their entire lengths. If desired, the lower horizontal edge 40 of the hood may be reinforced with a strip of heavy reinforcing tape 41, or the like. The resiliency of the bowed frame members 27 and 33 maintains the flexible hood 25 elevated a substantial distance above the tops of the mop sections 15 and 16 at the forward end of the hood, and the hood is inclined downwardly toward its sides and rear end, as shown.

Additional pairs of tying tapes 42, cords or the like are secured to the lower edge of the hood 25 adjacent the lower ends of the handles 21 and 22 for tying the lower edge of the hood to the handles substantially midway between the forward and rear ends of the hood. The lower edge 40 of the hood is thus held close to the tops of the hinge mop sections 15 and 16 in use.

In order to prevent the rear ends of the handles 21 and 22 from being separated too great a distance during the use of the mop, thus damaging the mop, I provide a safety stop in the form of a flexible chain 43 or the like between the handles rearwardly of their pivot 23. The ends of this chain 43 are secured to the handles 21 and 22 by any suitable means, as shown, and the chain limits the extent to which the rear ends of the handles may be separated and thus limits the opening of the mop. The chain does not interfere with the full closing of the mop when the rear ends of the handles 21 and 22 are drawn together. The chain 43 may be omitted, if desired.

In the use of the mop for sweeping waste material from the aisles of cotton mills and the like, the mop is pushed forwardly over the floor in the fully open position shown in Figure 1. The sweepings are gathered between the divergent mop sections 15 and 16 and may pile up to a considerable extent within the large space above the tops of the mop sections afforded by the hood 25. The sweepings are thus trapped beneath the hood 25 and between the mop sections 15 and 16 and cannot spill rearwardly over the mop sections because of the close proximity of the bottom of the hood to the mop sections 15 and 16. The cover 25 is substantially triangular, has a rear narrow end, a forward wide end and inclined side edges. The forward wide end is secured to the transverse frame member 25 while its rear narrow end is secured to the rear ends of the mop sections through the medium of the pintle 20 and associated elements. The transverse frame member 27 extends above the mop sections and is arranged in a transverse vertical plane positioned at the forward ends of the mop sections. The frame members 27 and 33 retain the cover 25 elevated. This cover is entirely mounted upon and supported by the mop section. The cover 25 extends over the space between the mop sections 15 and 16, when such sections are in the outermost position and diverge forwardly. The cover 25 also extends from the rear end of the mop sections to the forward ends of the same and this cover extends over or covers substantially the entire space

between the mop sections 15 and 16, when in the open position. Wind or a stream of overhead air from a blower or the like in the cotton mill cannot blow the sweepings rearwardly over the mop sections or spill them upon the floor because of the action of the hood 25.

When the hood is filled with the waste material collected by sweeping, the handles 21 and 22 may be drawn together in the manner of a scissors for closing the mop sections 15 and 16 which may then be arranged closer to parallel. The resiliency of the frame members 27 and 33 permits this action to take place, and as the forward ends of the mop sections move together, the forward edge of the hood becomes increasingly bowed and elevated, and the hood along with the mop sections 15 and 16 closes about the sweepings and compresses the sweepings within the hood. The entire mop can now be lifted from the floor and the sweepings will remain within the hood so that the mop can be held over a deposit receptacle and then opened by separating the handles for dropping the sweepings into the receptacle. A further advantage in connection with my device is that the resilient frame and cover are bodily mounted upon the mop sections 15 and 16, and are not attached to the handles 21 and 22 at an elevation near or above the pivot 23. This aids in the proper manipulation of the device so that there is no tendency for the resilient frame and cover to drop from the mop sections, when the handles are raised and lowered during the emptying of the mop device.

The mop in accordance with my invention is obviously suitable for various sweeping operations other than the sweeping of cotton mills, although I have found that the mop is ideally suited for this purpose. It is equally suitable for sweeping trash from any floor and for other general cleaning purposes.

While I have described the hood 25 as formed of canvas and the frame members 27 and 33 are formed of band saw steel, it should be understood that other suitable materials may be employed if desired. Also, any suitable means other than the tying tapes 39 and 42 may be used for securing the lower end of the hood to the mop structure if desired.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A sweeping device comprising a pair of elongated relatively movable mop sections having their rear ends hingedly connected so that their forward ends may be swung laterally toward and from each other, handle means connected with the mop sections to shift them to an inner position and to an outer position so that the mop sections diverge forwardly, a transverse resilient bowed frame member having a high intermediate portion and low ends, said low ends being mounted upon the forward ends of the mop sections, said bowed frame member extending above the mop sections and arranged in substantially vertical plane extending transversely of the mop sections adjacent to their forward ends when the mop sections are in the open position, a longitudinal frame member which is vertically inclined and has a forward high end and a rear low end, said forward high end being attached to the transverse resilient frame member near the center of the raised intermediate portion thereof, said rear low end being secured to the rear ends of the mop sections, and a generally triangular flexible cover having a reduced rear end and a wide forward end and inclined side edges, said wide forward end being secured to said transverse resilient frame member and its rear reduced end secured to the rear ends of the mop sections, said inclined side edges being arranged adjacent to the mop sections, the arrangement being such that when the mop sections are in the outer position and diverge for-

wardly said cover will extend substantially entirely over the space between the mop sections thus covering the sweepings and protecting the same from overhead air currents, the transverse resilient frame member yielding to permit the mop sections being swung toward each other.

2. A sweeping device comprising a pair of elongated relatively movable mop sections having their rear ends hingedly connected so that their forward ends may be swung laterally toward and from each other, handle means connected with the mop sections to shift them to an inner position and to an outer position so that the mop sections diverge forwardly, a transverse inverted generally U-shaped resilient frame member having a high intermediate portion and low ends, said low ends being mounted upon the forward ends of the mop sections, said frame member extending above the mop sections and arranged in a substantially vertical plane extending transversely of the mop sections adjacent to their forward ends when the mop sections are in the open position, a longitudinal frame member which is vertically inclined and has a forward high end and a rear low end, said forward high end being attached to the intermediate high portion of the transverse frame member, said rear low end being secured to the rear ends of the mop sections, and a generally triangular flexible cover having a reduced rear end and a wide forward end and inclined side edges, said wide forward end being secured to the transverse resilient frame member and its rear reduced end secured to the rear ends of the mop sections, said inclined side edges being arranged adjacent to the mop sections, said longitudinal frame member being arranged beneath and engaging with said cover, the arrangement being such that when the mop sections are in the outer position and diverging forwardly said cover will extend substantially entirely over the space between the mop sections thus covering the sweepings and protecting the same from overhead air currents, the transverse resilient frame member yielding to permit the mop sections being swung toward each other.

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