Jan. 17, 1956 F. ZOTTOLA 2,730,742

COMBINED MOP AND WRINGER

Filed June 13, 1952

Fig. 4.

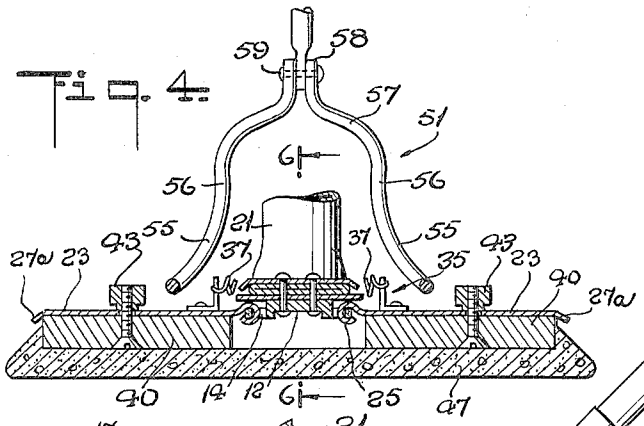
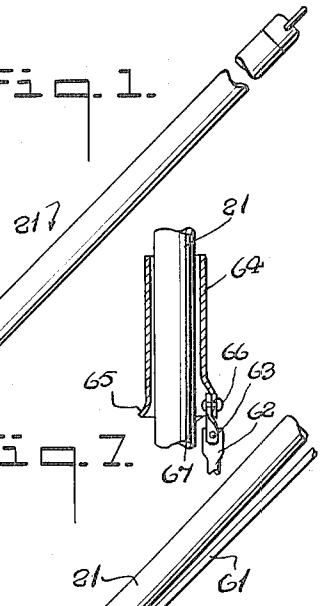


Fig. 1.



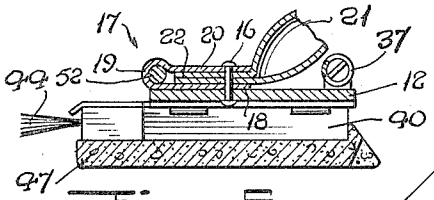


Fig. 6.

Fig. 7.

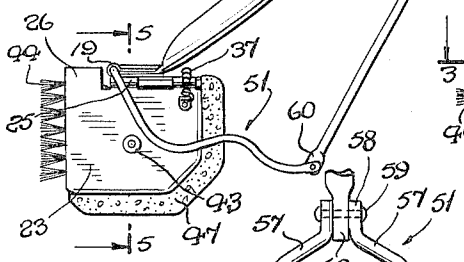


Fig. 2.

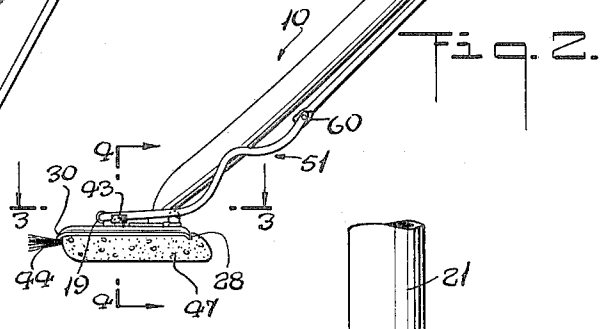


Fig. 3.

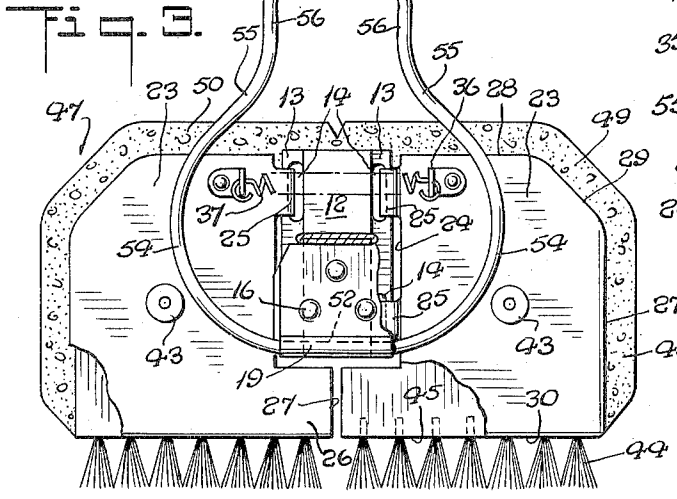
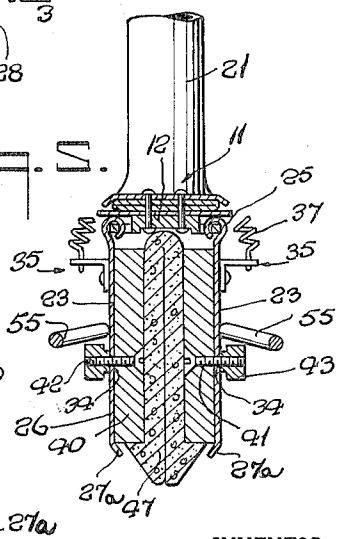


Fig. 5.



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COMBINED MOP AND WRINGER

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5 Claims. (Cl. 15—116)

This invention relates to mops.

It is particularly directed to a mop having a mopping pad of sponge-like material and provided with means to squeeze out water from the pad.

An object of this invention is to provide a mop of the character described comprising an elongated handle, a head to which the handle is attached, a pair of wings hinged to the head about parallel spaced hinges running from front to rear, a single pad of sponge material attached to the underside of both wings and traversing the space between said wings, and means to cause the wings to rotate downwardly about the hinges toward each other so that the pad will be folded together in half and whereby pressure of said wings toward each other will cause the doubled over pad portions to press against each other for squeezing the water out of the pad.

Another object of this invention is to provide, in a mop of the character described, highly improved means for causing the wings to be swung downwardly and toward each other such means being activated by a sleeve slidable on the mop handle.

Yet another object of the present invention is to provide a mop of the character described comprising a mop head, a mop handle attached to said head, a pair of wings hinged to opposite sides of the head, a sponge mop pad attached to the underside of the wings and traversing the space between the wings, releasable means for swinging the wings downwardly and toward each other to fold the pad in half about its mid-portion for squeezing water out of the pad, and spring means to return the wings to normal, co-planar position upon releasing said wings.

Still another object of this invention is to provide a mop of the character described comprising a head, a pair of wings hinged to opposite sides of the head about spaced parallel hinges, rigid blocks detachably attached to the undersides of said wings, and a sponge-like mop pad attached to the undersides of said blocks and traversing the space between said blocks.

Yet another object of this invention is to provide in a mop of the character described, highly improved means for swinging said wings downwardly and toward each other about their hinges, said means comprising a member hinged to said head about an axis perpendicular to said hinges and having portions adapted to engage said wings and move them downwardly upon swinging said member downwardly, a sleeve slidable on the mop handle, and a link interconnecting the rear end of said handle with the sleeve.

A still further object of this invention is to provide a strong and durable mop of the character described, which shall be relatively inexpensive to manufacture, easy to manipulate and handle and which shall yet be practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which is shown various illustrative embodiments of this invention:

Fig. 1 is a side elevational view of a mop embodying the invention and showing the mop in position where the mop pad is being squeezed;

Fig. 2 is a partial side elevational view of the mop in normal mopping position;

Fig. 3 is an enlarged cross sectional view taken on line 3—3 of Fig. 2, with parts broken away;

Fig. 4 is an enlarged cross sectional view taken on line 4—4 of Fig. 2;

Fig. 5 is an enlarged cross section taken on line 5—5 of Fig. 1;

Fig. 6 is a cross sectional view taken on line 6—6 of Fig. 4; and

Fig. 7 is a cross sectional view illustrating the sleeve on the mop handle and its connection to the link which operates the squeezing means.

Referring now in detail to the drawing, 10 designates a mop embodying the invention. Said mop comprises a head 11 running from front to rear, said head comprises a plate 12 provided at the sides thereof with depressed longitudinal extensions 13, each formed with a pair of aligned longitudinal slots 14 adjacent its outer edges. Riveted to the top of plate 12, as by rivets 16, is a folded over piece of metal 17 having a bottom portion 18 contacting the top surface of member 12, a front folded over curved portion 19, and a top portion 20 parallel to and spaced above portion 18. The front portion 19 serves as a hinge bearing, as will be seen hereinafter.

Attached to the head 11 is the mop handle 21 which may comprise a tube of metal, the front end of which is squeezed flat to form a tongue 22 extending forwardly at 45° to the body of the handle. The tongue 22 is received between portions 18 and 20 of member 17 and is fixed thereto by the rivets 16.

Hinged to the head 11, are a pair of similar, symmetrically disposed wings 23. The wings 23 may comprise metal plates having inner edges 24 from which extend spaced, aligned tubular ears 25 passing through the slots 14 for hinging the wings to opposite sides of plate 12. The wings 23 extend forwardly beyond the front of the head 11. Said wings 23 are formed, adjacent their front ends, with inward extensions 26 projecting toward each other in front of the head. The projections 26 have inner edges 27 terminating adjacent each other. The wings 23 have outer edges 27*a*, rear edges 28 and inclined edges 29, interconnecting the edges 27*a* and 28. The edges 27*a*, 28 and 29, may be bevelled downwardly slightly, if desired. The front edges 30 of plates 23 may also be bevelled downwardly slightly.

It will now be understood that the wings 23 are normally in a horizontal co-planar position. They may be swung downwardly about the hinged ears 25 to vertical position as shown in Fig. 5. When that is done, the portions 26 swing upwardly at the same time. The wing plates 23 are formed with central through openings 34 for the purpose hereinafter appearing.

Attached to the upper surfaces of the wing plates 23, adjacent the rear edges 28 thereof and adjacent the rear hinged ears 25, are angle brackets 35. Interconnecting the lugs 36 is a coil tension spring 37 having terminal hooks engaging the apertures in said lugs. The spring 37 crosses over the top of the rear end of plate 12 and normally holds the wings 23 in horizontal co-planar positions. If the wings are swung downwardly, spring 37 is tensioned so as to bias said wings back toward horizontal co-planar positions when the wings are released.

Removably attached to the underside of each wing 23 is a block 40 of wood or other rigid material. Each block 40 has substantially the outer contour of wing 23 (with the exception of the ears 25). The block 40 is somewhat smaller, however, than the wing 23 so that the bevelled edges 27a, 28, 29 and 30 of the wings extend beyond the blocks. The blocks 40 are of uniform thickness. They are formed with countersunk through openings 41 registering with the openings 34 in the wings. Extending through the openings 41 are screws 42 which also pass through the openings 34. Screwed to the upper ends of the screws 42 are nuts 43 contacting top surfaces of the wings 23. The heads of the screws 42 are received in the countersunk portions of the openings 41 which are located at the undersides of the blocks 40. A row of brush bristles 44 are attached to the front edges 45 of the blocks 40 and project forwardly therefrom.

Attached to the undersides of the blocks 40 and traversing the space between said blocks is a mop pad 47 of sponge-like material. The pad 47 may be made of synthetic sponge material or natural sponge material. Said pad 47 extends beyond the ends 27a of the wings 23 as at 48 and also extends beyond inclined edges 29 as at 49, and beyond the rear edges 28 as at 50. When the wings 23 and the blocks 40 are in horizontal co-planar positions, the pad 47 is flat. At such time, the spring 37 is in a horizontal straight position as shown in Fig. 4. The pad 47 traverses the space between the blocks 40 as shown in Fig. 4 and maintains the wings 23 in co-planar position. The pad 47 may be glued to the wood blocks 40 or attached thereto in any suitable manner.

It will also be observed that when the wings are swung down in the manner hereinafter described toward each other, the pad 47 will be folded over in half about its mid-section in the space between the blocks 40, and the folded portions of the pad will be pressed together to squeeze out water therefrom.

Means is provided to swing the wings downwardly and toward each other. To this end, there is pivoted to the head 11, a wing folding or operating member 51. Said member 51 may be made from a single piece of round wire stock, symmetrical about its mid-portion. Said member 51 comprises a central straight wire portion 52 journaled in the bearing 19 for swinging movement about a horizontal axis perpendicular to the axes of the ears 25. Extending from the central portion 52, are outwardly and rearwardly curved or bellied portions 54. Extending from the curved portions 54 are upwardly and inwardly inclined portions 55. Extending from the portions 55 are upwardly and rearwardly inclined parallel portions 56.

Extending from said portions 56 are inwardly, rearwardly and upwardly inclined portions 57. Extending from said portions 57 are parallel spaced apertured ears 58 inclined upwardly and rearwardly. Extending through the apertured ears 58 is a transverse horizontal pivot pin 59 traversing the space between said ears. Hinged to the pin 59 and received between the ears 58 is the lower apertured end 60 of a link 61. The link 61 may be made of round stock and its lower apertured end 60 may be flattened.

The upper end of the link 61 is flattened as at 62 and apertured to receive a pivot pin 63. Slidable on handle 21, is a sleeve or tube 64 having an outwardly flaring lower end 65. Riveted to the rear side of underside of the flaring end 65, as by rivet 66, is a connector 67, the lower end of which is pivoted to the pivot pin 63. It will be noted that the rivet 66 is at right angles to the pivot pin 63 (Fig. 7), and that the connector 67 is twisted so that its upper end is in a plane at right angles to its lower end.

When the wings 23 are in horizontal position, the outwardly bellied portions 54 of member 51 are located just above said wings. When the sleeve 64 is pushed downwardly by the operator, the link 61 rotates member 51 about the bearing 19 in a clockwise direction looking at Fig. 3. Portions 54 hence press downwardly against the wings 23 to start them swinging downwardly. As the tube 64 continues downwardly on the handle, portions 55 engage the wings 23 to gradually press them further downwardly and together and finally portions 56 press the wings tightly together. During such action, the folded together pad portions are compressed to squeeze the water out of the pad.

It will be noted that the space between portions 56 is equivalent to the distance between the outer surfaces of wings 23 when the latter are in vertical positions. It will be further noted that the compression of the pad is gradual since the portions 54, 55, 56 serve as cams to gradually squeeze the wings together.

It will be further noted that the space between the blocks 40 in the downwardly swinging position of the wings is less than twice the normal thickness of the pad 47 so as to make sure that the pad is squeezed when the wings are swung down.

After the mop is squeezed out, the tube 64 may be slidably moved upwardly on the handle 21, causing member 51 to be swung upwardly or at a counterclockwise direction from the position of Fig. 1 to the position of Fig. 2. During such action, the spring 37 which has been tensioned pulls the wings upwardly to straighten out the mop pad. The pad itself will limit the upward swinging movement of the wings to horizontal position.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A mop comprising a head extending from front to rear, a pair of wing plates hinged at their inner ends to the sides of said head, a coil tension spring interconnecting said wing plates and straddling said head, blocks removably attached to the undersides of said wing plates, and leaving a space under the head between said wing plates, a single flat sponge pad attached to the undersides of said blocks and straddling the space between said blocks, a member attached to the front end of said head and formed with a bearing at right angles to the hinge connections between said wing plates and head, a second member symmetrical about its mid-portion and formed of a single piece of round wire stock, having a central portion journaled in said bearing, and outwardly and rearwardly curved portions extending from said central portion, portions inclined rearwardly, upwardly and inwardly from said curved portions, and portions inclined upwardly and disposed parallel to each other, extending from said inclined portion, said second member being of such size as to engage the pivoted wings when said second member is swung downwardly.

2. The combination of claim 1, in combination with a handle attached to said head, a sleeve slidable on said handle and a link interconnecting said second member with said sleeve.

3. A mop comprising a head, a pair of wings hinged to opposite sides of the head about parallel axes running from front to rear and movable from a coplanar position to parallel positions, squeezable mop pad means at the undersides of said wings, a handle fixed to said head and inclined upwardly and rearwardly therefrom, a single member having a central portion traversing said head and hinged to said head about an axis at right angles to the pivotal axes of said wings, said member having portions extending outwardly and rearwardly from the central hinged portion and overlying the wings when said wings

are in coplanar position, and whereby when said member is swung downwardly, said outwardly and rearwardly extending portions will cause said wings to be swung downwardly and toward each other, and said member having portions extending from said outwardly and rearwardly extending portions and disposed parallel to one another to retain said wings in parallel relationship, said squeeze pad means being adapted to be pressed together and squeezed when said wings are in parallel relationship, a member slidable on said handle, and a link interconnecting said slidable member with the outer ends of said parallel portions of said hinged member to cause said hinged member to be swung downwardly when said slidable member is slidably moved downwardly along the handle.

4. The combination of claim 3, in combination with a coil tension spring interconnecting said wings and overlying said head, said spring being adapted to be tensioned when the wings are swung downwardly from coplanar to parallel position, and whereby when said hinged member is swung upwardly, releasing said hinged members, said tension spring will cause said wings to swing toward coplanar positions.

5. The combination of claim 4, said squeeze mop element comprising a single mop pad interconnecting said wings and having a portion underlying said head, and said pad being adapted to be folded in half and squeezed together when said wings are swung downwardly to parallel positions.

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