J. A. MEINHARDT.

MOP AND SUPPORTING FRAME THEREFOR.

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1,414,036. **Patented Apr. 25, 1922.**

Fig. 1.

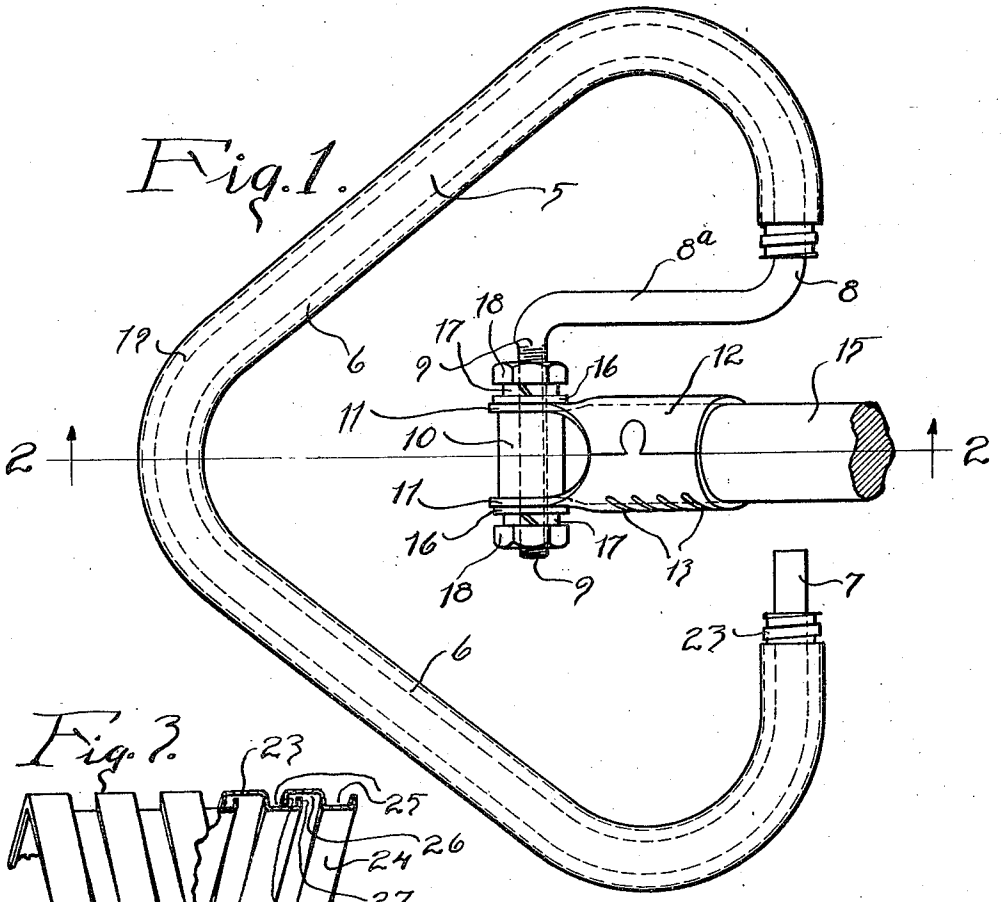


Fig. 3.

Fig. 4.

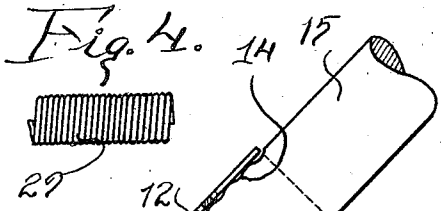
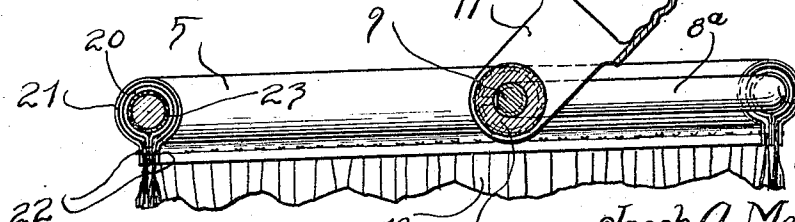


Fig. 2.



Witness

Geo. L. Lawrence

Inventor

Jacob A. Meinhardt.

By Chas. C. Tillman

Atty.

UNITED STATES PATENT OFFICE.

JACOB A. MEINHARDT, OF CHICAGO, ILLINOIS.

MOP AND SUPPORTING FRAME THEREFOR.

1,414,036. Specification of Letters Patent. Patented Apr. 25, 1922.

Application filed June 13, 1921. Serial No. 477,268.

To all whom it may concern:

Be it known that I, JACOB A. MEINHARDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Mop and Supporting Frame Therefor, of which the following is a specification.

This invention relates to improvements in cleaning devices in general, but has particular relation to that type of such devices used for mopping or cleaning floors, walls and other surfaces, and it consists in certain peculiarities of the construction, novel arrangement and combination of the various parts thereof as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a mop and supporting frame therefor, which shall be simple and inexpensive in construction, strong, durable and efficient in operation, with its parts so made, arranged and co-operating one with another, that, when it becomes necessary or desirable to remove a mop from the frame, and replace it with another, this can be accomplished with ease and facility and without the usual difficulties encountered in mops of the construction heretofore in general use, by reason of the shrinkage of the mop-cloths at their hems or loops, which receive a member or part of the supporting frame.

Another object is to provide a mop and frame therefor, of the above mentioned general character, in which the said frame shall be of such construction as to be ever ready for the mop to be placed and automatically maintained in operative position thereon, and the mop so constructed that it will be ever ready to be placed and maintained for use on the frame, without any preliminary adjustments or changes in the form or parts of either.

A further object is to provide a frame which shall be of such construction as to be reversible with respect to its handle, that is, so that either face of the frame may be placed uppermost or adjacent the handle.

Still another object is to furnish an improved and highly efficient bearing connection between the handle and frame of the device whereby they will self-adjustingly position themselves with respect to each other in its operation, without undue looseness between said members.

A still further object is the provision of a mop furnished with a head or frame engaging portion of a novel and improved kind, which is adaptable for use in connection with supporting frames of various kinds.

Other objects and advantages of the invention will be disclosed in the following description and explanation.

In the accompanying drawing—

Fig. 1 is a plan view of a mop and frame therefor constructed according to my invention and showing the parts thereof in about the positions they will occupy when ready for use.

Fig. 2 is a central sectional view taken on line 2—2 of Fig. 1 looking in the direction indicated by the arrows.

Fig. 3 is a greatly enlarged view partly in perspective and partly in section of a portion of the flexible and elastic tube carried by the mop for detachably securing the latter on the frame, and

Fig. 4 is a detached fragmental perspective view of a modified form in the means for detachably mounting the mop on the frame.

Like numerals of reference refer to corresponding parts throughout the different views of the drawing.

Referring now more particularly to Figs. 1 and 2 of the drawing, the reference numeral 5 designates as a whole the frame of the device, which frame is substantially triangular in outlines and is made of a single piece in the form of a rod or large wire.

As shown, the sides 6 of the frame 5 are arranged at angles to each other and at their juncture form a more or less pointed portion of the frame for the purpose of entering corners to be cleaned. One of the sides 6 is provided with an inwardly extended arm 7 which terminates short of the axial line of the frame as is clearly shown in Fig. 1, while the other side 6 of the frame is provided with an inwardly extended arm 8 which is located in the same plane with the sides and extension 7 but is extended first towards the side 6 with which it is connected, and then towards the other side of the frame, thereby providing a shaft or arm 9 upon which the bearing connection for the handle of the device is mounted.

The shaft portion of the arm 8 is screw-threaded as shown and has loosely mounted thereon a sleeve or collar 10 which is of sufficient length to fit snugly between the prongs 11 of a socket member 12 which is preferably

tubular in shape and is by preference provided on its inner surface with a plurality of pitched or inclined ribs 13 to co-act with the screw-threads 14 of the handle 15 which is fitted into said socket member. As shown, the prongs 11 of this member are extended therefrom in parallelism and each is provided with a transverse opening for the reception of the shaft 9. Located on the outer surface of each of the prongs 11 and around the shaft, is a washer 16, and located on the outer surface of each of said washers is a split spring washer 17, which are held in place against the washers 16 by means of nuts 18 one of which is located in screw engagement with the shaft 9 outwardly of each of the spring members 17.

In assembling the parts of this bearing connection which unites the shaft 9 and handle 15, one of the nuts 18 is placed on the free end of the shaft 9 and screwed thereon to about the position adjacent the arm 8 as shown in Fig. 1, after which one of the spring washers or members 17 and one of the plain washers 16 is positioned on the shaft 9 against the inner surface of said nut. The prongs 11 of the socket member 12 having located therebetween the sleeve 10, are then placed on the shaft 9 so that one of said prongs will rest against the washer 16 adjacent the arm 8 of the frame. When thus positioned, the other washers 16 and 17 are positioned on the outer portion of the shaft 9 and held in position thereon by the nut 18 adjacent the free end of said shaft.

By this arrangement, it is apparent that by turning the nuts 18 in the proper direction the tension of the spring members 17 can be regulated so as to increase or decrease the pressure of the prongs 11 of the socket 12 against the ends of the sleeve 10, thereby affording means for holding the socket 12 against too free movement on the shaft 9, yet so as to permit of its self-adjustment with respect to the frame 5 while the device is being used.

The mop of the device is designated as a whole by the numeral 19 and may be of the ordinary or well-known construction, but in order to render it adaptable for co-action with the frame 5 as a support therefor, said mop is provided about its middle on opposed surfaces with binding strips 20 and 21 which, when the mop 19 is folded around the frame engaging tube or member, as is shown in Fig. 2, will lie on the inner and outer surfaces respectively of the mop. These binding strips 20 and 21 are secured together by means of stitches 22, which stitches also pass through the body of the mop 19, and thus form a loop or hem for the frame engaging tube or member 23 which tube or member is by preference in the form of a flexible and somewhat elastic metal tube of a sufficient length, when placed on the frame 5, to extend thereon from a point near the arm 8 to near the end of the other arm 7 of the frame as shown in Fig. 1 of the drawing.

The frame engaging tube or member is designated as a whole by the numeral 23 and consists of a single piece 24 of spirally wound sheet metal which is formed between its edges with oppositely disposed channels 25 and 26, the outer edge 27 of the channel 25 overlapping the free edge 28 of the channel 26 in each convolution of the spirally wound tube, thereby affording flexibility and elasticity or longitudinal extension of the tube. This tube is of sufficient diameter to conveniently receive therein the supporting frame 5 and by reason of the flexibility of the tube, it is apparent that after the mop 19 has been mounted thereon, it can be readily placed on the frame 5 with its parts positioned substantially as shown in Fig. 1 of the drawing, when it is obvious that by reason of the inwardly extended or curved arms 7 and 8 of the frame, the said engaging tube or member will be maintained in the proper position on the frame against accidental displacement.

In using this frame engaging tube or member 23, it is manifest that the mop head or frame engaging portion will engage or fit into the corrugations of the tube 23 between the channels thereof and thus prevent the mop sliding longitudinally with respect to the tube. Furthermore, it will be understood that as the tube is extensible, when it is placed on the frame 5, or rather when the arm 7 of said frame is inserted in one end of the tube and the latter is forced on the frame towards the arm 8, the tube will be deformed in passing over the curves of the frame, thus allowing the cloth of the mop to freely enter the spaces or corrugations between the channels 25 of said tube. After that portion of the tube which has been thus deformed in passing over the curves of the arms 7 has reached the straight portions of the frame 5, it is manifest that the spirals of the tube will assume their normal positions and thus grip interposed portions of the cloth of the mop between the channels 25 so as to securely hold the mop against slidable movement on the tube.

In Fig. 4 of the drawing I have illustrated a fragment of a modified form of the frame engaging member adapted to be carried in the loop or hem of the mop in a similar manner to that in which the tube 23 is carried by the mop, which consists of a spiral-coil 29 of wire of a suitable size to fit snugly around the frame 5 when the same is inserted thereinto.

This modified form of the frame engaging member is of a suitable length to extend, when on the frame 5, from near the inturned portion 8^a of the arm 8 to a point near the

end of the arm 7 as in the first above described construction. As this modified construction is flexible as well as longitudinally extensible, it is obvious that the deforming action of the spirals thereof, when it is placed on the skeleton frame 5, will be similar to those of the tube 23 and above described, and will permit the same function with respect to the mop in the hem or loop of which the modified construction of the frame engaging member is located.

It will be understood that the wire rod or other material out of which the frame 5 is made, is comparatively stiff or rigid, and that all of its parts will be located in the same plane so that uniform pressure will be exerted on the mop when pressed against the surface to be cleaned by the mop frame.

While I have shown the frame as being substantially triangular in outlines, yet I do not wish to be understood as limiting myself to such form, as I may make the frame of various shapes, yet in such a manner as to permit a mop carrying a frame engaging member to be slid on one end of the frame towards the other end thereof.

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

1. In a device of the class described, the combination with a frame made of relatively stiff material, of a flexible and longitudinally extensible mop-carrying frame-engaging metal member slidably mounted on the frame.

2. In a device of the class described, the combination with a frame made of relatively stiff material, of a corrugated flexible and longitudinally extensible mop-carrying frame-engaging member slidably mounted on the frame.

3. In a device of the class described, the combination with a frame made of relatively stiff material, of a flexible and longitudinally extensible mop carrying member slidably mounted on the frame, said member being a separate element from the mop.

JACOB A. MEINHARDT.