C. DUNCAN.

MOP FRAME.

APPLICATION FILED JULY 12, 1917.

1,256,989.

Patented Feb. 19, 1918.

2 SHEETS—SHEET 1.

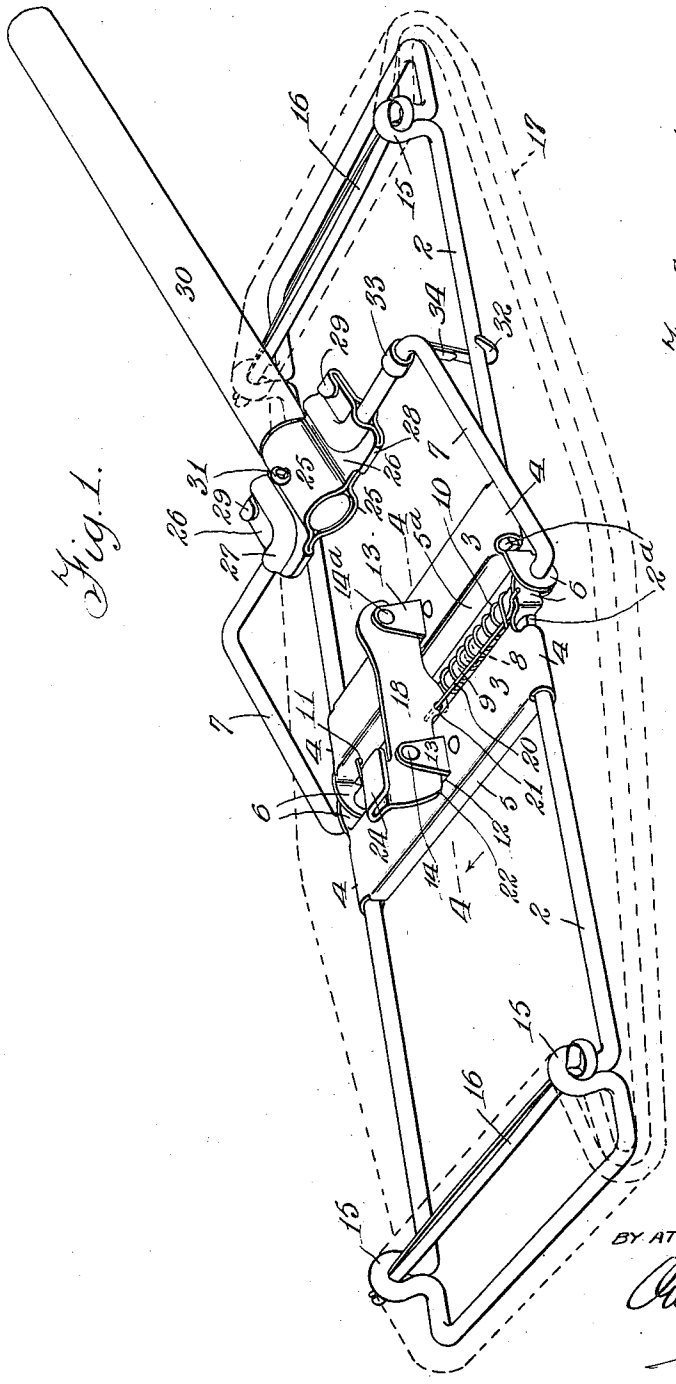


Fig. 1.

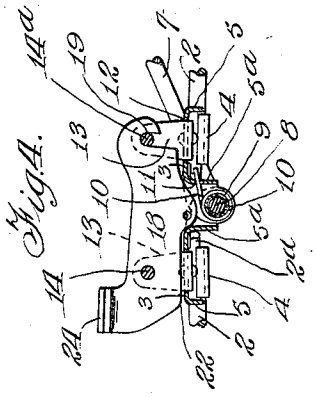


Fig. 4.

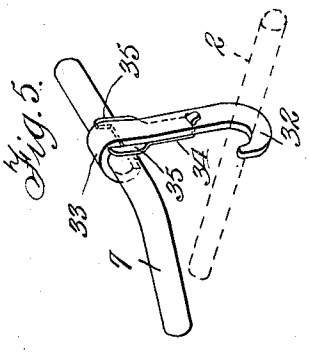


Fig. 5.

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2 SHEETS—SHEET 2.

Fig. 3.

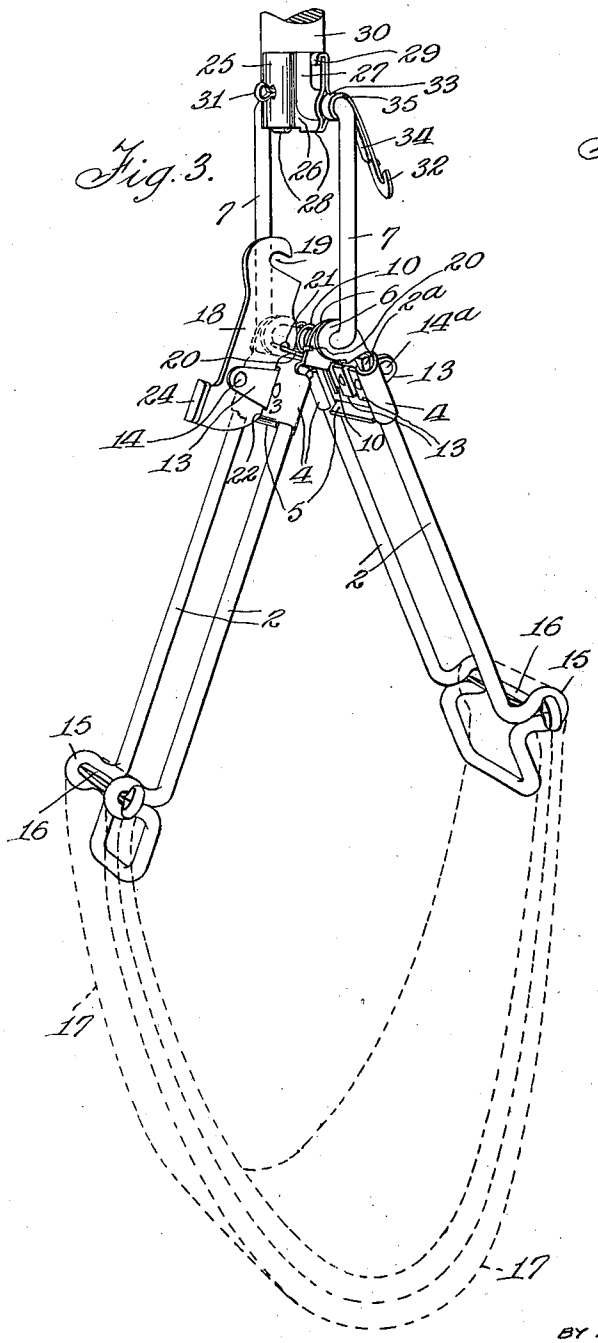
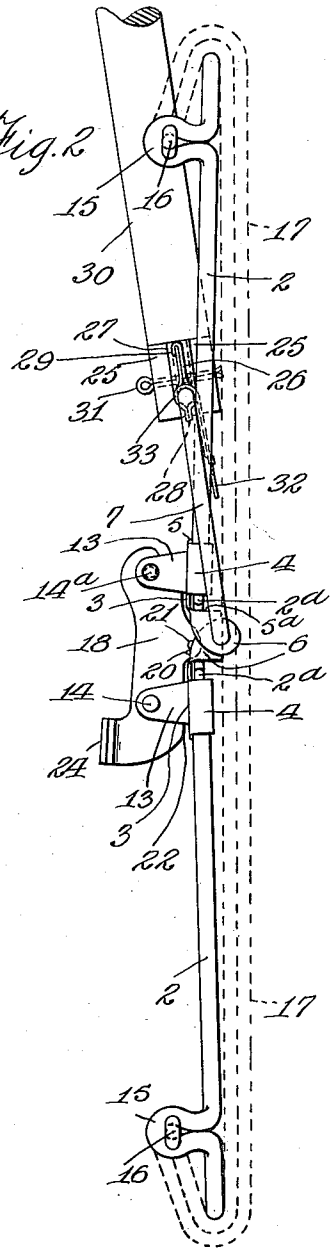


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MOP-FRAME.

1,256,989. Specification of Letters Patent. Patented Feb. 19, 1918.

Application filed July 12, 1917. Serial No. 180,154.

To all whom it may concern:

Be it known that I, CHARLES DUNCAN, a subject of the King of Great Britain, and resident of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Mop-Frames, and do hereby declare the following to be a full, clear, and exact description of same.

This invention relates to frames for supporting the fabric elements of mops for dusting or mopping floors, walls, windows, etc., and appertains particularly to a collapsible frame normally held by a latch device to support the fabric in a flat, stretched-out position and which, by release of the latch, can be folded up to loosen such fabric for the purpose of squeezing or wringing same.

An object of the invention is to simplify and improve the latch device.

Another object is to standardize the construction of the frame and make corresponding parts interchangeable for economy of manufacture and facility in assembly.

A further object is to provide an improved hook between the frame and its handle.

A further object is to improve the handle socket for economy and facility in the production thereof.

The above with still further objects having in view the general improvement of construction will be hereinafter more fully described and particularly pointed out in the appended claims.

For full comprehension, however, of my invention reference should be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate the same parts and wherein:

Figure 1 is a perspective of the mop frame as in use;

Fig. 2 is a side elevation of same set on end;

Fig. 3 is a perspective of the frame collapsed; and

Fig. 4 is a detail section on line 4—4 Fig. 1;

Fig. 5 is a perspective of the handle hook.

My improved mop frame, as well be seen from the accompanying drawings consists of two wire frames 2 of U-form hinged together at their inner or open adjacent ends through the medium of cross-pieces 3. These cross-pieces are in the form of plates with end flanges 4 and side flanges 5 and 5^a respectively, the end flanges being bent downwardly around the sides of the frames 2 just inside enlarged ends 2^a thereof and the inner side flanges 5 extending down between the sides near their open ends to lend rigidity thereto. The outer or adjacent side flanges 5^a of the cross-plates have end lugs 6 extending in the longitudinal line of the frame, such lugs being apertured and those at each end of the cross plates overlapping and being pivotally connected by the bail of the mop handle to form the hinge connection between the frames 2. The bail consists of two lengths 7 of wire having their lower ends extended inward loosely through the overlapping pairs of apertured lugs and their upper ends extended inwardly over the mop frame where they are connected by a handle socket to be presently described. The ends 8 serve as pivot pins supporting the frames 2 and about which the latter swing, such ends entering a distance piece or sleeve 9 extending between the pairs of lugs. A coiled spring 10 encircling sleeve 9 and having its ends respectively attached to one of the cross plates 3 by passing through holes 11 in the flanges 5^a, serves to yieldingly restrict the swing of the frames 2 into close contact with each other upon the release of a latch to be hereinafter described.

The plates 3 have apertures 12 therein opposite each other in the longitudinal line of the frame and each plate carries angle pieces 13 at opposite sides of its aperture, one flange of each angle piece being riveted or otherwise suitably secured to the underside of the plate and the other flange protruding upwardly therethrough. The upwardly extending flanges constitute lugs spaced transversely of the frame and carry pins 14 and 14^a bridging the spaces therebetween.

The sides of the frame 2 near their outer ends are formed with oppositely arranged eyes 15 in which split pins 16 are located and serve to detachably secure a mop fabric or cloth 17 to the frame. The eyes 15 are

formed by bending the wire of the frames up into open loops of U-form and constricting the lower portions of the loops to close same and form the eyes, in contradistinction to crossing the wire to form such eyes.

The several elements above described as constituting the hinged members are of a standard construction with respect to each other and corresponding parts are of such an identity as to be interchangeable thus facilitating their manufacture and assembly.

A latch 18 is mounted upon one of the plates, being pivotally mounted upon one, 14, of the beforementioned pins and extending on opposite sides thereof in the longitudinal line of the frame. One end of the latch is adapted to extend across the hinged connection of the frames 2 and is formed upon its underside with a hook or notch 19 to engage over the pin 14^a and, holding the hinged frames 2 in substantial alinement and against movement toward each other, maintain the mop fabric stretched out in a flat position.

The hook end of the latch is yieldingly held against upward movement by a spring 20 which, resting upon the top of one of the lugs 6 extends beneath one terminal of the spring 10 just outside hole 11 and has its opposite end passed through a hole 21 in the latch between the notch 19 and pin 14. This spring 20 is thus positioned in a simple way and tensioned in a manner to avoid sharp bends which would tend to crystallize and weaken the material thereof.

The opposite end of the latch is preferably shorter than the hook end and is adapted to be pressed down to raise the latter out of engagement with the latch pin 14^a and permit swinging of the frames 2 toward each other to loosen the cloth as shown in Fig. 2. This presser end of the latch is formed with an elbow or stop 22 diagonally beneath the pin 14 and overlying the plate 3 upon which it is mounted and such stop, while permitting sufficient swinging of the latch to release it, engages with the plate at such release and so prevents excessive movement and consequent possibility of distortion of spring 20.

The frames 2 can be alined without the necessity of directly handling same, by placing their free ends upon the floor or other surface and pressing down upon the frame by means of the handle, the frames being thus alined and the cloth stretched flat. The spring 20 causes the latch to automatically snap down over pin 14^a and secure the frames in their alined position. Accidental disengagement of the latch is prevented by spring 20 and such displacement is also retarded by the notch 19 which is upwardly inclined away from the pivot pin 14 for the purpose of obstructing upward movement of the latch until pressure is applied at its presser end.

By pivoting the latch between its ends and making it a presser latch same can be released by the foot of the user and this feature, combined with the above described automatic engagement of the latch, avoids the necessity of touching the mop or frame with the hands. As the foot, however, might be inadvertently placed on the wrong side of the pivot I have formed the latch with a portion elevated above the normal top line thereof at a point just to the outer or presser side of the pivot 14 so that the foot naturally finds the raised portion first and the likelihood of mistake is avoided. This raised portion is formed preferably by providing the presser end of the latch with an upwardly extending tongue 24 bent, into a flat position, laterally first to one side and then back to the opposite side of and above the latch proper. The support provided by the pins 14, 14^a enables the latch to effectively stand up under pressure. The upper ends of the bail members 7 are as before mentioned joined by a handle socket, this socket being formed of semi-cylindrical halves 25 each presenting lateral flanges 26 extending outwardly in opposite directions transversely of the frame and having angular or L-shaped grooves 27 pressed therein and extending outwardly from the socket portions.

The two halves are made integral, webs 28 uniting the lower edges of those flanges 26 at each side. During assembly the webs are bent to bring the portions 25 side to side to form the handle socket, in which position the grooves 27 of one half respectively register with those of the other half and form sockets for the upper ends of the bail members 7 which latter terminate in ends bent to correspond to the grooves 27.

The upper portions of the socket halves are fastened together by means of lugs 29 formed upon the upper edges of the flanges of one half portion, the lugs being bent over the flanges of the other half and, in conjunction with the webs 28 at the lower edges of the flanges securely uniting the socket members and binding the flanges over the bent ends of the bail members. The socket formed by the members 25 receives the lower end of a pole 30 which is secured therein by a transversely extending split pin 31.

The formation of the socket in one piece enables same to be quickly and economically stamped out and applied to the frame, the elimination of rivets or like fastening devices serving to further reduce cost and time of manufacture and assembly.

The shoulder formed by the inwardly extending upper end of one of the handle bail members 7 has an outwardly facing hook

32 pivotally mounted thereon at the side of the handle socket and disposed transversely of the frame. The pivotal connection is formed by bending the shank of the hook loosely around the wire as at 33, to allow the hook which is normally out of the path of the frame side to permit free movement of the handle, being moved outwardly to a position where the hook will engage beneath the frame side and maintain the latter at a constant angle with respect to the handle.

A flat spring 34 attached to the shank of the hook by bending one end through an opening in such shank, extends along the latter and has its opposite end caught between the shank and bail 7. The latter end of the spring is formed with forwardly extending lugs 35 bearing upon the bail at the sides of the turned over shank and exert a binding action retarding the hook swinging too freely.

The hook 32 is adapted not only to engage with the frame at an acute angle thereto as shown by Fig. 2, for the purpose of holding the frame close to the handle so that it can be conveniently set on end for drying purposes but such hook is also adapted to engage with the frame at substantially right angles thereto as shown by Fig. 1. In this latter arrangement the frame is disposed in a most convenient angular position with the handle for mopping or dusting stairs or for access to corners, door frames, etc., above the user's head and the hook rigidly maintains this relative position of frame and handle thus avoiding wabbling or swinging of the frame under vigorous usage.

What I claim is as follows:

1. In a mop, a frame consisting of members hinged to swing toward each other, a cloth carried by the frame and a presser latch for preventing the frame members swinging toward each other, such latch being pivoted between its ends upon one of said frame members.

2. In a mop, a frame consisting of members hinged to swing toward each other, a cloth carried by the frame, transversely extending pins upon said frame, a latch pivoted between its ends upon one of said pins to swing up and down with relation to the frame and adapted to engage the other pin to prevent the frame members swinging toward each other and a spring yieldingly restraining upward movement of the latch.

3. In a mop, a frame consisting of members hinged to swing toward each other, a cloth carried by the frame, a latch pivoted between its ends upon one of the frame members and adapted to swing up and down with relation to the frame, one end of the latch being adapted to engage with the other frame member and prevent swinging of the frame members toward each other, a spring yieldingly resisting upward movement of the engaging end of the latch and a shoulder upon the other end of the latch limiting the downward movement of same.

4. In a mop, a frame consisting of members hinged to swing toward each other, a cloth carried by the frame and a presser latch pivoted between its ends upon one of the frame members and adapted to engage at one end with the other frame member, to prevent the swinging of the frame members toward each other, the opposite end of the latch having a portion raised above the normal top line of the latch as a guide for the application of pressure.

5. In a mop, a frame consisting of members hinged to swing toward each other, a cloth carried by the frame and a latch pivoted between its ends upon one of the frame members and adapted to engage at one end with the other frame member to prevent the swinging of the frame members toward each other, the opposite end of the latch having an upwardly extending tongue bent, into a flat position, laterally first to one side and then back to the opposite side of and above the latch proper.

6. In a mop, a frame consisting of U-form frame members having their open ends adjacent each other, plates connecting the open ends of the frames, such plates respectively presenting end lugs arranged in the longitudinal line of the mop frame, the lugs at each end of one plate overlapping a lug at each end of the other plate, a handle bail having its ends respectively extending loosely inwardly through each pair of overlapping lugs and pivoting same together, a sleeve enveloping the inwardly extending ends of the handle bail between the pairs of overlapping lugs, a coil spring wound over said sleeve and having each terminal engaging one of said plates, upstanding lugs carried by each of said plates, the lugs of each plate being spaced transversely of the frame, pins carried between the lugs of each plate, a latch pivotally mounted upon one of said pins, one end of the latch having a notch therein for engagement over the other pin, the other end of the latch extending upwardly above the normal line of the latch and bent flat laterally of the latch and a spring resting upon one of said lugs at one end, passed under one terminal of said coil spring and having its opposite end engaged with the latch between the notched end of the latch and the pivot pin thereof.

7. In a mop, a frame having eyes therein, a cloth and removable split pins inserted through the eyes and engaging the cloth to attach same to the frame.

8. In a mop, a frame, a bail pivoted to the frame, a pole and a socket for attaching the pole to the bail, such socket consisting of two

halves presenting semi-circular pole receiving portions with flanges at opposite sides thereof engaging the bail, the flanges at each side of the pole receiving portions being connected at the bottom by webs formed integral with the flanges and lugs at the top of the flanges of one half portion and bent over the other flanges to act with the webs in securing the halves together.

9. In a mop, a frame, and a handle for the frame consisting of wire lengths, one of the ends of same being pivoted to the frame at opposite sides thereof and the opposite free ends extending inwardly over the latter toward each other, a one piece socket member having two semi-cylindrical portions with oppositely extending lateral flanges placed side by side, a web connecting the flanges at their lower edges, lugs carried by the top edge of the flanges at one side and bent over the other flanges, such flanges presenting L-shaped grooves extending outwardly from the semi-cylindrical portions and having said free ends of the wire lengths clamped therein, a pole having one end located between the semi-cylindrical portions and a transversely extending split pin securing the pole in place.

10. In a mop, a frame, a handle pivoted to the frame and a hook pivoted to the handle, slidable transversely of the frame and adapted to engage the latter to check relative movement of frame and handle.

11. In a mop, a frame, a handle pivoted to the frame and a hook pivoted to the handle said hook being adapted to engage the frame at a right or acute angle thereto to check relative movement of frame and handle.

12. In a mop, a frame consisting of frame members adapted to swing toward each other, a coiled spring having one terminal engaging one of said frame members and yieldingly preventing swinging of same toward each other, a latch pivotally mounted upon one of the members and adapted to engage the other member to hold the members from swinging toward each other and means for yieldingly holding the latch against upward movement consisting of a spring resting at one end upon one of said frame members passed under a portion of said coil spring and having its opposite end engaged with the latch between the ends of the latter.

In testimony whereof I have signed my name to this specification.

CHARLES DUNCAN.