March 10, 1931. J. C. HUNTER 1,795,651

MOP

Filed March 22, 1929

Fig. 3.

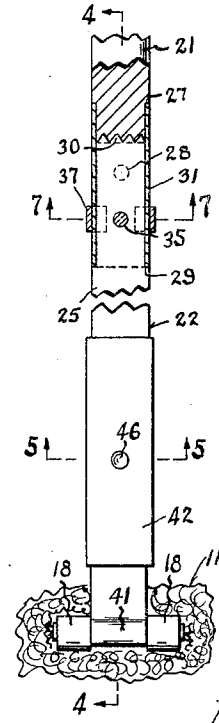


Fig. 1.

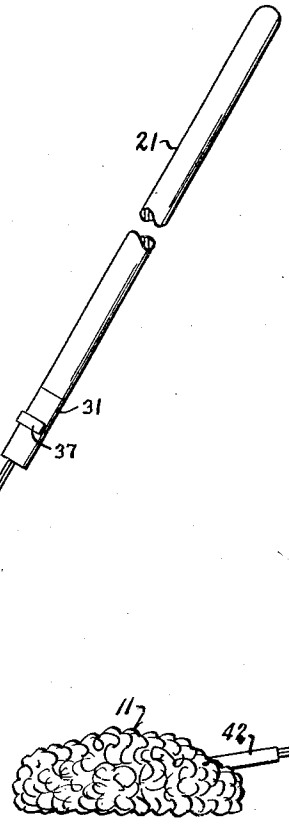


Fig. 2.

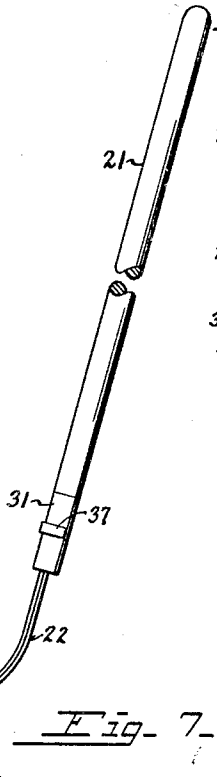


Fig. 4.

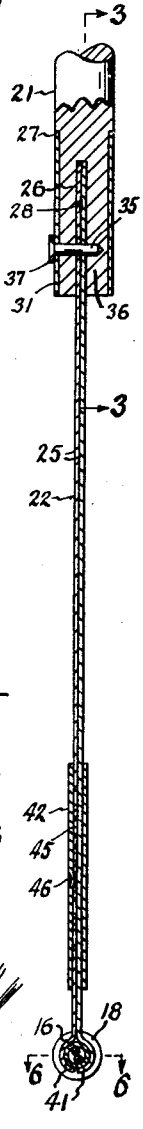


Fig. 7.

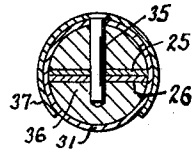


Fig. 5.

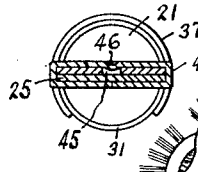


Fig. 6.

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Patented Mar. 10, 1931 1,795,651

UNITED STATES PATENT OFFICE

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MOP

Application filed March 22, 1929. Serial No. 349,233.

My invention relates to mops provided with strands of fiber for cleaning purposes.

It is the object of my invention to provide a mop with a flat spring structure of substantial length between the handle and the head, which can be bent to substantial extent at an angle to the handle, for permitting the head to be moved to substantial extent under radiators, pieces of furniture and other objects which are raised only slightly from the floor, and to maintain the head flat upon the floor while under such object; further, to provide novel means for releasably attaching the head and permitting the head to turn so as to present either of its side flatwise to the floor; and, further, to provide novel means for securing the spring structure to the handle.

My invention will be further readily understood from the following description and claims, and from the drawings, in which latter:

Fig. 1 is a side elevation of my improved mop, with the handle partly broken away, and the spring structure in unflexed relation.

Fig. 2 is a similar view, showing the spring structure in flexed relation.

Fig. 3 is a front elevation of my improved device, partly broken away, and partly in section in the plane of the line 3—3 of Fig. 4.

Fig. 4 is a longitudinal section of the same, taken in the plane of the line 4—4 of Fig. 3.

Fig. 5 is a cross-section of the same, taken in the plane of the line 5—5 of Fig. 4.

Fig. 6 is a plan view of the head and its attaching means, the latter taken in section in the plane of the line 6—6 of Fig. 4; and,

Fig. 7 is a cross-section of a detail, taken in the plane of the line 7—7 of Fig. 3.

11 represents the mop-head, which is built up of strands or cords of fiber, the strands 12 being clamped intermediate of their ends between the twisted wires 13, which are shown as forming a loop 14, preferably in the form of an ellipse, and having the ends 15 thereof presented toward each other and received in a tube 16, which is preferably of metal, the ends of the tube being swaged, as at 17, upon the twisted wire, to hold the wires in place and form the head. Cushion-rings 18 are located on the respective end portions of the tube.

21 is the handle, which is in the form of a shank of suitable length for ready manipulation. There is a resilient section 22 of substantial length between the handle and the head, which is bendable, for instance, as shown in Fig. 2, so that the head 11 may be readily pushed under radiators or in shallow spaces under pieces of furniture or other objects, while the mop-head lies flat on the floor and has full contact with the floor throughout its area. The head is also preferably rotatable on the resilient section so as to present either side of the head to the floor.

The resilient section is shown as a leaf-spring structure, the upper end of which is secured to the lower end of the handle, and the lower end of which is provided with a releasing bearing received about the attaching part of the head, exemplified as the tube 16.

This leaf-spring structure is shown as comprising a pair of spring leaves 25, extending downwardly from the handle. The lower end of the handle is provided with a slot 26, and with an annular rabbet 27. The upper ends of the spring leaves are preferably secured together, as by spot welding shown at 28.

The side edges of the springs are at their upper ends provided with rabbets 29. The extreme upper ends of the springs are preferably provided with teeth 30. A ferrule 31 is received in the annular rabbet 27 in the lower end of the handle and in the rabbets 29 in the side edges of the upper ends of the springs.

The teeth 30 at the upper ends of the leaf springs are preferably imbedded in the wood of the handle, being froced lengthwise into the upper wall of the slot 26 in the handle. A pin 35 is received in holes in the ferrule, in the wings 36 at the respective sides of the slot 26 in the handle, and in holes in the spring leaves, a clip 37 on the pin being received part way about the ferrule and clamping the pin in place.

The lower ends of the spring leaves are provided with bearing-parts, which are clamped toward each other about the tube 16 between the cushion-rings 18. The lower ends of the

spring leaves are preferably bent to form the bearing-parts 41, which are received about the tube 16 to form a bearing about said tube, in which the tube is rotatable, so that the mop-head may be rotated in its bearing for presenting either of its sides flatwise to the floor.

A slide 42 is slidable lengthwise on the spring leaves, and is received about the spring leaves as a clamping band to press the bearing-parts toward each other about the attaching part on the head, when the slide is moved toward said bearing parts.

This slide extends a substantial distance along the spring structure so as to stiffen the spring structure adjacent to the head, and to remove the point of flexure of the spring structure a distance from the head, in order that the head may be moved to greater distance under objects without having the spring structure interfere with said objects. This arrangement of parts places the point of flexure of the spring structure closer to the handle. Endwise shifting is also permitted between the spring leaves in the clamp-slide for ready flexure of the spring leaves when a plurality of adjacent spring leaves is employed.

In order to lock the clamp-slide in adjusted position, the mating faces between one of the spring leaves and the clamp-slide are provided with holes 45 and with a projection 46, the holes being shown in the spring leaf and the complemental projection in the clamp-slide. There is sufficient resilient yield between the parts to permit the projection to be pushed past the holes or to permit the projection to be received in any one of the registering holes for locking the clamp-slide in adjusted position.

If it is desired to attach the head to the handle, the slide 42 is moved along the spring leaves toward the handle for permitting the bearing-parts to be separated so that the bearing-parts may be forced about the tube in the space between the cushion-rings 18 on the respective ends of the tube. The clamp-slide is then moved toward the bearing, exerting pressure upon the bearing-parts to clamp the tube between the bearing-parts, the projection 46 being received progressively in the holes 45, as the clamp-slide is moved toward the bearing, and holding the clamp-slide in the adjusted position on the spring leaves to which it may have been moved in clamping the bearing-parts about the tube.

The mop may be used as an ordinary mop without flexure of the flexible section, the flexible section being sufficiently stiff for such use. If, however, it is desired to reach under a radiator or piece of furniture or into a shallow space under an object, downward pressure is exerted upon the handle, whereby the flexible section is flexed for arranging the lower end of the flexible section to desired extent lengthwise of the floor or at an angle to the handle, with the mop-head flat upon the floor, in which relation the mop-head may be pushed to full extent under an object.

The mop-head may also be rotatable in its bearing for presenting either side of the same to the floor. The cushion-rings 18 extend radially beyond the bearing 41 so as to prevent contact of any metal parts of the brush likely to scratch the floor, with the floor, any contact with the floor being made by the cushion-rings. These cushion-rings may be sections of rubber hose.

My invention provides a simple structure, readily manipulated, easily assembled and taken apart, and permits obscure recesses to be readily cleaned.

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

1. A mop comprising a head including an attaching part, a shank-handle, and a resilient flat leaf-spring structure extending in the direction of the length of said shank-handle and secured at its respective ends to said attaching part and to the lower end of said handle, said resilient flat leaf-spring structure extending a substantial distance between the lower end of said handle and said attaching part and being bodily flexible flatwise for arranging said handle at various angles to the plane of said head, substantially as described.

2. A mop comprising a head including an attaching part, a shank-handle, and a resilient flat leaf-spring structure comprising a pair of parallel flat spring leaves having their flat faces presented toward each other and secured at their respective ends to said attaching part and to said handle, said spring leaves extending a substantial distance between said handle and said attaching part and being flexible for positioning said head laterally at a distance from the longitudinal axis of said handle by the bending of said spring leaves, substantially as described.

In testimony whereof, I have hereunto signed my name.

JOHN C. HUNTER.