Jan. 3, 1961 N. ANTONUCCI, JR 2,966,689

MOP WITH WRINGING ROLLS

Filed June 16, 1958

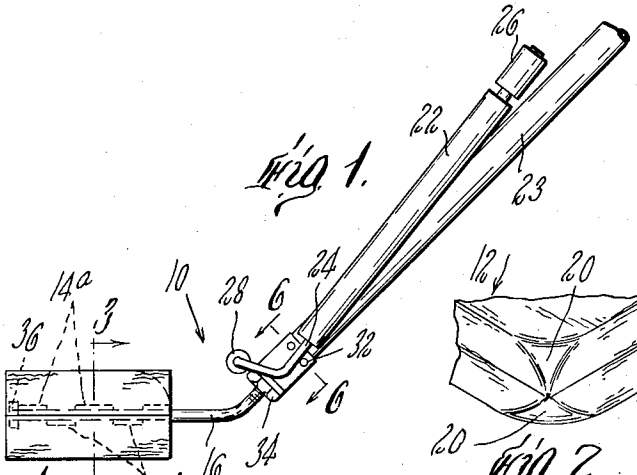


Fig. 1.

Fig. 7.

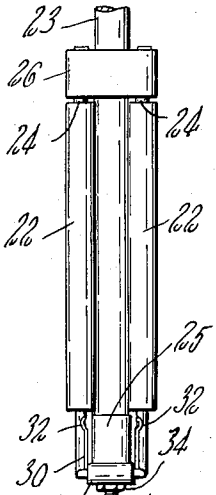


Fig. 2.

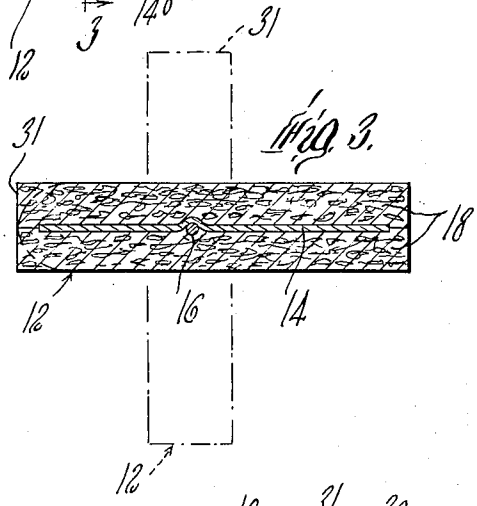
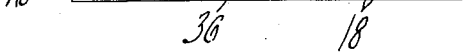


Fig. 3.



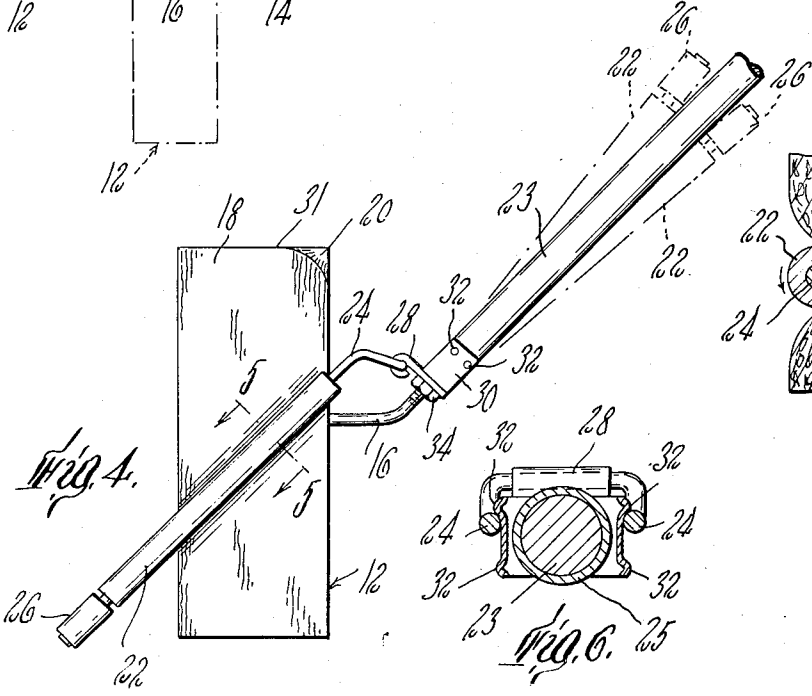


Fig. 4.

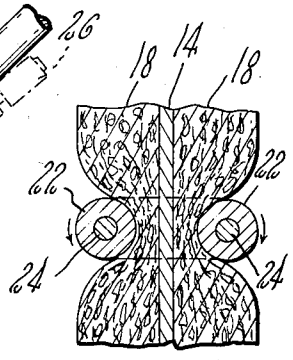


Fig. 5.

Fig. 6.

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MOP WITH WRINGING ROLLS

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2 Claims. (Cl. 15—119)

This invention relates to mops, and more particularly to such devices which carry thereon means for squeezing water from the working parts thereof.

Particular objects of the invention are to provide for self-wringing mops, such as sponge mops, in which fluid may be squeezed from the sponge or other liquid absorptive parts with great ease and facility and thoroughness and at the same time with minimum wear and tear on the sponge or other absorptive part.

Others objects are to provide for automatic rotation of the wet sponge about the axis above referred to when lifted out of working position, so that the same side of the sponge is always vertically upwardly directed; and to provide easily operated squeezing means mounted on the mop and adapted to engage in each squeezing operation the vertically upwardly directed edge of the mop above referred to, and thereafter sweep from said edge over the entire sponge or working portion.

Other objects, advantages and features will appear from the following description of the preferred embodiment, taken together with the drawings thereof, in which:

Fig. 1 is a side elevation of said preferred embodiment in working position, with the handle broken away;

Fig. 2 is a view corresponding to Fig. 1, looking from above in a direction generally perpendicular to the handle;

Fig. 3 is a sectional view of the mop head of said preferred embodiment, taken at 3—3 of Fig. 1, the dotted lines showing in outline the position assumed by the mop head when lifted out of working position on the floor;

Fig. 4 is a side elevation in which the mop head has been lifted out of engagement with the floor and in which the squeezing means has been partially moved over the surfaces of the mop head;

Fig. 5 is a sectional view, broken away, at 5—5 of Fig. 4;

Fig. 6 is a sectional view at 6—6 of Fig. 1; and

Fig. 7 is a broken away isometric view of the rear corner adjacent the side of the mop head which automatically moves into a vertically upward position when said mop head is lifted out of engagement with the floor or other surface to be cleaned.

Referring now in more detail to the drawings, there is shown in Fig. 1 a sponge mop indicated generally at **10**. The mop **10** includes a mop head indicated generally at **12** which comprises a central plate **14**, imperforate except where the same is alternatively deformed upwardly and downwardly at **14***a* and **14***b* respectively to provide a journal through which the shaft **16** is mounted for rotatable movement only. Secured to the plate **14** over the opposing faces thereof, and to each other around the edges thereof, are two sponge portions **18**. The portions **14***a* and **14***b* of the plate **14** are formed slightly off-center of said plate, whereby the mop head **12** when lifted

out of engagement with a working surface rotates about the shaft **16** until the heavier portion thereof is downward and the lighter portion is vertically upwardly oriented. Preferably the shaft **16** is journaled in the plate **14** an amount off-center which is insufficient to produce automatic rotation of the character described when the mop head is dry, but sufficient to produce such rotation when the same is wet. The upper and lower rear corners **20** at the vertically upward side of the mop head when the same is out of working position and automatically positioned for squeezing are relieved, by being rounded off, whereby as the mop head is engaged by the squeeze rolls **22** the same may easily roll up onto the sponge head **12** without tending to unduly wear or abrade the sponge portions where the rolls **22** first engage the same.

The squeeze rolls **22** are held in a predetermined spaced relation for rotation about shafts **24**, which terminate in the handle **26**. At their opposing ends, said shafts **24** are secured for offset pivotal motion within clip **28**. A generally U-shaped spring **30** is secured between the clip **28** and the handle **23** and provided on each side of said handle with a pair of detents **32** whereby the shafts **24** are engaged on each side of the handle to hold the squeeze rolls thereagainst when not in use. The shaft **16** is bent at an obtuse angle toward the handle **23**, and extending axially thereof thereinto and through the clip **28** and spring **30**, the nut **34** holding all the parts against relative rotation. If desired the handle **23** may be made of wood and provided at the end thereof with a metal bushing **25** therearound; and if desired mating detents may be provided in said bushing and the clip **28** to further insure against relative rotation.

The plate **14** is held against axial movement on the shaft **16** by means of the nut **36**.

In operation, the rotatable mounting of the mop head **12** on the shaft **16** which is at an angle from the handle **23** permits a universal motion that enables the user to mop wide areas while maintaining a flat working surface. Also rotatability of the mop head permits cleaning in narrow cracks and crevices, and this is further facilitated by the eccentric mounting of the shaft **16**, whereby the mop head **12** automatically assumes a vertical position when it is lifted. This latter feature also automatically aligns the mop head for engagement by the squeeze rolls **22**. Since the same edge **31** of the mop head is presented to the squeeze rolls **22** each time, for squeezing liquid from the mop head in a single movement thereover, and since on atlernate squeezings the squeeze rolls will begin from a position respectively adjacent opposite sides of the handle **23**, as indicated in dotted lines in Fig. 4, it is apparent that each time squeezing is to be done the portion of the handle currently adjacent the squeeze rolls **22** must be held upward. Thus, while the squeeze rolls describe oppositely directed arcs, relative to the handle, on successive passes over the sponge, the direction of movement over the sponge itself is always the same.

Though only the preferred embodiment has been described, other embodiments within the spirit and scope of the invention and the claims will occur to those skilled in the art.

I claim:

1. A mop comprising a mop head, a bent shaft, a handle, and two parallel shafts bearing squeeze rolls rotatably mounted thereon, said mop head having a pair of spaced sides and being rotatably mounted on one end of said bent shaft, eccentrically with the axis of said one end of said bent shaft nearer a first one of said spaced sides than the second, whereby when said mop is lifted from the floor in use said mop head moves about said

axis so that said first one of said spaced sides lies above said second, said handle being secured to the other end of said bent shaft, and said parallel shafts being pivotally secured at common ends thereof to said handle for joint vertical paths of movement with said mop head therebetween when said first one of said spaced sides lies above said second.

2. The mop of claim 1 in which said first one of said sides of said mop head is relieved at the extremity thereof toward said handle, whereby movement of said squeeze rolls over said mop head is made easier.

References Cited in the file of this patent

UNITED STATES PATENTS

2,413,872	Hoyer	Jan. 7, 1947
2,730,742	Zottola	Jan. 17, 1956
2,757,398	Richards et al.	Aug. 7, 1956
2,796,617	Bradshaw	June 25, 1957
2,867,832	Hanninen	Jan. 13, 1959

FOREIGN PATENTS

159,236	Sweden	June 18, 1957