Oct. 11, 1960 A. K. BROWN, JR 2,955,309

SELF-WRINGING FLOOR CLEANING AND WAXING DEVICE

Filed April 14, 1958 2 Sheets-Sheet 1

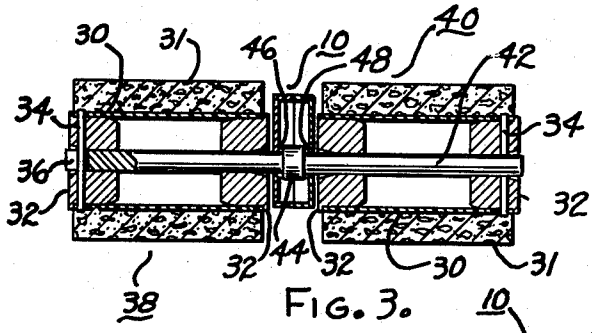


FIG. 3.

FIG. 2.

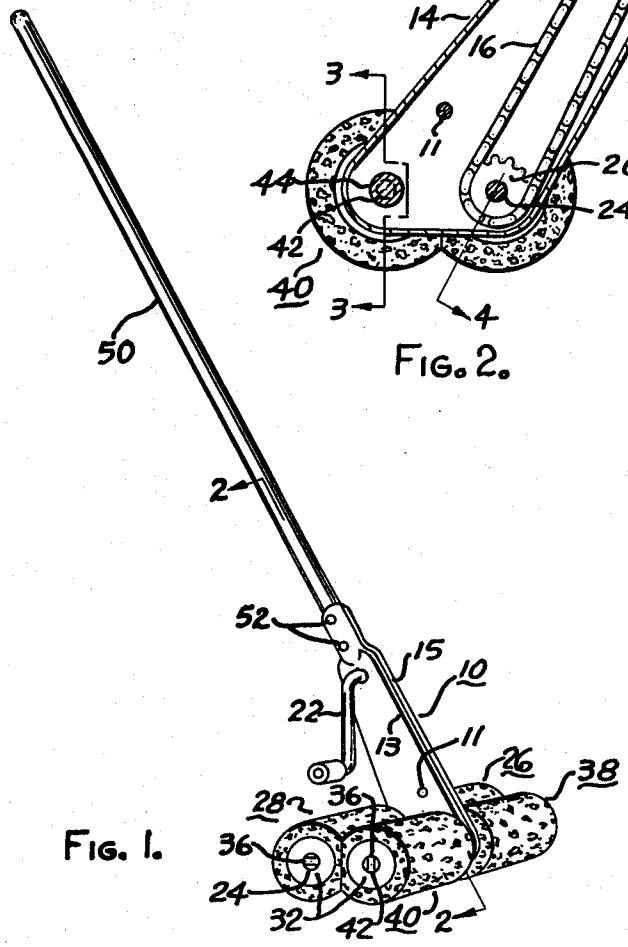


FIG. 1.

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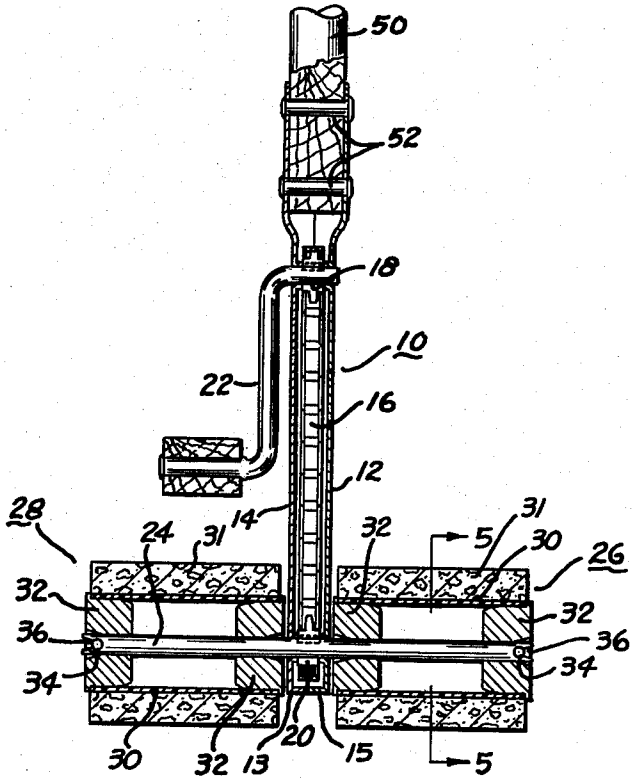


FIG. 4.

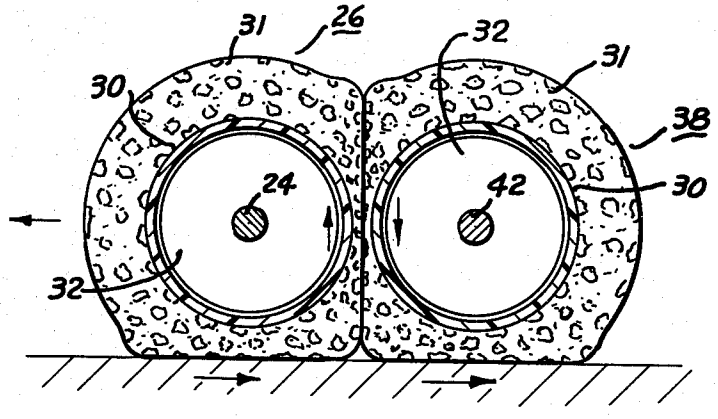


FIG. 5.

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SELF-WRINGING FLOOR CLEANING AND WAXING DEVICE

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2 Claims. (Cl. 15—119)

This invention relates in general to mops and in particular to mops adapted to be used by the housewife in cleaning or waxing floors of the home.

It is an object of my invention to provide a mop that combines, in one unit, the features of a conventional mop wringer bucket and a conventional rag mop.

It is a further object of my invention to provide a cheaply constructed, easily repaired, cleaned and serviced mop adapted to clean floors.

And it is yet another object of my invention to provide a dual purpose manually operated mop that can be easily wrung dry.

Other objects of my invention and desirable details of construction will become apparent from a detailed description of one embodiment of my invention, described in detail in the following specification, taken in conjunction with the accompanying drawings illustrating said embodiment, in which:

Figure 1 is an isometric view disclosing one embodiment of my invention.

Figure 2 is an enlarged longitudinal sectional view, taken on the line 2—2 of Figure 1, disclosing details of the wringing mechanism of my invention.

Figure 3 is a sectional view, taken on the line 3—3 of Figure 2, disclosing details of the floating rollers of my invention.

Figure 4 is another longitudinal sectional view, taken on the line 4—4 of Figure 2, disclosing details of the wringing mechanism and the driving rollers of my invention; and

Figure 5 is an enlarged sectional view, taken on the line 5—5 of Figure 4, disclosing details of the driving and driven roller structure of my invention.

Referring to Figure 1 disclosing a preferred embodiment of my invention, an elongated housing or bracket member **10**, comprising two face to face cup like members **12** and **14**, serves as a housing for a mop wringing mechanism and also as a bracketing means for connecting a mop handle to a mop scrubbing member, both of which will be described hereinafter. As disclosed in Figures 1 and 4 flanges **13** and **15** of the housing are in abutment with each other and the two parts of the housing are held together by means including a rivet **11**, Figure 1, or other suitable fastening means. The wringing mechanism includes a chain **16** mounted on sprockets **18** and **20**, said sprockets being mounted, respectively, on one end of a crank **22** and a driving shaft **24**. The sprocket **20**, as is disclosed in Figure 4 is keyed to the shaft **24**; and sprocket **18** is keyed to crank **22**.

On the shaft **24** there are mounted rollers **26** and **28** each comprising a cylinder member **30** made of a suitable material such as a plastic upon which is mounted a cylindrical shaped sponge like member **31** of suitable absorbent material such as cellulose or lamb's wool. Spool shaped cap members **32**, which may be made of wood, metal, or a suitable plastic material, are sleeved over the shaft **24**, the outermost cap of each roller, Figure 4, being secured

to said shaft by a pin **34** which extends through the cap in a generally cylindrical shaped opening in the shaft. The pin **34** which is press fitted into the cap is inserted into the shaft **24** by means of wedge shaped detent slots **36** in the end of said shaft. This construction facilitates the assembly of the parts of the roller. All the rollers of my mop mechanism are alike; accordingly, only one of the same has been described in detail.

Continuing the description of the mop unit of my invention, front rollers, which may be referred to as floating rollers, are driven when the crank **22** is actuated. These floating, that is driven, rollers are indicated by the reference numerals **38** and **40** and are duplicates of the rollers **26** and **28**; and they are rotatably mounted on a shaft **42**. As is disclosed in Figure 3 this shaft **42** is sleeved through the two parts of the housing unit **10**, a spacer or shoulder **44**, which is positioned between flanges **46** and **48** of the housing, serving to properly position the rollers **38** and **40**.

A suitable handle **50**, adapted to be grasped by the hands of the person using the mop, is fitted within a socket formed on the upper end of the housing **10** and secured in place, preferably by rivets **52**.

There is thus provided a mop combining the features of the conventional rag mop and mop wringer bucket; for after use, in the cleaning and drying of the floor, the rollers, both driving and driven, are wrung dry by the operation of the crank **22**. It is to be noted that the pairs of rollers, mounted on each side of the housing, lie in a plane parallel or substantially parallel to the floor being cleaned and that the housing **10** lies in a plane which is normal to the plane of the rollers. It is apparent therefore that all four of the rollers engage the floor simultaneously; thereby providing a large scrubbing surface which may be described as a scrubbing member.

As a feature of my invention the driving rollers are in tight frictional engagement or in mesh with the driven rollers and as is evidenced by an inspection of Figure 5 the absorbent material of the several rollers is distorted out of its normal shape. If the rollers were not engaged as described above they would roll when rubbed against the floor and be useless for scrubbing. Since they are in mesh and engage the floor at the same time as a scrubbing member the rollers are locked and do not turn; and this is apparent from a study of Figure 5.

Any one of the rollers can be removed quickly and easily without the use of tools simply by sliding them off of their mounting shafts. In this removal operation the pin **34** is sprung from the wedge shape detent slot **36** thus freeing the roller from said shaft. Once the roller is off the shaft the caps can be readily removed from each end of the cylindrical shaped sponge member to facilitate the replacement of said member. In the case of the driving rollers power from the shaft **24** is transmitted to said roller through the pins **34**. Wringing the rollers of my invention, by the operation of the crank **22** takes much of the work out of cleaning the floor; and it is to be noted that my invention, operating as a mop, can be used close to the baseboard of the room and in corners without scratching the woodwork.

While the preferred embodiment of the invention has been described in considerable detail, I do not wish to be limited to the particular construction shown which may be varied within the scope of the invention, and it is the intention to cover hereby all adaptations, modifications and arrangements thereof which come within the practice of those skilled in the art to which the invention relates.

I claim:

1. A mop adapted to clean floors by first absorbing a cleaning fluid during the cleaning operation and then ex-

pelling said fluid from the mop, said mop comprising two pairs of rollers positioned alongside each other and lying substantially in the same plane, each of said pairs of rollers consisting of a driving roller having an absorbent facing and a driven roller having an absorbent facing, said rollers being in squeezing contact with each other so that the same do not rotate when the mop is bodily pushed across the floor, a drive shaft extending through the several driving rollers, a shaft extending through the several driven rollers, a housing member positioned between the pairs of rollers and lying in a plane extending normal to the aforementioned plane of the pairs of rollers, said shafts being rotatably mounted in the housing member, a driving mechanism housed within the housing member and operably connected to the drive shaft, and a manually operable crank operably connected to the driving mechanism and positioned alongside the housing member.

2. A mop adapted to clean floors by first absorbing a cleaning fluid during the cleaning operation and then expelling said fluid from the mop, said mop comprising two pairs of rollers having absorbent faces and positioned alongside each other and lying substantially in the same plane, each of the two pairs of rollers consisting of a driving roller and a driven roller in meshing squeezing contact with each other whereby the bottoms of the then non-rotating meshed rollers form a scrubbing surface when the mop is bodily pushed across the floor and whereby rotation of the driving roller serves to rotate the driven roller to thereby expel the cleaning fluid from both rollers, a drive shaft extending through the several driving rollers, a shaft extending through the several driven rollers, a two part housing member positioned between the pairs of rollers and lying in a plane extending normal to the aforementioned plane of the pairs of rollers, said shafts being rotatably mounted in the housing member, a driving mechanism housed within the housing member and operably connected to the drive shaft, and a manually operable crank operably connected to the driving mechanism and positioned alongside the housing member.

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