Nov. 30, 1954 T. T. BATHURST 2,695,417

ROTARY MOP WITH WRINGER

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Fig. 1

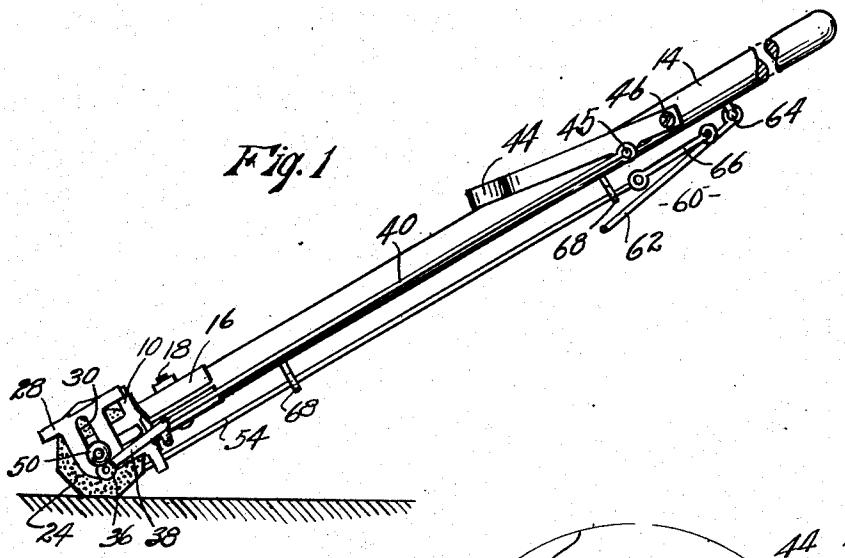


Fig. 2

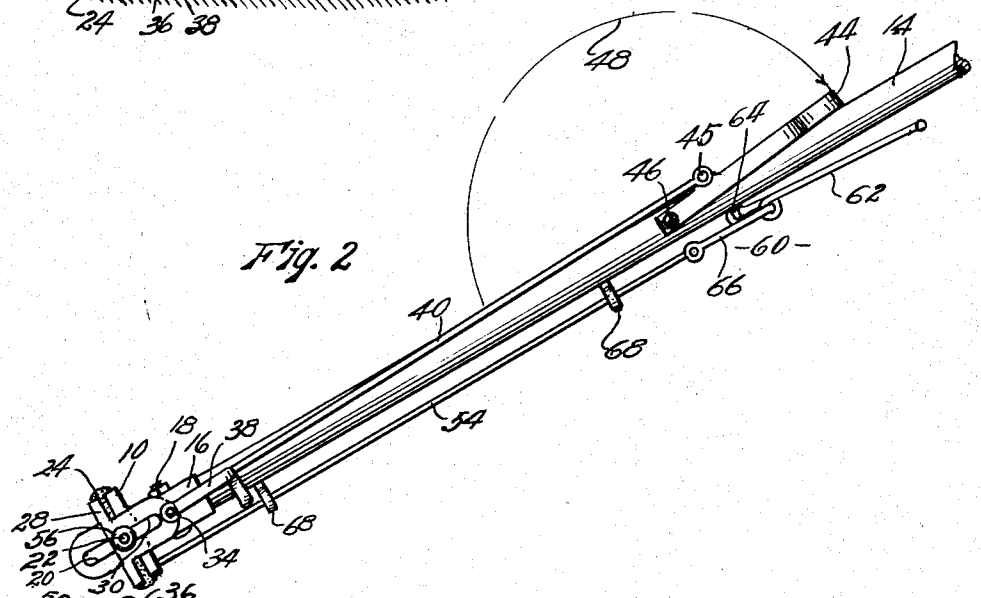
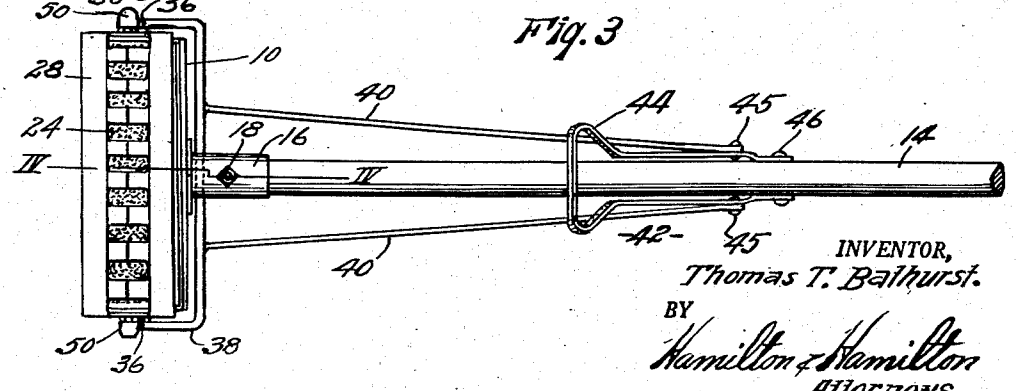


Fig. 3



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Fig. 4

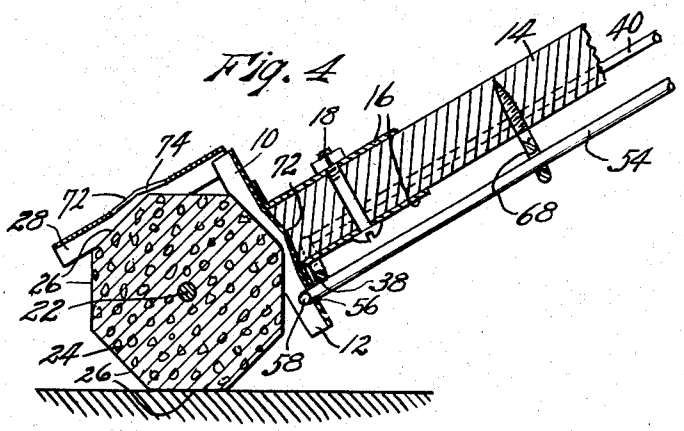


Fig. 5

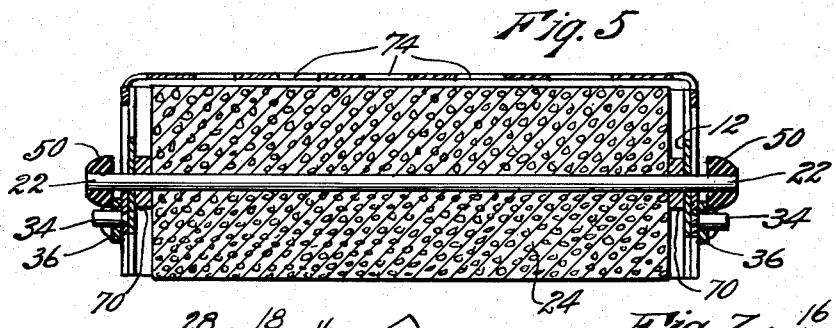


Fig. 6

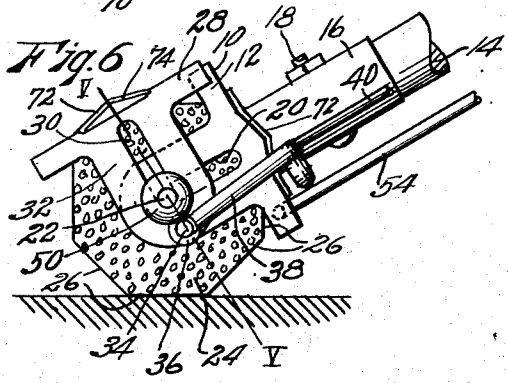


Fig. 7

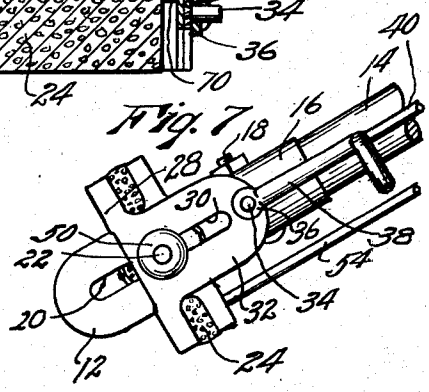
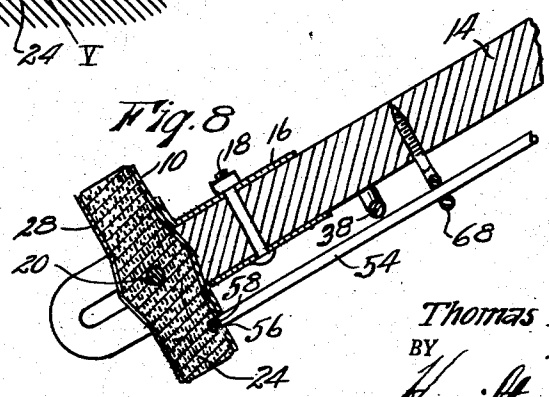


Fig. 8



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ROTARY MOP WITH WRINGER

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Application October 18, 1951, Serial No. 251,955

3 Claims. (Cl. 15—119)

This invention relates to improvements in rotary surface cleaners, and has particular reference to a mop member made of a substantially solid block of elastically compressible material such as cellulose sponge or air foam rubber adapted to be moved in rolling or sliding contact with the surface to be cleaned. The movement of the mop over the floor will cause alternate compressing and expansion of said sponge material thus causing a partial vacuum therein, by means of which particles of dirt will be drawn into the sponge, from which it may be readily washed.

The principal object of this invention is the provision of a rotary surface cleansing mop having a substantially solid sponge cleansing member adapted to be uniformly compressed to force liquid therefrom.

Another object of the invention is the provision of a mop having a series of planar surfaces and means whereby said mop may be secured against rotation in any desired operating position.

Other objects are simplicity and economy of construction, ease and efficiency of operation and adaptability for cleaning floors, walls or ceilings or any substantially planar surface.

With these objects in view as well as other objects which will appear during the course of the specification reference will be had to the drawings wherein:

Fig. 1 is a side elevational view of the rotary surface cleaner embodying this invention.

Fig. 2 is a side elevational view of the rotary surface cleaner with parts shown in the mop squeezing position.

Fig. 3 is a plan view of the mop as shown in Fig. 1.

Fig. 4 is an enlarged fragmentary sectional view taken on line IV—IV of Fig. 3.

Fig. 5 is a cross sectional view taken on line V—V of Fig. 6.

Fig. 6 is an enlarged elevational view of the operating end of the mop with the parts shown in the position as shown in Fig. 1.

Fig. 7 is an enlarged elevational view of the mop as shown in the squeezing position in Fig. 2.

Fig. 8 is an enlarged fragmentary section view of the section taken on line IV—IV of Fig. 3 with the parts in the squeezed position.

Like reference characters refer to similar parts throughout the several views and the numeral **10** designates a frame of substantially planar form having end flanges or walls **12**. Mounted rigidly adjacent the central portion of said frame **10** and disposed at substantially right angle thereto is an operating handle **14** which is mounted in a split socket **16** and secured thereto by means of a bolt **18**. End flanges or walls **12** are slotted along their medial line at **20** to present slots to receive axle of drum **24** therethrough. This mop drum **24** is of substantially solid octagonal form with multiple flat mopping faces **26** which are equidistant from axle **22** which is disposed at right angles to the operating handle **12**. A frame **28** similar in form to frame member **10** telescopes over frame **10** and is disposed at a right angle thereto when the mop is in the normal scrubbing form as shown in Figs. 1 and 6. When so positioned as shown in Fig. 6 the slot **30** in each end wall **32** of frame **28** will be disposed at right angles to slots **20** of frame member **10**. At the outer end portion of each end wall **32** beyond slot **30** is a trunnion **34** which is disposed at right angles to the wall **32** and which are in axial alignment to receive

the bearing ends **36** of bale **38** which extends rearwardly therefrom to receive the connecting arms **40** toggle member **42**. Hand operating member **44** of toggle member **42** is U-shaped and is pivoted at its free ends to handle **14** by means of a rivet pin **46**. When the mop is on the operative position as shown in Fig. 3, the toggle connecting arm **40**, welded at their inner ends to the bale and riveted at their outer ends at **45** to the respective legs of member **44** in spaced relation to pin **46**. When the operator grasps member **44** and pulls it through arc **48** to the position shown in Fig. 2 it will operate the toggle to rotate frame **28** to a position parallel to frame **10** and will then move it toward frame **10** to squeeze the mop sponge positioned therebetween to force the liquid therefrom.

It will be noted that axle **22** is relatively small as compared with the mop drum and fits through a small hole bored lengthwise through said drum. The axle at its opposite ends is provided with a slip on rubber buffer cap **50** which serves to hold the axle in position and also serves to protect the furniture against being damaged from contact with the mop parts. When the mop drums become worn and it is desirable to replace it with a new one all that the operator needs to do is to remove one of the end caps **50** and draw axle **22** from the drum **24** and thread it into a new drum and replace the cap **50** and it will be ready for use.

When it is desired to use the mop as a scrubbing mop the mop drum **24** is secured against rotation by means of a brake member **58** which comprises a rod **54** which passes through hole **56** formed through frame **10**.

The end portion **58** of rod **54** which extends through frame **10** is bent transversely to rod **54** to engage the wall of the drum **24** to secure it against rotation during the scrubbing operation. It is apparent that each of the eight flat surfaces may be excessively used by properly setting the brake portion **58** against the drum **24**. This brake member **58** is moved in and out of breaking position by means of a toggle member **60** comprising a hand operating member **62** pivoted on staple **64** fixed in handle **14**. A connecting link **66** pivoted at its one end to an eye **68** formed in hand member **62** and at its other end in to the end of rod **54** which is guided by means of screw eyes **68**. When toggle **60** is in the position shown in Fig. 1 the brakes **58** will be in the locking position and when in the position shown in Fig. 2 it will be in the unlocked position.

When the brake **58** is not set and the drum is permitted to roll freely over the surface it acts as a dust remover, furthermore when the drum is squeezed dry and then rolled over the treated surface it will pick up the liquid solution to dry the surface. From the above it will be noted that this is substantially an all purpose mop and one that can be used on rugs, carpets or any other floor coverings, or on painted or papered walls or ceilings in addition to being a dust remover and scrubbing mop for any planar surfaces.

While in the drawings an eight faced drum has been shown however a cylindrical drum or any multi-surfaced drum might be submitted therefore since the brake member will serve to hold the drum against rotation regardless of its surface contour. It will be noted that the end portions of drum **24** are spaced inwardly from the adjacent end walls **12** by means of suitable washers **70**.

When the operator wishes to squeeze the mop member he grasps the hand operating member **44** which is normally in the position shown in Fig. 1 and as it is moved through arc **48** it will first rotate the frame **28** about axle **22** to a position substantially parallel with frame member **10**. When the frame members are so related the slots **20** and **30** will be in alignment so that the frames may be moved toward each other as they remain in parallel relation. Thus producing a minimum distortion of the mop member as the moisture is extracted therefrom and insuring a long life of the mop material.

The frames members **10** and **28** are each offset at **72** to strengthen the planar surfaces and frame **28** is perforated at **74** to permit the escape of liquid during the squeezing operation.

What I claim as new and desire to protect by Letters Patent is:

1. A combination mop and scrubber comprising a first frame having a substantially planar body portion and an end wall at each end of said body portion extending at right angles to said body portion, each of said end walls having a slot formed therein at right angles to said body portion, an axle extending rotatably through said slots, a resilient, sponge-like drum mounted on said axle, a second frame having a substantially planar body portion and slotted end walls similarly to said first frame, said axle extending through the slots of said second frame, a handle secured to said first frame, and an operating member carried by said handle and pivotally secured to the end walls of said second frame at points remote from the body portion of said second frame, said operating member being movable in a direction generally parallel to the end walls of said first frame, whereby as said operating member is moved outwardly from said first frame until said axle rests in the ends of said slots remote from the body portions of the frames, said second frame will be pivoted to a position with the body thereof in a plane approximately at right angles to the body of said first frame and with the adjacent edges of said frame bodies in engagement, and whereby as said operating member is moved toward said first frame said second frame will be pivoted to a position with the body thereof generally parallel to the body of said first frame, and forced toward said first frame to compress said drum therebetween.

2. A combination mop and scrubber comprising a first frame having a substantially planar body portion and an end wall at each end of said body portion extending at right angles to said body portion, each of said end walls having a slot formed therein at right angles to said body portion, an axle extending rotatably through said slots, a resilient, sponge-like drum mounted on said axle, a second frame having a substantially planar body portion and slotted end walls similarly to said first frame, said axle extending through the slots of said second frame, a handle secured to said first frame, and an operating member carried by said handle and pivotally secured to the end walls of said second frame at points remote from the body portion of said second frame, said operating member being movable in a direction generally parallel to the end walls of said first frame, whereby as said operating member is moved outwardly from said first frame until said axle rests in the ends of said slots remote from the body portions of the frames, said second frame will be pivoted to a position with the body thereof in a plane approximately at right angles to the body of said first frame and with the adjacent

edges of said frame bodies in engagement, and whereby as said operating member is moved toward said first frame said second frame will be pivoted to a position with the body thereof generally parallel to the body of said first frame, and forced toward said first frame to compress said drum therebetween, and means for securing said frame body portions releasably in their right-angled position.

3. A combination mop and scrubber comprising a first frame having a substantially planar body portion and an end wall at each end of said body portion extending at right angles to said body portion, each of said end walls having a slot formed therein at right angles to said body portion, an axle extending rotatably through said slots, a resilient, sponge-like drum mounted on said axle, a second frame having a substantially planar body portion and slotted end walls similarly to said first frame, said axle extending through the slots of said second frame, a handle secured to said first frame, a bail having the arms thereof secured pivotally to the end walls of said second frame at points remote from the body of said second frame on an axis parallel to said axle, a rod fixed to said bail at right angles to the pivotal axis thereof and extending along said handle, and a lever pivoted at one end to said handle and at another point to said rod, said rod and lever constituting a toggle linkage operative to move said bail in a direction generally parallel to the end walls of said first frame, whereby as said bail is moved outwardly from said first frame until said axle rests in the ends of said slots remote from the body portions of the frames, said second frame will be pivoted to a position with the body thereof in a plane approximately at right angles to the body of said first frame and with the adjacent edges of said frame bodies in engagement, and whereby as said operating member is moved toward said first frame said second frame will be pivoted to a position with the body thereof generally parallel to the body of said first frame, and forced toward said first frame to compress said drum therebetween, said toggle linkage having a dead-center locking position wherein said frames are secured in their right-angled position.

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