May 11, 1948. L. J. SIMON 2,441,536

FLOOR SCRUBBING MACHINE

Filed April 16, 1938

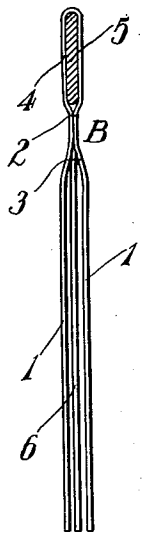


Fig. 3.

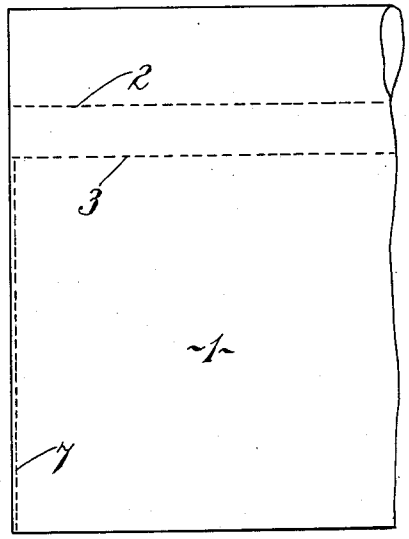


Fig. 1.

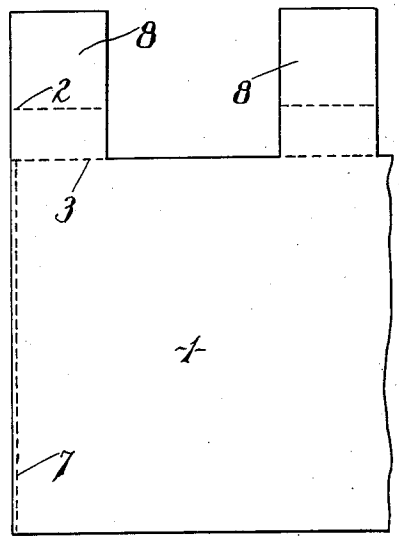


Fig. 2.

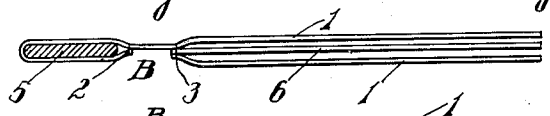


Fig 4

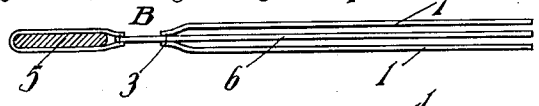


Fig 5

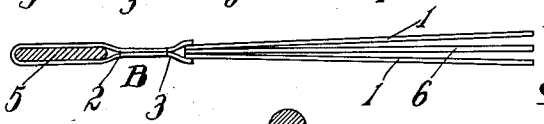


Fig 6

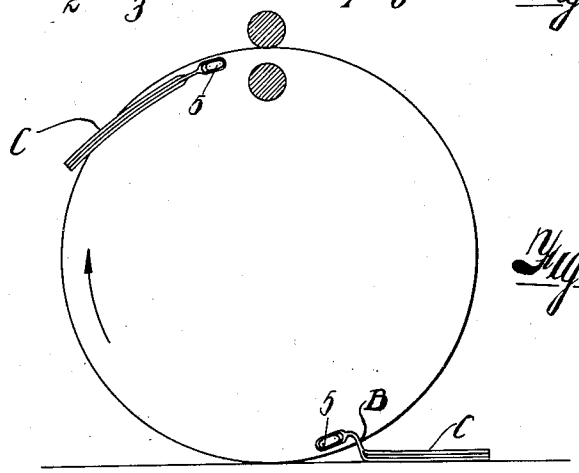


Fig 7

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Patented May 11, 1948 2,441,536

UNITED STATES PATENT OFFICE

2,441,536

FLOOR SCRUBBING MACHINE

Louis John Simon, Ilford, England

Application April 16, 1938, Serial No. 202,534

Section 3, Public Law 690, August 8, 1946
Patent expires April 16, 1958

3 Claims. (Cl. 15—230)

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This invention relates to wiping elements used in apparatus for scrubbing and washing floors of the kind wherein cloths are employed to absorb and pick up water or liquid from the floor under treatment.

In devices of this character the necessity exists for the displacement of all air between the cloths constituting the wiping elements and the floor to ensure the necessary suction effect when the cloths are drawn along over the floor, and the object of the present invention is to provide improved means for ensuring this effect being obtained.

It has been found in practice that when cloths or wipers of the type previously employed have been in use for a short while they become hard due to the fact that they become loaded with fine particles which enmesh in the fabric as well as the constant wringing of the cloths through the squeegee rollers, and take on a leathery formation or structure which as a consequence restricts to some extent the air displacement as well as reducing the surface capable of making immediate contact with the floor. This difficulty is overcome by providing that the cloths or wipers are made or caused to be heavier when loaded with liquid at their extremity and again by arranging for a part of the cloth or wiper to hinge flexibly as freely as possible about that point where they are attached to the apparatus.

The invention consists in having only one or two layers of material at the point of attachment with an extra layer or layers sewn on or attached to the terminal portion of the wiper, in such manner that the portion intermediate the outward extremity and the point of attachment is thinner, whereby the cloth or wiper is adapted to hinge and move more freely outwardly from the mobile attachment rod and thus have greater weight at its outward parts than at or about its pivot parts. Further, the material at the point of attachment may be non-absorbent, or of a different character from that of the absorbent material, it being arranged that the absorbent material makes contact with the floor and becomes weighted when loaded with liquid, so that when the machine carrying the wipers is rotated, the wipers immediately slap flat on the floor thereby suddenly displacing air from underneath enabling the wipers to pick up the maximum amount of moisture from the floor by suction as they are drawn along over the floor.

In order that this invention may be more fully understood, reference is made to the accompanying drawings in which:

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Figure 1 is an elevation of part of a wiping element according to the invention,

Figure 2 is an elevation of a modification,

Figure 3 is a transverse sectional view of Fig. 1,

Figures 4, 5 and 6 show alternative methods of construction of the wiper in order to obtain flexibility below the point of support, and

Figure 7 shows the wiping element in use.

Referring to the drawings the material 1 of the cloth or wiper is preferably a closely woven mixture of wool and cotton, or any material with like properties will suit providing that it is readily absorbent of moisture, has small tendency to tear or unravel, and is closely woven. This material 1 in the form shown is cut into strips and folded and sewn below the fold at 2 and 3, so as to form a pocket 4 which carries the cloth carrying bar 5.

In the form shown in Fig. 1 the material is stitched as at 2 immediately below the pocket and again stitched at 3, a piece of additional cloth 6 being inserted. Hence the insertion 6 is covered on both sides by the outer fabric 1. The sides of the assembled cloth are stitched as at 7 to prevent the edges from unravelling, but the ends of the wiper are left free of any stitching. The inserted material 6 may be of like character to that of the cover 1 or again it may be of a different character or substance, but a material which is readily absorbent of moisture.

In Fig. 2 an alternative form of construction is shown in which tapes or loops 8 are employed to form the pocket for the bar, these loops being made of strong material, and the construction according to this form of the invention may be in section according to Figs. 5 or 6.

Thus in Fig. 5 the inner material is secured to the loop or tape, whilst the outer covers are stitched at 3 so as to leave a flexible neck at the point B.

In Fig. 6 the tapes 8 are attached to pieces of material 1 and 6, the tapes being stitched at 2 and 3 so as to provide a neck at B.

In Fig. 4 the material 1 is taken over the bar 5 and stitched at 2, leaving a thin neck of material at the point B.

In Fig. 7 the wiper C is shown in operation. Thus, as the hinge bars 5 rotate in the direction shown by the arrow, the bars reach a point where the flaps 1 and 6 constituting the wiper contact with the floor. In this movement the flaps hinge or flex at the part B allowing the outer part C to slap the floor sharply and drive out any intervening air and thus enables the wiper to be immediately drawn flatly over the floor,

and so providing for absorption of the water from the floor by suction.

From the foregoing it will be seen that it is not essential to use absorbent material in the part B or for covering the bar 5, but it is essential that the composite portion C is not only absorbent but readily absorbent and the operation of wiping up moisture is enhanced by a portion of the added moisture remaining in the wiper after it has been through the squeegee rollers which extract the surplus water.

I claim:

1. A wiping element for floor scrubbing machines having an elongated supporting member mounted for movement in a rotary path, comprising a pocket portion to extend around said supporting member, a flexible hinge portion connected to an edge of said pocket portion, and an outer absorbent portion of greater thickness and weight than the hinge portion.

2. A wiping element for floor scrubbing machines adapted to hinge freely from a rod mounted for movement in a rotary path, comprising a pocket portion to receive said rod, a wiping portion, and a hinge portion between said pocket and wiping portions, said hinge portion being of less thickness than said wiping portion and

of sufficient length to flex freely under the weight of the wiping portion.

3. A wiping element for floor scrubbing machines comprising a rod capable of movement through a rotary path, a strip of farbric folded around said rod and stitched to provide a pocket therefor, and a plurality of absorbent flaps connected to said strip and forming a continuation thereof, the point of connection of said flaps to said strip being spaced sufficiently from said stitching to leave a portion of the strip of substantial length to act as a flexible hinge between the flaps and the rod.

LOUIS JOHN SIMON.

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The following references are of record in the file of this patent:

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