

Dec. 27, 1927.

1,654,036

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BACK FOR ROTARY SCRUBBING BRUSHES

Filed Sept. 25, 1926

Fig. 1

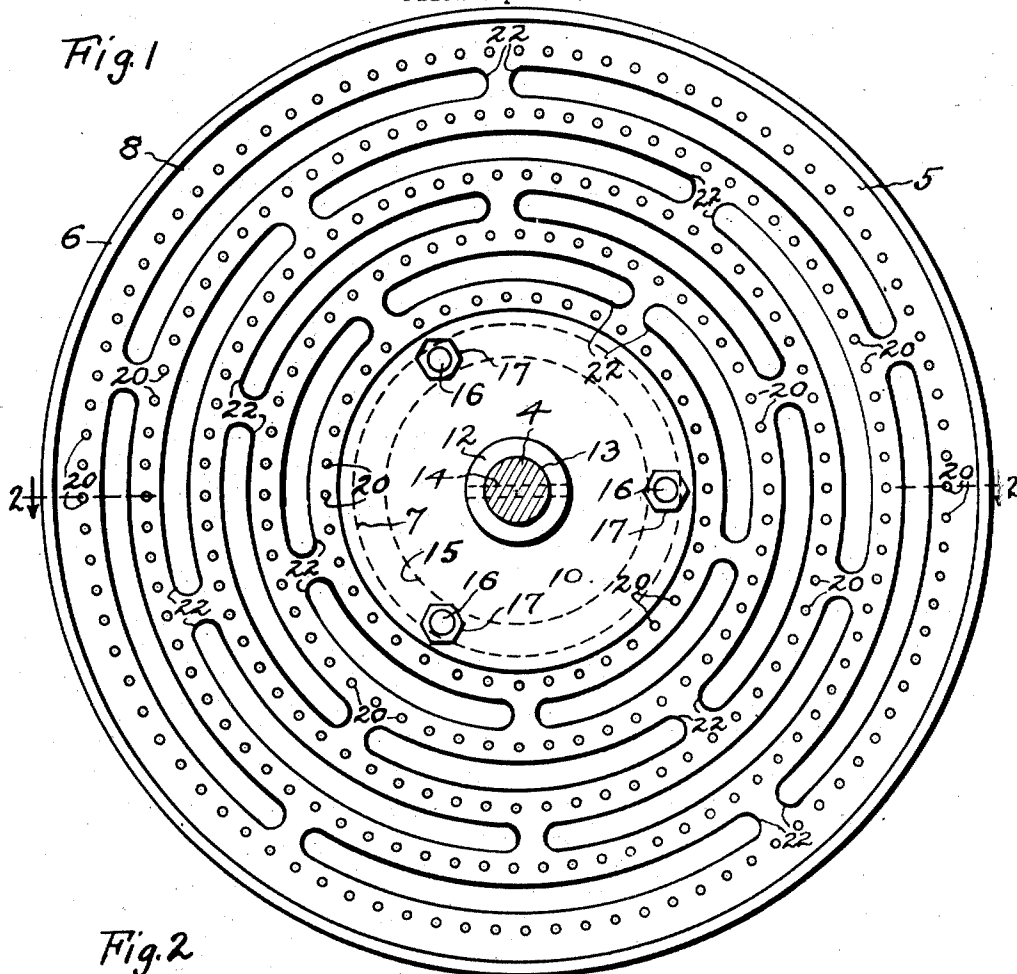
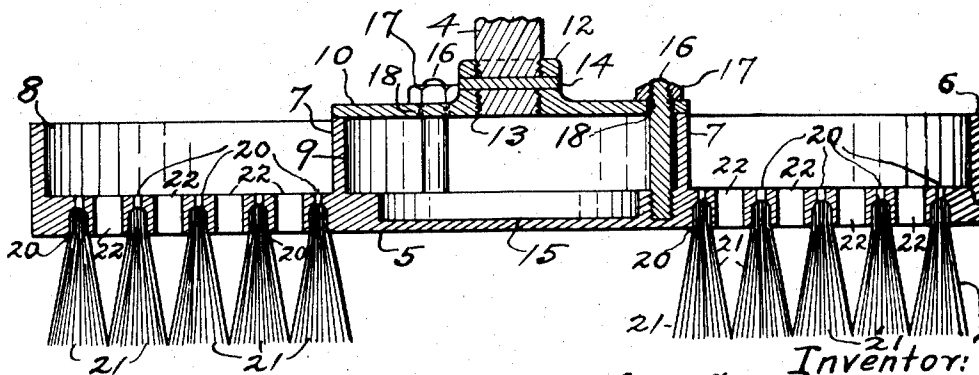


Fig. 2



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BACK FOR ROTARY SCRUBBING BRUSHES.

Application filed September 25, 1926. Serial No. 137,722.

This invention relates to improvements in backs for rotary brushes suitable for use in apparatus employed in scrubbing or cleaning floors and floor-coverings such, for instance, as rugs and carpets, and the hereinafter described brush-back is arranged substantially horizontally and adapted to be operatively connected, at its central portion, with an upright shaft for rotating said back.

One object of this invention is to produce a brush-back of the character indicated comprising simple and reliable improved means for attaching the brush-back to said shaft. Another object is to produce a brush-back of the character indicated which has an annular chamber surrounding and spaced from and arranged substantially concentric in relation to the axis of the back and having a bottom which has several substantially annularly arranged and horizontally spaced series of holes adapted to be engaged by bristles or brushing elements adapted to extend downwardly from the back and also has slots formed between said series of holes and spaced circumferentially of the axis of the back and arranged to permit the passage of a cleansing liquid downwardly through said bottom.

Another object is to have the hereinbefore mentioned annular chamber open at its upper end all round the axis of the brush-back so as to permit the extension, into said chamber, of means for delivering a cleansing liquid within said chamber during the rotation of the brush-back with the hereinbefore mentioned shaft.

Another object is to secure an adequate and substantially uniform distribution of the cleansing liquid to the bristles or brushing elements during the rotation of a brush comprising the hereinafter described back.

Another object is to render my improved brush-back durable in construction, and to facilitate the assemblage of the component parts of the back.

With these objects in view, and to attain other objects hereinafter appearing, this invention consists in certain meritorious structural features of said brush-back and combinations and relative arrangements of parts, hereinafter described in this specification, pointed out in the claims, and illustrated in the accompanying drawings.

In said drawings, Figure 1 is a top plan of said brush-back and shows said back as secured to the hereinbefore mentioned

shaft which is shown in section. Fig. 2 is a central vertical section taken along the dashed line 2—2 in Fig. 1, except that in Fig. 2 the brush-back is shown provided with tufts of bristles or brushing elements not shown in Fig. 1.

The substantially horizontally arranged brush-back illustrated in said drawings is adapted to extend, at its central portion, under and attachable to and rotatable with a substantially vertical shaft 4 adapted to be employed in rotating the rotary scrubbing brush comprising said back, and said shaft is applied and driven in any approved manner. said back preferably comprises a substantially horizontally arranged circular metal plate 5 provided, preferably at its circumference, with an upwardly projecting outer annular flange 6 which is concentric in relation to the axis of the back. The plate 5 has an upwardly projecting inner annular flange 7 which is adequately spaced from the outer flange 6 and substantially concentric in relation to said outer flange and therefore substantially concentric in relation to the axis of the brush-back. The plate 5 and its flanges 6 and 7 are preferably composed of a single casting of aluminum. Said flanges 6 and 7 constitute opposite side walls respectively of a substantially horizontal annular chamber 8 which is substantially concentric in relation to the axis of the brush-back and open at its upper end.

The inner flange 7 constitutes the surrounding wall of a chamber 9 formed at the central portion of the brush-back, and a circular metal top plate 10 is seated on the upper end of said flange. The top plate 10 has an upwardly enlarged central portion 12 and a screw-threaded hole 13 formed centrally of and extending vertically through said plate. The top plate 10 is shown screwed at its hole 13 onto the externally screw-threaded lower end of the shaft 4 and also shown fastened to said shaft by a removable pin 14 shown extending horizontally through the enlarged central portion 12 of said plate and through the shaft.

The central portion of the plate 5 constitutes the bottom of the inner chamber 9, and said bottom preferably has a circular recess 15 formed at the inner side of and centrally in relation to said bottom. Said recess has a diameter which measures considerably less than the internal diameter of the inner flange 7 of said plate, and said

recess forms a downward enlargement of said chamber. The bottom of said recess is imperforate and has a thickness which measures considerably less than the thickness of the plate 5 between said recess and the outer flange 6 so as to economize in the amount of metal required for casting the plate 5.

Means for removably securing the top plate 10 in place in relation to the inner flange 7 of the plate 5 comprise substantially vertical stud-bolts 16 and nut 17. The bolts 16 are arranged between said inner flange 7 and the recess 15 and threaded into the plate 5 externally of said recess and spaced circumferentially of said recess. The bolts 16 extend loosely through holes 18 formed in the top plate 10 and spaced circumferentially of the enlarged portion 12 of said plate, and the nuts 17 are screwed above the top plate 10 onto said bolts and are arranged to cooperate with said bolts in securing said top plate in place on the inner flange 7 of the plate 5.

By the hereinbefore described construction and relative arrangement of parts it will be observed that the central portion including the inner flange 7 of the plate 5, the bolts 16, nuts 17 and top plate 10 constitute simple, strong and reliable means for attaching my improved brush-back to the shaft 4.

The plate 5 is provided, between its flanges 6 and 7, with several horizontally spaced and annularly arranged series of holes 20. Each series of holes 20 extends circumferentially of the axis of the brush-back, and the holes of said series of holes are spaced circumferentially of the axis of the brush-back. Said holes 20 extend to the outer side of the bottom of the annular chamber 8 and therefore to the under side of and preferably vertically through the plate 5 and are adapted to be engaged by bristles or brushing elements not shown in Fig. 1. Each series of holes 20 is substantially concentric in relation to the axis of the brush-back, and two of the holes of each series of holes 20 are illustrated in central section in Fig. 2. Fig. 2 shows holes 20 which are considerably smaller diametrically at their upper ends than at their lower ends and also shows said holes as engaged by tufts of bristles 21 applied and secured to the plate 5 in any approved manner and extending downwardly from the plate.

Between adjacent series of holes 20 the plate 5 has an annularly arranged series of slots 22 which are spaced circumferentially of the axis of the brush-back, and each series of slots 22 extends circumferentially of and is substantially concentric in relation to said axis. Each slot of each series of slots 22 extends a considerable distance circumferentially of the axis of the brush-

back and from the inner side to the outer side of the bottom of the annular chamber 8 and therefore from the upper side to the under side and preferably vertically through the plate 5 and constitutes a highly practical passage arranged to permit feeding of a cleansing liquid to bristles or brushing elements applied adjacent said series of slots. To attain a desirable and substantially uniform distribution of cleansing liquid to the bristles or brushing elements of a rotary brush comprising the hereinbefore described back the slots of the outer of adjacent series of slots 22 are in staggered relation to the slots of the inner of said adjacent series of slots, and each slot of the outer of said adjacent series of slots extends substantially equidistantly circumferentially of adjacent portions of two adjacent slots of the inner of said adjacent series of slots.

What I claim is:—

1. A brush-back of the character indicated adapted to be attached to and rotatable with an upright shaft and comprising a substantially horizontally arranged plate having two upwardly projecting spaced annular flanges which are substantially concentric in relation to the axis of the back, said plate having between said flanges several horizontally spaced and annularly arranged series of holes which extend to the under side of the plate and are adapted to be engaged by bristles or brushing elements, each of said series of holes being substantially concentric in relation to the aforesaid axis, the plate having annularly arranged series of slots between adjacent series of brushing-element-receiving holes, each series of slots being substantially concentric in relation to the aforesaid axis, and the slots of each series of slots being spaced and extending circumferentially of said axis and also extending from the upper side to the under side of the plate.

2. A brush-back of the character indicated adapted to be attached to and rotatable with an upright shaft and comprising a substantially horizontally arranged plate having two upwardly projecting spaced annular flanges which are substantially concentric in relation to the axis of the back, said plate having between said flanges several horizontally spaced and annularly arranged series of holes which extend to the under side of the plate and are adapted to be engaged by bristles or brushing elements, each of said series of holes being substantially concentric in relation to the aforesaid axis, the plate having annularly arranged series of spaced slots between adjacent series of brushing-element-receiving holes, said slots being spaced and extending circumferentially of the aforesaid axis and also extending from the upper side to the under side of the plate, the slots of the outer of

adjacent series of slots being in staggered relation to the slots of the inner of said adjacent series of slots, and each slot of the outer of said adjacent series of slots extending substantially equidistantly circumferentially of adjacent portions of two adjacent slots of the inner of said adjacent series of slots.

3. In a brush-back of the character indicated, the combination, with a substantially horizontally arranged plate having two upwardly projecting spaced annular flanges which are substantially concentric in relation to the axis of the back and provided between said flanges with holes which extend to the under side of the plate and are adapted to be engaged by bristles or brushing elements, said plate also being provided between said flanges with slots extending from the upper side to the under side of said plate, of a top plate seated and secured in place on the inner flange of the aforesaid flanges and adapted to be secured to an upright shaft for rotating the brush-back.

4. In a brush-back of the character indicated, the combination, with a substantially

horizontally arranged plate having two upwardly projecting spaced annular flanges which are substantially concentric in relation to the axis of the back and provided, between said flanges, with holes for receiving bristles or brushing elements and with slots for the passage of cleansing liquid downwardly through said plate, of a top plate seated on the inner flange of the aforesaid flanges and provided centrally with a screw-threaded hole for threading it onto the lower end of an upright shaft for rotating the brush-back, upright bolts arranged between said inner flange and the axis of said back and spaced circumferentially of said axis, said bolts being rigid with the first-mentioned plate and extending loosely through and above the second-mentioned plate, and nuts screwed onto said bolts above the second-mentioned plate and arranged to cooperate with said bolts in holding said second-mentioned plate in place on the aforesaid inner flange.

In testimony whereof, I sign the foregoing specification.

IRA C. CARPENTER.