

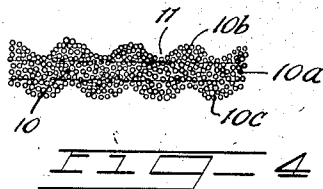
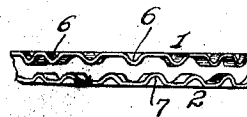
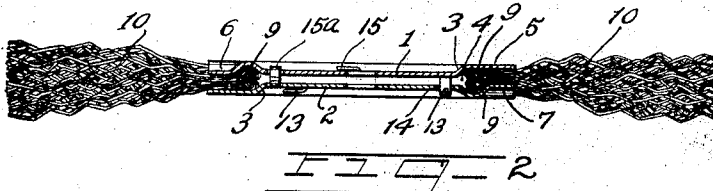
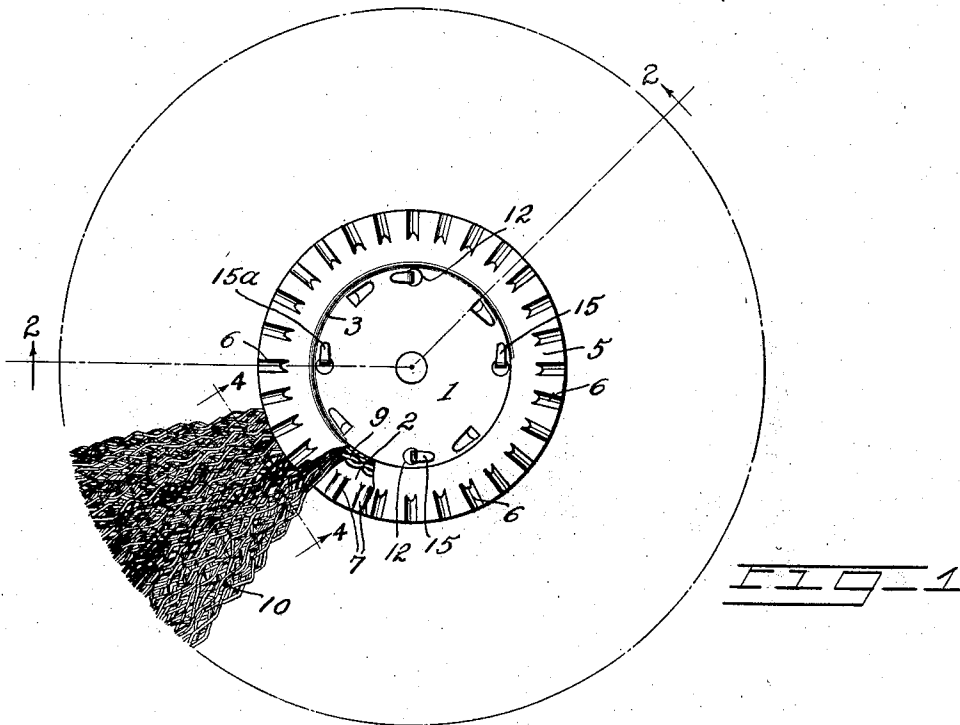
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BRUSH

Filed June 14, 1926



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UNITED STATES PATENT OFFICE.

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BRUSH.

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This invention relates to cleaning, polishing and abrading tools, particularly to a power driven wire brush, such as are used in machine shops for cleaning castings and for similar purposes.

The primary object is to provide a brush wherein the bristles may be effectively retained in working position against radial displacement. A further object is to provide a tool of this character so arranged as to prevent the individual tufts of bristles from becoming permanently inclined from their normal radial position when in use. Another object is to provide a retaining means for a substantially continuous tuft annulus, which will very effectively prevent such annulus from peripheral slippage relative to the retaining means. More specific objects include the provision of a retaining means comprising substantially similar disc-like members wherein such members are prevented from radial shifting relative to each other in either direction. It is a further object to provide a tool of this character which may be simply made from a small number of inexpensive and easily assembled parts.

The advantages of my preferred construction, shown in the accompanying drawings, will become apparent from the description to follow. The essential characteristics will be summarized in the claims.

In the drawings Fig. 1 is a plan view of my brush, a portion of the bristles being omitted; Fig. 2 is a horizontal cross section taken along the line 2—2 on Fig. 1; Fig. 3 is a fragmentary side elevation of the retaining plates in position to retain the tuft annulus; Fig. 4 is a fragmentary cross section through a number of tufts taken along the line 4—4 on Fig. 1.

In its preferred form the device comprises dished plates or discs secured together back to back to provide an enlarged circumferential recess between the outermost portions of the discs. The margin of each disc is corrugated, and when assembled the corrugations of the two discs are in offset relation to each other. The bristles are retained in the recess formed between the discs and, as shown, are mounted on a base or binder of twisted wire, the wires being joined at their ends to form a substantially solid ring.

Referring in detail to the drawing and indicating the various parts by suitable characters, the plates or discs 1 and 2 have a substantially planular central portion rising at

3 to form an enlarged recess 4 between the plates, near their outer edges, for retaining the bristles. The outer margins 5 of the plates are corrugated as at 6 and 7 respectively, these corrugations being offset from each other when the plates are clamped together as shown in Fig. 3. The corrugations extend only a short distance back from the peripheral edges of the discs, as shown particularly in Fig. 2, to restrict the recess 4 in order to prevent the holding means for the bristle from outward displacement.

Such holding means for the bristles may comprise twisted wires, two being shown at 9. These wires are preferably joined by welding at their respective ends, and each individual bristle may be looped around one of the wires in the manner of the well known Fuller brush construction.

By reason of the offset relation of the corrugations, the bristles 10 are caused to assume and be retained in approximately the relation shown in Fig. 4. It may be here mentioned that, in the usual brush construction the bristles bear against each other in a solid mass and as a result such bristles soon become permanently bent into a whorl, resulting in impaired efficiency. By reason of my construction, successive bunches of tufts are distended from the general mass first on one side and then on the other, or in offset relation as shown in Fig. 4, wherein at either side of the central mass of bristles 10^a, are bunches 10^b and 10^c, these bunches 10^b for example being separated by open spaces 11. The portion of each tuft of bristles which lies between the plates is prevented from becoming inclined as well as from slipping between the plates by engagement with the corrugations. Beyond such engagement the bunches 10^b and 10^c are free to return to radial position after having engaged a surface to be cleaned by reason of the open spaces 11. For the above reasons my brush may be used for a considerably longer period before the bristles become any less effective by being bent out of their normal radial position.

It will be further noted in connection with Fig. 2 that the corrugations provide an individual retaining means for each binder wire 9, the corrugations 7 being substantially opposite that portion of the binder wire adjacent the plate 2 and the corrugations 6 being in similar alignment with the upwardly disposed wire as shown at the left in Fig. 2.

The preferred binding or fastening means for the discs consists, as shown, of openings 12 and lugs 13 formed in the plate 1, registering respectively with lugs 15 and openings 14 of the plate 2. The lugs extend through the openings and may be bent over as shown in Figs. 1 and 2. It will be noted that in Fig. 1 the lugs designated 16 extend in the same general direction, namely counter-clockwise, while the single lug designated 15^a extends in the opposite direction. This is to provide against relative shifting of the plates in either direction since, although the intended direction of rotation is marked on the plates, should the operator fail to notice such marks, no material damage will be done as might be the case if all the lugs extended in the same direction. It will be easily seen that any number of lugs might be bent in both directions, if desired, making the direction of rotation immaterial.

Having thus described my invention, I claim:

1. In a rotary brush, a pair of plates formed to provide a circumferential recess therebetween, means for retaining bristles in said recess and means including corrugations offset relatively to each other on said plates and disposed outwardly of said bristle retaining means for maintaining such retaining means in position.

2. In a buffing tool, a pair of discs each being formed to provide a shaft engaging portion intermediately of the outer edges, the outer edge of each disc being depressed at intervals toward the other disc and the depressions being in spaced radial planes, and bristles retained in place by said depressions and extending outwardly between the discs.

3. A rotary brush, comprising oppositely disposed plates dished toward each other to provide a marginal recess and corrugations extending a short distance from the edges of said plates toward the center of rotation and in separate radial planes, means for retaining bristles within the recess, and bristles looped about said means and extending outwardly between the corrugations.

4. A tool of the character described comprising

circular plates formed to provide a recess near their outer edges, bristle retaining means located in said recess and extending in a substantially continuous annulus, bristles carried thereby and extending outwardly between the plates and means including short corrugations extending from the peripheral edges of the plates to within a short distance from the bottom of the recess, the corrugations of the respective plates being in separate radial planes whereby the body of bristles is constrained to assume a serpentine form.

5. In a device of the character described, a pair of adjacent plates, means for retaining a substantially continuous bristle annulus between the plates, and means for retaining the plates together comprising openings in one of the plates and lugs registering therewith on the other, certain of the lugs of a given plate being bent over in one direction and another lug of the same plate being bent over in the opposite direction whereby the plates are prevented from shifting relative to each other in either direction.

6. In a rotary brush, a pair of plates secured together and formed to provide an annular recess therebetween near the outer edges thereof, means for retaining bristles in said recess, and means including radially extending and radially offset corrugations on such plates and disposed outwardly of said bristle retaining means for maintaining the retaining means in position.

7. In a device of the character described, a pair of adjacent substantially identical plates formed to retain a substantially continuous bristle annulus therebetween, and means for retaining the plates together comprising openings and lugs on each plate, the lugs of one plate registering with the openings of the other, and the lugs being bent over to hold the plates together, at least one of the lugs of one plate being bent clockwise and at least one of the lugs of the same plate counter-clockwise for the purpose specified.

In testimony whereof, I hereunto affix my signature.

LAWRENCE C. HEROLD.