

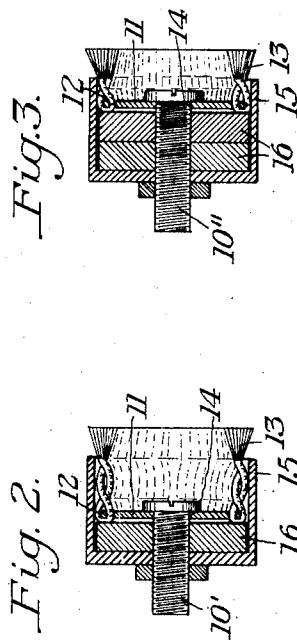
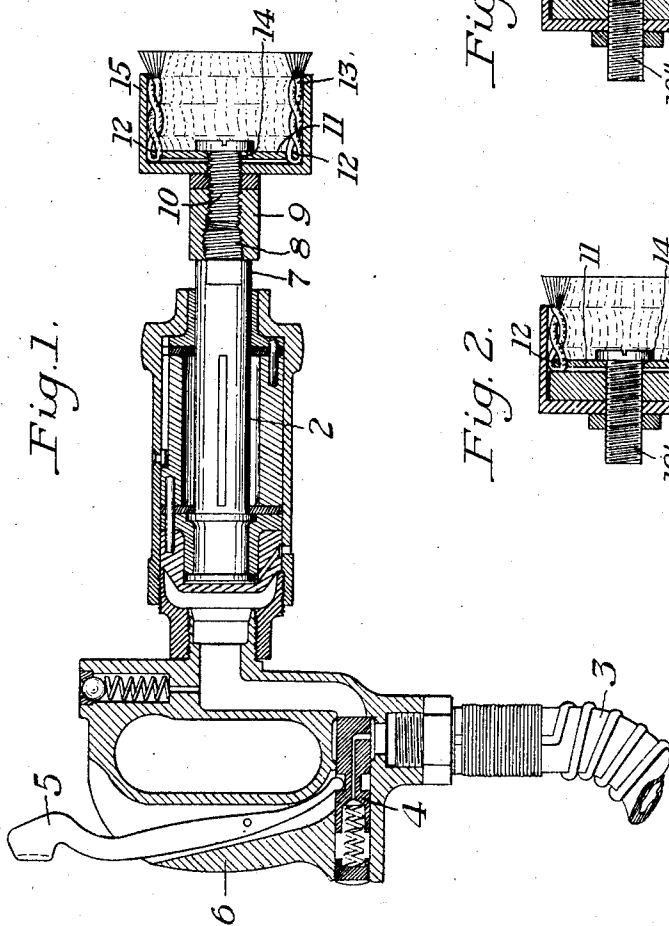
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J. P. RODGERS

1,656,237

BRUSH

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INVENTOR
James P. Rodgers,
By *Byrne, Edwin & Carmichael*,
his attys.

UNITED STATES PATENT OFFICE.

JAMES P. RODGERS, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO ELLIOTT COMPANY OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BRUSH.

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The present invention relates broadly to brushes, and more particularly to motor driven brushes as now used for a wide variety of different operations.

5 It has heretofore been proposed to construct brushes comprising a central hub member having a series of openings in the periphery thereof through each of which is threaded a tuft of bristles. Such brushes 10 have been found to be highly efficient and desirable, but their use and period of usefulness have both been limited due to the impossibility of so mounting and operating the brushes as to efficiently use the bristles 15 throughout their entire length. This limitation has necessitated throwing away the brushes before their full period of usefulness has passed.

20 The present invention has for one of its objects the provision of a brush and mounting means therefor of such nature that an adjustment of the brush can be made to compensate for wear of the bristles, thereby permitting the bristles to be used throughout 25 substantially their entire length while maintaining an adequate support therefor.

30 In the accompanying drawings there is shown, for purposes of illustration only, a preferred embodiment of the present invention, it being understood that the drawings do not define the limits of my invention as changes in the construction and operation 35 therein disclosed may be made without departing either from the spirit of the invention or the scope of my broader claims.

In the drawings:—

40 Figure 1 is a vertical sectional view, partly in elevation and partly broken away, illustrating one form of brush constructed in accordance with the present invention with an operating means therefor;

Figure 2 is a view similar to Figure 1 illustrating the mounting for the brush after it has been partly worn, and

45 Figure 3 is a view similar to Figure 2 illustrating the manner of mounting the brush after it has been worn to a still greater extent.

50 In carrying out the present invention, there may be utilized a motor 2 of any desired and well known type, herein illustrated as comprising a turbine having a source of fluid pressure supply 3 controlled by a valve 4 operated by a lever 5 conveniently disposed with respect to the handle 6. Motors

of this type are well known, and as the specific construction or operating characteristics of the motor do not constitute any part of the present invention, it is deemed unnecessary to describe the same in detail. 60

The rotating element 7 of the motor is provided with a stud 8 preferably threaded externally to receive a sleeve 9 having one end thereof threaded to cooperate with the stud and its opposite end threaded to receive 65 a fastening means 10.

70 The brush, while it may be of any desired construction, is herein illustrated as being of the type comprising a central hub member 11 having a series of openings 12 adjacent the periphery through each of which is threaded a tuft of bristles 13. In accordance with the present invention, the hub member 11 is provided with a central opening 14 through which the fastening 75 means 10 is adapted to pass, and the hub member and bristles are so proportioned as to enter and be effectively maintained in the desired operating position by a cup shaped support 15. It will be understood that the 80 depth of the cup shaped support bears a definite relation to the length of the bristles 13, it being desired to have the bristles project a predetermined distance beyond the edge of the support when the fastening 85 means 10 is in its final position. Heretofore, when the effective projecting portion of the bristles have been worn down substantially to the plane of the edge of the support 15, the brush has been thrown away and a new 90 brush utilized. In accordance with the present invention, I provide each support with a plurality of fastening means, the fastening means 10 being adapted to be 95 utilized when the brush is new, and fastening means 10' adapted to be utilized when the brush is partly worn, and further fastening means 10'' adapted to hold a brush in position after it has become worn to a still greater extent. These fastening means 100 are of similar construction with the exception that they are of increasing length, whereby they are adapted to cooperate with the hub member 11 of the brush as it is moved outwardly in the support 15. 105

For effectively cooperating with the brush in different positions, I provide a plurality of replaceable and interchangeable disk shaped wear members 16 adapted to be inserted at will between the hub member of the 110

brush and the bottom of the cup shaped support so that there is produced, in effect, a cup shaped support of varying effective depths in accordance with the length of
5 bristle on the brush being utilized. In Figure 1 the brush is illustrated as being a new one, and adapted to be utilized without any of the wear members 16. In Figure 2, however, the brush is shown as partly worn and
10 as cooperating with one of the wear members. In Figure 3 the brush is illustrated as having been worn to a considerable extent, and the cup shaped support 15 is provided with a plurality of wear members or spacing
15 washers 16 to thereby maintain the bristles in the desired position.

It will be understood that with a construction of the character shown, a single support may be effectively utilized throughout the entire period of usefulness of a
20 brush, it being only necessary to substitute fastening means and add wear members in accordance with the wear on the bristles. While the wear member 16 may be of any
25 desired thickness, the invention contemplating an assortment of wear members of different thicknesses if desired, it has been found expedient to utilize wear members having a
30 thickness approximately equal to the maximum projection of the bristles at any one time, but slightly less in thickness than the amount of projection, whereby when the
35 bristles have been worn down to such an extent that they terminate substantially in the plane of the edge of the cup shaped support, the addition of a new wear member
40 will not tend to project the bristles too far beyond the edge of the support. At the same time, such a relationship makes it possible to obtain the maximum period of service from the brush with a minimum number
of adjustments.

The advantages of the present invention arise from the provision of a brush having
45 supporting means adapted to cooperate with the brush in different positions, thereby enabling the brush to be used throughout its full period of usefulness.

I claim:

50 1. As an article of manufacture, a brush comprising a hub member, brushing elements carried thereby, a cup shaped sup-

port for said hub member and elements, a filler adapted to be inserted into said support
55 between the same and the hub member, and securing means terminating within the upper portion of the support and cooperating with said support and the hub member for
60 maintaining the hub member in position within the support, the portion of said securing means lying within the cup shaped support being below the brim of the support.

2. As an article of manufacture, a brush comprising a hub member, bristles carried
65 thereby, a cup shaped support for said member and bristles, a plurality of wear members adapted to be inserted into said support between the same and the hub member, and securing means adapted to pass
70 through said hub member, said wear members and said support and terminating within the cupped portion for maintaining the parts in operative position, the portion of
75 said securing means lying within the cup shaped support being below the brim of the support.

3. As an article of manufacture, a brush unit comprising a hub member, a plurality of
80 bristles carried by the periphery thereof, a cup shaped support for said hub and bristles, means for adjustably supporting said hub within said support, and securing means terminating within the cupped portion of the
85 support and adapted to hold the hub, support and adjusting means as a rigid brush unit, all portions of said securing means lying within the cup shaped support being so
disposed that they lie below the brim of the support.

4. As an article of manufacture, a brush
90 unit comprising a hub member, a plurality of bristles carried thereby and projecting in a uniform direction, a cup shaped support for the hub and bristles and opening outwardly in the direction of projection of the
95 bristles, spacing means disposed between the cup and the hub, and securing means adapted to hold the hub, support and spacing means extending outwardly and beyond the rear wall of the support for securing the
100 latter to a driving mechanism.

In testimony whereof I have hereunto set my hand.

JAMES P. RODGERS.