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1,493,670

C. E. GALVIN

ROTARY WIRE BRUSH AND METHOD OF CONSTRUCTING SAME

Filed Dec. 8, 1922

Fig. 1.

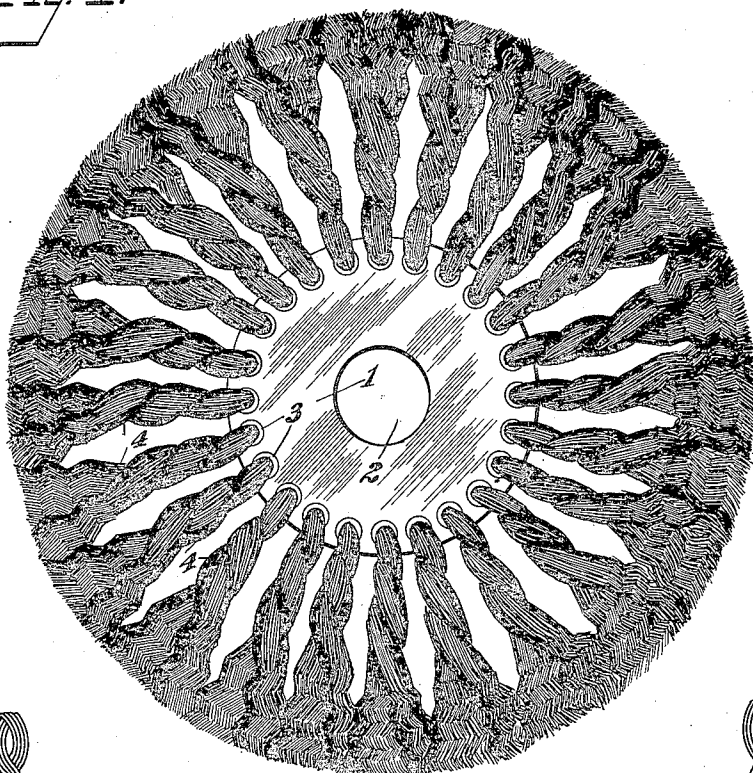


Fig. 5.

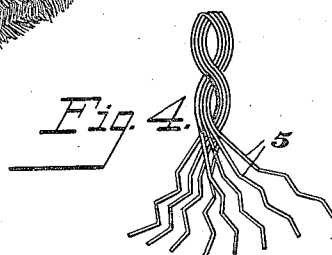


Fig. 4.

Fig. 2.

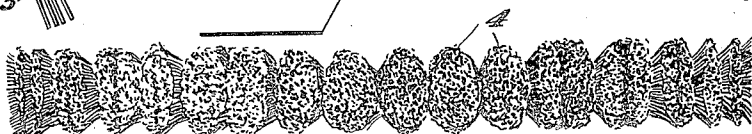


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ROTARY WIRE BRUSH AND METHOD OF CONSTRUCTING SAME.

Application filed December 8, 1922. Serial No. 605,574.

To all whom it may concern:

Be it known that I, CHARLES E. GALVIN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Rotary Wire Brushes and Method of Constructing Same, of which the following is a specification.

This invention relates to improvements in wire brushes and an improved method of constructing same. The invention relates more particularly to rotary brushes adapted to operate at a high speed formed with an abrasive surface of wire bristles which have been brushed.

An object of the invention is to provide a brush of this character in which all of the parts are evenly balanced and so arranged as to enable the operator to hold the same against the work to be cleaned with a minimum amount of exertion; the metal bristles being twisted near the center of the brush while the ends are preferably separated one from the other.

A further object of the invention is to provide a brush of this character having tufts of bristles with their inner portions twisted and with the outer or working ends of the bristles formed with crimps or waves of comparatively short length so as to not only lend stiffness to the individual bristles but also prolong the life of same so that by crimping the ends of twisted tufts of wires thus separating the ends and spreading same apart, as it were, the cleaning or polishing action is improved without impairing the stiffness of the parts due to the twisted inner portions.

A further object of the invention is to improve the method of constructing brushes of this character.

A further object of the invention is to provide a rotary wire brush of simple construction, economical in manufacture and effective in operation.

The improved brush has tufts of wires or metal bristles bent upon themselves and twisted for a portion of their length, the outer or free ends of the bristles being crimped or waved.

In the drawings:

Fig. 1 is a side elevation of a rotary brush embodying the improvements.

Fig. 2 is a plan view of the same.

Fig. 3 is a plan view of the brush showing the bristles after twisting but before crimping.

Fig. 4 is a view of a strand or tuft of bristles after twisting and crimping; this view being somewhat diagrammatic in character in that it shows a tuft made up of bristles far less in number than actually used.

Fig. 5 is a view of a tuft or strand of bristles similar to Fig. 4 but showing the bristles after twisting but before crimping.

In the drawings, 1 represents a metal disk forming a hub having a central opening 2 to receive a shaft and also a plurality of equally spaced apertures 3 near its outer periphery to receive the respective strands of bristles 4. These strands are each formed of a plurality of metal wires or bristles 5. In forming the brush a strand of bristles is threaded through each of the openings 3, the strand being bent upon itself and partly twisted as shown in Fig. 5. The outer or free ends of the bristles are then put through a crimping machine so as to crimp or wave the same in the manner in Fig. 4. The crimps or waves formed in the bristles are comparatively close together so as to provide comparatively short angularly arranged sections in the free ends of the bristles.

By first twisting the tuft of bristles from the bend outwardly for a portion of its length and then crimping the outer or free ends of the bristles forming the tuft, the bristles are spread apart to provide a periphery that will give an improved cleaning or polishing action without impairing the stiff character of the tuft due to the twisted inner portion.

It will be noticed that a substantial space is had between the portions of the respective strands or tufts of bristles which provides for an ample air circulation about the strands to keep the same cool and at the same time the crimping of the outer ends of the bristles causes the free ends of the bristles to be held apart and in contact with the bristles of adjacent strands so as to provide a substantially continuous periphery. Having thus described my invention, I claim:

1. The method of forming a metal brush by twisting one portion of metal bristles to form tufts and leaving unbent projecting ends and crimping the said projecting ends,

whereby the body of the tufts retain their compactness due to their twisted condition and the projecting ends are spread apart.

2. In a brush of the character described,
5 a central hub member having a series of openings, a tuft of bristles threaded through each opening and bent upon itself and

twisted for a portion of its length, the balance or free ends of the bristles forming the tuft being provided with a series of 10 short bends.

In testimony whereof, I have hereunto set my hand this 4th day of December, 1922.

CHARLES E. GALVIN.