Sept. 25, 1962 W. HÄLG 3,055,034

WIRE BRUSH

Filed March 1, 1960

Fig. 1.

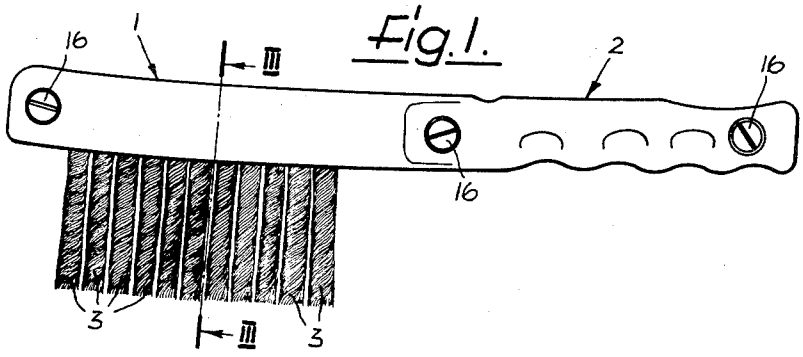


Fig. 2.

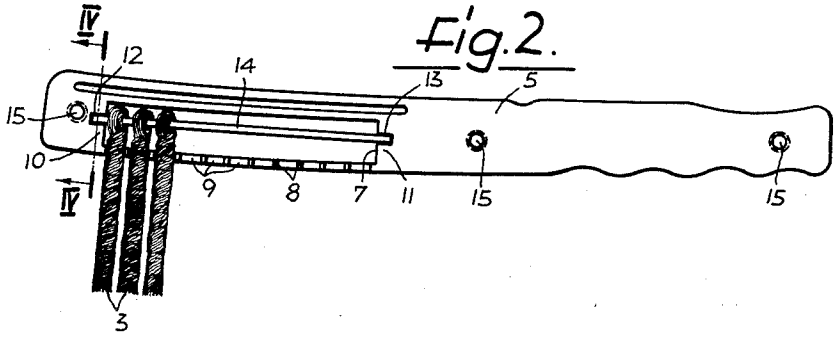


Fig. 3.

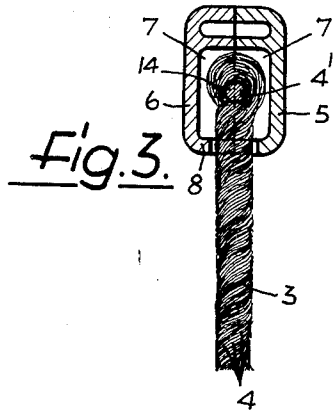


Fig. 4.

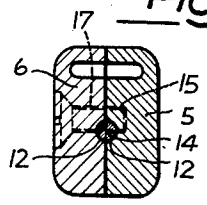
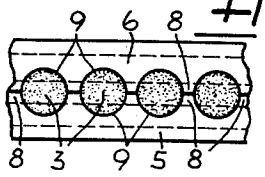


Fig. 5.



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WIRE BRUSH

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1 Claim. (Cl. 15—197)

The present invention relates to a hand brush with wire bristles as commonly used, for example, for brushing welding seams, plaster, concrete, and the like, for cleaning tables, cutting blocks and the like in butcher shops, and for many other purposes.

In the wire hand brushes according to the known constructions, the wire bristles are always solidly embedded in the back of the brush. The manner of securing the wire bristles of these known hand brushes also only permits the use of relatively weak bristles, and the individual bristles may be easily bent and will then be useless.

It is an object of the present invention to provide a wire hand brush which overcomes the above-mentioned disadvantages by providing the wire bristles in the form of tufts of a number of bristles and twisting the bristles of each tuft together. The individual wires of such a twisted tuft may be made of any desired thickness and may be embedded in the back of the brush much more easily than a tuft of bristles which are not twisted together. Such twisting of the bristles also produces the important advantage that the individual bristles within each tuft can no longer be bent over or kinked since they will support or brace each other.

Another disadvantage of the known wire hand brushes is the fact that the entire brush has to be discarded when the wire bristles have been worn off, since there is no possibility of exchanging them for new bristles.

It is therefore another object of the present invention to provide a hand brush with exchangeable wire bristles.

This object is attained according to the invention by making the body or back of the brush of at least two parts which are removably secured to each other, preferably by screws, and by providing the sides of these parts which are facing toward each other with suitable recesses in which the twisted tufts of wire bristles are mounted. The individual twisted tufts are simply inserted with one end into the mentioned recesses in the two parts, whereupon the latter are removably secured to each other, for example, by screws. When the wire bristles are worn off, the back is taken apart so that the old twisted tufts can be removed and replaced by new tufts.

A very simple manner of securing the twisted wire tufts between the two parts of the back of the brush consists according to the invention in making each tuft of wires of a substantially uniform length which are bent around their center to form an eye and are then twisted together. The end of the tuft containing the eye will therefore be thicker than the remainder thereof and can thus be more firmly embedded. Furthermore, this eye portion may be used for the insertion of a securing member, and for this purpose a rod is passed through the eyes of several twisted wire tufts which are thus threaded thereon, and the ends of this wire are mounted in grooves in the solid parts of the back of the brush adjacent to the ends of the recess in each back part containing the tufts.

These and other objects, features, and advantages of the present invention will become further apparent from the following detailed description thereof, particularly when the same is read with reference to the accompanying drawings, in which—

FIGURE 1 shows a side view of the wire brush according to the invention;

FIGURE 2 shows an inside view of one of the two main parts of the brush according to FIGURE 1;

FIGURE 3 shows an enlarged cross section taken along line III—III of FIGURE 1;

FIGURE 4 shows an enlarged cross section taken along line IV—IV of FIGURE 2; while

FIGURE 5 shows an enlarged partial plan view of the back of the brush as seen from below.

Referring to the drawings, the brush according to the invention consists of a body portion or back **1** which is provided with a handle **2** and carries tufts **3** of bristles which consist of a plurality of metal wires **4** which are twisted together. Depending upon the particular use of the brush, the wire bristles may consist of different grades of steel, brass, or other metals, or a combination of several metals.

Each tuft **3** of bristles is preferably made of wires of approximative twice the length as required for the entire tuft, and these wires are folded over about their center so as to form an eye **4'** at the center. Starting from this eye **4'**, the individual wires or bristles **4** are then twisted together toward their ends so that a coherent body, namely the tuft **3**, consisting of individual bristles **4** will be formed.

The back portion and the handle **2** of the brush together form a single element which, however, is divided in half in the longitudinal direction into two sections **5** and **6** of equal lengths so that each of these sections **5** and **6** forms one half of back portion **1** and one half of handle **2**. Each of the two halves of back portion **1** is provided with a similar trough-shaped recess **7** for receiving the eye-shaped ends **4'** of tufts **3**. As illustrated in FIGURE 2, the lower wall portion **8** of each recess **7** is provided with semicircular grooves **9** for enclosing and gripping the round parts of tufts **3** underneath eyes **4'**, while in the wall portions **10** and **11** at both ends of each recess **7** a groove **12** or **13**, respectively, is provided into which a rod **14** may be inserted which passes through eyes **4'** of tufts **3**. Furthermore, section **5** is provided with threaded bores **15** into which screws **16** may be screwed which are inserted into bores **17** in section **6** and are adapted to secure the two sections **5** and **6** to each other and to grip tufts **3** at opposite sides thereof.

In the assembly of the brush, the required number of twisted tufts **3** are threaded upon a rod **14** and inserted with the latter into one section of back portion **1**, for example, into section **5**, so that the ends of rod **14** engage into grooves **12** and **13**, while the end portions of tufts **3** adjacent to eyes **4'** rest in the semicircular recesses **9**. The other section **6** is then placed upon the first section **5** and both sections are secured to each other by screws **16**. Tufts **3** will thereby be held on rod **14** and securely clamped by the walls of grooves **9**. If the tufts are worn off, the two sections **5** and **6** may be easily unscrewed from each other and the worn tufts be replaced by a set of new tufts.

Although my invention has been illustrated and described with reference to the preferred embodiment thereof, I wish to have it understood that it is in no way limited to the details of such embodiment, but is capable of numerous modifications within the scope of the appended claim.

Having thus fully disclosed my invention, what I claim is:

A wire brush comprising a back portion and a plurality of tufts secured at one end to said back portion and each tuft consisting of a plurality of wire bristles twisted together to form a cablelike member, said back portion having a longitudinal extension thereon forming a handle and the handle being divided longitudinally into two substantially equal sections each having a recess in the part

forming said back portion, lower wall portions in each section forming a row of substantially semicircular grooves, said recesses in said two sections facing toward each other when said two sections are placed on each other with opposite pairs of wall portions abutting each other to form a closed chamber for holding one end of each of said twisted tufts, the grooves in said walls facing toward each other to surround and grip said tufts at a point near said ends, means for removably securing said two sections to each other and for clamping said twisted tufts in a fixed position, the wire strands of each of said tufts being of a substantially uniform length and are bent over at their center to form an enlarged eye portion and are twisted together, and a rod inserted through all of said eye portions in a row behind each other, the end walls of each of said recesses having grooves therein for receiving the ends of said rod and for clamping said ends in a fixed position when said two sections are secured to each other.

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