March 9, 1926. 1,576,182

E. F. FLETCHER

BRUSH

Filed April 5, 1924

Fig. 1.

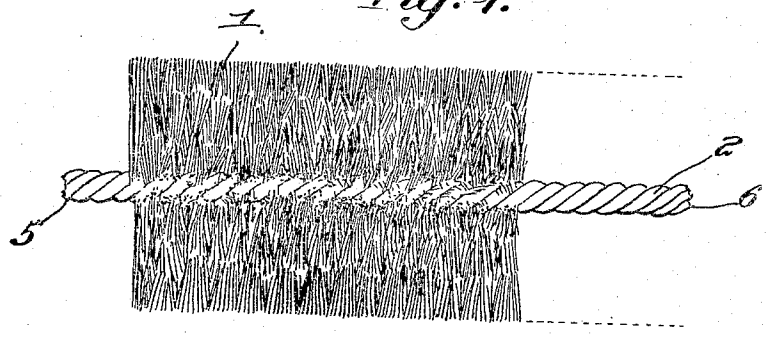


Fig. 2.

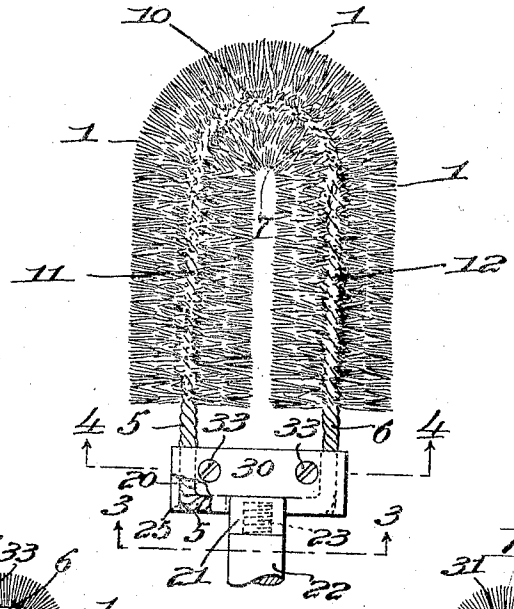


Fig. 3.

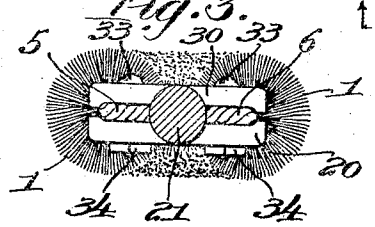
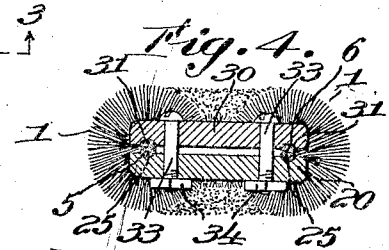


Fig. 4.



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UNITED STATES PATENT OFFICE.

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BRUSH.

Application filed April 5, 1924. Serial No. 704,515.

To all whom it may concern:

Be it known that I, EDWARD F. FLETCHER, a citizen of the United States, and resident of Worcester, in the county of Worcester and State of Massachusetts, have invented an Improvement in Brushes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My present invention is a novel and improved type of metallic scraper brush, particularly intended for use in furnace work, cleaning sectional tube boilers and the like, giving a greater brushing surface and on both sides and end, than has heretofore been possible.

In carrying out my invention, I employ the present well known method of fitting pluralities of groups of wire bristles of predetermined length through an assembled plurality of strands, and thereupon when a sufficient length has been thus assembled, twisting the strands into a wire rope, which engages, holds and secures the bristles by simultaneously forming the strands into a sufficiently rigid carrying rope or cable to hold the brush elements as a self-sustaining brush or scraper. With a predetermined length of wire brushing elements and suitable length of cable thus positioned, I then form the same into a U-shaped contour, the natural resistance, as well as resilience of the brush elements at the curved portion of the U formation insuring this action, while keeping the two arms or legs of the U spaced, and also affording rigidity thereto. Thereupon I provide a combined clamping and handle receiving member, into which the free ends of the arms or legs of the U are fitted, allowing suitable length to bend over the ends into recesses provided in a socket member, and thereupon clamping the same into a rigid, compact handle-receiving holder. Thus I am enabled to provide a double stranded metallic brush with the brushing elements across the connecting outer portions, thereby greatly improving the usefulness of such an article.

Referring to the drawings, illustrating a preferred embodiment of my invention,

Fig. 1 is a side view illustrating the method of manufacture;

Fig. 2 is a side view showing the completed U-shaped form of the brush secured to the holder;

Fig. 3 is a cross-sectional view on the line 3—3 of Fig. 2; and

Fig. 4 is a cross-sectional view on the line 4—4 of Fig. 2.

It will be appreciated that my invention, as herein illustrated, is suitable for application to metallic brushes of this type and any size, strength, and fineness or coarseness of bristles desired. As shown in Fig. 1, the plurality of bristles or brush elements designated generally at 1, are fitted through the plurality of strands in the usual manner, which latter are thereafter twisted into a combined holding and supporting rope or cable element 2. This cable is of predetermined length and the brush elements 1 are fitted thereon also for desired length for the completed brush. Thereupon the free ends 5 and 6 of the cable 2 are bent into U-shaped form, as shown in Fig. 2. The mass of the bristles affording resistance around the U conformation as indicated at 7, aid and assist in this bending curve, while maintaining the connecting portion 10 of the cable legs or arms 11 and 12 all constituting the U, completely covered with the scraping and bristle elements 1. The feature of having the curved portion 10 of the cable thus carrying brushing instrumentalities also, is an important and distinct novelty, prior brushes having two legs or arms being simply connected across the outer end by naked wire, cable or other fastening elements.

In order to hold, retain and lock the brush elements into this conformation, as well as to provide also a handle receiving device, I provide a base member comprising a plate or rectangular block 20 having formed integrally therewith an internally threaded socket 21, adapted to receive a handle 22 with cooperating threaded portion 23. This plate 20 has formed therein at each end a groove 25 of sufficient diameter to receive approximately one-half of the cable ends 5 and 6, which latter are fitted therein and bent thereover, as clearly shown in Figs. 2 and 3. A cooperating clamping plate or block 30 is provided with similar cable receiving grooves 31, and pair of headed bolts 33, 33, arranged to extend through both plate 20 and clamp 30, and be firmly se-

cured in position by threaded nuts 34, fitting on the projecting ends.

Thus I provide a simple, strong, economical and efficient combined clamping means, handle receiving means and cable interlocking means. The extreme free ends of the end portions 5 and 6 being bent over within the grooves 25 and 31 respectively, and held in this interlocked and clamped position by the bolts 33.

My invention is further described and defined in the form of a claim as follows:

A metallic brush for use on boilers, furnaces, iron work and the like, comprising a twisted bristle carrying core of substantially U-shaped form, the terminal portions of the legs of the core being bent inwardly at right angles toward each other into alinement, a holding and locking clamp for said alined members, comprising a pair of rectangular metallic blocks, one of said blocks having formed therein a substantially U-shaped groove and having a threaded handle receiving device formed integral therewith, the second block being provided with substantially U-shaped grooves cooperating with the U-shaped groove in the first block, and together acting as a clamp for the wire elements, and adjustable and removable means extending through said blocks and near each end thereof for holding said blocks in close association.

In testimony whereof, I have signed my name to this specification.

EDWARD F. FLETCHER.