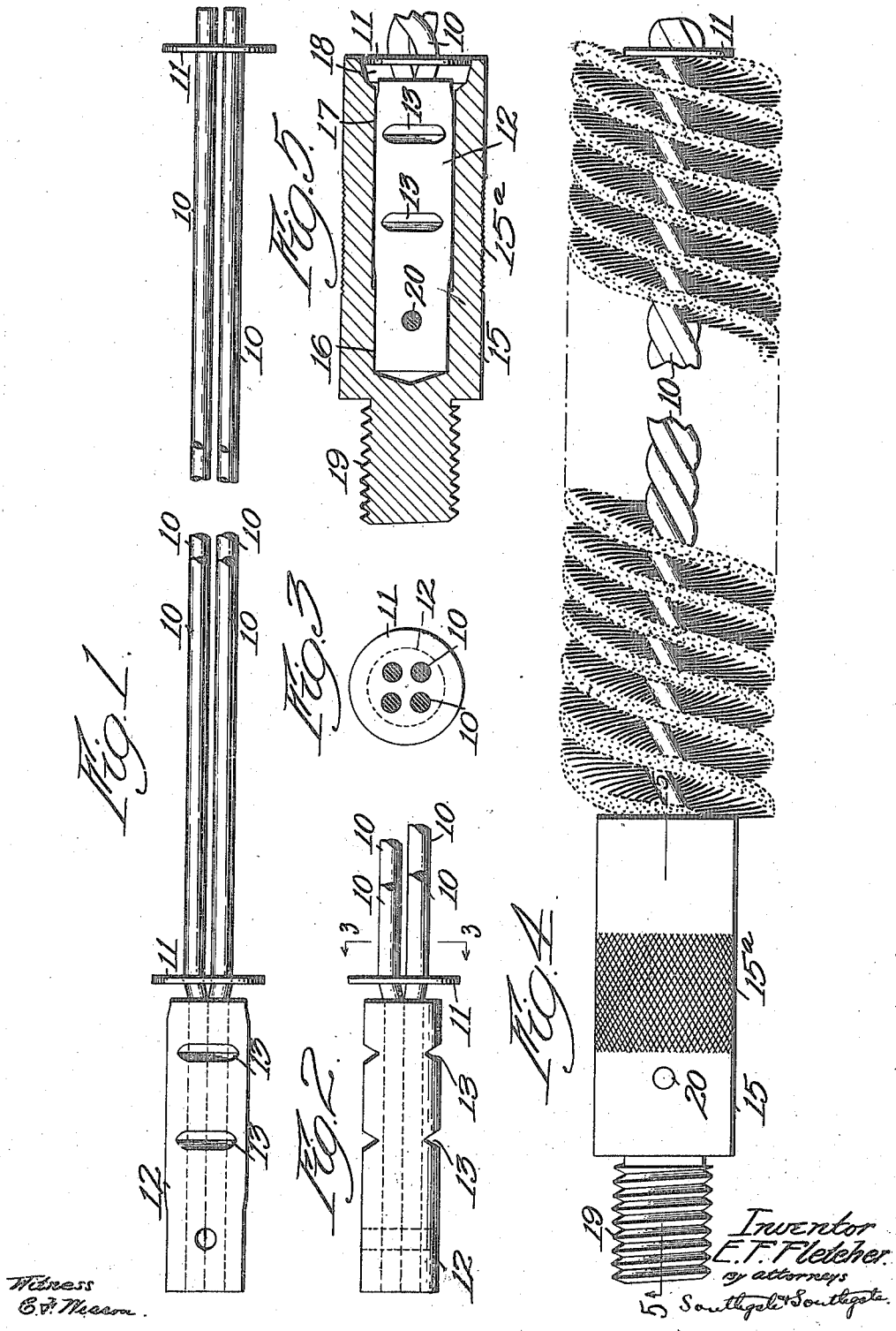
E. F. FLETCHER.

BRUSH FOR CLEANING GUNS AND THE LIKE.

APPLICATION FILED JUNE 25, 1917.

1,264,290. Patented Apr. 30, 1918.



UNITED STATES PATENT OFFICE.

EDWARD F. FLETCHER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WORCESTER BRUSH AND SCRAPER COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BRUSH FOR CLEANING GUNS AND THE LIKE.

1,264,290. Specification of Letters Patent. Patented Apr. 30, 1918.

Application filed June 25, 1917. Serial No. 176,725.

To all whom it may concern:

Be it known that I, EDWARD F. FLETCHER, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Brush for Cleaning Guns and the like, of which the following is a specification.

This invention relates to a brush, particularly designed for cleaning guns, but obviously having features adapting it for other purposes.

The principal objects of the invention are to provide a simple and durable construction in which all parts except the bristles are made of metal, so that there will be practically nothing to get out of order; to provide a construction in which the wires between which the bristles are held are secured together in a simple and accurate manner which reduces materially the operation of manufacture; and to provide improved means for holding the wires in the ferrule by which they are mounted on the handle. The invention also involves improvements in details of construction and combinations of parts as will appear.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a side elevation of a portion of the device before the bristles are placed in position;

Fig. 2 is a plan of the same;

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

Fig. 4 is a side elevation of the complete brush; and

Fig. 5 is a central longitudinal sectional view of the same on the line 5—5 of Fig. 4.

The arrangement shown in Figs. 1, 2 and 3 as will be understood is not the completed brush, but these figures illustrate one stage in the operation of making the brush. It is made by taking four heavy wires 10 and arranging them in the form of a square and holding them in that position by means of two washers 11, each having four perforations arranged in the form of a square for receiving the four wires. These washers are placed at opposite ends of the portion of the wires which is to receive the bristles and they serve throughout the manufacture of the brush to hold the wires in proper position with respect to each other. A piece of common piping 12 is provided and the ends of the wires beyond one of the washers 11 are driven into it. This piping is chosen of such size as to just receive these wires and permit them to be inserted preferably by driving them in. This is then put in a simple press, or the operation performed in any other convenient way, so as to press upon it in opposite directions on opposite sides, incidentally making two opposite grooves 13 in each side. This forces the metal of the pipe into such intimate contact with the wires inside that they are practically permanently held by them alone, and although I do not depend upon them alone in the completed article this does constitute the sole means for holding the wires in the pipe while the brush is being made up. It will be understood that although the wires may be pressed out of shape a little within the pipe the washer near the end of the pipe holds them accurately at that point.

The holding ferrule 15 is formed of metal provided with a knurled portion at 15ª to facilitate handling the completed article, and this is bored out axially in the center to give three different diameters. The inner one at 16 is substantially the size of the inner pipe 12. The next one at 17 is a little larger to accommodate the little bulge which is given the pipe by the pressure which is used in forcing it against the wires. At the outer end there is a third bore at 18 slightly conical in form for receiving the washer 11. This ferrule 15 is also provided with a screw-threaded end 19 for receiving the handle not shown.

The device shown in Fig. 1 is forced into this ferrule and the washer 11 inserted by pressure so as to hold firmly. Then a hole is bored through the whole thing and a holding pin 20 driven in to hold the parts firmly in position. This pin not only holds the pipe but also the wires because it is bored through between them and enters their inner sides so as to positively prevent their being pulled out.

The operation of inserting the bristles and permanently fixing them in position is well understood in this art and need not be described in full. It is sufficient to say merely that the bristles are inserted between the

wires in two planes at right angles to each other, and the wires twisted into the form shown in Fig. 4. On account of the washers 11 holding the wires this twisting operation can be performed in a comparatively rough manner and yet the brush will come through it in a uniform condition, the wires being bent uniformly from end to end and holding the bristles also with great uniformity all the way along on account of these washers. This is an important element.

At the end beyond the outer washer 11 the wires are bent inwardly toward each other and filed off to finish the article at that end. The whole device can then be applied to the handle and it is found in practice to constitute a most durable and efficient construction, although made by a very simple process as has been stated. It contains no parts of wood or other soft material, and therefore is permanent.

Although I have illustrated and described only a single form of the invention I am aware of the fact that modifications may be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but what I do claim is:—

1. As an article of manufacture, a brush comprising a plurality of wires twisted together and holding bristles between them, and a washer at the end of the set of bristles having perforations for receiving said wires and holding them in proper relative position.

2. As an article of manufacture, a brush comprising a plurality of wires having bristles between them, said wires being twisted to fix the bristles in place, and a pair of washers one located at each end of the series of bristles, each wire passing through both washers.

3. As an article of manufacture, a brush comprising four wires twisted together, bristles located between the wires and held in position thereby, and a washer at each end of the series of bristles, each washer having four perforations spaced apart, each for receiving one of said wires, whereby the washers constitute spacing means for keeping the wires in proper relative position.

4. As an article of manufacture, a brush comprising a plurality of wires twisted together and holding bristles between them, a washer at the end of the set of bristles, said washer having a series of perforations, each one for receiving one of said wires and holding them in proper relative position, and a substantially cylindrical hollow member into which the ends of said wires beyond the washer project, said member being provided with opposite depressions for holding the wires therein.

5. As an article of manufacture, a brush comprising a plurality of wires having bristles between them, said wires being twisted to fix the bristles in place, a pair of washers one located at each end of the series of bristles, each wire passing through both washers, the washers having perforations for receiving and holding the wires, a piece of piping into which the ends of said wires beyond one of the washers extend, said piping being compressed on two opposite sides for holding it on the wires, and a socket or ferrule for receiving said piping.

6. As an article of manufacture a brush comprising a plurality of wires holding bristles between them, means at the end of the set of bristles for receiving said wires and holding them spaced apart in proper relative position, and a substantially cylindrical hollow member into which the ends of said wires beyond said holding means project, said member being provided with off-set depressions on its outer surface, and its inner surface being provided with corresponding inner projections for engaging the wires and holding them therein.

7. As an article of manufacture, a brush comprising a handle, a plurality of wires twisted together and holding bristles between them, and fixed means at the outer end of the set of bristles for receiving said wires and holding them positively spaced apart in proper relative position.

8. In a brush, the combination of a socket or ferrule having means for attachment to a handle and provided with a central bore therein, a piece of piping fitting in said bore, means for permanently attaching the piping to the ferrule, a plurality of wires held in the piping and projecting therefrom, and bristles held between the wires constituting the brush proper.

9. In a brush, the combination of a socket or ferrule having a bore therein, a piece of piping in said bore, means for permanently attaching the piping to the ferrule, a plurality of wires held in the piping and projecting therefrom and provided with bristles between them constituting the brush proper, and a washer between the piping and bristles having a series of perforations for receiving the wires and spacing them apart, the bore of said ferrule having an enlargement at the end for receiving said washer.

10. In a brush, the combination of a socket or ferrule provided with a bore therein, a piece of piping in said bore, a plurality of wires held in the piping and projecting therefrom and provided with bristles between them constituting the brush proper, and a pin extending through the wall of the ferrule and through the piping, said wires having a hole entering each of them at some point into which said pin projects so that the pin holds the wires positively in position.

11. The method of making a brush which comprises the location of a plurality of wires in parallel positions, holding the said wires at a fixed distance apart at one extreme end and at a point near the other end, placing a piece of piping over one end of the wires, compressing said piping to fix it to the wires, placing bristles between the wires outside the piping, and twisting them to fix the bristles in position.

In testimony whereof I have hereunto affixed my signature.

EDWARD F. FLETCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."