F. SPROWER.

Brush.

No. 211,431. Patented Jan. 14, 1879.

Fig. 1.

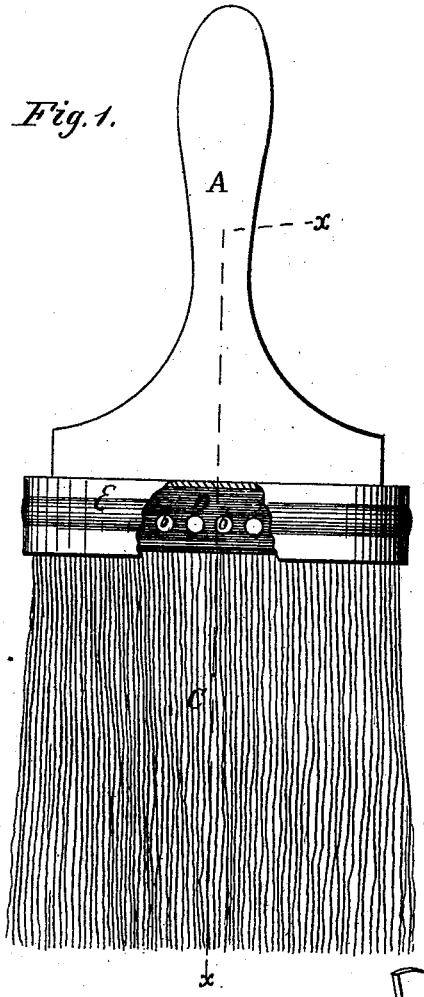


Fig. 2.

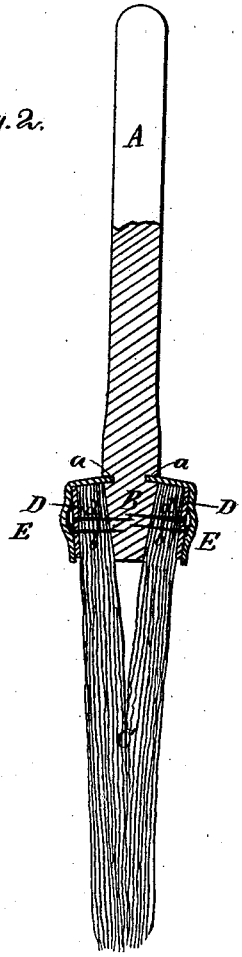


Fig. 3.

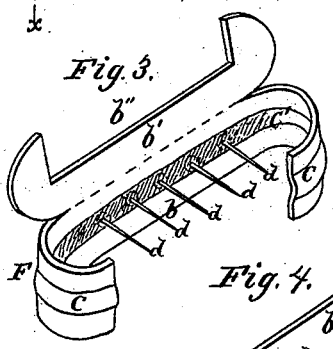


Fig. 5.

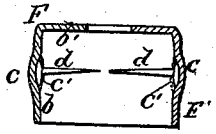
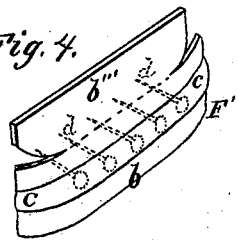


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK SPROWER, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN BRUSHES.

Specification forming part of Letters Patent No. **211,431**, dated January 14, 1879; application filed September 16, 1878.

To all whom it may concern:

Be it known that I, FREDERICK SPROWER, of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and useful Improvement in Brushes, of which the following is a specification:

The object of this invention is to secure the ends of the bristles, so that when the brush is bent or the point is struck against an object they will be held in place and prevented from slipping up and becoming loosened on the handle.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a brush provided with my improvement. Fig. 2 is a longitudinal section of the same on line *x x*. Figs. 3 and 4 are detailed perspective views of the ferrule, and Fig. 5 is a transverse section of the same.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is the handle of the brush, the lower end of which forms a stock, B, to which the ends of the bristles C are confined. Around the stock, on a line corresponding to the point where the confined ends of the bristles are placed, is made a deep groove, *a*.

D is the leather band, placed around the fixed part of the bristles, and securing them to the stock by means of nails *b b b*, &c., passed laterally through the leather and into the stock B, as clearly shown in Fig. 2.

Fastening the bristles to the stock by means of the leather band is the method now employed, and my invention has no reference to this part of the construction of the brush; but in the old construction the bristles C are apt to be driven up from the fastening when the brush is bent, or when its end is struck against an object, as is frequently the case when the workman is endeavoring to brush the material into corners, crevices, &c., and, as a result thereof, the brush loses its evenness, and in a short time becomes useless. Now, my invention is designed to prevent anything of this kind.

The ferrule for protecting the ends of the bristles is shown at E in Figs. 1 and 2 in the position it occupies when placed on the completed brush, and in Figs. 3, 4, and 5 in detail. This ferrule is made in two parts, F F′, in the last figures, and when placed on the brush the two parts are soldered together, so as to form a whole. The part F is composed of the side piece, *b*, (the ends of which are curved when placed on the brush to conform to the edges thereof,) and the bottom piece, *b′*, at right angles to *b*, with its ends rounded and provided with the rectangular opening *b″*. The part F′ has a similar side, *b*, and a piece, *b‴*, to join the corresponding parts in F, and thus form the complete ferrule shown in Figs. 1 and 2. The sides of the two parts F F′ have a longitudinal bead, *c*, made by striking up the metal, forming a groove, *c′*, on the inside, into which the heads of the nails *d d d*, &c., are placed, and secured by solder, as clearly indicated in the drawings.

The mode of applying my improvement is as follows: The bristles having been secured to the stock by means of the leather band nailed into the stock, as shown in the drawings, the part F is placed over the fixed ends of the bristles, with the edges of the rectangular opening *b″* in the bottom *b′* inserted in the groove, and the points of the nails *d* pushed through the strap and bristles against the wood of the stock. Then the nails are driven into the stock as far as they will go, the sides of the ferrule pressing against the leather strap. At the same time the bottom *b′* advances toward the stock, and finally incases the bristles on the sides and top, as clearly shown in Figs. 1 and 2. The piece F′ is then applied in the same manner on the opposite side. The ends of the two parts F F′ are then soldered together, they having been first bent around the edges of the brush and made to conform to them, and, finally, the bottom parts *b′ b″* and the edges of the ends are soldered together, thus forming a complete ferrule, as represented in Figs. 1 and 2. This ferrule completely incloses the fixed ends of the bristles, so that they cannot slip, however the brush may be used, and, in addition, they are more securely attached to the stock, as there is a double row of nails driven through the leather band, and altogether a stronger brush is formed than any now in use.

In applying my improvement to paint-brushes where a cord ferrule is now employed

the metal ferrule is, of course, made the shape of the brush, and, as no nails are employed, the flange of the ferrule (called the "sides" in the above description) is made shallower than in the one shown in the drawing, and the ferrule is secured by wrapping the cord over the flange.

The ferrule can, of course, be made in one piece in brushes of this description where no nails are used, and in the construction of the brush be placed first on the handle or stock, and made to bear against a shoulder on the handle, instead of having it placed in a groove.

The advantages of the ferrule in connection with brushes in which the bristles are secured without nails or straps, but wholly by wrapping, will be manifest to the manufacturer and user of brushes.

The ends of the bristles bear against the ferrule; and it makes no difference how the bristles may be borne on, they cannot slip, and it will not be possible for the handle to be driven or worked through the brush so long as the bristles are held together.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

As an improvement in the construction of brushes, the ferrule composed of two parts, F and F′, and provided with the corrugation or groove C and nails *d*, the heads of said nails being arranged in said groove and soldered to the ferrule-sections, as set forth.

FREDK. SPROWER.

Witnesses:
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W. C. DONN.