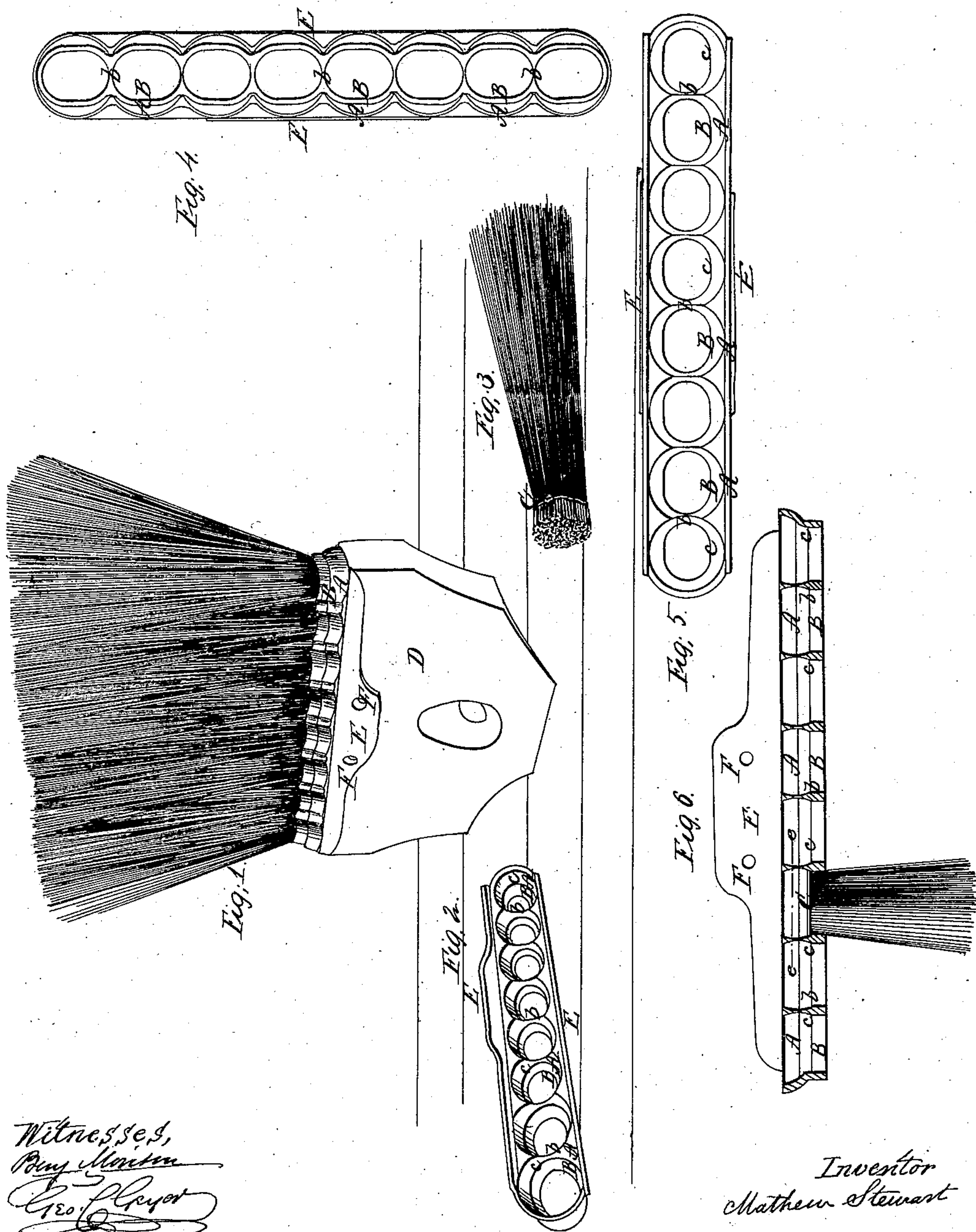


M. Stewart

Brush.

No. 12,037.

Patented Dec. 5, 1854.



Witnesses,
Benjamin
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UNITED STATES PATENT OFFICE.

MATHEW STEWART, OF PHILADELPHIA, PENNSYLVANIA.

MANUFACTURE OF BRUSHES.

Specification of Letters Patent No. 12,037, dated December 5, 1854.

To all whom it may concern:

Be it known that I, MATHEW STEWART, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Mode of Constructing Brushes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my improvement in brushes consists in combining together in a peculiar manner a series of short tubes, of a peculiar construction, in one piece of iron, brass, or other suitable metal, adapted for holding securely the root ends of the bristles within the said tubes and attaching the same to the wooden block or handle.

To enable others skilled in the art to make and use my invention, I will proceed to describe it more in detail.

Figure 1, is a perspective view of a wall-wash brush as finished for sale; Fig. 2, a perspective view of the inner side of the series of tubes, cast in one piece; Fig. 3, a like view of a bunch of bristles as wired and prepared for insertion into one of the tubes. Fig. 4 is a plan view, showing the outer ends of the tubes as combined in one piece; Fig. 5, a like view of the inner side of the same piece; and Fig. 6, a vertical longitudinal section of the same, showing one of the projecting plates for securing it to the block, and also one of the bunches of bristles as properly placed in its tube.

The same letters refer to like parts when in the different figures.

The usual mode of constructing brushes of the character shown in the drawings, consists in binding the bristles to the sides of the block, by means of twine or other cord, but this plan not only shortens the useful length of the bristles, but in a short time the brushes give way in the using and become worthless. These very serious objections are entirely obviated by my improved mode of construction, as the part immediately in connection with the bristles is made entirely of metal, which can be galvanized, tinned, japanned or painted to secure them from oxidation. I have made brushes with a series of longer conical tubes combined, but find on experiments that short circular and bell shaped tubes, combined with very short

cylindroid or elliptical tubes are much better.

A, are the circular and bell shaped tubes; B, the short cylindroid or elliptical tubes with which the circular and bell shaped tubes are united so as to form one tube, adapted at its outer or elliptical end to compress and give to the bunches of bristles a flattened shape, and within its inner or bell shaped part, to allow the root ends of the bristles to expand over the tie wire (C) and also to hold the cement.

The elliptical tubes (B) are cast so as to leave as small a partition (b) between them at their outer ends, as may be—their inner ends (which unite with the circular and bell shaped tubes), gradually run into the circular form at their junction, and the circular, bell shaped tubes, enlarging upward, necessarily cut into each other and bring the partitions (b) each to an edge, causing an arched groove along on the inner edges, extending from end to end of the series of tubes as shown in Fig. 2. The bristles are weighed in parcels suited to the size of the elliptical tubes, and bound together near the root ends by a slender wire, as shown in Fig. 3. These bunches are then forced down through the combined tubes; the wire (C) being arrested by the shoulder (c) formed by the junction of the bell shaped and the elliptical tubes, is forced upward on the bunches of bristles, to within about an eighth of an inch of their root ends—the root ends of the bunches being thereby caused to spread out and fill the bell shaped parts around. Pitch or other suitable cement is now poured on, covering the root ends and filling the arched groove about as high as the dotted line (e e) and thus permanently securing the bunches of bristles in the combined metallic tubes.

In order the more perfectly to unite the bristles and the cement, I usually take a hot iron tool, adapted to the purpose, and remelt therewith the cement in each tube, pressing and rubbing sufficiently hard to cause the roots of the bristles to clench with each other, and the cement to sink down between the ends of the bristles. After the bristles are thus secured, the wooden block (D) is inserted, fitting between the projecting plates (E) so as to bear also against the edges of the bell shaped tubes from extreme

end to end of the metallic piece, and secured thereto by means of nails or screws (at F,) passing through the plates and into the block D.

- 5 The drawings more especially illustrate my mode of constructing brushes used for coating walls, but it will be apparent that the description and illustrations of the principles of construction apply also to brushes
10 used for various other purposes, as paint or varnish brushes which have a handle inserted instead of the block (D), and the number of the combined tubes increased or diminished as may be required.
- 15 In addition to the advantage of durability before mentioned—which this my improved mode of constructing—brushes, has over all others heretofore used, there is a saving in the length of the bristles, inasmuch as the
20 tubes (B) being very short, the length of the bristles within the tubes is not required to be more than about one half of what is

usually required in securing them to the block or handle by cords, and they can never become loose nor waste singly as in the old 25 plan.

I do not claim the use of conical or bell shaped tubes, for binding the knots of bristles, and leaving room for the expansion of the roots of the bristles in the enlarged 30 end of the tubes, such conical or enlarged tubes, so used not being new; but

What I do claim is,

The use, in combination therewith, of a wire for binding the knot of bristles before 35 their insertion, the said wire being supported or held by coming in contact with the sides of the tubes, or suitable projections thereon as described.

MATHEW STEWART.

Witnesses:

BEN. MORISON,
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