

(No Model.)

H. E. FOWLER.

BRUSH.

No. 369,985.

Patented Sept. 13, 1887.

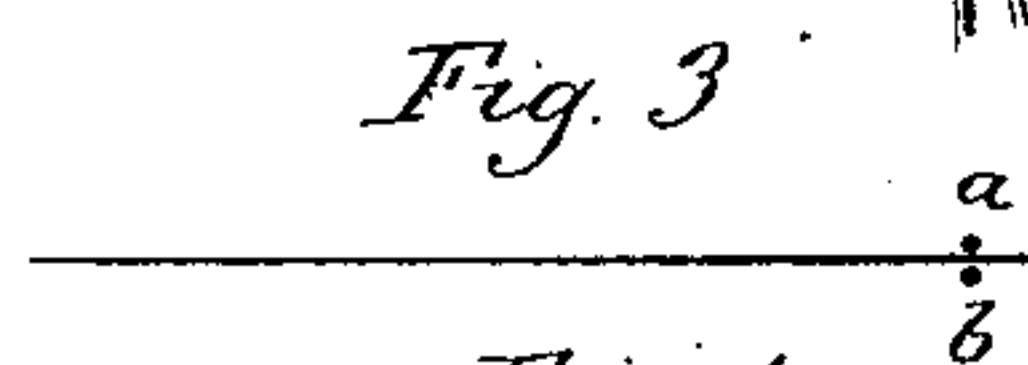
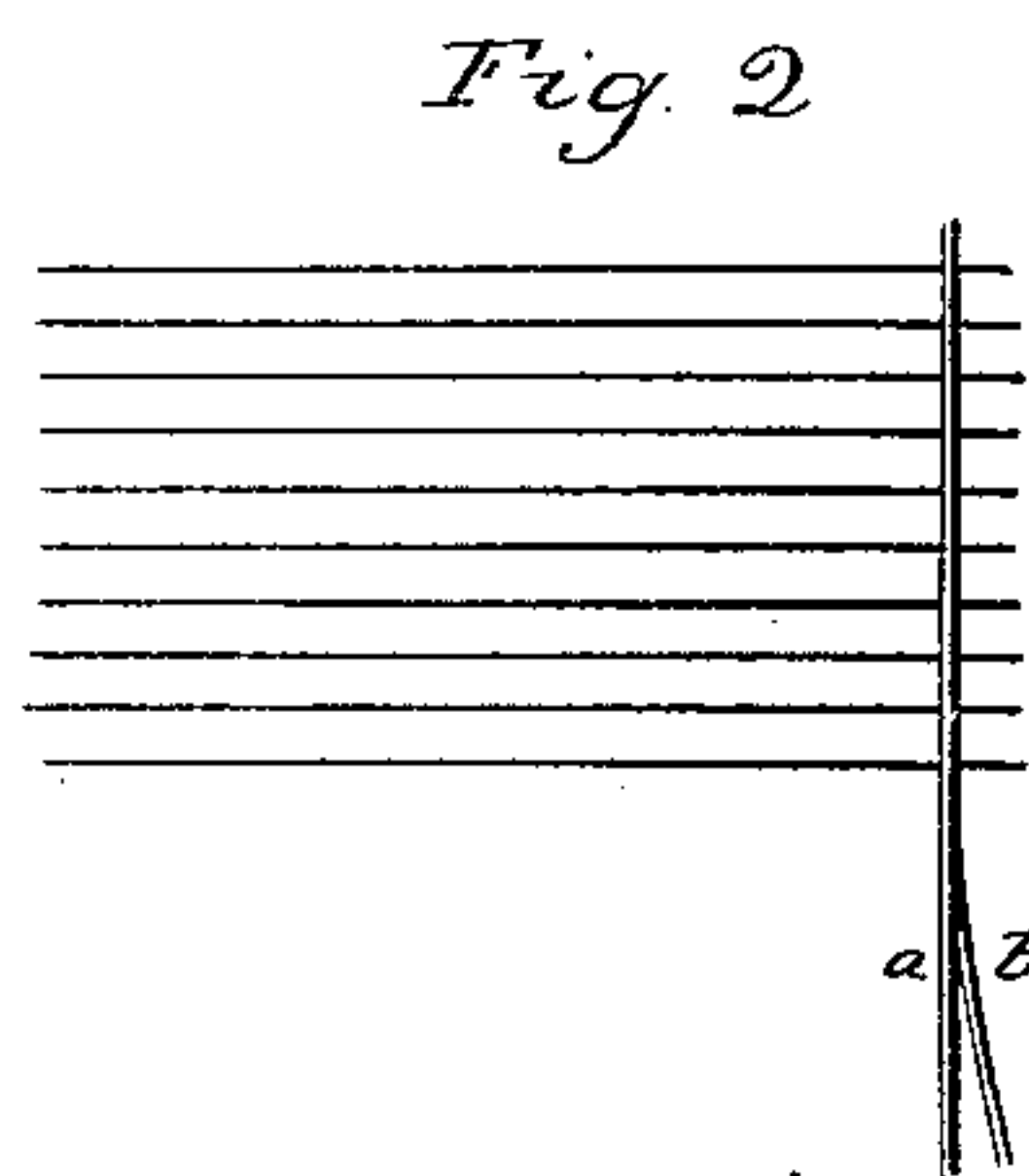
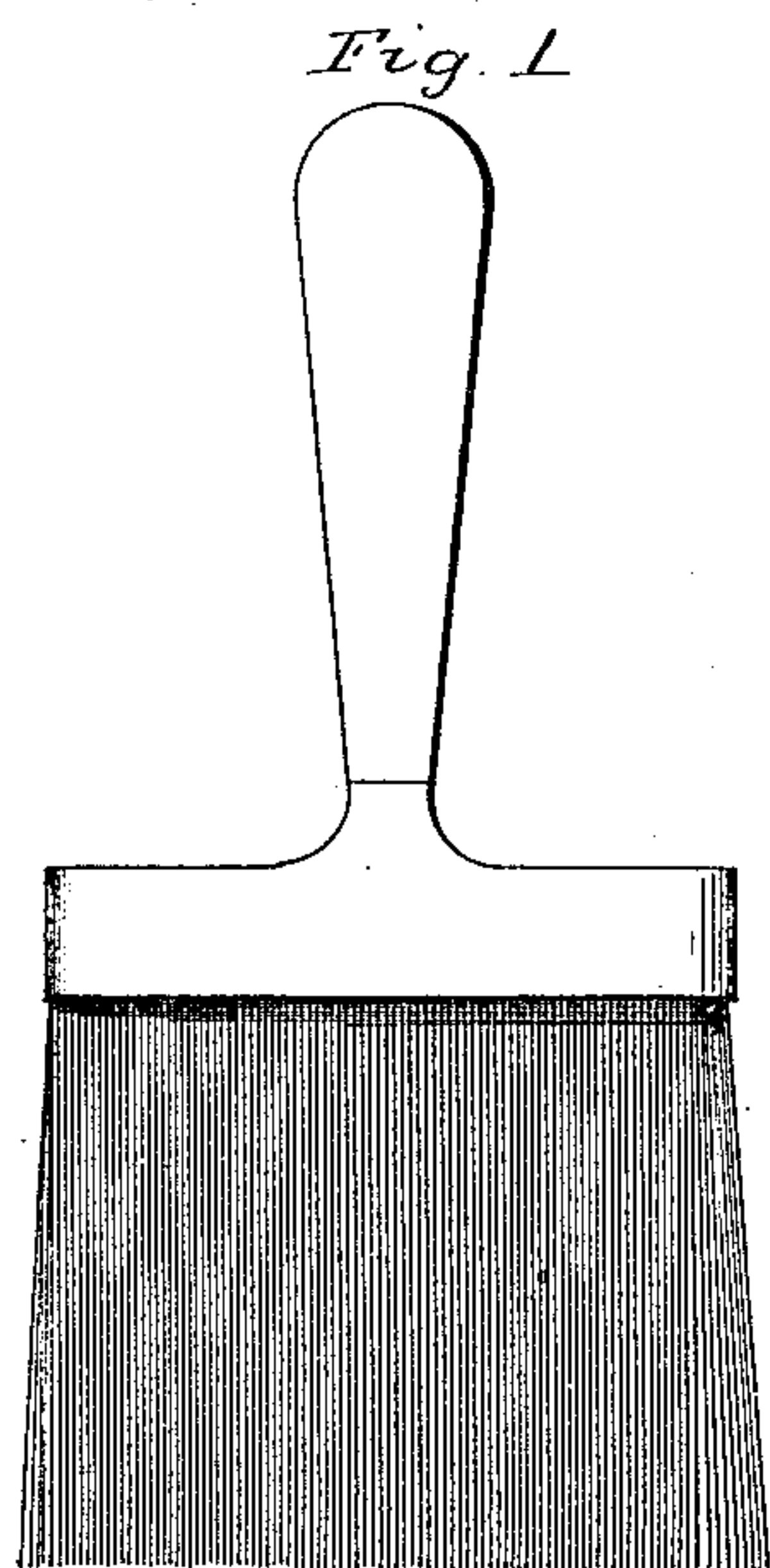


Fig. 4

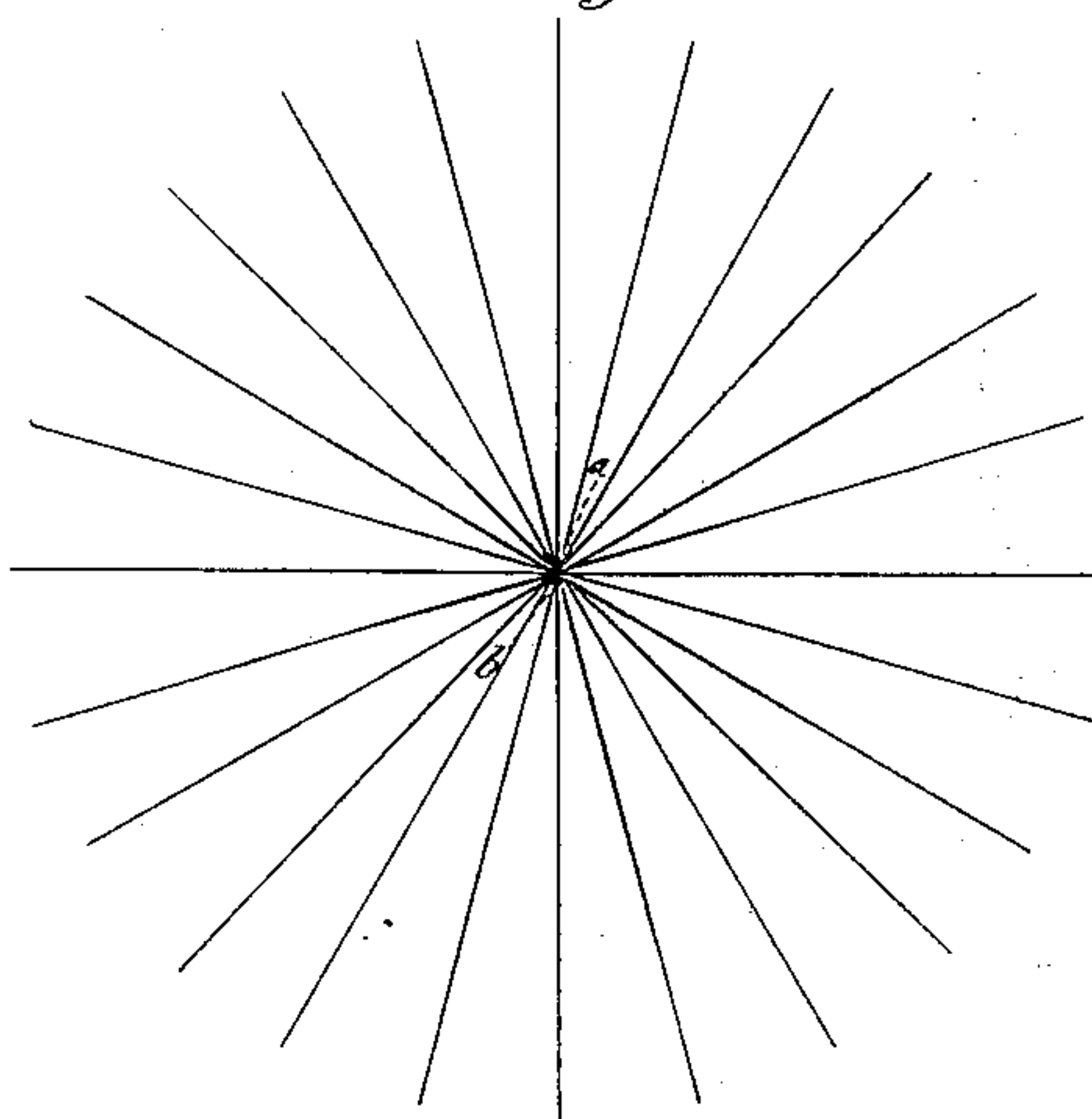


Fig. 6



Fig. 8

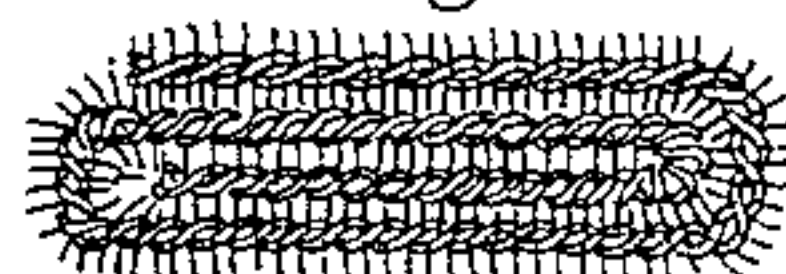


Fig. 5



Fig. 7

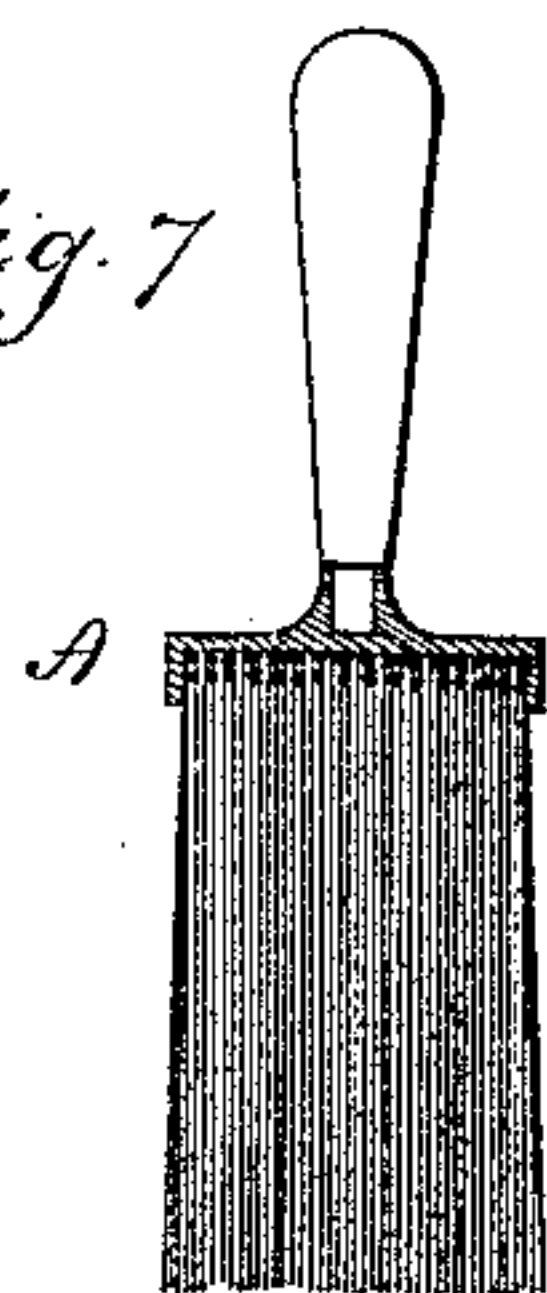


Fig. 9



Fig. 10

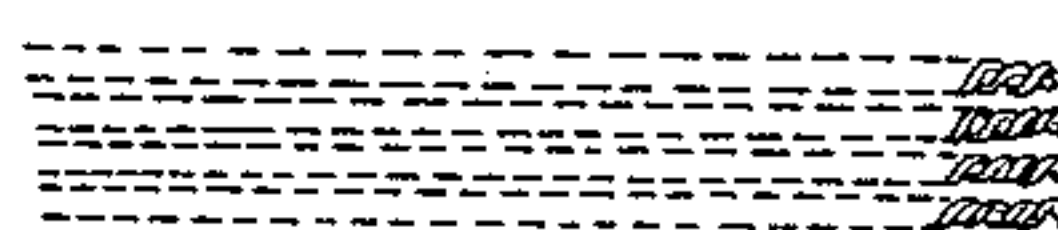


Fig. 13

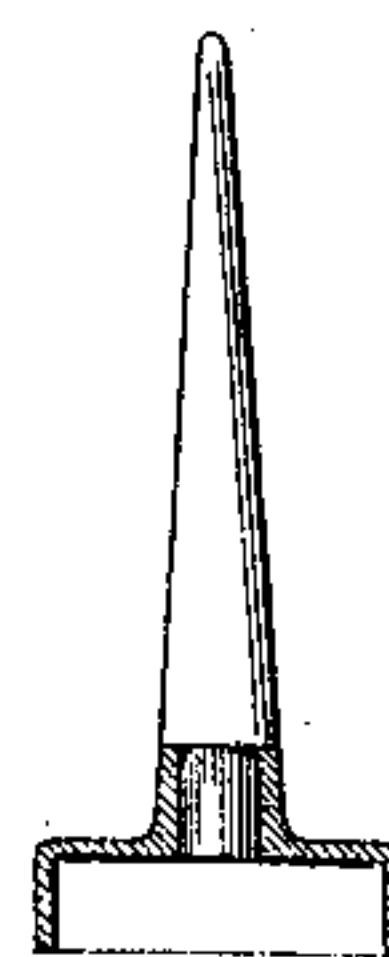


Fig. 11

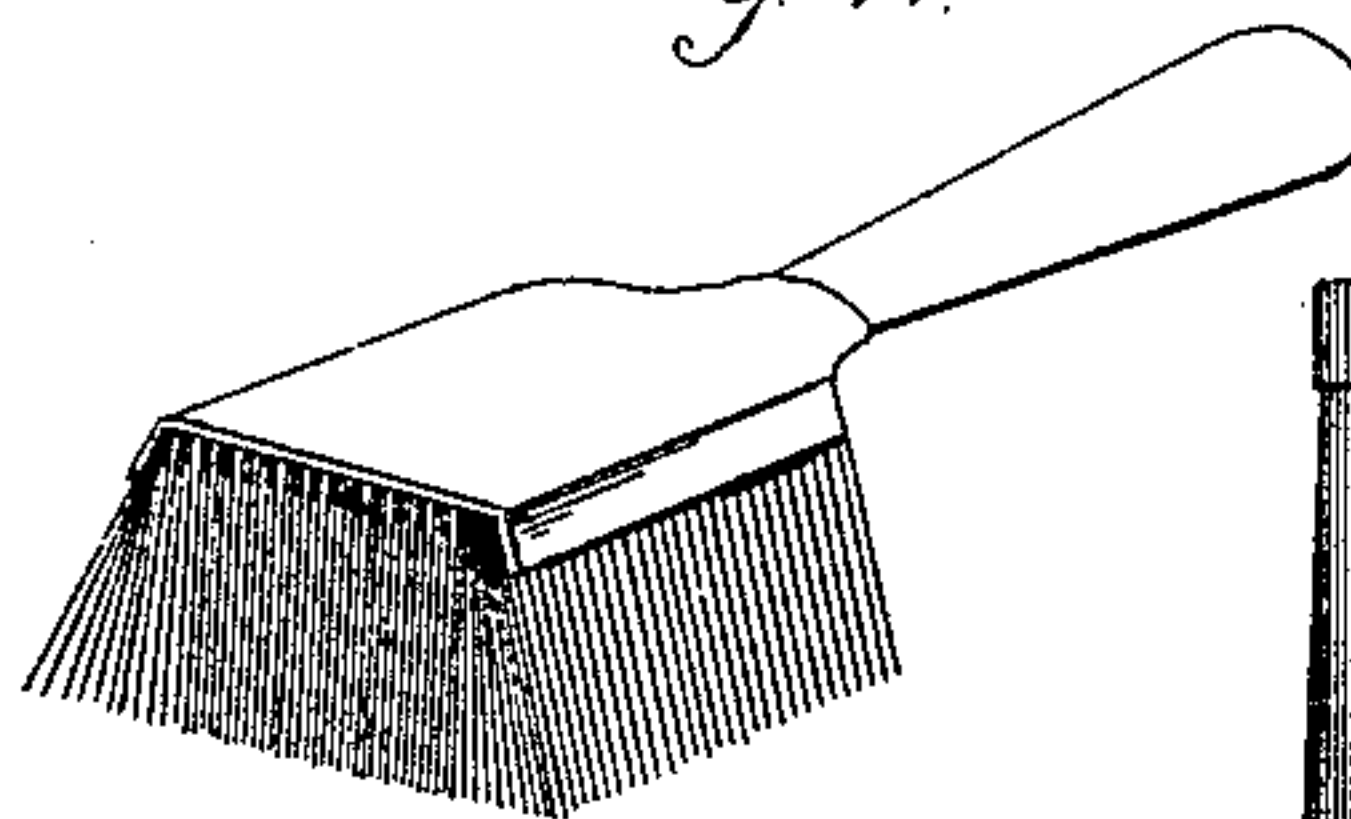
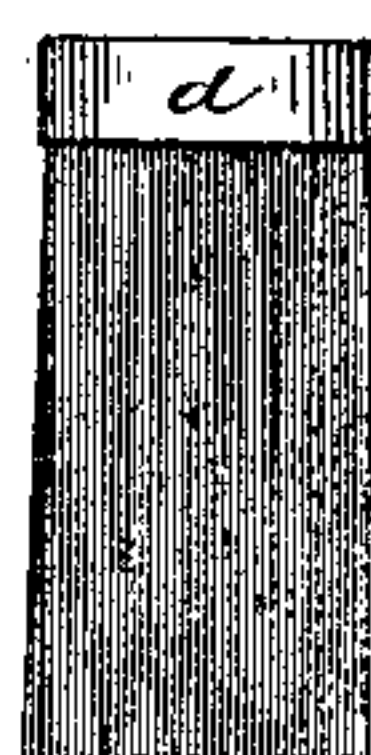


Fig. 12



Witnesses.
J. H. Shumway
Fred C. Carter

Herbert C. Fowler
By Atty,
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John E. Carter

UNITED STATES PATENT OFFICE.

HERBERT E. FOWLER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR OF ONE
HALF TO LEVI N. BLYDENBURGH, OF SAME PLACE.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 369,985, dated September 13, 1887.

Application filed September 6, 1886. Serial No. 212,794. (No model.)

To all whom it may concern:

Be it known that I, HERBERT E. FOWLER, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Brushes; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which
10 said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of a flat brush embodying the invention. Figs. 2 and 3 illustrate the methods of arranging the bristles preparatory
15 to twisting; Fig. 4, the strands and bristles after twisting; Fig. 5, a section through the strands, showing the bristles turned to one side; Fig. 6, a head end view showing the several layers of strands and bristles in the form of a
20 round coil; Fig. 7, a vertical section showing the bristles secured in the head of a brush; Fig. 8, a head end view showing the layers coiled as for a flat brush; Fig. 9, the head end of a round brush, showing the several layers
25 concentric; Fig. 10, the head end of a flat brush, showing the strands as laid parallel without coiling; Fig. 11, a perspective view of a hand-brush, showing transverse section of the same; Fig. 12, bristles with the head applied
30 as adapted to be set into a socket; Fig. 13, a socket and handle adapted to secure the bristles of Fig. 12.

This invention relates to an improvement in the manufacture of that class of brushes in
35 which the bristles are secured by the root end, leaving the outer or free ends as the working part of the brush—such as paint-brushes, whitewash-brushes, dust-brushes, &c.—the object of the invention being to employ the
40 method of securing the bristles described in application, Serial No. 208,376, which I have made for Letters Patent. In that application the bristles or fibers are arranged midway of their length between two wires or strands,
45 which wires and strands being twisted secure the bristles together at such midway of their length, and then the fibers are turned to one side of the twisted strands, and the twisted strands set in a grooved back, the sides of the
50 groove supporting the outer fibers, so that

they spread and form a brush more or less flat; or, if the groove be a close groove then the lines of bristles or fibers will be narrow and several applied in a single brush to resemble
an ordinary tuft-brush. The brushes thus
55 made are trimmed so as to present stiff bristles, as in ordinary tuft-brushes; but in paint-brushes and brushes of like character it is necessary that the bristles shall be secured by
60 the root end, so as to leave the point end of the bristles free, and the bristles must be of a considerable length. To accomplish this object and produce brushes of this character, I
arrange the bristles, as seen in Figs. 2 and 3,
65 between strands *a b*, similar to the method described in my previous application; but instead of laying the bristles upon the strands midway of their length the strands stand near
the root end, as shown, then the strands *a b*
70 are twisted to secure the bristles. This will throw the bristles in all directions, as seen in Fig. 4, and as in the usual method of making
twisted-wire brushes.

To make a round paint-brush, the bristles are separated on one side of the strands or
75 wires and brought around together upon the opposite side, as seen in Fig. 5. After the bristles have thus been turned to one side the strands are coiled, as seen in Fig. 6, laying the
80 bristles in a succession of circular layers until the requisite diameter is attained. Then a suitable cap of metal or other material, *A*, is applied over the strands, as seen in Fig. 7, and to which the handle may be applied. This
85 done, the brush is complete and the bristles are substantially the same as in a round paint-brush of usual manufacture of the same size; but as the bristles are all secured in the most
perfect manner, the liability of the bristles
90 pulling out or the brush coming to pieces, which exists in the common paint-brush, is entirely avoided.

If the brush required is to be flat—as for flat paint-brushes, whitewash-brushes, or other
95 similar brushes—the coiling may be made accordingly, as seen in Fig. 8. Instead of coiling the strands which hold the bristles, the several layers may be in separate pieces, as indicated in Fig. 9, and laid together in the form
of concentric rings, and then inclosed with a
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clasping head or back; or in case of a flat brush there may be several straight and parallel layers of strands, as indicated in Fig. 10. In this case the clasping-back, as seen in Fig. 7, is applied so as to secure the parts together, and the back or head form a convenient handle or method of attachment for the handle, the handle part being the same as in brushes of common manufacture, and adapted to the several uses for which the brush is intended. (Not shown in the illustration.)

By the term bristles, I wish to be understood as including any of the known substitutes therefor suitable for the manufacture of brushes.

While I prefer to clasp the back or head upon the strands holding the bristles, the several layers of strands thus combined may be set into a groove in a back, as seen in Fig. 11, and secured by any suitable means—say as solder—the strands and back being metal; or, as for a paint-brush, the bristles may be secured by a metal clasp, *d*, as seen in Fig. 12, adapted to be set into a socket carrying the handle, as seen in Fig. 13, so that the bristle portion may be interchangeable—that is, a single handle adapted to receive numerous brushes. In that case the bristles simply secured together without the handle may be made and sold as an article of manufacture.

I am aware that brushes have been made consisting of several strands twisted together, with bristles interwoven so as to project radially from said strands and thereby form a cylindrical brush, such interweaving of the bristles being substantially the same manner of interweaving the bristles as hereinbefore de-

scribed; and I am also aware that several such twisted strands with their bristles have been independently secured to a back so as to form a brush-surface composed of a series of convex lines of bristles, each of said lines secured to the back at the ends, and each independent of the others; but I am not aware that a brush has been made composed of twisted strands having bristles interwoven therewith, the bristles turned from the strands, all substantially in one direction, and the strands with the bristles arranged in layers one upon another, with the several layers bound together, so that each layer of bristles was dependent upon the other layers for their own support and position, which is the essential feature of my invention.

I claim—

1. A brush consisting in twisted strands having the bristles interwoven therewith, the bristles turned from the strands, all substantially in one direction, and the strands with the bristles so laid arranged in layers, one layer upon another, and all the layers secured together, substantially as described.

2. A brush consisting in twisted strands having the bristles interwoven therewith, the bristles turned from the strands, all substantially in one direction, and the strands with the bristles so laid arranged in layers, one layer upon another, combined with a head or back clasped upon the strands, substantially as described.

HERBERT E. FOWLER.

Witnesses:

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