No. 642,484. Patented Jan. 30, 1900.

A. F. PHILLIPS.

BRUSH.

(Application filed Aug. 7, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

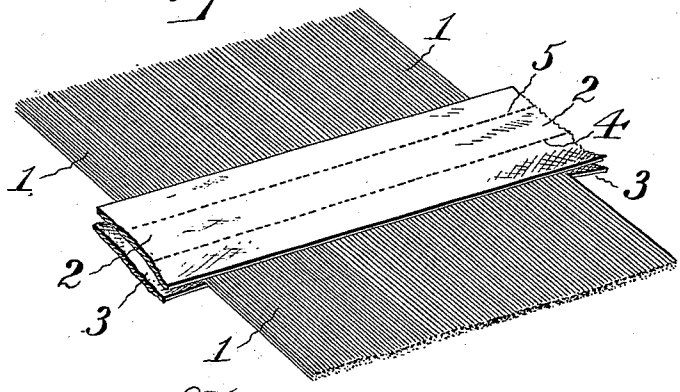


Fig. 2.

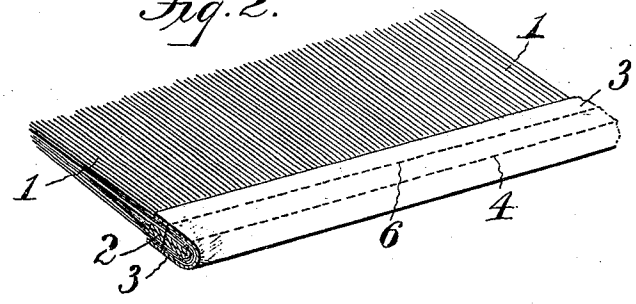


Fig. 3.

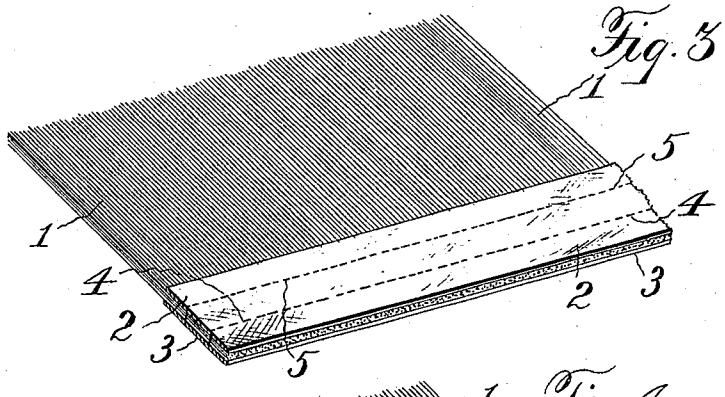
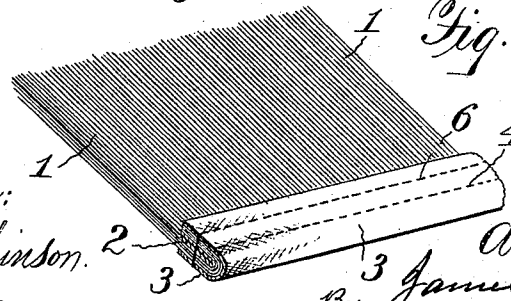


Fig. 4.



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No. 642,484. Patented Jan. 30, 1900.

A. F. PHILLIPS.

BRUSH.

(Application filed Aug. 7, 1899.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

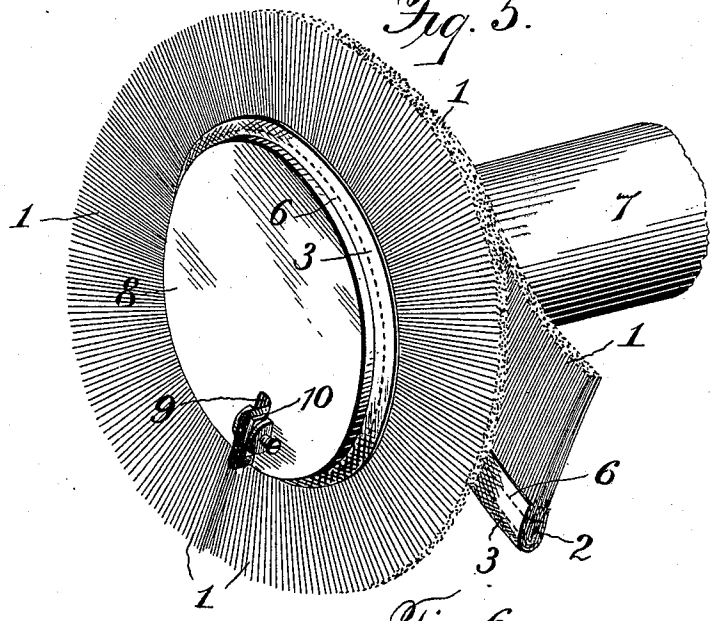
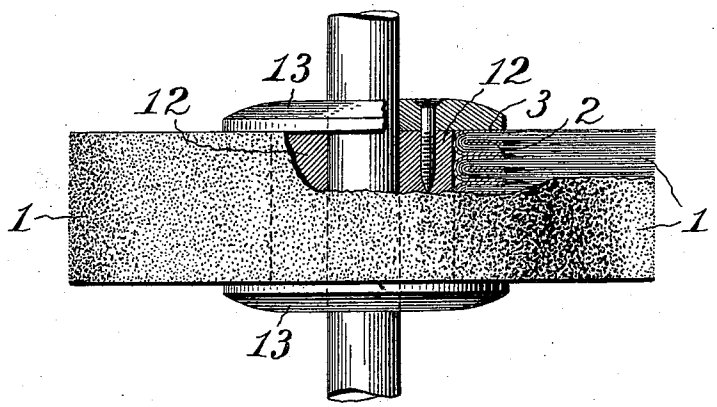


Fig. 6.



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UNITED STATES PATENT OFFICE.

ARTHUR F. PHILLIPS, OF NORTH ADAMS, MASSACHUSETTS.

BRUSH.

SPECIFICATION forming part of Letters Patent No. 642,484, dated January 30, 1900.

Application filed August 7, 1899. Serial No. 726,414. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR F. PHILLIPS, a citizen of the United States, residing at North Adams, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Brushes, of which the following is a specification.

This invention relates to the manufacture of brushes, and has for its object to provide simple, durable, and inexpensive means for holding the bristles or brush-stock in a web.

To this end my invention consists in providing improved means for holding the brush-stock securely and permanently in the form of a web and in novel means for quickly, effectively, and economically mounting such web upon a handle or brush-head.

To enable others to understand and practice my said invention, I will now proceed to describe the same in detail, reference being had for this purpose to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a web of bristles or brush-stock partly formed in accordance with my invention. Fig. 2 is a perspective view showing the web after it has been completed and brought into condition to be attached to a suitable handle. Figs. 3 and 4 are views showing a slight modification. Fig. 5 is a view showing the former used in making a rotary brush. Fig. 6 is a view of the rotary brush, partly in section, to show the construction.

The reference-numeral 1 in said drawings indicates the bristles or brush-stock, which are of equal length, or substantially so, being prepared in the usual manner. These are arranged in a layer of suitable thickness, the bristles lying at full length with their ends in line. Tapes 2 and 3 or strips of any suitable fabric having a width of about one-fourth the length of the bristles are placed against the opposite sides of the layer of bristles, along the middle of said layer, and are united or fastened together with the bristles between them by means of two parallel lines of stitching 4 and 5, which are formed upon both sides of the central longitudinal line of the tapes and separated from said central line by a suitable space, which may be from a quarter to one-half of an inch, more or less. The thread used in this stitching is of such size and strength as to permit of a tension that will draw the tapes or strips of fabric 2 and 3 as closely together as possible and produce a stitch formation in the tapes that will effectually avoid leaving slack portions of the thread. I may of course form more than a single line of stitching upon each side of the central line of tape, but ordinarily a single line of machine-stitching will be sufficient. When a web has been produced in this manner of any suitable length, I fold it upon the central longitudinal line of the tapes, as seen in Fig. 2 of the drawings, thereby doubling the bristles and bringing their opposite ends together. The strips of tape 2 and 3 are pressed closely together by any suitable means, such as a pair of rolls, in order to form a well-defined fold and insure a substantially uniform thickness. One or more lines of stitching 6 are then run through the folded tapes at a suitable distance from the folded edge. The web is now ready to be applied to a handle or brush-head in any manner preferred.

When the brush is to be used to apply paint or calcimine, the same general method is followed, the only variation being that the strips of tape or other fabric 2 and 3 are arranged with one edge coinciding with one edge of the layer of bristles. The stitching and folding, however, are the same as described already. In Figs. 3 and 4 I have shown this modified construction, using the same reference-numbers as in Figs. 1 and 2.

To apply the web shown in Fig. 2 to a form and convert it into a rotary or circular brush, I proceed as follows: A round bar 7 is provided at one end with a rigid flange 8, in which is a slot 9 to receive one end of the tape portion of the formed web. A small piece of iron 10 also lies in the slot 9, and a thumb-screw tapped through it bears against the end of the tape. The bar is then revolved until the web has been wound thereon to the required thickness, when it is severed, and a strong thread or wire is passed through the several layers of tape and fastened. The coil is then taken from the bar and pressed for a suitable time, a bar of the same size as that on which it was formed being placed in the opening surrounded by the coil of tape. The coil is then placed on a hub 12 and compressed

between flanges 13, one of which is adjustable. The brush thus formed is then mounted on a shaft and revolved at suitable speed against a cutter, which trims all the bristles to the same length.

I am aware that it is old to form a brush from bristles that are held together by a bristle-band formed of two flexible strips, the bristles being cemented between the strips with their butts exposed at the edge and secured together with a row of stitches. I am also aware that it is old to form a brush-head comprising bristles laid in a sheet-metal head, said head being folded substantially parallel to the bristles and then folded at right angles thereto, whereby the bristles are bent and confined, and I therefore make no claim to brushes constructed in such manner.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In the manufacture of brushes, a web of brush-stock having two strips of tape, or fabric, applied to the opposite sides of a layer of bristles and united by two or more lines of stitching, one on each side of the central longitudinal line of said strips, said layer and tapes being then folded along said central line and stitched to preserve said fold, substantially as described.

2. The combination with a circular bar having two projecting flanges, one of which is adjustable, of a continuous web of brush-stock consisting of a layer of bristles having tapes placed transversely on opposite sides along the middle of said layer and stitched through both tapes and bristles both the latter being folded along the middle line of the tapes and a line of stitching made to preserve the fold, said web being wound on the bar between the flanges, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARTHUR F. PHILLIPS.

Witnesses:
ARTHUR J. TORREY,
GEORGE L. PARKER.