J. S. WHITE.

BRUSHES.

No. 180,296. Patented July 25. 1876.

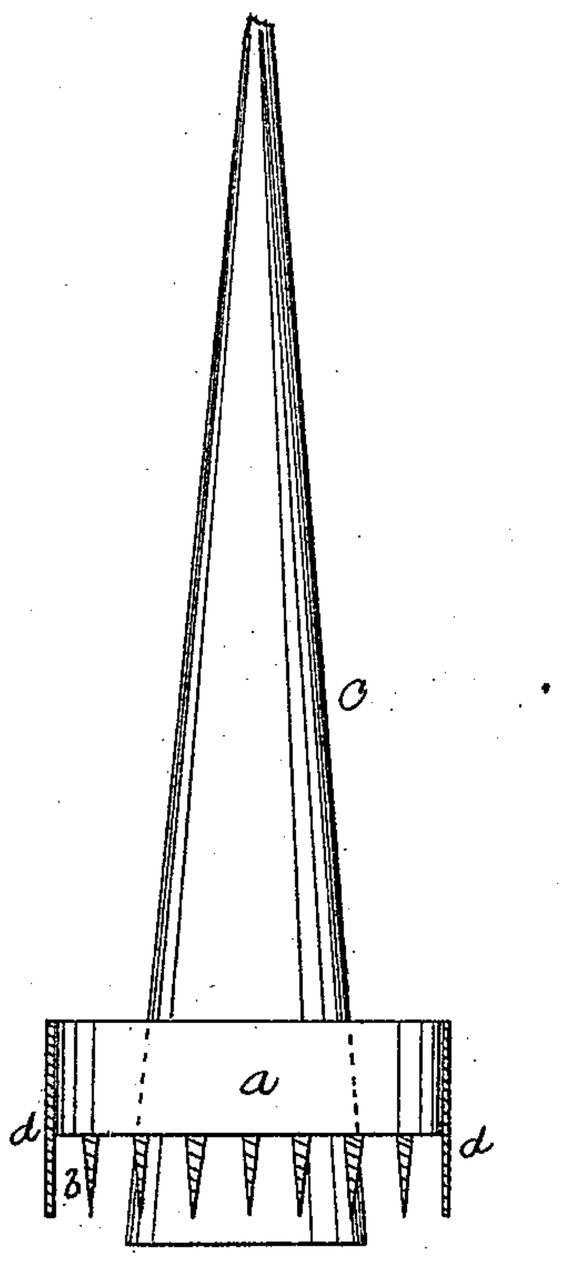

Fig 1

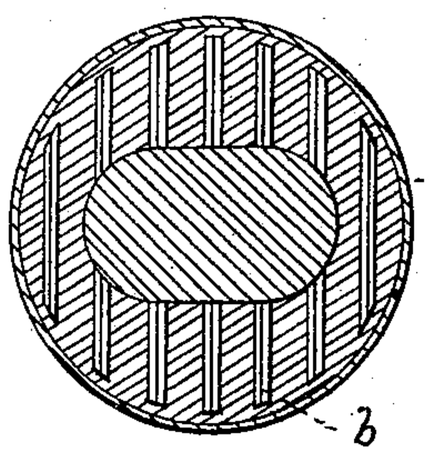

Fig. 2

WITNESSES

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JOHN S. WHITE, OF PORTLAND, MAINE.

IMPROVEMENT IN BRUSHES.

Specification forming part of Letters Patent No. **180,296**, dated July 25, 1876; application filed May 1, 1876.

To all whom it may concern:

Be it known that I, JOHN S. WHITE, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Brush Handles and Plugs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of a brush-handle with my improved plug thereon, on which projecting strips of wood are made. Fig. 2 is a bottom plan of Fig. 1.

Same letters show like parts.

The purpose of my invention is to produce an improved brush, and one in which the bristles are held with increased firmness and security.

I will first describe the plug or disk, which fits into the ferrule, and against which the butts of the bristles impinge. The butt is provided with projecting strips, formed from the wood of the butt itself. These strips are in straight lines across the face of the plug, as in Fig. 2. The plug itself is perforated to receive either a round or oval handle.

In the accompanying drawing, *a* shows plugs; *b*, the strips or projections on the under side thereof; *c*, the brush-handles. *d* shows the ferrules.

The mode of making a brush with my improved plugs is as follows: The bristles are placed within the ferrule, and the plug pushed down upon the butts of the bristles, so that the wooden strips or circles shall penetrate among the same. The handle is then driven up through the plug in the usual way. The butts of the bristles are covered with moist cement before the plug is placed in contact with the same.

When the handle is driven in as described it will be perceived that the bristles, in case of the straight strips, are forced against the strips and the ferrule in such a way as to bind them very firmly within the ferrule. The expansion and pressure to which they are subjected will be understood when it is seen that in the case of a plug and handle like Figs. 1 and 5, the entire hole *e* is filled with the handle, and the bristles forced away and compressed to that extent. When the cement becomes dry, the strips, plugs, and head of the bristles are firmly united together. This method affords greater strength than when projecting teeth or pegs are used.

The oval or flat handle, as in Fig. 1, besides aiding in forcing the bristles tightly into the ferrule, is also more convenient, because it fits the hand and fingers more naturally than a round one. More work can be accomplished with it, with less fatigue to the hand and wrist, than with a round one. Furthermore, its shape is of advantage in the breaking in or shaping of a brush, especially in the hands of an inexperienced workman. This is because, from the shape of the handle, the brush is held steadily, and does not turn frequently in the hand. Thus the bristles are worn out evenly.

The strips are wedge-shaped, as shown in Fig. 1, so that they compress the bristles between the strips themselves, and force them against the ferrule.

The combination of the handle and the straight strips has a very beneficial effect in closely binding the bristles within the ferrule.

The straight wedge-shaped strips present no obstacle in binding the bristles between the butt of the handle and the ferrule; but the compression occasioned by driving in the handle is extended to the inner side or periphery of the ferrule. Where, for instance, the strips are arranged in circles, the driving in of the handle only compresses the bristles within the inner circle; but in my invention the effect of driving in the handle is extended throughout the whole space within the ferrule. This results from having the wedge-shaped strip straight, and arranged as shown.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the tapering handle *c*, head *a*, provided with rows of straight wedges *b*, and the ferrule *d*, substantially as herein described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN S. WHITE.

Witnesses:

WILLIAM HENRY CLIFFORD,

HERBERT G. BRIGGS.