

W. H. VAN KLEECK.

Improvement in the Manufacture of Brushes.

No. 123,064.

Patented Jan. 23, 1872.

Fig. 1.

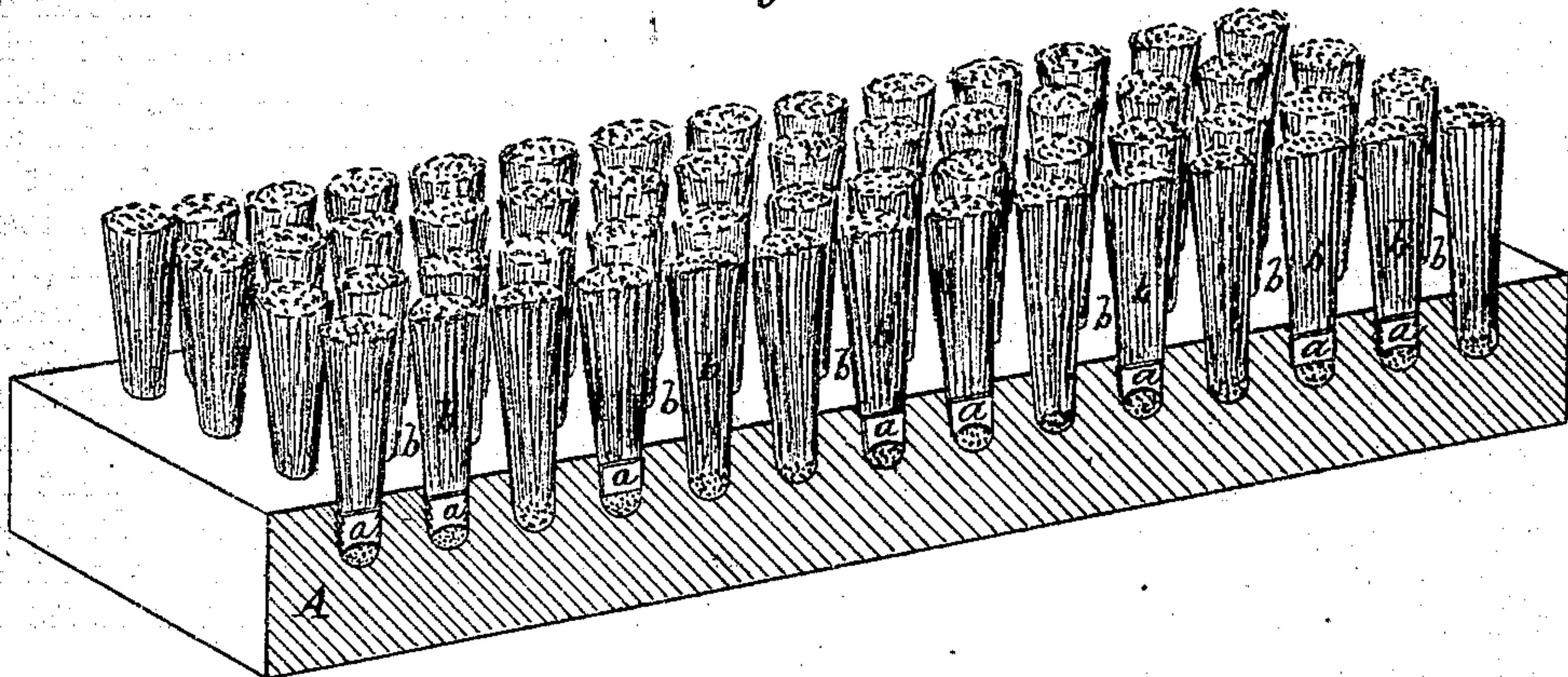


Fig. 2.



Fig. 3.



Fig. 4.



Fig. 5.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN THE MANUFACTURE OF BRUSHES.

Specification forming part of Letters Patent No. 123,064, dated January 23, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM H. VAN KLEECK, of Lansingburg, Rensselaer county, State of New York, have invented certain new and useful Improvements in the Manufacture of Brushes, of which the following is a specification.

My invention relates to that part of the manufacture of brushes which embraces the securing of the bristles in the brush-back or block. Bristles have heretofore been secured in brush-backs in a variety of ways. Sometimes the bunches have been glued into the holes; at other times the holes have been bored entirely through the brush-block, and the bunches of bristles have been secured therein by bending each bunch in the middle so as to bring its ends together, and then inserting the loop-end into and so as to project through the hole, and then passing wire between the brush-back and the end of the bunch. This method of fastening, however, required an additional backing or covering strip to be applied to the back of the brush in order to cover the fastening-wire. To do away with the necessity for this covering-strip holes have been bored only part way through the block and the bunches of bristles have been secured therein by means of staples straddling the bend of the bristles and driven into the solid block at the bottom of the holes. Still another mode of securing bristles in holes formed partly through the block is by means of a wire wrapped spirally around the bent end of the bunch and screwed into the hole. These modes, however, as well as all others now used of which I have knowledge, are more or less objectionable either on the score of expense or because they do not hold the bristles with sufficient tightness, or because they are apt in fine work, where, for instance, the brush-back is quite thin, to injure the back, the fastening devices, where staples are used, sometimes protruding through the back, or, where the spiral-screw wire is used, causing the back to warp or bend.

The object of my invention is to produce a cheap, durable, and effective fastening for the bristles; and to this end my invention consists in the employment of a fastener-plate, of metal or other suitable material, which is placed over the bend of the bristles and driven down into

the hole in the brush-back, the plate being of a width slightly in excess of the diameter of the hole, so that when driven down its side edges will enter the wood surrounding the hole on the sides, and in this manner will be held securely in place. The bottom edge of the plate is above the bend of the bristles and does not necessarily come in contact with the bottom of the hole. The side edges of the plate, which enter and take a hold upon the wood, may be either plain or roughened, scored or serrated, in order to insure their hold upon the wood. The plain edges may be sufficient in fine work, such as hair-brushes, &c. In making heavier brushes, such as scrubbing or other like brushes, I prefer to serrate the edges of the plate.

To enable others to understand and use my invention, I will now proceed to describe the manner in which the same is or may be carried into effect by reference to the accompanying drawing, in which—

Figure 1 represents a perspective and partly-sectional view of a brush made in accordance with my invention. Figs. 2, 3, 4, and 5 are representations of the fastening-plate illustrative of the different forms which may be given to it.

The brush-back or block is represented at A provided with holes bored part way through it and at proper distances from one another for receiving the bunches of bristles. The bunches of bristles *b* are bent in the middle so as to bring their ends together, and, as shown in Fig. 1, each holding-plate *a* is situated between the two portions of the bunch and over the bend which is received in the lowest part or bottom of the hole in the brush-back. In applying the bristles to the brush-back I usually lay the bunch so that its middle part will be over the hole in which it is to be secured, then place the fastening-plate over this middle portion of the bristles, and then drive or force the plate down into the hole, this operation causing the ends of the bristles to be brought together and the center part of the bunch to be forced down into the hole, the plate being, of course, above and resting in the bend of the bristles. The plate is made of a width slightly in excess of the diameter of the hole, so that its side edges may enter



the wood on the sides of the hole, the plate being by this means held in position. For heavy work I prefer, as above intimated, to serrate the edges of the plate, as shown in Fig. 2, to enable them to take a firmer hold upon the block. This same result may, in a measure, be attained by roughening or scoring or otherwise indenting the edges, though I prefer the serrated saw-tooth edge shown in the figure referred to. I also prefer, whether the side edges be plain or serrated, to make the bottom edge more or less concave, as shown in Figs. 2, 4, and 5, or to form an equivalent recess in the bottom part of the plate, for the purpose of embracing and holding together the bristles at the bend of the bunch; still the bottom edge may be perfectly straight, if desired, as shown in Fig. 3. If the hole in the block be made tapering—that is, wider at the top than at the bottom—the plate may be made of the same width throughout, this width, of course, being such as to permit the plate to enter the top of the hole. If the hole be made cylindrical, it will be well to taper the plate a little at the bottom, so as to permit this end to enter the hole without difficulty.

It will be seen that the fastening device which I employ takes its hold entirely on the sides of the hole, that it is not necessarily in contact with the bottom of the same, but that its lower edge need only be in contact with the bend of the bristles. It is applied and used with great ease, is manufactured with little expense, and is adapted equally well for the lightest or heaviest kind of work. I prefer to

make the fastener from sheet metal, which can be readily stamped out into the form required. Other material, however, may be used.

It will be understood that, while I have mentioned only bristles, I can employ any animal or vegetable fiber or material fitted to be used for making brushes or like articles.

It will be manifest that the form of the fastening-plate may be varied in many respects without departure from the principle of my invention. I do not, therefore, limit myself to the precise details herein described; but

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

1. The mode of securing bristles to brush-backs by the employment of a fastening-plate placed over the bend of the bunch of bristles in the hole in the brush-back, and of a width slightly in excess of the diameter of said hole, so that its side edges may enter and take a hold upon the wood on the sides of the hole, substantially as shown and described.

2. The fastening-plate, provided with serrated or equivalently-formed side edges, when used in connection with a brush-back and for the purpose of securing a bunch of bristles therein, substantially in the manner shown and described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

WILLIAM H. VAN KLEECK.

Witnesses:

M. BAILEY,

EDM. F. BROWN.