S. A. MILES.

Brush.

No. 166,542. Patented Aug. 10, 1875.

Fig. 1.

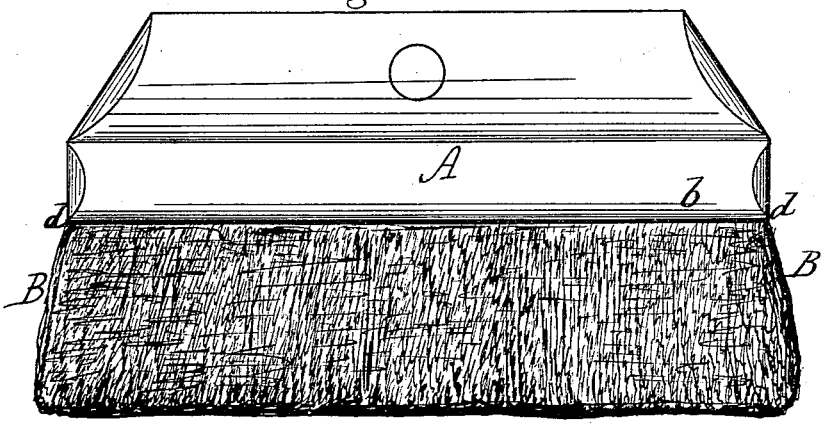


Fig. 2.

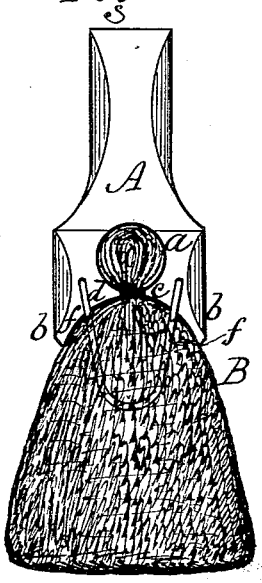
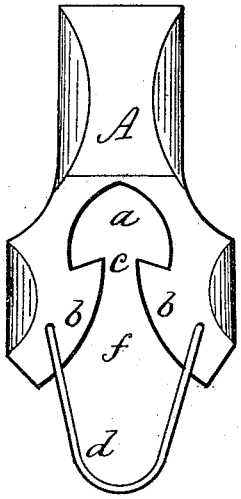


Fig. 3.



Witnesses.
Edwin. B. Scott.
John. C. Burns.

Inventor.
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UNITED STATES PATENT OFFICE.

SAMUEL A. MILES, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN BRUSHES.

Specification forming part of Letters Patent No. **166,542**, dated August 10, 1875; application filed May 24, 1875.

To all whom it may concern:

Be it known that I, SAMUEL A. MILES, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Brushes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is an end elevation. Fig. 3 is a view similar to Fig. 2, but showing a modification of the brush head or holder.

My improvement relates to sponge brushes. Much difficulty has been experienced in attaching the sponge to the holder, owing to its peculiar porous and compressible nature.

The object of my invention is to remedy this difficulty; and it consists in the construction of the head or holder with an interior socket or passage, into which the upper edge of sponge is rammed, and a groove at the bottom, which allows the body of the sponge to expand, as hereinafter described.

A represents the head or holder, and B the sponge. The holder is formed with an internal socket or passage, *a*, which extends longitudinally from end to end. It may be circular in cross-section, as shown in Fig. 2, or heart-shaped, as shown in Fig. 3. The holder has also below the socket a groove, *f*, formed by the sides *b b*, and the socket and groove are connected by a narrow throat, *c*, as shown. The socket *a* is most conveniently formed by boring it out with an auger, and the groove *f* by running the block through a suitable planing-machine. The holder thus constructed is ready to receive the sponge.

The sponge, preferably in small pieces, is compressed firmly at the upper edge, and is forced into the socket *a* by a rammer, to which greater power is applied. The pressure is sufficient to compress the sponge in the socket in almost a solid body, greatly reducing its bulk, and leaving it with but little capacity to absorb water. The narrow throat *c* holds the sponge in the socket from being drawn out, while the groove *f* below the socket allows an abrupt expansion of the sponge from the point of attachment to enable it to absorb water, and it also forms a seat to retain the sponge in place under action. When the whole body of sponge is inserted in the holder, wire staples or bearings *d d* are driven into the ends of the holder, the body of the staples projecting downward, and lapping the end of the sponge some distance, as shown, and keeping it in place. The body of the sponge forming the brush is also trimmed or cut to present a regular and smooth form. The staples *d d* serve not so much to keep the sponge from escaping from its fastenings as to retain the form of the ends of the brush, which, in the use of such an expansible material, would be likely to swell out of place.

The advantage in this invention consists more especially in the extreme simplicity and cheapness of construction, and in the great security of attachment of the sponge. Owing to the bulk of the sponge and its great compressibility, much difficulty has been before experienced in attaching it to the holder. When simply clamped between two opposing surfaces—the most common form of attachment—it cannot be arranged in a uniform and compact body; neither can it be so securely clamped, owing to the irregularity in thickness of the layer, as to be perfectly secure; but it will soon draw out in shreds and become loose, making the brush worthless. When rammed and compressed solidly into the socket *a*, as by my method, the whole forms a compact and homogeneous body, and there is no possibility of escape. This also enables the brush to retain its form much better in use, and this effect is assisted by the angular or expanding groove *f*, in which the body of the brush rests, the same forming a seat to the brush.

The great density and compactness of the sponge in the socket *a* prevents absorption of water in a great degree in the sponge at that point, so that in wringing the brush nearly all the water can be removed, leaving the brush in good condition for drying, and thereby preserving its form.

The brush is attached to a handle in the usual manner, and is used for cleaning windows, painted walls, &c., forming a soft body

holding much water, and not liable to scratch the surface like common brushes.

Having thus described my invention, I do not claim, broadly, a sponge brush; nor do I claim a head with an exterior groove and clamping strap; but

I claim—

The grooved head or holder A, constructed with the narrow throat *c* and expanding sides *b b*, forming the angular groove *f* for the easy insertion of the sponge, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

S. A. MILES.

Witnesses:
R. F. OSGOOD,
EDWIN B. SCOTT.