(No Model.)

# J. BINGEMAN & O. MARTIN.

## BRUSH.

No. 536,181. Patented Mar. 26, 1895.

*Fig. 1.*

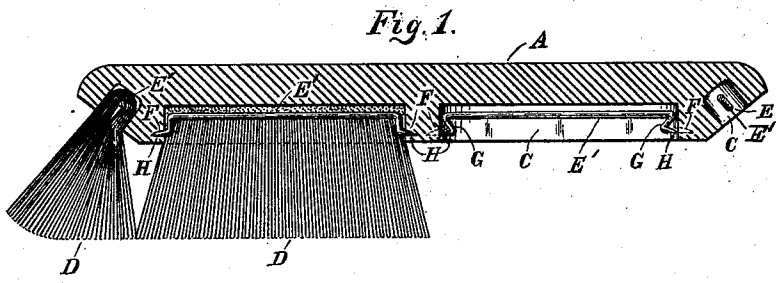



*Fig. 2.*

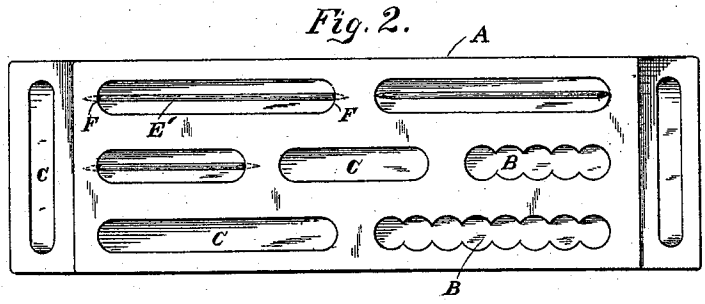



*Fig. 3.*

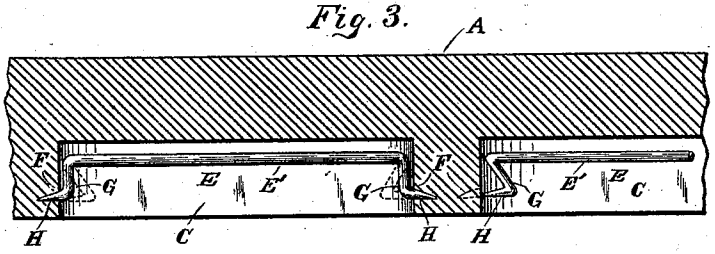
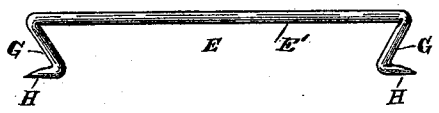



*Fig. 4.*

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# UNITED STATES PATENT OFFICE.

JOSEPH BINGEMAN AND OLIVER MARTIN, OF BERLIN, CANADA.

## BRUSH.

SPECIFICATION forming part of Letters Patent No. 536,181, dated March 26, 1895.

Application filed April 12, 1894. Serial No. 507,327. (No model.) Patented in Canada April 19, 1894, No. 45,841.

*To all whom it may concern:*

Be it known that we, JOSEPH BINGEMAN and OLIVER MARTIN, citizens of the Dominion of Canada, residing at Berlin, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Brushes, (for which we have obtained Letters Patent in Canada, No. 45,841, dated April 19, 1894;) and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in that class of brushes in which doubled tufts of bristles or fiber are secured in the holes or grooves of a block or head by wire fasteners; and it has for its general object to provide such a brush comprising a block or head having elongated holes or grooves in its face, and cheap and simple wire fasteners adapted to be inserted and secured, one in each elongated hole or groove, to secure long tufts of bristles or fiber therein and being also adapted to engage the block or head in such a manner that tension or pull on the bristles or fiber will tend to more securely fix them in position.

With the foregoing ends in view, the invention will be fully understood from the following description and claims when taken in connection with the annexed drawings, in which—

Figure 1, is a longitudinal section of a brush embodying our invention, with one fastener shown as engaging the head or block to secure a tuft of bristles thereto and another fastener as simply inserted in one of the holes or grooves of the head or block. Fig. 2, is a plan view of the face of the block, illustrating the various forms of holes or grooves which may be formed therein. Fig. 3, is an enlarged section illustrating one fastener in engagement with the head or block and a portion of another fastener as simply inserted in one of the holes or grooves thereof, and Fig. 4, is an enlarged elevation illustrating one of our fasteners ready to be inserted in a hole or groove of a block.

Referring by letter to the drawings:—A, indicates the head or block of our improved brush which is preferably formed of wood and is provided in its face with elongated holes or grooves B, C, of any suitable form.

D, indicates the doubled tufts of bristles or fiber, and E, indicates our improved fasteners; one of which is employed to secure each doubled tuft in the head or block. These fasteners E, are respectively formed from a single piece of suitable wire and they each comprise essentially the body portion E′, the angular arms G, at the ends of the body portion and the angular, outwardly-extending, pointed branches or barbs H, at the ends of the arms G, which branches or barbs are about one half as long as said arms G, and extend parallel or approximately parallel to the body E′, as shown.

The arms G, of the fasteners are bent inwardly at the time of manufacture as shown in Fig. 4, and the said fasteners are thus interposed between the doubled tufts of bristles or fiber and with the tufts may be readily pressed in the holes or grooves B, C, of the head or block A, until the inner portions of the tufts bear against the inner walls of the holes or grooves, as shown in Fig. 1.

The fasteners enter the holes or grooves in the head or block with the arms G, in the position shown at the right of Fig. 3, that is to say with the arms G, extending inwardly oblique from the body toward the face of the head or block, and with the points of the branches H, resting adjacent to the walls of the holes and when the tufts and fasteners have been sufficiently inserted, the arms G, are forced outwardly by any suitable means so as to embed the pointed branches or barbs in the head or block as better shown at the left of Fig. 3, and secure the fasteners and consequently the tufts of bristles in position in the holes or grooves of the head or block. It will be readily perceived that when the fasteners are thus secured in the head or block, any tension or pull upon the bristles or fiber will tend to force the branches or barbs H, which extend at right angles to the line of tension into the head or block and more securely fix the fasteners in position, and that consequently there is no liability of the fasteners or the bristles or fiber pulling out in use, which is a desideratum.

It will be seen from the foregoing that inasmuch as our improved fastener may be manufactured very cheaply and may be quickly and easily fixed in the head or block to se-

cure the bristles or fiber therein, we are enabled to produce a strong and durable brush at a small cost; and by reason of the arms G, of the fasteners being provided with the angular branches or barbs H, it will be seen that a single long fastener may be employed to secure a long tuft of bristles in an elongated hole or groove of the block or head as the branches or barbs H, are not liable to be drawn out of the walls of the hole or groove by the bowing of the body portion E′, incident to pull or tension on the bristles.

Having described our invention, what we claim is—

1. The herein described brush consisting essentially of the head or block having an elongated hole or groove in its face, a doubled tuft of bristles or fiber inserted in said hole or groove, and the fastener formed from a piece of wire and having the comparatively long body portion E′, the angular arms G, at the ends of the body portion, and the angular, outwardly-extending branches or barbs H, at the ends of the arms G, extending parallel or approximately parallel to the body portion; the said fastener being interposed between the portions of the tuft within the hole or groove of the block with the arms G, outward and the barbs or branches H, extending into the walls of the hole or groove in a direction at right angles or approximately so to the length of the bristles or fiber, substantially as and for the purpose set forth.

2. As an improved article of manufacture, the herein described tuft fastener formed from a piece of wire and comprising the comparatively long body portion E′, the angular arms G, at the ends of the body portion and the angular, outwardly-extending pointed branches H, at the ends of the arms G, resting in positions parallel or approximately parallel to the body portion E substantially as and for the purpose set forth.

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