(No Model.)

# McC. YOUNG.

## BRUSH.

No. 423,506. Patented Mar. 18, 1890.

Fig. 1.

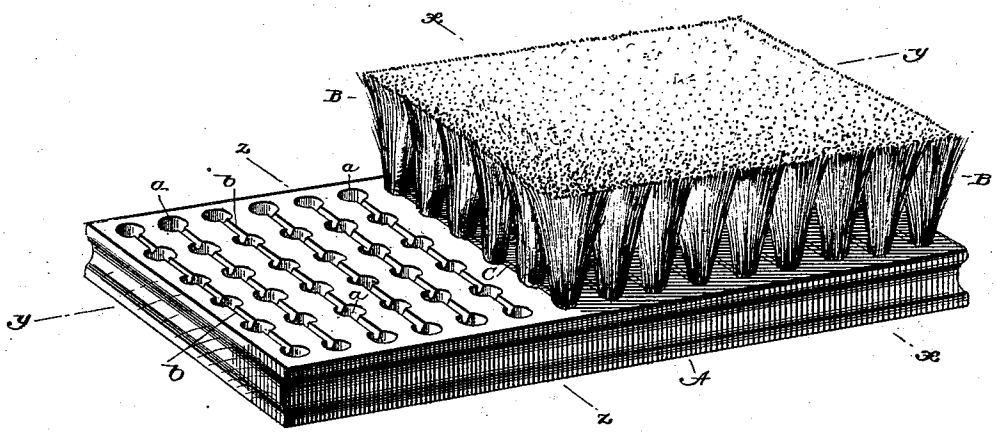


Fig. 2.
ON LINE x - x

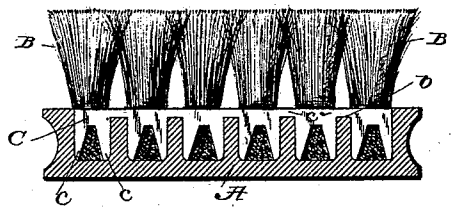


Fig. 3.
ON LINE y - y

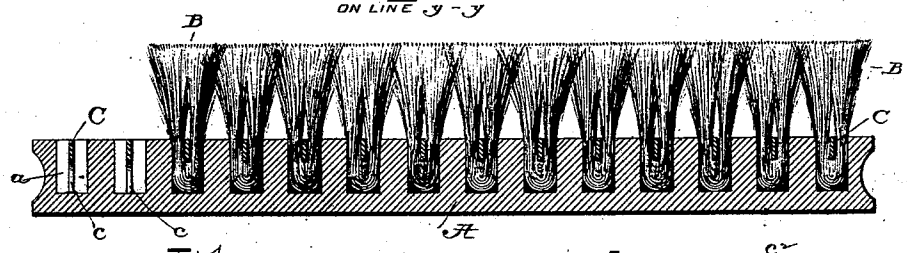


Fig. 4.
ON LINE z - z

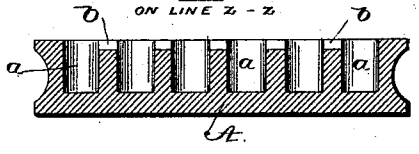


Fig. 5.

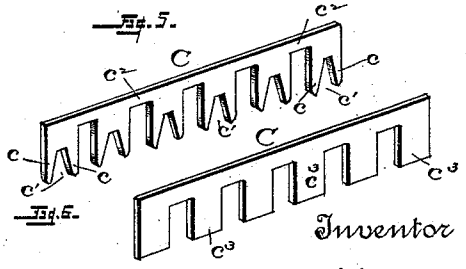


Fig. 6.

Witnesses
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# UNITED STATES PATENT OFFICE.

McCLINTOCK YOUNG, OF FREDERICK, MARYLAND.

## BRUSH.

SPECIFICATION forming part of Letters Patent No. 423,506, dated March 18, 1890.

Application filed October 6, 1888. Serial No. 287,380. (No model.)

*To all whom it may concern:*

Be it known that I, McCLINTOCK YOUNG, of Frederick, in the county of Frederick and State of Maryland, have invented certain Improvements in Brushes, of which the following is a specification.

My invention relates to that class of brushes in which a series of tufts are seated in holes formed in rows in a wooden body or block, and has reference to an improved manner of securing the tufts in place by means of metal fastening-strips, each passed through a row of tufts and seated in the face of the block, the strip having on one edge teeth or projections adapted to enter the tuft-holes and bear within and upon the tufts to hold them down securely in place. By the employment of a fastening-strip of this character passing through and confining a series or row of tufts transversely of the brush-body I am enabled to simplify the construction, reduce the cost of manufacture, and stiffen the body, so as to prevent it from splitting or warping out of shape. I am also enabled to prevent the escape of individual tufts, since the fastening device, having a series of teeth, will be held firmly at one point, although it may from any reason fail to hold securely at another point.

In the accompanying drawings, Figure 1 is a perspective view showing a brush constructed on my plan, the tufts and fastenings being omitted at one end to show the construction of the body. Fig 2 is a transverse section on the line $x\ x$ of Fig. 1. Fig 3 is a longitudinal section on the line $y\ y$ of Fig. 1, the tuft and fastening being removed at one end in order to show more clearly the construction. Fig. 4 is a cross-section of the brush-body on the line $z\ z$ of Fig. 1. Figs. 5 and 6 are perspective views showing the fastening-strips in two forms.

Referring to the drawings, A represents the body of the brush, preferably constructed of a single block of wood. It is provided, as shown, with a series of tuft-receiving holes *a*, bored therein from one face. These holes are perpendicular, or approximately so, to the face of the brush, and are arranged, as shown, in rows or lines transversely of the body. The shallow grooves *b* are formed transversely in the face of the block, connecting the holes in the respective rows.

B represents the tufts, each of which consists, as usual, of a bunch of fibers doubled or folded transversely at the middle and inserted endwise into the respective holes.

C C represent my fastening devices, each of which consists of a thin strip of steel or equivalent metal having one edge toothed or notched. Each strip is applied transversely of the brush-body and through the center or fold of a row of tufts, and is driven firmly home into the face of the body until its edge is seated in the groove *b* flush with the face of the body. The form of the teeth or projections may be modified at will. The teeth or projections are adapted to extend downward into the holes which contain the tufts and so straddle or bear upon the right of the tufts as to prevent their escape and hold them down solidly in the bottom of the deep holes or pockets, as shown. The teeth are to be made of such form and size in relation to the hole and the intermediate portion of the body that when driven home they will seat themselves firmly and immovably in the wood. Each strip is preferably extended across the entire width of the body. When applied as described, the strips serve the twofold purpose of confining the tufts firmly in place and strengthening and stiffening the body, so as to prevent the same from splitting and twisting out of shape.

The provision of the groove *b* and the sinking of the edge of the strip therein flush with the face are not vital features of my construction. In cheap brushes it is admissible to permit the edge of the strip to project slightly beyond the face of the brush-body; but for various reasons the construction represented in the drawings is preferred. Under ordinary circumstances I prefer to employ a fastening-strip of the form shown in Fig. 5, the teeth *c* entering the holes on the opposite sides of the tufts which are received in the intermediate notch *c'*. The portions $c^2$ are extended from one hole to the next through the groove *b*. In the strip shown in Fig. 6 the teeth or projections $c^3$ enter the holes to retain the tufts in place.

It is to be observed that in my brush the walls of the holes extend upward and present solid unbroken surfaces above the lower ends of the teeth or projections, so that each tuft, while held down tightly to its place by the

tooth, is firmly and rigidly supported on all sides by the walls of the hole. In this manner the tufts are held firmly in shape and securely in position.

I am aware that it has been proposed to seat rows of bristles or other fibers in grooves in a brush-block and to secure them in place therein by metal strips having pointed teeth to enter the wood. I believe myself to be the first, however, to seat independent tufts in a row of holes and to confine them in place by means of a transverse strip having a series of teeth which enter the holes and the ends of which are of suitable form to straddle or bear upon the tufts as distinguished from sharp points or teeth to pierce the tufts and enter the wood.

Having thus described my invention, what I claim is—

1. In a brush, the stock or body having holes therein, tufts seated in said holes, and transverse fastening-strips, each passing through a series of tufts, and provided with teeth or projections extending down within the holes and bearing upon the tufts therein, whereby said teeth are caused to hold the tufts firmly in place.

2. In a brush, the combination of a stock or body having holes therein, tufts seated in the holes, and transverse fastening-strips extending through the folds or bights of the tufts, and each provided with a series of teeth or projections which enter the holes to confine the tufts, said teeth having their ends notched or indented to embrace or straddle the tufts, as shown.

3. A brush-block provided in its face with rows of tuft-receiving holes, and with shallow transverse grooves intersecting the holes, but terminating short of the edges of the block.

4. In a brush, a block having holes therein, in combination with folded or doubled tufts inserted in said holes, and a metal fastening-strip extended through a series of tufts, and having on one edge teeth or projections seated in the holes tightly against their walls, whereby said teeth are caused to hold the strip in place, and also to hold the tufts down tightly in the bottom of the holes.

In testimony whereof I hereunto set my hand, this 1st day of October, 1888, in the presence of two attesting witnesses.

McCLINTOCK YOUNG.

Witnesses:

W. CLARENCE DUVALL,

P. T. DODGE.