

F. A. FREEMAN.  
Hair-Brush.

No. 212,844.

Patented Mar. 4, 1879.

Fig:1.

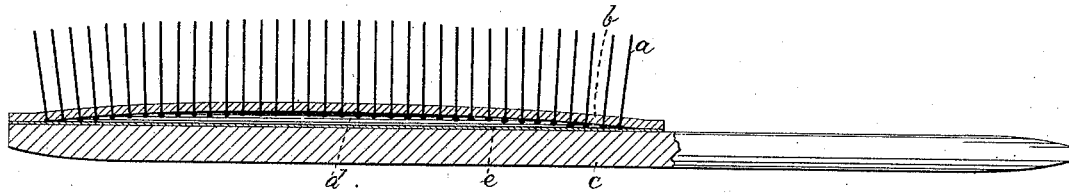


Fig:2.

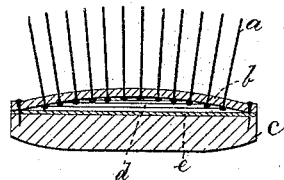
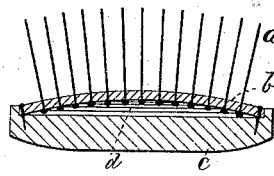


Fig:3.



Witnesses.

L. J. Connor  
N. E. Whitney

Inventor.

Frank A. Freeman,  
by Crosby & Gregory Attys.

# UNITED STATES PATENT OFFICE.

FRANK A. FREEMAN, OF MAPLEWOOD, MASSACHUSETTS, ASSIGNOR TO  
THE POPE MANUFACTURING COMPANY.

## IMPROVEMENT IN HAIR-BRUSHES.

Specification forming part of Letters Patent No. 212,844, dated March 4, 1879; application filed  
November 1, 1878.

### *To all whom it may concern:*

Be it known that I, FRANK A. FREEMAN, of Maplewood, county of Middlesex, State of Massachusetts, have invented an Improvement in Brushes, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to brushes for use as hair-brushes for persons or for animals.

In other brushes having metallic pins or teeth held in an india-rubber or flexible backing, it has been customary to support the india-rubber and the inner ends or headed parts of the pins solidly upon the back of the brush.

The object of this invention is to produce a so-called "metallic brush" which shall more readily yield to the head and be more flexible and not so harsh.

To that end my invention consists in a brush composed of metallic pins set in a sheet of india-rubber or equivalent flexible medium, the latter being so attached to the back or rigid part of the brush as to leave the majority of the pins and the india-rubber foundation for them, except at its edges, as shown in the drawings, unsupported by the brush-back, thereby leaving a free or air space between the back and india-rubber, and permitting the india-rubber to rise and fall freely from and toward the back.

Figure 1 represents, in longitudinal section, a hair-brush embodying one form of my invention; Fig. 2, a cross-section thereof; and Fig. 3, a modification, also in section.

The pins *a* and india-rubber or flexible foundation are and may be as usual.

Instead of permitting the heads of the pins at the lower face or side of the india-rubber sheet *b* to rest upon the brush-back *c*, as usual, the said flexible sheet is so supported or sustained upon or above the back *c* as to leave an open or air space, *d*, which will permit the pins and sheet at the central portion of the brush to move freely toward the back *c* when pressure is applied to the outer ends of the pins *a*.

To form the open or air space *d*, as in Figs. 1 and 2, the india-rubber sheet *b*, set with pins, is curved upward or convexed, as shown, and in said condition a sheet-holder, *e*, shown as a piece of cloth, is connected with the sheet *b* at its edges, so as to retain the outer face of the sheet *b* bent in its convex form. This

sheet is then applied to the back-forming portion of the brush, the cloth or other equivalent sheet-holder *e* between the outer edges of the sheet resting directly against the brush-back, and holding the sheet bulged upward, as shown, away from the back.

Instead of this piece of cloth *e*, I might lace the edges of the sheet *b* with a thread and draw them somewhat together; and, if desired, I may set a sheet of rubber into a recess of smaller area, as in Fig. 3, when only the edges of the rubber sheet will rest upon the brush-back, and consequently a space, *d*, will be formed below the india-rubber.

In this way it is obvious that the pins are free to yield longitudinally and move toward and from the brush-back, and that the sheet *b*, except at its edge, is practically unsupported by the brush-back.

The back *c* may be of any usual material, and be finished in any usual way.

The portions *b c e* may be united by a glue-like compound known as "comps," or by india-rubber paste, or by pins, as shown at the left of Figs. 2 and 3.

I claim—

1. A brush having a back of sufficiently rigid material, in combination with a flexible sheet, of greater area than the back, secured to said back by being buckled up, so as to form an inclosed air-space between the two, the said sheet being provided with metallic pins, substantially as and for the purpose described.

2. In a brush, the india-rubber or flexible sheet supported at its edges by the brush-back, and held convexed above the said back, to yield and permit the pins to move longitudinally with the sheet toward the brush-back, substantially as described.

3. The flexible sheet *b* and metallic pins, combined with a sheet-holder attached to the edges of the sheet to bulge it outward away from the brush-back, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK A. FREEMAN.

Witnesses:

G. W. GREGORY,  
N. E. WHITNEY.