(No Model.) 2 Sheets—Sheet 1.

J. RAPER, M. PEARSON & F. GILL.

HAIR OR OTHER BRUSH.

No. 354,583. Patented Dec. 21, 1886.

Fig. 2.

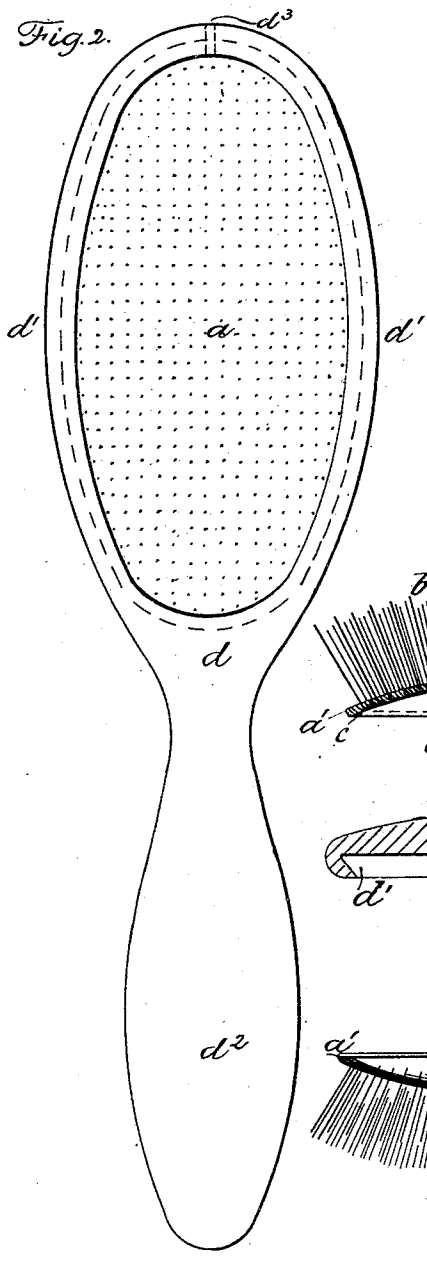


Fig. 1.

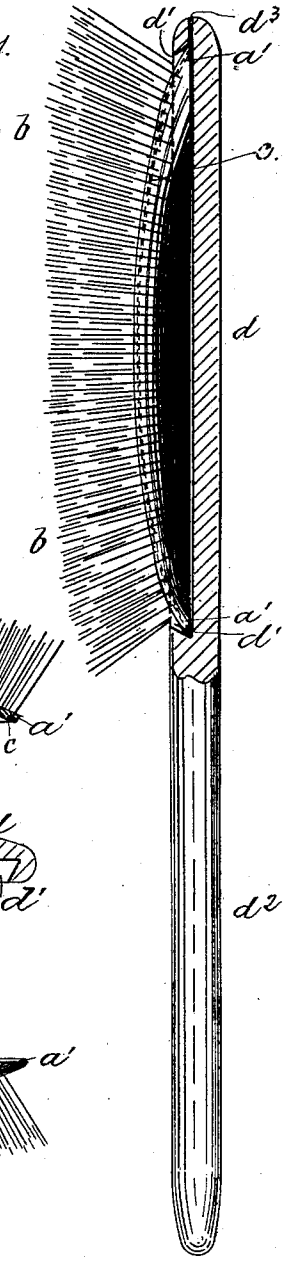


Fig. 10.

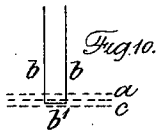


Fig. 9.

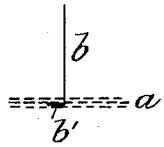


Fig. 7.

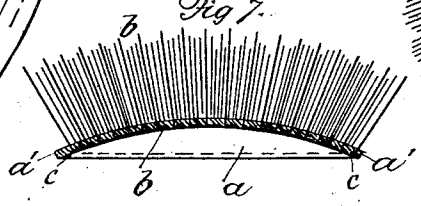


Fig. 4.

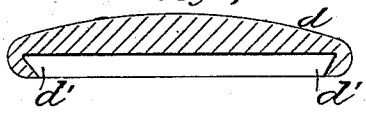
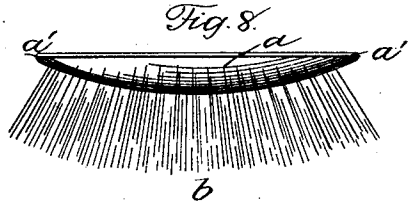


Fig. 8.



Witnesses
Will T. Norton
F. Coleman.

Inventors.
James Raper, Mason Pearson
and Frederick Gill
by his Attys John J. Halsted & Son.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. RAPER, M. PEARSON & F. GILL.

HAIR OR OTHER BRUSH.

No. 354,583. Patented Dec. 21, 1886.

Fig. 3

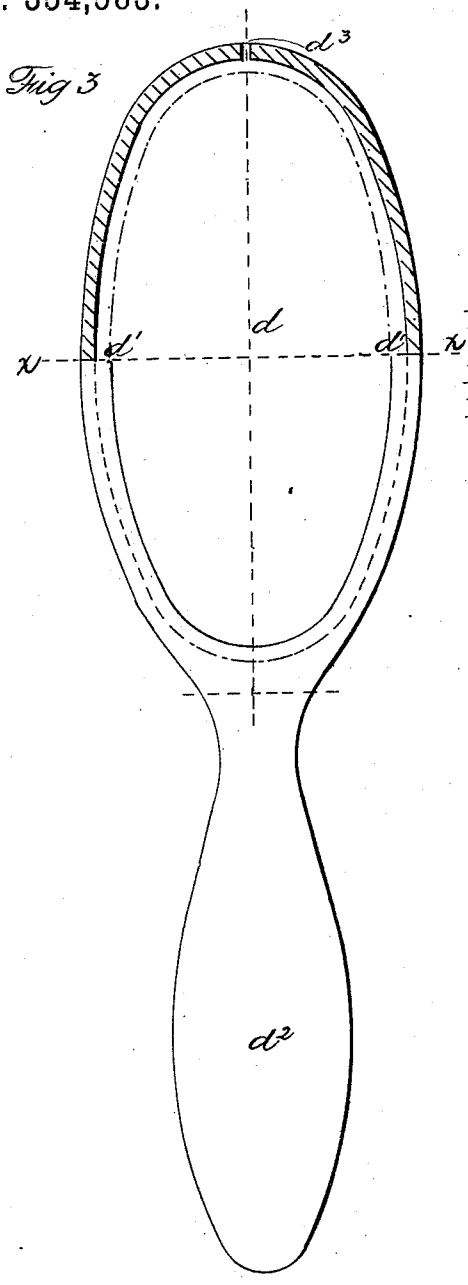


Fig. 5

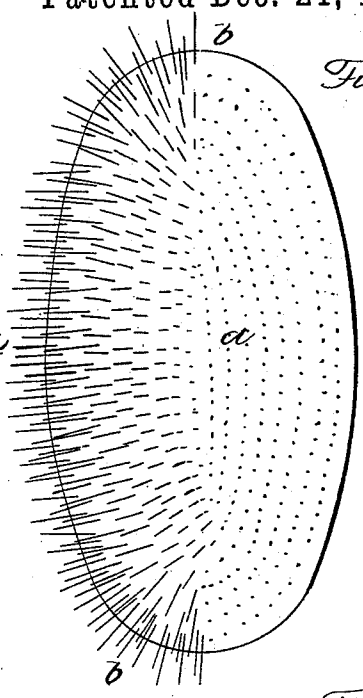
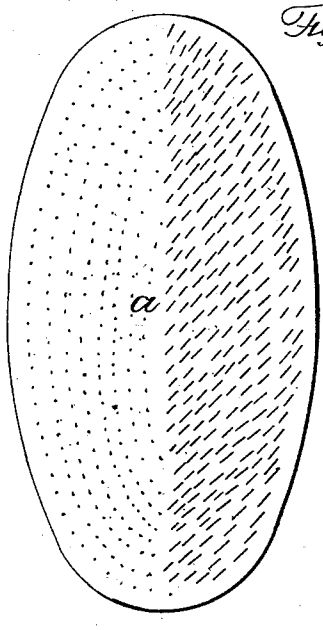


Fig. 6



Witnesses
Will T. Norton
F. Coleman

Inventors
James Raper, Mason Pearson
and Frederick Gill
by his Attys John J. Halsted & Son

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JAMES RAPER, MASON PEARSON, AND FREDERICK GILL, OF ROYAL VICTOR PLACE, OLD FORD ROAD, COUNTY OF MIDDLESEX, ENGLAND.

HAIR OR OTHER BRUSH.

SPECIFICATION forming part of Letters Patent No. 354,583, dated December 21, 1886.

Application filed July 14, 1886. Serial No. 207,991. (No model.) Patented in Belgium March 26, 1886, No. 72,517.

To all whom it may concern:

Be it known that we, JAMES RAPER, MASON PEARSON, and FREDERICK GILL, all of the firm of RAPER, PEARSON & GILL, of Royal Victor Place, Old Ford Road, in the county of Middlesex, England, brush-makers, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Hair and other Brushes, (for which we have received Letters Patent in Belgium, No. 72,517, dated March 26, 1886,) of which the following is a specification.

We make our improved brushes of bristles of a stiff nature, isolated or placed singly and separately, each bristle or end of a bristle in a hole in an india-rubber pad or sheet, strengthened, if desired, by cementing thereto a backing or layer of a textile fabric or strengthening-sheet, the retention of these single bristles therein being secured by the application of any suitable india-rubber or such like cement or composition—such as are well known to manufacturers of water-proof rubber clothing—applied on the back or hidden side of the india-rubber and sheet of fabric, and further adding a covering over all of cemented fabric, if desired; but the relative arrangement of the layers of rubber, or rubber-combined fabric, and sheet of textile fabric, covering the stumps or ends of the bristles, may be varied, and which cement will serve to cover the inner or root ends, holding and locking each bristle in its proper situation in the brush.

Figure 1 shows a side view of such a brush, a part of the back or roof being shown in section, the bristles, with their dome or arched support, being seen exteriorly, and the bristles being seen as rising tier above tier on such support; Fig. 2, a front view. Fig. 3 shows a front view of the brush-back partly in section, to better indicate the under-cutting of the recess for the india-rubber sheet holding the bristles. Fig. 4 is a section of the brush-back on the line *x x* of Fig. 3. Figs. 5 and 6 show, respectively, front and back views of the pad or sheet for the bristles to be held. One-half of the pad in each view is supposed to be filled with bristles of the half-staple kind and the other half ready to receive them. Figs. 7 and 8, respectively, show a section and an end view of a pad filled with bristles. Fig. 9 is a single bristle, or half-staple bristle, separately, the dotted lines indicating the position of a pad; and Fig. 10 is a like view of a bristle, staple or U-shaped, adapted for each end to protrude through a separate hole in the pad and to be held by the middle part of the bristle being locked into the fabric of the pad. The applied bristles in the elastic pad may be either L or U shaped.

a is the india-rubber or elastic pad or sheet, of bellied or domed contour, the edges *a'* of which are pressed into the undercut grooves *d'* of the recess of the front of the brush-back *d*, leaving a vacant space between the inner side of back *d* and the inner surface of the dome or bellied elastic pad *a*, in which air is retained or may be drawn in and forced out through the drift d^3 under the influence of pressure on the bristles.

b are the bristles, the inner ends, *b'*, of which next the brush-back (if half-bristles) are generally folded down onto the inner side of the pad, so as to give the cement a better retentive hold to secure them to the sheet *a*, while, when of staple form, the part *b'*, behind the pad, serves as a secure lock. (See Fig. 10.)

c is the textile lining to the pad *a*.

d is the brush-back; *d'*, the undercut retaining-wall of brush-back; d^2, the brush-handle; d^3, a small drift or hole for passage of air to and from the chamber formed under the pad, and between it and the brush-back.

The pad or sheet of rubber *a*, with its series of isolated single bristles or ends of bristles *b*, is somewhat, more or less, compressed or secured and fastened into a recess, *d'*, formed in the front of a brush-back, *d;* or the pad may be otherwise secured to the front of the brush, and either with or without a suitable handle, d^2, to the brush, provided that in the placing of the rubber pad or sheet *a* in the recess *d'* in the brush-back *d* an arching or doming is secured to it, which imparts a springiness to the bristles, and by its roundness or curvature is attended with great enhancement of the elegance of appearance imparted to the finished brush.

In place of india-rubber, other suitable elastic soft pliant material may be employed for the elastic sheet, whereinto the separate L or U shaped bristles are to be entered and secured.

Among the advantages resulting from our

improvements are the greater elasticity from the combined pliancy of the bristles and rubber sheet, which replaces the rigid board of the usual constructions, particularly in brushes for the hair and other toilet uses, as well as for other brushes.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim in brushes for the hair, &c., is—

1. In a brush, the described combination of a pad or sheet of elastic material supporting bristles, arranged each separately isolated, and secured therein by cement and a backing-sheet, and held in an undercut groove in the brush-back so as to form an air-space, bed, or elastic backing, substantially as set forth.

2. In a hair-brush, the combination of an elastic domed or arched bristle-supporting sheet, a back to which such sheet is secured, and affording an air-chamber between them, the back having therein a passage, d^3, through which, under the pressure on the bristles, air may be forced out of such chamber, substantially as set forth.

In testimony whereof we, the said JAMES RAPER, MASON PEARSON, and FREDERICK GILL, have hereunto set our hands this 30th day of June, 1886.

JAMES RAPER.
MASON PEARSON.
FREDERICK GILL.

In presence of—
ALFRED BELL,
ALFRED BURBRIDGE.