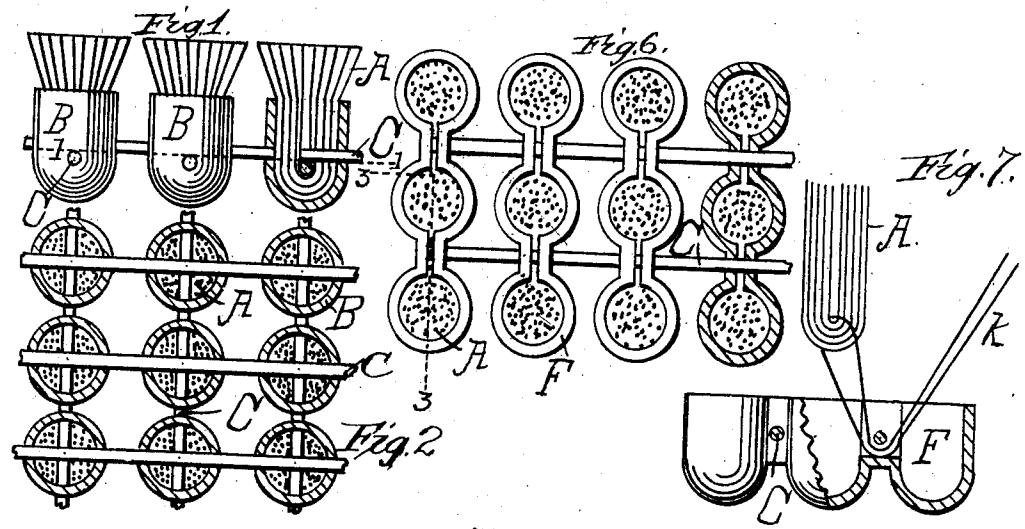
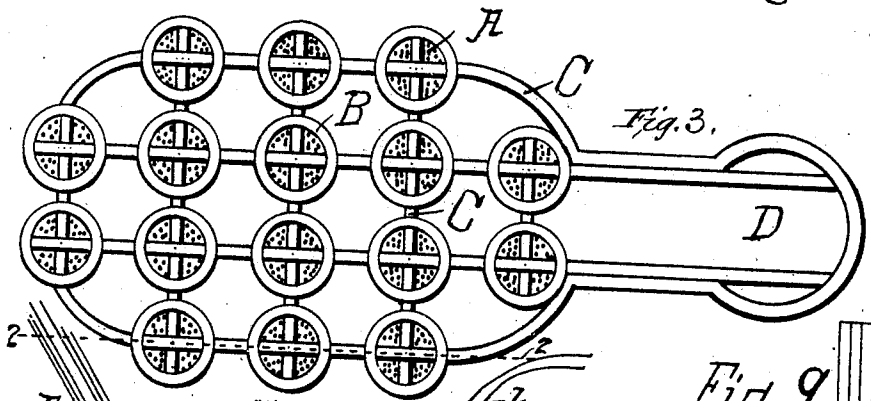
No. 832,805. PATENTED OCT. 9, 1906.

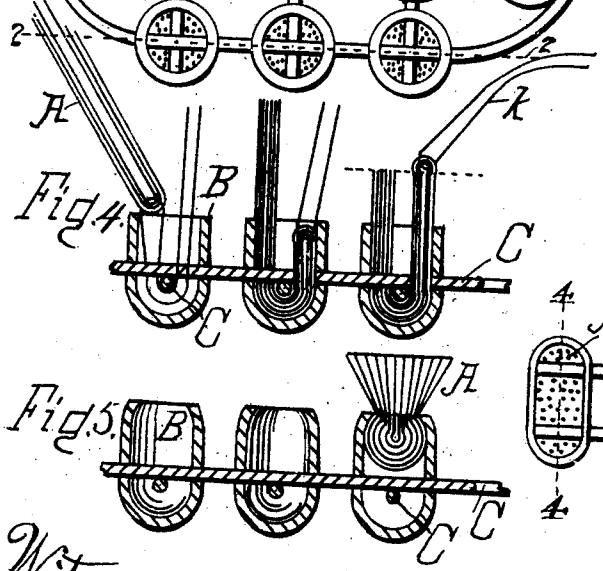
H. P. OSBORN.

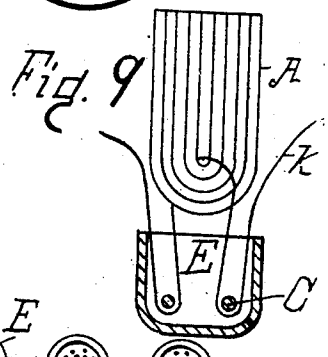
BRUSH CONSTRUCTION.

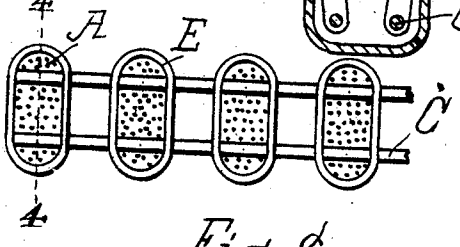
APPLICATION FILED AUG. 6, 1896.











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UNITED STATES PATENT OFFICE.

HENRY PORTER OSBORN, OF NEW YORK, N. Y.

BRUSH CONSTRUCTION.

No. 832,805. Specification of Letters Patent. Patented Oct. 9, 1906.

Application filed August 6, 1896. Serial No. 601,930.

To all whom it may concern:

Be it known that I, HENRY PORTER OSBORN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Brush Construction, of which the following is a specification.

My invention relates to improvements in brushes whereby the dirt-collecting floor at the base of the tufts in ordinary solid-back brushes is nearly or quite abolished in my form of open-back construction; and the objects of my improvement are, first, to provide a brush that will not easily foul; second, to provide a brush that can be cleansed by washing through the back; third, to furnish a brush that can be sterilized by hot water without loosening the bristles; fourth, to prevent the spread of baldness by furnishing a cleansible and sterilizable brush. I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a vertical side view of a reticular arrangement of cups strung on wires with one cup shown in section. Fig. 2 is a horizontal sectional view of Fig. 1 at dotted line 1 1 in Fig. 1. Fig. 3 is a horizontal plan view of an open-back brush formed by mounting cups on wires and filling the cups with bristle-tufts. Fig. 4 is a vertical sectional view of the outer row of cups in Fig. 3 at dotted line 2 2, showing how the brush fiber can be mounted in the cups. Fig. 5 is a vertical sectional view of a modification, taken at dotted line 2 2 of Fig. 3, in which the fiber tufts are secured in the cups by crimping the open ends of the same. Fig. 6 is a horizontal and in part sectional view of subdivided oblong cups mounted crosswise on supporting-wires. Fig. 7 is an end view of Fig. 6 with part of the end cup in section taken at dotted line 3 3 to show how the cups are filled with brush fiber. Fig. 8 is a horizontal plan view of oblong cups mounted on supporting-wires. Fig. 9 is an end view in section, taken at point shown by dotted line 4 4 of Fig. 8 to show how brush fiber can be drawn into subdivided oblong cups.

Similar letters refer to similar parts throughout the several views.

My invention relates to that variety of brushes which have their body portions open and are known as "open-back" brushes. By using small stiff wires and cups with thin sides I gain the largest amount of opening and the least amount of footing for the lodgment of dirt.

The three main anatomical elements of construction are, first, one or more wires or a wire-like open framework; second, a tuft-receiving cup; third, brush fiber composed of bristles or wire or other similar material. The cups are made larger than the supporting-wires and are of a size internally which corresponds with the size of the tuft of bristles to be mounted therein.

I do not limit myself in the material out of which I construct the wires or the cups, as I intend to use anything useful in the construction of the wires and of the cups. One end of the cup is closed or is closed sufficiently to prevent the bristles from coming out through the back. The cups may be drawn up out of thin sheets by means of dies, and holes may be made in their sides for stringing upon wires, or they may be pressed up out of celluloid, rubber, or any other moldable material. I do not limit myself as to the shape of the cups, as I use round cups, as in Figs. 1, 2, 3, 4, 5, oblong cups, as in Figs. 8, 9, and subdivided oblong cups, as in Figs. 6, 7.

The letter A designates the bristles or brush fiber; the letter B, the round cups; the letter C, the cup-supporting wire or wires, which wire or wires traverse the diameter of the cups at right angles to the direction traversed by the brush fiber.

D shows the handle, which in many cases is a simple prolongation of the cup-supporting wire C. (See Fig. 3 as an example.)

E shows oblong cups.

F shows subdivided oblong cups.

It is designed to provide a neat, light, hygienic, and attractive brush, with the quality of great durability and the utmost degree of access to the base of the tufts for the purpose of cleansing.

A further object attained is the security of the brush fiber from coming out, which object I achieve by passing the brush fiber around that portion of the supporting-wires which traverse the diameter of the cups, or, as an alternate method of securing the brush fiber, by crimping in the flange edge of the cup, causing it to firmly grasp the tufts at the mouth of the cup, as shown in Fig. 5.

With these objects in view the invention consists in the novel construction and in the

combination of these variously-named parts, as hereinafter described, and pointed out in the appended claims.

In the manufacture of brushes constructed according to this invention I vary the procedure in accordance to the form and style of brush under construction. If it be a single row of cups mounted upon wires, as in Fig. 8, or several rows of cups on several wires which are crossed to form a reticulum, as shown in Figs. 2, 3, I begin by forming my cup with a wire-hole in its side through which the supporting-wire C is passed. I then take a bunch of brush fiber A, folded between its ends, (see Figs. 4, 7, 9,) and pass through the fold a common draw-string or wire K. I then carry the draw-string K down into the cup and around that portion of the supporting wire or wires C which traverses the diameter of the cup, and up, out of the cup exerting a pull on the draw-string K, which has the effect of drawing the fiber into the cup around the supporting wire or wires C and up and out of the cup, when their ends are finally trimmed. When I am constructing the cups or the cups and wires both out of a moldable substance, I construct the molds best suited to the substance to be molded after the plans peculiar to the molder's art and mold the cups around the supporting-wires at their intersections, or I mold both the wires and the cups in one operation out of the same material. (Sufficiently illustrated in Fig. 3.) I do not confine myself to a round cup entirely, as I use the oblong cup, as in Figs. 8, 9, the subdivided oblong cup, as in Figs. 6, 7.

In the form of brush shown in Fig. 7, where the supporting-wires C engage the shorter diameter of the cup at its constricted points, I support the cup with as many wires as the cup has constrictions, engaging each constricted point with a supporting-wire C, two constrictions and two supporting-wires being shown in Figs. 6, 7; but I use any number of constrictions and wires which I desire.

The operation of drawing or bristle mounting is one of the last to be performed and is not claimed as a leading feature of the invention, as the drawing operation may be varied without affecting the main feature of the invention, which feature is the cup on a supporting-wire or wire-like framework.

While the several forms of brushes above shown serve to illustrate the application of my invention to various forms of brushes, it is obvious and it is the inventor's full intention to apply the cup on an open wire-like framework principle to all brushes in which its application is feasible. I will therefore not multiply the forms, as those already given serve the purpose of clearly illustrating the principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a brush, the combination of a plurality of wires which piece the sides of tuft-holding cups and support said cups thereon, and tuft-filled cups which have their rims crimped inward as a means for tuft retention within said cups.

2. In an open-back brush, the combination of the reticulated wire cup-supports, the tuft-holding cups mounted thereon, and the brush-tufts, the tufts being secured in the cups by crimping the ends of the latter.

3. In an open-brush body, the combination of a reticulum of cup-supporting wires, and tuft-holding cups strung on said wires so as to include the juncture of the wires within the cups.

4. In an open-back brush, the combination of the reticulated wire cup-supports, the tuft-holding cups cast thereon at the juncture of the wires, and brush-tufts secured within said cups.

HENRY PORTER OSBORN.

Witnesses:
JACOB KAUFMANN,
SIGMUND WILLNER.

Correction in Letters Patent No. 832,805.

It is hereby certified that in Letters Patent No. 832,805, granted October 9, 1906, upon the application of Henry Porter Osborn, of New York, N. Y., for an improvement in "Brush Construction," an error occurs in the printed specification requiring correction, as follows: In line 68, page 2, the word "piece" should read *pierce;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 20th day of November, A. D., 1906.

[SEAL.]

F. I. ALLEN,

Commissioner of Patents.