

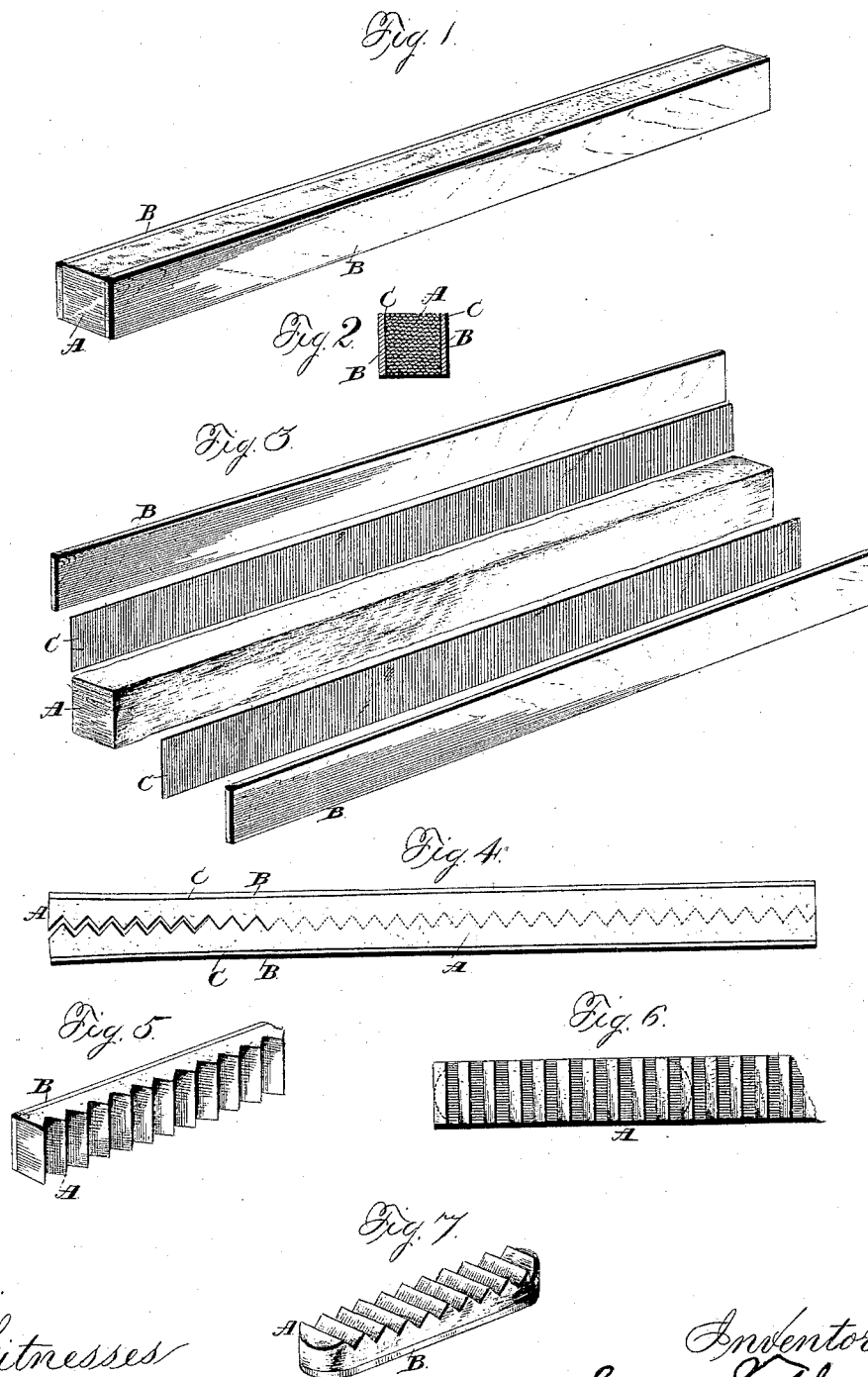
(No Model.)

G. F. HORSEY.

MANUFACTURE OF PADS FOR CLEANING AND POLISHING THE TEETH.

No. 419,675.

Patented Jan. 21, 1890.



Witnesses
Chas. Williamson.
Henry C. Hazard.

Inventor
George F. Horsey
by Phinley and Halsey
his Attorneys

UNITED STATES PATENT OFFICE.

GEORGE FREDERICK HORSEY, OF UTICA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ALFRED DOLGE, OF DOLGEVILLE, NEW YORK.

MANUFACTURE OF PADS FOR CLEANING AND POLISHING THE TEETH.

SPECIFICATION forming part of Letters Patent No. 419,675, dated January 21, 1890.

Application filed April 24, 1889. Serial No. 308,392. (No model.)

To all whom it may concern:

Be it known that I, GEORGE FREDERICK HORSEY, of Utica, in the county of Oneida, and in the State of New York, have invented certain new and useful Improvements in the Manufacture of Pads for Cleaning and Polishing the Teeth and for other Purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows one of the strips or blanks as made by me in carrying out my process; Fig. 2, a transverse section of the same; Fig. 3, a detail perspective view showing the parts of one of such blanks separated as before they are fastened together to form the strip; Fig. 4, a plan view of one of the strips with the longitudinal division of the same partly made; Fig. 5, a detail perspective view of a portion of one of the halves into which the strip or blank is cut; Fig. 6, a plan view of the same with the shape of one of the pads to be cut from it indicated in dotted lines, and Fig. 7 a detail perspective view of one of the pads.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to provide an improved process of manufacturing pads for cleaning and polishing the teeth and for other purposes; and to this end my invention consists in the process and parts of the process as hereinafter specified.

My invention has relation to the manufacture of cleaning and polishing pads having a body of material adapted to afford a good cleaning and polishing surface, and a back of stiffer material to stiffen and form a support for the said body.

The substance or material which I prefer to use for the main part or body of the pad is felt, as this, while affording the best cleaning and polishing surface, is porous and absorbent, and so best adapted to take up and hold any cleansing and polishing substance or compound, whether in liquid or powder form. Felt is also desirable, particularly where the pads are to be used on the teeth, on account of its softness and elasticity, which enable it to accommodate itself to the sur-

faces of the teeth and prevent any harsh or uncomfortable action on the gums.

While I prefer to use felt in the manufacture of my pads, I do not claim or intend to cover, broadly, with my claims in this application such material for cleaning or polishing.

In carrying out my process I take a strip of felt A, of a thickness substantially equal to or greater than the width of one of the pads to be made. The strip is cut from a sheet of felt in which, as is well known, the fibers lie or run substantially in planes parallel to the upper and lower faces of the sheet. The ends of the fibers cut off in cutting out the strip will then be presented at the sides of the strip. To such sides of the strip I next cement strips B B of wood, paper, or other stiff material. By stiff material I do not mean only that which is rigid, but stiffer material than the felt. For cementing the said strips to the sides of the felt I prefer a cement which is softened by heat. The best I have found for the purpose is rubber, which can be used in the form of a thin sheet, as shown at C C in Fig. 3, placed between each wooden or other stiffening-strip and the felt. With the sheets of rubber placed between the sides of the felt and the wooden strips the whole is subjected to heat and pressure. The ends of the felt fibers are thus caused to be embedded in the softened rubber, so as to be held most firmly when the rubber cools.

Other cement than rubber can be employed to hold the felt fibers and attach the wooden or other strips to the strips of felt; but whatever it is, I prefer that it shall, especially where the polishing-pads are to be used on the teeth, be impervious to and unacted upon by water or moisture.

By cementing the backing or stiffening strips to the opposite sides of the felt strip, I secure a compound blank, consisting of a body of felt with the ends of its fibers at its sides strongly attached to strips of stiffer material. I then cut this blank in two, longitudinally, midway between the said strips along its sides. If this longitudinal cut were made on a straight line, the surface left by the cut on each half of the blank would be a plane one, in which there would be no loose fibers, for it would be made up of the cut

ends of fibers which were either attached at their other ends by the cement to the wooden or other backing-strip, or were interlocked with and held by fibers so attached.

5 While the cut dividing the blank can thus be made on a straight line, so as to have a flat plane surface along the cut, I prefer to make the line of the cut a zigzag or waved one, so as to produce on each half of the blank
10 or compound strip a corrugated surface with the corrugations running transversely with reference to the face of the half blank or strip. The zigzag or wave-line cut dividing the blank is preferably made with a V-shaped knife reciprocating at right angles to the blank and
15 driven down through the felt body in a direction at right angles to planes in which the felt fibers lie. The blank or knife is fed along at each reciprocation of the latter, so
20 as to bring the V-shaped cuts made side by side to form one continuous zigzag cut dividing the blank, as indicated in Fig. 4.

Instead of the single V-shaped knife just described, I contemplate using one having a
25 zigzag or waved edge adapted to divide at one stroke, in a plane between and parallel to the strips at the sides of the felt strip, a part or the whole of a blank.

From each half of the divided blank the
30 pads of the desired shape and size are next cut out. I prefer to do this by a cutting-die or stamp operating upon the half of the blank placed upon a suitable platen or support with its cut or corrugated face upward.

35 With the body of felt cemented to and held between the two wooden or other stiffening strips a stiff blank is provided which can be most conveniently and accurately cut on any desired line. The wood or other strips hold
40 the felt between them, so that it cannot bend, twist, or get out of line during the cutting operation. Such strips also afford the best hold for the feeding devices which may be used to feed the blank as it is being cut.

45 Where, as indicated hereinbefore, rubber or other cement unaffected by moisture is used, any liquid with which the felt may be treated will not affect the back of the pad, which it is desired should remain stiff enough
50 to afford a good hold for any clamp or holder to be used. Where felt is used, as described, in carrying out my process, the rubbing-surface of the resultant pad, whether corrugated or not, is free from any loose fibers to be
55 rubbed off while the pad is being used. The fibers whose ends are exposed are, as set forth hereinbefore, then attached to the back by the cement or firmly interlocked with other fibers.

60 While I prefer to use felt in making up the compound blank, I do not intend to limit myself to such material. Other soft fibrous or porous substances can be used.

Having thus described my invention, what
65 I claim is—

1. As an improvement in the art of making cleaning and polishing pads, the process

which consists in attaching to the sides of a strip of the material to be used for the body of the pads strips of stiffer material, and
70 then dividing the blank so formed longitudinally between the two side strips, substantially as and for the purpose specified.

2. As an improvement in the art of making cleaning and polishing pads, the process
75 which consists in fastening strips of wood or other stiff material to the sides of a strip of felt where the ends of the fibers are exposed, and then cutting the strip of felt in two longitudinally between the side strips, substantially
80 as and for the purpose shown.

3. As an improvement in the art of making cleaning and polishing pads, the process which consists in cutting a strip from a sheet
85 of felt, cementing to the sides of such strip strips of stiffer material, and then dividing the felt strip longitudinally between the side strips, substantially as and for the purpose set forth.

4. As an improvement in the art of making
90 cleaning and polishing pads, the process which consists in attaching to the sides of a strip of felt strips of stiffer material, and then dividing the strip of felt longitudinally between the side strips on a waved or zigzag
95 line, substantially as and for the purpose described.

5. As an improvement in the art of making cleaning and polishing pads, the process which consists in attaching to the sides of a
100 strip of felt strips of stiffer material, then cutting the felt strips in two longitudinally between the side strips to form two compound strips of felt with stiffer material at the back, and finally cutting the pads from such strips,
105 substantially as and for the purpose specified.

6. The improved process of making cleaning and polishing pads, which consists in cutting a strip from a sheet of felt, cementing
110 strips of wood to the sides thereof, cutting the compound strip so formed in two longitudinally between the wood strips, and finally cutting the pads from the halves of the divided compound strip, substantially as and
115 for the purpose shown.

7. The improved process of manufacturing cleaning and polishing pads, which consists in cementing strips of wood to the sides
120 of a strip of felt, so as to attach the ends of the felt fibers to the wood strips, then cutting the felt strip in two longitudinally on a wave or zigzag line, and finally cutting the combined felt and wood strips so formed into pads of the desired shape and size, substantially
125 as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of November, 1888.

GEORGE FREDERICK HORSEY.

Witnesses:

C. H. FOLMAR,
JOHN GILMOR.