(Model.)

A. T. GOOD.

POLISHING CONE.

No. 449,217. Patented Mar. 31, 1891.

Fig. 1.

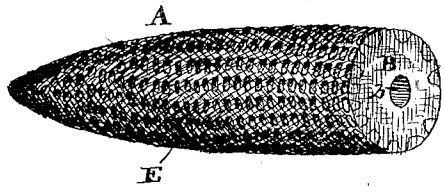


Fig. 2.

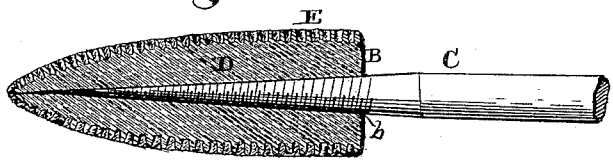


Fig. 3.

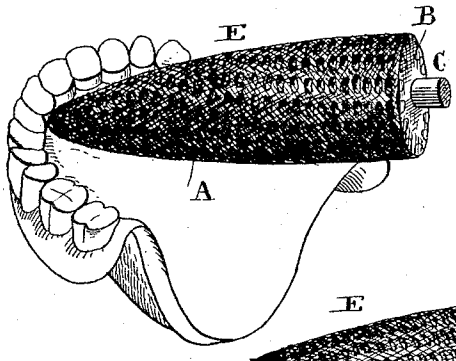


Fig. 4.

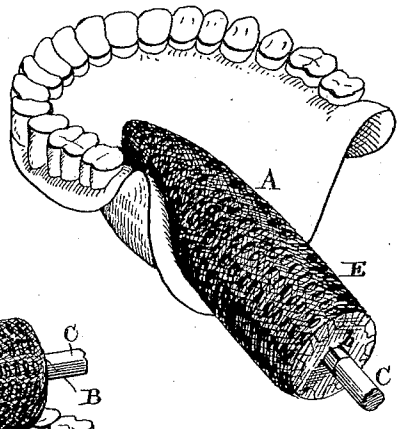
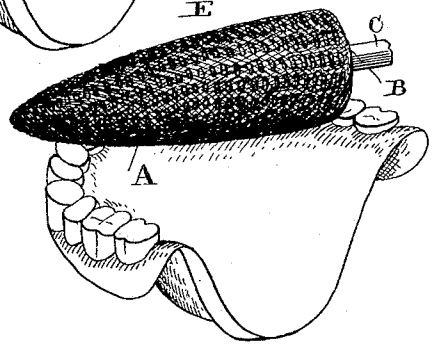


Fig. 5.



Witnesses
F. L. Ourand
F. E. Gaither

Arthur T. Good Inventor
By his Attorney W. S. Boyd.

UNITED STATES PATENT OFFICE.

ARTHUR T. GOOD, OF HAMILTON, OHIO.

POLISHING-CONE.

SPECIFICATION forming part of Letters Patent No. 449,217, dated March 31, 1891.

Application filed November 6, 1886. Serial No. 218,168. (Model.)

To all whom it may concern.

Be it known that I, ARTHUR T. GOOD, a citizen of the United States, residing at Hamilton, in the county of Butler and State of Ohio, have invented certain new and useful Improvements in Polishing-Cones, of which the following is a specification.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of my device. Fig. 2 is a longitudinal sectional view of the same, showing it upon a spindle; and Figs. 3, 4, and 5 are views of some of the different ways in which it can be used.

In the manufacture of dental plates, after the rough face of the interior has been removed by means of the ordinary burr, scraper, and emery-paper until it has been reduced to the required thickness, the plate is then smoothed and polished by means of pumice-stone and corundum, whiting, &c., placed upon a polishing bobbin or cone. These cones are usually made of cork or other soft and yielding material, but it has been found difficult to do satisfactory work with them, as the point of the cone is soon worn so blunt that it will not grind out the portions of the plate which are forced between the teeth by the high pressure to which it is subjected. It is also difficult, if not impossible, to cause the polishing material to stick to the smooth surface of the cone, but it will collect in the holes in its surface. These holes are of different sizes and are at irregular places in the cone, and consequently the work is not as nicely finished as if the cutting material were more evenly distributed, as the material which collects in the holes cuts faster than the rest of the cone, which has but a small amount or material. To obviate these defects and to produce an improved polishing-cone is the object of my invention; and it consists in the improved construction and combination of parts, as will be hereinafter more particularly set forth.

In the drawings, in which the same letters of reference indicate corresponding parts in all the figures, A indicates a cone the base B of which may be cut off square or slightly rounding. The center of the cone may be of a soft material, which may be removed entirely, if desired, forming a longitudinal hole *b*, in which is placed a spindle C for supporting and operating the cone. The spindle can be made round and screw-threaded, or it may be provided with longitudinal fins or corners, and is preferably made tapering to fit the tapering hole in the cone or the more readily to enter the soft center when the cone is placed in position for use. The hard portion D of the cone surrounding the center has its periphery at substantially the same distance from the center, so that it will run true when rotated upon the spindle. The tip of the cone gradually tapers to a point, while the main portion is substantially a right cylinder. The exterior surface of the cone is provided with small cells or pockets E, the walls of which are very thin, and each pocket is preferably provided with a small husk or fuzz.

I have discovered that the ordinary corn-cob possesses all the requisites of a cone as above described, as its body D is formed of a hard durable substance having a soft pith in its center, which may be readily removed, or the cone can be put upon the spindle by forcing the end of the spindle into the pith. The exterior of the cob is provided with the small cavities formed by the grains of corn, the walls of which are of a hard and tough texture, which will give greater life to the cone, and at the same time the walls are sufficiently yielding to permit of their bending over while in use to permit of the material in the cell being brought directly in contact with the plate or other object being operated upon. Besides these advantages possessed by the cob, each cell is provided with the short husks or hairs which surround the base of the grain of corn, but which remain in the cells after the grain has been removed, thus affording additional means for retaining the polishing material in the cells and presenting it to the surface to be polished. If desired, the walls and hairs may be trimmed off before using the cone, although it gives very good results in its natural state.

In use the cone is mounted upon the spindle of any ordinary dental lathe and moist-

ened sufficiently to make the polishing material adhere to it, which can be applied with the hand or by means of a brush. After a sufficient quantity of the polishing material has been put upon it the plate is held against it in the usual manner, the base cutting around the lower portions of the teeth, as shown in Fig. 5, the tip cutting between them, as shown in Fig. 3, and the main portion of the cone cutting the larger portion of the plate, as shown in Fig. 4. As the cells or pockets of the cone are substantially of the same size, decreasing from the base to the point, the same amount of material is retained by each one of them for the amount of work it has to perform—that is, those nearer the base and in the main part of the cone have more work to do than those at the apex and are correspondingly larger and contain the more material to do the work required of them. After the cone has been used with one kind of material it can be also used for a different grade of material by simply washing off the old material and applying the new directly to the moistened surface.

In preparing the cone for the market it can be made without the polishing material, or it can have the cells filled with the desired kind of material before it is put upon the market, the material being moistened or formed into a paste before it is applied to cause it to adhere to the walls of the cells. I find that the best results are obtained after the cells have been filled comparatively full of the material. Hence I prefer to fill them before they are placed on sale, as in use it takes some time for the cells to become filled up.

I claim—

1. A rotary polishing-cone the main portion of which is substantially a right cylinder, one end of which is cut off substantially square and the opposite end is gradually tapered to a point, the exterior of said cone being provided with regularly-arranged pockets, the walls of which are thin and yielding, substantially as described.

2. A rotary polishing-cone the main portion of which is substantially a right cone, one end of which is cut off square and the opposite end is gradually tapered to a point, the exterior of the cone being provided with pockets gradually decreasing in size toward the tip, and each pocket being provided with a short husk or fuzz, substantially as described.

3. As a new article of manufacture, a rotary polishing-cone consisting of the tip end of a corn-cob, the base of which is cut off square and the surface of the cob being trimmed off, so as to leave only a portion of the wall and husk in the pockets remaining, whereby the pockets upon the exterior of the cob are adapted to receive and retain a polishing material, substantially as described.

In testimony that I claim the foregoing as my own invention I have hereunto set my hand and affixed my seal.

ARTHUR T. GOOD. [L. S.]

Attest:

J. N. KUMLER,

J. N. SLAYBACK.