

March 7, 1944.

G. T. FIELDING

2,343,651

CLEANSING AND POLISHING MEDIUM FOR DENTIFRICES OR THE LIKE

Filed Nov. 29, 1941

Fig. 1.

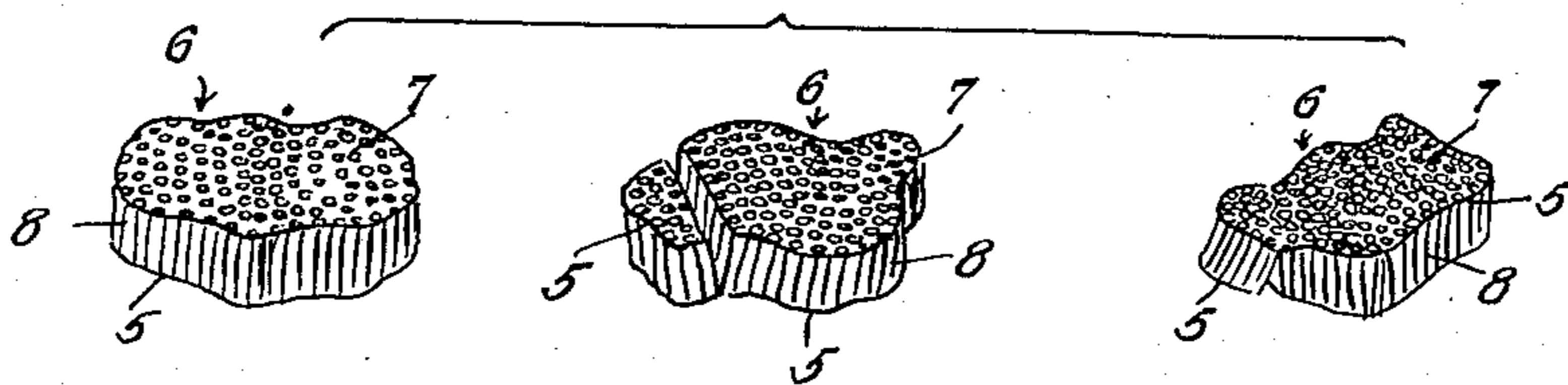
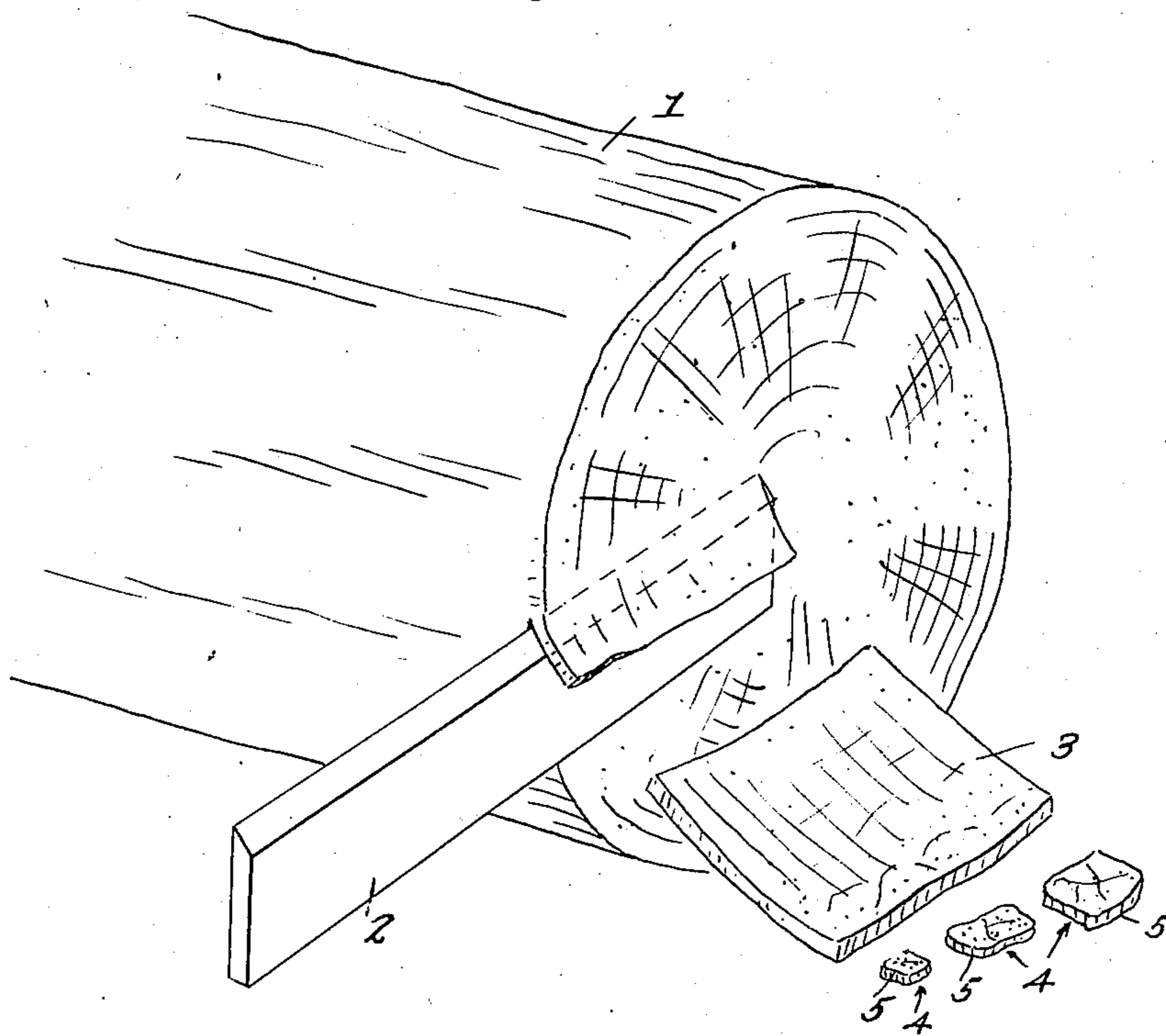


Fig. 2.



INVENTOR.
GEORGE T. FIELDING
BY

Clark & Ott
ATTORNEYS

UNITED STATES PATENT OFFICE

2,343,651

CLEANSING AND POLISHING MEDIUM FOR DENTIFRICES OR THE LIKE

George T. Fielding, Stamford, Conn.

Application November 29, 1941, Serial No. 420,913

4 Claims. (Cl. 167—93)

The present invention relates to a general cleaning and scrubbing medium, particularly useful as a dentifrice.

The principal object of the invention is to provide a medium including wood particles which when applied to a surface to be cleaned, as by a dry or moist brush or other instrument, presents an abrupt or sharp edge to the soiled surface. When thus held against the surface, the particles can be made to travel thereover while scraping therefrom the material to be removed.

The invention is based upon the discovery that particles of hard wood of a certain shape and/or size may be effectively used as a cleaning and polishing medium. Such action is enhanced if a detergent or emulsification agent is used therewith.

While a cleaning medium within the purview of the invention has many general uses, yet it is unique as a dentifrice inasmuch as it may be used with a tooth brush, orange stick, finger or the like, to scrape and loosen film from the teeth, yet the nature of the wood particles is such that they do not become unduly softened by moisture absorption during the normal period of use. The cleaning effect may be readily accomplished without abrasion, scratching or otherwise damaging the tooth surface, while at the same time serving the purpose of not only removing film but actually polishing the tooth surface. The use of this material has been found to be of additional value in that the rough wood particles tend to gently massage the gums in a beneficial manner.

It is a well known fact that the tenacious film or plaque of mucin or mucous which accumulates upon or adheres to the surface of the teeth not only forms the basis for stains but causes decay as it harbors bacteria and constitutes a culture therefor through which the tooth structure is attacked. Neither the stains nor the bacteria will adhere to the surfaces of the tooth enamel if the same is free of this film. It is, therefore, essential and it is one of the purposes of the invention to effectively remove the same in its entirety by the cleaning, scrubbing and polishing medium of this invention in such manner as to avoid scratching, abrasion or other damage to the surfaces of the teeth or injury to the gums.

The invention, therefore, contemplates a cleaning, scrubbing and polishing medium containing as an essential ingredient particles of hard wood formed by slicing or cutting wood stock across its grain, opposite faces of such particles lying substantially in parallel planes.

Such faces of the particles present the closely packed and substantially nonabsorbent ends of the woody fibres set in their natural and substantially impervious matrix. These end faces, therefore, constitute good polishing mediums. As the grain runs more or less perpendicular to the end faces of the particles, the periphery of said faces present one or more abrupt and relatively sharp scrubbing edges which are primarily responsible for the enhanced effect of film loosening.

The invention further contemplates details more fully hereinafter set forth and with reference to the accompanying drawing in which:

Fig. 1 is an enlarged perspective view of several wood particles of the preferred type after passing through a screen or sieve.

Fig. 2 is a perspective view showing the manner of producing thin wafers from which the eventual wood particles are prepared with one of the wafers before and after breaking and splitting with the wood grain.

The woods preferred for the purpose of this invention are those known as the "hard woods." Typical and suitable members of this group are hard maple, orange, birch, apple, beech, sandalwood, lignum vitae or equivalent varieties characterized by their denseness, close grain, ability of the matrix to hold the fibres in place even though wetted and their ability to withstand absorption of substantial quantities of moisture during their period of use.

In preparing such particles, the wood stock is cut, sliced, shaved or turned endwise and across the grain by a blade or cutter so as to produce frangible wafers. These slices or wafers may then be readily split or broken with the grain so as to form smaller sections as shown at 4. It is to be noted that in the wafers and irregular smaller sections, the end faces join the sides to form relatively sharp or abrupt edges.

When these pieces are screened or rubbed as through a sieve or screen, particles having a larger diameter across the grain than with the grain result. Even these eventual particles show the desired sharp or abrupt edges formed at the juncture of the end faces and sides. The end faces being constituted by the tightly packed ends of the fibres held in their natural matrix, serve as a polishing surface.

In a dentifrice, best results are obtainable when the dimensions of such eventual particles across the grain are approximately .03" and the dimension with the grain is less than .03", the major portion of the total number of said parti-

cles passing through a screen having apertures of approximately .03".

While different sized particles may be used as a dentifrice and for other purposes, yet the relationship of greater dimension across the grain to smaller dimension with the grain should exist in all cases.

Thus in any quantity of such particles, there are a preponderant number which have end faces, the diameter of which is greater than the height of their sides, the sides joining the end faces at a relatively sharp angle.

In manipulation of such particles by means of a dry or moist brush or orange stick dipped therein, a large number will always more or less firmly rest on one of their larger faces, and due to the instrument of pressure, will scrape the film from the tooth surface by reason of these sharp edges 5, while the end faces 7 themselves act as a polishing medium on the surface thus cleaned.

While this may be a more or less unprovable theory, yet the fact remains that a cleaning medium containing wood particles of the type described does a better cleaning job in less time and with less damage to the surface to be cleaned than if such is not the case. This is particularly noticeable when comparison is made with sawdust and used under the same circumstances.

Wood particles of the type described are amazingly non-water absorbent as compared with other types of particles, even of the same screen size, such as sawdust, for example. Sawdust particles appear under the microscope to be very ragged and non-uniform in shape and size. More the fibres of the particles have been either loosened in the matrix or completely removed therefrom. There are substantially no abrupt edges to act as scrapers. In the vast majority of cases, the larger dimension is with the grain rather than across the grain. Consequently, there is no tendency for the fibres to stand on end so to speak, to act as a polishing medium. Sawdust fibres, therefore, are ineffective as a scraping and polishing medium particularly as they are in a condition to readily absorb moisture and quickly become softened.

Wood particles prepared as here contemplated, when moistened and rubbed between the fingers, have a definitely gritty feel, even after several minutes. Sawdust, on the other hand, even of the same wood, under the same circumstances, quickly becomes softened and hence slides over the surface with little or no cleaning effect.

When wood particles as herein described are incorporated in a cleaning mixture to be used with moisture, it is desirable to also use a detergent or emulsifying agent such as soap or the like. This has the effect of preventing an accumulation of dirt or film on the particles them-

selves, thus maintaining the abrupt scraping edges and the polishing areas free and clean during the useful period. In addition, it serves to prevent segregation of the dirt and facilitates the eventual removal from the cleaning environment.

Where the composition is used as a dentifrice, it may have added thereto a suitable flavoring substance where desired. It will also be found preferable to use light-colored woods under such circumstances, as the darker colored ones do not have a favorable physiological appeal.

It will be seen from the above that the scraping, cleaning, scrubbing and polishing medium of this invention may be the wood particles alone, either with or without water, and with or without adding detergents and/or flavoring materials. Where ingredients other than the wood particles are to be incorporated, the latter will always be present in a preponderating ratio.

While the invention has been shown and described with particular reference to specific embodiments, it is to be understood that it is not to be limited thereto but is to be construed broadly and restricted solely by the scope of the appended claims.

What is claimed is:

1. A cleaning and polishing medium containing hard wood particles, the dimension of the major portion of which across the grain is greater than that with the grain the faces of the major portion of the particles across the grain lying in substantially parallel planes, a face with the grain joining a face across the grain at an abrupt angle forming a scraping edge.

2. A dentifrice containing hard wood particles, the dimension of the major portion of which across the grain, is greater than that with the grain the faces of the major portion of the particles across the grain lying in substantially parallel planes, a face with the grain joining a face across the grain at an abrupt angle forming a scraping edge.

3. A dentifrice containing hard wood particles, the dimension of the major portion of which across the grain is greater than that with the grain the faces of the major portion of the particles across the grain lying in substantially parallel planes, a face with the grain joining a face across the grain at an abrupt angle forming a scraping edge, and a detergent.

4. The dentifrice of claim 3 in which the dimension of the major portion of the hard wood particles across the grain is about .03" and the dimension with the grain is less than about .03", the major portion of the total number of said particles passing through a screen having apertures of about .03".

GEORGE T. FIELDING.