UNITED STATES PATENT OFFICE.

GEORGE C. W. BELCHER, OF ST. LOUIS, MISSOURI.

ANTISEPTIC SOAP.

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To all whom it may concern:

Be it known that I, GEORGE C. W. BELCHER, of St. Louis, Missouri, a citizen of the United States, have invented a new and useful improvement in antiseptic compounds adapted to disinfecting, deodorizing, purifying, and other analogous purposes and in the process of manufacturing the same, of which the following is a specification.

In the manufacture of distinfecting soaps it has been common to mix disinfecting materials with the soap in the liquid or plastic state, so as to form a solution pervaded by the disinfectant substance, the soap forming merely a diluent thereof. The intimate union between the component parts, which is the result of so combining them, is objectionable, in that it in a measure neutralizes the efficiency of the antiseptic or disinfecting agents, and because it is apt to lock them up, so that they are not liberated as readily as desirable when brought in contact with the liquids upon which they are designed to act, while the blocks formed when the component parts are in solution are liable to crack open under the action of the atmosphere or to be otherwise injuriously affected thereby. Moisture and air are both deleterious to many of the antiseptic and disinfecting ingredients, and if they are so solved with the soap as to form a practically homogeneous substance throughout they are in a measure destroyed in the manufacture, and many otherwise desirable antiseptic substances are unavailable, because the excess of alkali usually present in soap prevents their being solved with the soap, or because the water which solves the soap would cause or permit chemical action to take place.

The object of my invention is to provide at small cost blocks or cakes in which these disinfecting or antiseptic agents shall be securely housed, without dilution, and protected against liberation through the action of air and moisture when not called into effective use while being readily liberated by the contact of the substances upon which they are designed to act. It is especially adapted for use in urinals, but is capable of application to many other purposes.

The essential feature of my invention consists in compacting the disinfecting or antiseptic agents with the soap or other matrix or gangue while both are in a comminuted state and substantially free from moisture, the compression applied being such as to form a solid or cohesive block or cake without having either material brought to a solvent or plastic state.

In practice I commonly take ordinary soap, reduce it while substantially dry by means of any convenient chopping knife or machine to a comminuted state, mingling with it, either during the operation of comminuting or subsequently, the antiseptic or disinfecting material which has already been reduced to a similar state. I then compact the intermingled substances into blocks or cakes by hydraulic or other suitable pressure. The agents used are thus preserved in their integrity with no dilution or impairing of their respective properties. The soap, instead of neutralizing the chemical agents, serves to bind them together and seal them against the action of air and moisture, so that no escape or deterioration is possible, except as the solution of the soap or matrix by the contact of the substance upon which they are intended to act unlocks and releases them, when each particle acts with its unalloyed vigor, but without communicating its disintegration to other particles which lie within and remain intact until they are in turn called into play by the further solution of their matrix.

The antiseptic and disinfecting agents may be of any character possessing the chemical properties desired, and may be mixed in coarser or finer grains, or mixed more or less thickly through the soap, according to the use to which they are to be put. I have used them in different degrees of fineness, varying from approximately the size of granulated sugar to approximately the size of peas. For some purposes it may be desirable to exceed those limits, though for most purposes a mean between them will be preferable.

I have found the following, among other antiseptic, disinfecting, or deodorizing agents, to be suitable for the purpose, to wit: sulphate of alumina, protosulphate of iron, sulphate of copper, sulphate of zinc, chloride of lime, also such agents as salicylic acid, benzoic acid, and thymol. I mention these as illustrations, there being many others to which my invention is equally applicable, and which may be

selected with reference either to economy or to the particular property which is most desired. They may be used severally or two or more of them collectively in the same article.

While I have found soap the most satisfactory matrix, the advantages of my invention may be in a measure secured by using other soluble matrices possessing the requisite cohesiveness and solidity under ordinary atmospheric conditions. Among others I have used grape-sugar, but have found it to dissolve so readily that, for ordinary purposes, I consider it less satisfactory than soap. An ordinary meat-chopper will answer for the purpose of comminuting the soap.

Where the disinfecting agents are united with the soap by solution it is difficult to incorporate them in greater proportion than from twenty to twenty-five per cent., while, by my method, there is no difficulty about incorporating as high as seventy per cent. of active agents.

I claim—

As a new article of manufacture, the herein-described block or cake for neutralizing the noxious properties of substances to which it is applied, consisting of a matrix of soap or equivalent solvent and cohesive material having the chemical agents in a granular form embedded therein, substantially as described.

GEO. C. W. BELCHER.

Witnesses:
WM. L. BODLEY,
GEO. K. ANDREWS.