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DRAINPIPE-CLEANING COMPOSITION.

No Drawing.

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This invention relates generally to compositions of the type which in use liberate a gas, and more particularly to compositions known as drain-pipe cleaners containing a cleansing or detergent agent such as caustic soda and a gas-liberating agent such as aluminum powder.

Drain-pipe cleaners of the type referred to in use liberate malodorous and irritating gases or vapors, and since hydrogen which is the only gas generated by the interaction of caustic soda and aluminum powder in the presence of water is an odorless and non-irritating gas, I attribute the irritating action of the gas liberated in the use of such compositions to the spray of the cleansing agent, for instance, caustic soda solution, carried into the atmosphere with the gas generated, for instance the hydrogen.

I have found that if the cleaning composition during the liberation of the gas is blanketed with a foam or froth so that the gas before passing into the atmosphere is scrubbed by the foam or froth, the irritating and malodorous character of the evolved gas is eliminated.

My invention, therefore, resides generally in scrubbing gases evolved from liquids by means of foam or froth, and more particularly in the provision of gas-generating compositions comprising a foaming or frothing agent.

The invention has, as is apparent, a wide range of use, being applicable generally in cases in which gases are liberated from caustic, irritating, malodorous or similar liquids, but will be described and illustrated hereinafter by reference to compositions of the type of the so-called drain-pipe cleaners to which the invention is particularly applicable, it being understood that the invention is not limited thereto, excepting as is indicated in the appended claims.

A typical drain-pipe cleaner is one containing a large proportion of caustic soda, say 98%, a small amount of metal powder, such as aluminum powder, or an aluminum-zinc alloy powder, say $\frac{3}{4}$ to $1\frac{1}{2}\%$, with or without coloring material, perfuming material, etc. In use the composition is introduced with water into the drain-pipe or opening to be cleansed, where the caustic soda acts upon the foreign material in the pipe, dissolving and loosening it and at the same time reacts with the aluminum powder, liberating hy-

drogen, which serves to agitate the mixture, and eventually passes off into the surrounding atmosphere carrying with it a spray of caustic soda solution and perhaps also material dissolved from the drain-pipe. This evolved gas or spray is malodorous and highly irritating, and therefore very objectionable.

The hydrogen gas evolved is of course inflammable and when mixed with air gives an explosive mixture, and it has been proposed to add an oxidizing agent to compositions of the type referred to, presumably for the purpose of oxidizing the hydrogen formed by the interaction of the caustic alkali and the metal powder and preventing its evolution.

The object of the present invention is not to prevent the evolution of gas by the cleaning composition, this being regarded as an essential or at least a highly important feature of such compositions, but to render the evolved gas non-irritating and unobjectionable.

In accordance with my invention there is added to the cleaning composition a foaming or frothing agent. There are a great variety of materials suitable for this purpose, for example goulac (sulfite cellulose pulp waste), glue, mucilage and Romanco stucco retarder (a material prepared from hoofs and other similar stock-yard waste material and commonly used as a retarder in plaster of Paris mixtures). Such materials are used in quantity sufficient, for example about 1% of the cleaning composition, to produce a heavy blanket of foam or froth on top of the mixture or solution of the cleaning composition with water.

The resulting composition in use evolves hydrogen or other gas, as described above, and due to the presence in the composition of the foaming or frothing agent develops a blanket of foam or froth, through which the gas must pass before it is liberated into the atmosphere. This blanket of foam serves to scrub the gas and to thereby remove from it any non-gaseous particles, such as spray of caustic soda solution, so that a clean, practically odorless and non-irritating gas is evolved.

The improved compositions of my invention therefore comprise as essential ingredients a cleansing agent, such as caustic soda, a material such as metal powder, which in the use of the composition generates a gas, and

a foam- or froth-producing agent. It is conceivable that the cleansing agent and the gas-liberating agent may be one and the same material, and it is possible that the cleansing, 5 gas-generating and foam-producing properties may be embodied in a single material, and consequently it will be understood that the invention embraces compositions having the three properties referred to, regardless of 0 whether these properties are conferred by three different materials or by materials possessing combinations of the properties.

I claim:—

1. A drain-pipe cleaning composition com-

prising caustic alkali, a finely divided metal 15 capable of reacting with caustic alkali in the presence of water with the liberation of hydrogen, and a foam-producing organic colloid.

2. A drain-pipe cleaning composition com- 20 prising caustic alkali, finely divided aluminum and goulac.

3. A drain-pipe cleaning composition comprising caustic soda not less than about 95%, 25 aluminum powder not over about 2% and goulac about 1%, the parts being by weight.

In testimony whereof, I affix my signature.

EDWARD A. TAYLOR.