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UNITED STATES PATENT OFFICE.

CHARLES McADAM AND VICTOR O. OLSEN, OF CHICAGO, ILLINOIS, ASSIGNORS TO CHARLES McADAM CO., OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

BLEACHING AND CLEANING COMPOSITION.

No Drawing. Application filed November 3, 1921. Serial No. 512,533.

To all whom it may concern:

Be it known that we, CHARLES McADAM and VICTOR O. OLSEN, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bleaching and Cleaning Compositions, of which the following is a specification.

This invention relates to new and useful improvements in bleaching compositions, for the purpose of reducing and removing stains such as rust, iodine, fruit, iron, and ink stains from fabrics, and to the process of preparing the same.

It is well known that certain acids attack stains but the action of these acids is such as to injure the fabric. Hydrofluoric acid, for example, we find to be an active bleaching and stain reducing agent, and in the case of rust stains, it changes the brown iron oxide to a colorless iron salt.

To dilute this acid, or other stain reducing acids, tends to decrease their effectiveness as bleaching agents. We have discovered that by first diluting an acid with water and then strengthening the bleaching or reducing agent by the addition of another bleaching agent, the bleaching action is more positive and certain, while the otherwise destructive effects upon the fabric are reduced to a minimum.

Our new bleaching composition may be prepared from the following formula:

Hydrofluosilicic acid (H_2SiF_6) 16 parts by weight.

Water (H_2O) 16 parts by weight.

Hydrofluoric acid (HF) 3 parts by weight.

In compounding this preparation, we prefer to first thoroughly mix the hydrofluosilicic acid with the water and afterwards add the hydrofluoric acid. We have found, however, that this order may be reversed. We have also found in use that these acids, when diluted as above described, have great chemical activity and yet do not injure the fabrics to which they are applied. We have found it undesirable, because of its chemical activity, to put up the composition in ordinary glass, tin or iron containers, and prefer to use lead tubes.

Our composition may be used successfully in laundries and in so called dry cleaning processes. When the garments have been thoroughly washed and the soap suds rinsed out, we then apply our liquid compound which neutralizes the alkalies. The garments are then rinsed in the usual manner, and will be found to be free from stains.

We claim as our invention:

1. A bleaching composition consisting of hydrofluosilicic acid, water and hydrofluoric acid.

2. A bleaching composition containing hydrofluosilicic acid, sixteen parts by weight, water, sixteen parts by weight, and hydrofluoric acid, three parts by weight.

In testimony, that we claim the foregoing as our invention we affix our signatures in the presence of two witnesses, this 31st day of October, 1921.

CHARLES McADAM.
VICTOR O. OLSEN.

Witnesses:
B. L. MACGREGOR,
JENE MEREDITH.