

# United States Patent Office.

HENRY JULIUS SMITH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO JOSEPH C. WIGHTMAN, OF NEWTONVILLE, NEW YORK.

*Letters Patent No. 71,919, dated December 10, 1867.*

IMPROVED METHOD OF HARDENING AND BLEACHING ARTICLES MADE OF SOAPSTONE, TALC, &c.

*The Schedule referred to in these Letters Patent and making part of the same.*

TO ALL WHOM IT MAY CONCERN:

Be it known that I, HENRY J. SMITH, of Boston, in the county of Suffolk, and Commonwealth of Massachusetts, have invented a new and improved method of manufacturing useful and ornamental articles from the natural products known as soapstone, talc, silicates of magnesia, silicates of alumina, and silicates of magnesia and alumina, namely, a new and improved method of toughening and hardening such articles after they are shaped from the raw material, and of bleaching or decolorizing such articles, either before or after the hardening process.

My process is as follows: I use a soft soapstone, free from grit. The other materials named can be used, when free from grit. After giving the desired form—as, for example, that of knife-handles or pistol-handles—to the substance employed, I put the articles so formed in intimate contact with some kind of carbon, (I prefer finely-ground bone-coal or plumbago,) into a closed vessel, of suitable material for resisting heat, and submit the vessel and contents to heat for an hour or more, removing the same when a white heat has been reached. The articles are then found to be hard and tough.

For the purpose of decolorization or bleaching, I have used generally a bath of melted common salt, in which the articles may have been placed previous to fusion of the salt, or immersed after it is fused. The articles should remain in this bath a longer or shorter time, in proportion to the size of the article and its degree of discoloration, but the heat must not be carried to the point of vaporization of the salt. By this process the articles will be bleached of their impurities.

## *Claim.*

What I claim as new, and desire to secure by Letters Patent, is—

1. The heating in a closed vessel, and in contact with carbon, the above-described substances, or articles formed therefrom, for the purpose of hardening and toughening the same, substantially as above described.
2. Also, the removal, either before or after the hardening process, of impurities producing discoloration, by the action of a bath of melted chloride of sodium, or other chemical compound operating in like manner.

HENRY JULIUS SMITH.

Witnesses:

FRANCIS V. BALCH,  
CHAS. J. HAYDEN.