

# United States Patent Office.

EDWARD H. ASHCROFT, OF LYNN, MASSACHUSETTS.

*Letters Patent No. 76,133; dated March 31, 1868.*

## IMPROVED COMPOUND FOR USE IN SAFES AND POWDER-MAGAZINES.

*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, EDWARD H. ASHCROFT, of the city of Lynn, county of Essex, and State of Massachusetts, have invented an Improvement in Protecting Safes from the Action of Heat, by the use of chemicals placed within the outer walls of the same; and I do hereby declare that the following is a full and exact description of the same.

The object of my invention is to provide materials or compounds, to be used in one of the inner compartments of safes, and around the chambers of powder-magazines, which, upon the action of a certain degree of heat, will evolve incombustible gases or vapor, thus protecting the contents of the safe or magazine from the destroying action of heat or fire.

To enable others skilled in the art to make use of my invention, I will proceed to describe the same.

I make use of certain salts or chemicals which I have found to answer the above purpose, such as bicarbonate of soda, carbonates of ammonia, or other volatile salts, with or without a liquid acid.

I place in one of the inner perforated compartments of a safe, or in several different places around the chamber of a powder magazine, metallic tubes or vials, filled with a liquid acid, (sulphuric acid, for instance,) one or both ends of such tube or vial being stopped with an easily-fusible alloy. I surround this, and place in immediate contact with it, bicarbonate of soda. I then put into the compartments a large proportion of carbonate of ammonia, or other volatile salts.

In case the safe, or chamber of the powder-magazine, becomes heated to about  $212^{\circ}$  F., the above-mentioned fusible alloy melts, thus opening the vial; the acid runs out, and, coming in contact with the surrounding bicarbonate of soda, immediately eliminates carbonic-acid gas, which fills the safe or powder-magazine, and is non-combustible. The evolution of this gas having ceased, and if the safe or powder-magazine is still longer heated, the carbonate of ammonia or other volatile salt vaporizes slowly, and, being also non-combustible, protects the contents of the safe or powder-magazine.

I do not limit myself to these particular salts, nor do I limit myself to any particular proportions, nor is it absolutely necessary to use the liquid acid, as the volatile salts will answer the purpose more or less perfectly by themselves.

I am aware that somewhat similar compounds or materials have been heretofore used for extinguishing fire and flame, but my invention is for use in safes or powder-magazines, as a protection against the action of heat, on the land or on board of vessels.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

The salts or chemical compounds herein described, with or without liquid acids, or any other materials substantially the same, all as and for the purposes set forth.

E. H. ASHCROFT,

Witnesses:

EDWIN J. WRIGHT,

CHARLES E. ASHCROFT.