

# UNITED STATES PATENT OFFICE.

TERENCE SPARHAM, OF BROCKVILLE, ASSIGNOR OF ONE-HALF TO HENRY C. MITCHELL AND JOHN E. HULETT, OF TORONTO, CANADA.

## BOILER-COVERING.

SPECIFICATION forming part of Letters Patent No. 512,524, dated January 9, 1894.

Application filed April 14, 1893. Serial No. 470,367. (No specimens.)

*To all whom it may concern:*

Be it known that I, TERENCE SPARHAM, a subject of the Queen of Great Britain, residing at Brockville, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Boiler-Coverings, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention has relation to a composition of matter intended for use as a covering for steam boilers and all other structures intended for the production, distribution and application of heat, the object being to prevent radiation and loss of heat. Among the ends in view are the production of a non-conducting substance which shall be cheap, comparatively light, porous, that is, interiorly disposed into numerous cells which will constitute within the composition multitudinous dead-air spaces or vacuums more or less perfect. These cells are non-communicating and tend to reduce the weight of the composition as a whole, so that radiation and loss of heat are prevented without the addition and undue weight of material to a structure.

Other objects and advantages of the invention will appear in the following description and the novel features will be particularly set forth in the claims.

For the body of my composition I use mica and soap-stone each in a more or less finely-powdered condition and I thereby secure the well-known advantage common to each in that each is materially unaffected by ordinarily high temperature especially by such high degrees thereof as will naturally exist in steam-producing and heating apparatuses. I employ as a binder, molasses. As it requires approximately 400° Fahrenheit to burn sugar or the saccharine principle of molasses, it will serve as a binder for all structures intended for the production or application of heat below that temperature. I employ bi-carbonate of soda for the production of the cellular structure which lightens the mass at the same time.

I do not limit my invention to any particular proportion of each of the ingredients as the same may be modified to produce variable effects for different or specific purposes but as a standard formula for producing a covering for ordinary structures used under ordi-

nary circumstances and conditions I find the following proportions to be eminently satisfactory: mica two parts, soap-stone two parts, molasses one part, bi-carbonate of soda one-hundredth part. As above stated, however, these proportions may be varied as desired for special purposes, conditions of use and the degree of temperature to which the substance is to be subjected.

The composition is prepared in the following manner: I boil water sufficient in quantity to give the composition a mortar-like consistency, for one half hour, the molasses and soda being mixed therewith and while hot I add the mica and the soap-stone. The composition when properly fixed having the consistency of mortar can be applied to a structure by means of a jacket arranged about and at a distance from the structure to form a surrounding space into which the composition may be poured. A covering of wire cloth may if desired, be first placed within the jacket and will serve to hold the composition in place until it is hardened by the application of heat and said jacket may remain as a protector to the composition. An outer covering of any water proof material may be applied for example, a composition of mica, soap-stone and coal-tar which would give a water-proof and enameled or finished exterior. A coat of ordinary paint may be used as an exterior finish but the composition itself will not require an exterior coating except where it is exposed to excessive moisture.

What I claim is—

1. A heat non-conducting composition consisting of mica, soap-stone, molasses and bi-carbonate of soda, substantially as and for the purpose set forth.

2. A heat non-conducting composition of matter consisting of mica, soap-stone, a saccharine binding medium and bi-carbonate of soda, substantially as specified.

3. In a heat non-conducting compound, mica, soapstone, and a saccharine binder, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

TERENCE SPARHAM.

Witnesses:

L. C. HILLS,  
HEATH SUTHERLAND.