(No Model.)

R. STEWART.

BOILER COVERING.

No. 349,183. Patented Sept. 14, 1886.

FIG. 1

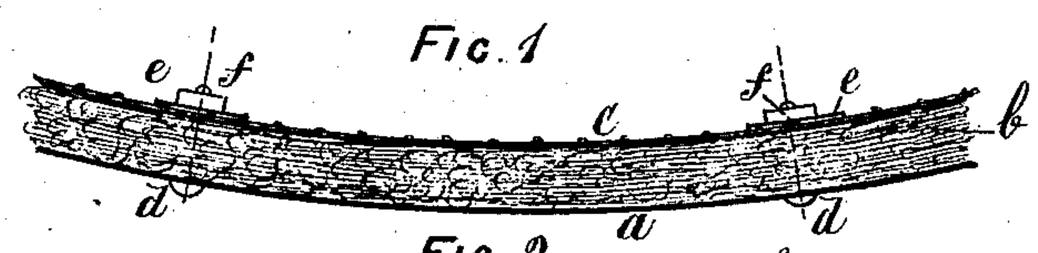


FIG. 2

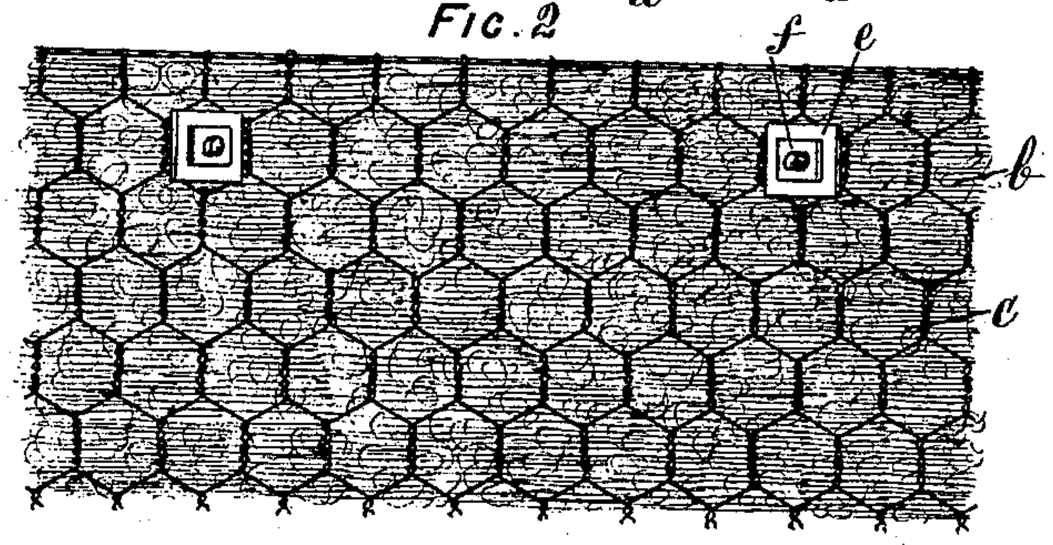
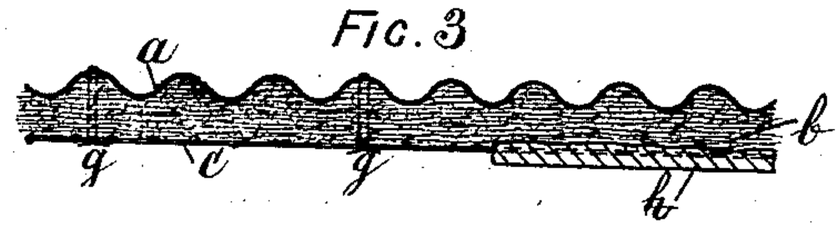


FIG. 3



Witnesses:-
W. R. Haight
A. Zickl

Inventor:-
Robert Stewart
by Wm H Babcock
Attorney

UNITED STATES PATENT OFFICE.

ROBERT STEWART, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

BOILER-COVERING.

SPECIFICATION forming part of Letters Patent No. 349,183, dated September 14, 1886.

Application filed April 27, 1886. Serial No. 200,258. (No model.)

To all whom it may concern:

Be it known that I, ROBERT STEWART, manufacturer, a subject of the Queen of Great Britain, residing at London, in the county of Middlesex, England, have invented a certain new and useful Improved Compound Material to be used as a Boiler-Covering, or for the walls or Roofs of Buildings; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the drawings accompanying the same.

My invention relates to an improved combination of what is known as "silicate, cotton, or slag-wool with a sheet-metal plate and wire-net;" and the object of my invention is to facilitate the application of the material as a covering for boilers or for walls or roofs by making it complete in itself, so that it can be quickly and easily fitted, removed, and replaced, when desired. I attain this object by the method illustrated in the accompanying drawings, in which—

Figure 1 is a section, and Fig. 2 a view from inside, of the material curved to fit the surface of a steam-boiler. Fig. 3 shows in section the compound material applied as a house-wall. It may also be used in roofs and other parts of a building.

The same letters of reference indicate similar parts in the several figures.

In Figs. 1 and 2, *a* is an outside sheet, of iron or other metal, plain or galvanized. *b* is a sufficient thickness of silicate, cotton, or slag-wool, and *c* is an inner covering, of iron or other wire-netting. *d d d* are bolts or studs fitted or fixed into the outside sheet of metal *a*, and projecting through the inner wire-netting, *c*, the whole being held together by washers *e* and nuts or pins *f*. The outer metal sheet, *a*, is first shaped and fitted to the surface of the boiler, as shown, and the bolts or studs *d d d* having been then fitted in their places, I lay on a sufficient thickness of the silicate, cotton, or slag-wool *b*, manufactured, in the usual well-known way, in thin sheets or plates, until the requisite uniform thickness has been obtained, and upon it I fit and press down the sheet of open wire-netting *c* until the washers *e* and nuts *f* can be fixed upon the ends of the bolts *d*, so that the mineral cotton or wool *b*, with its outer and inner metal coverings, *a* and *c*, are all held firmly and durably together.

The compound material or covering, prepared as described, can be fixed to the boiler to which it is fitted by means of studs screwed into the boiler and passing through corresponding holes in the covering, nuts being screwed upon the outer ends of the studs, or wooden or other ribs may be fixed to the boiler at intervals, and the covering nailed or screwed to these ribs; or it may be held by external bands or hoops passing round the covering and holding it down upon the boiler, or by other equivalent means, according to the shape and position of the boiler.

If the outer metal, *a*, is sufficiently thin, the compound covering may be made in flat sheets and subsequently bent to their place.

In Fig. 3 is shown, in section, the compound material used as the wall of a building. In this case the exterior sheet, *a*, is shown corrugated, instead of flat, in order to give greater strength and rigidity, and the outer sheet, *a*, the mineral, cotton, or wool *b*, and the inner wire-net, *c*, are held together by double-ended wires *g*, passed through holes in the outer sheet, *a*, and having their inner ends bent over upon the wire-net *c*. Plaster or cement may be applied upon the surface of the wire-net *c*, as shown in section at *h*, in order to give greater finish to the inside of the building.

The improved compound covering made and used in the way described and shown is complete in itself, fire-proof, very durable, a good insulator and non-conductor of heat, easy of application, and readily removed and replaced, while it is weather-proof, vermin-proof, and well adapted for roofing or covering in hot climates.

I am aware that silicate, cotton, or slag-wool has been used as a covering for boilers, but it has been difficult to apply and to remove and replace, and I do not claim its use for such purpose; nor do I claim any particular method of manufacturing the silicate, cotton, or slag-wool which may be made in the method ordinarily used; but

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

1. The combination of silicate, cotton, or slag-wool *b*, held between a sheet of metal, *a*, on its outer side, and a sheet of wire-netting, *c*, on its inner side, so as to form an independent compound material, substantially as set forth and shown.

2. The combination, with the silicate, cotton, or slag-wool *b*, the metal sheet *a*, and wire-netting *c*, or two sheets of wire-netting, *c*, the double-ended bent wires *g*, substantially as and for the purpose set forth and shown.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT STEWART.

Witnesses:

ARTHUR E. EDWARDS,

E. M. RIDGWAY.