Jan. 23, 1923. 1,443,221

J. HAWKRIDGE ET AL.

NONCONDUCTING COVERING FOR BOILERS AND OTHER VESSELS.

FILED NOV. 3, 1921. 2 SHEETS-SHEET 1

Fig. 1.

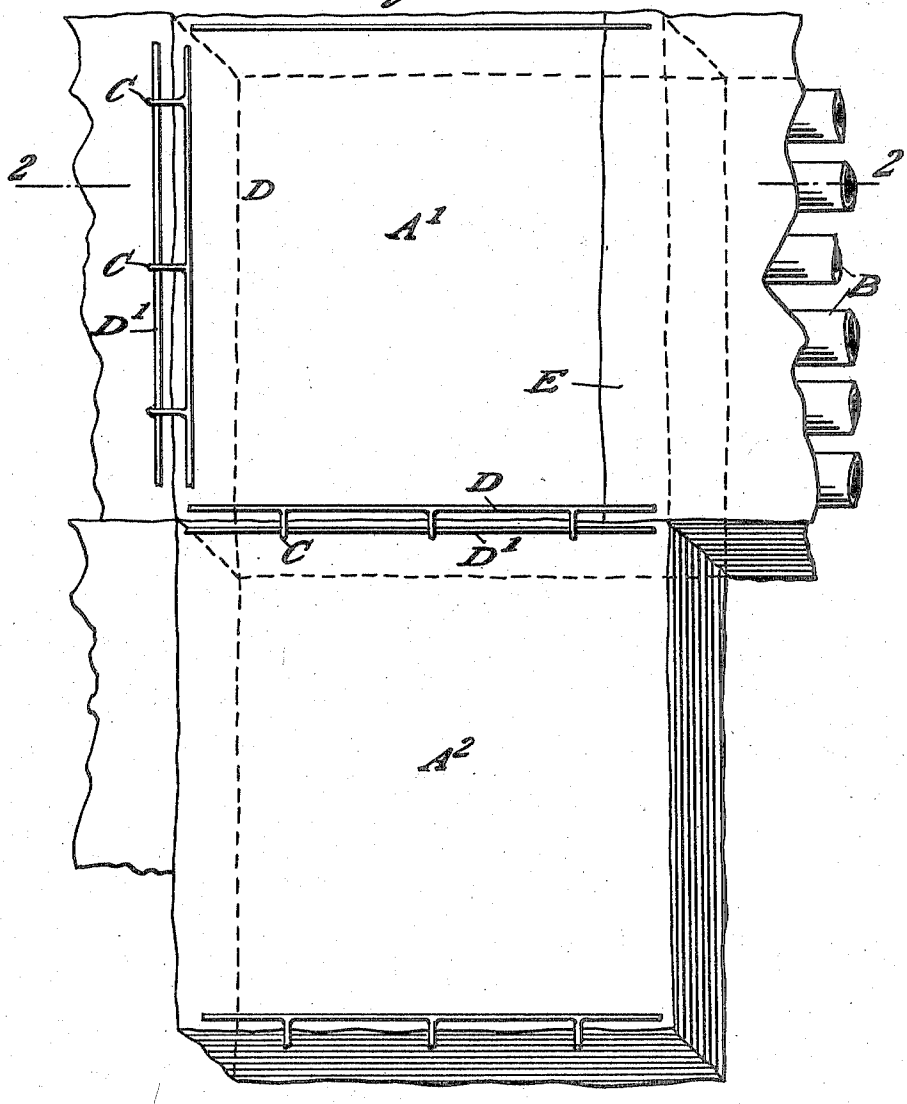
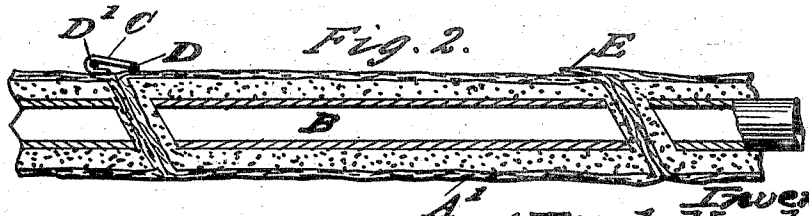


Fig. 2.



Inventors
Joseph Hawkridge
David Robertson
Charles Tessonneaire

By

Louis L. Norris

Attorney

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Fig. 3.

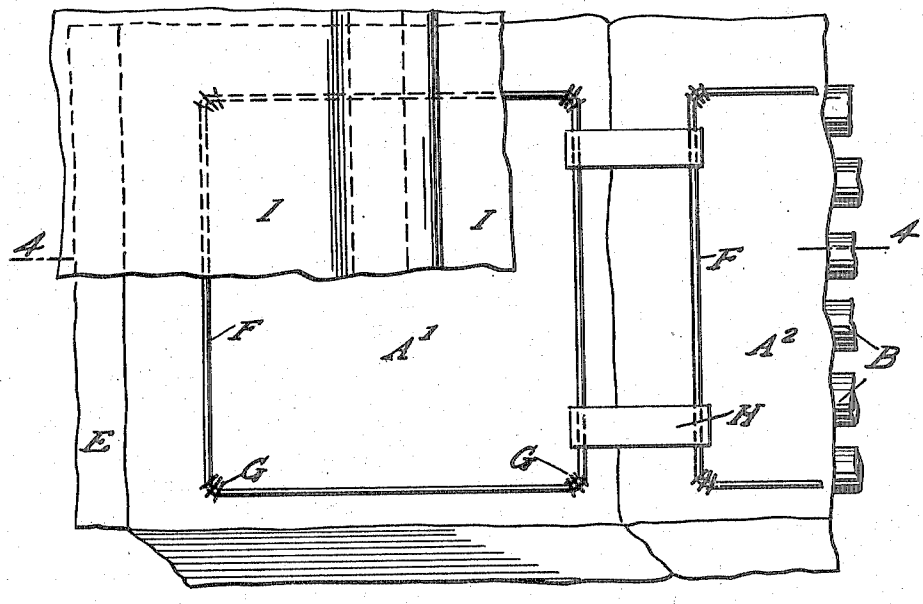
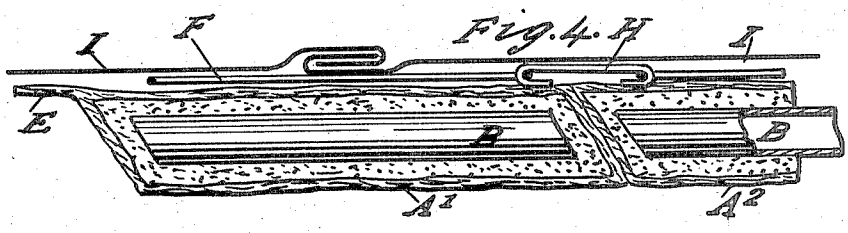


Fig. 4.



Inventors
Joseph Hawkridge
David Robertson
Charles Jesy Rainne
By
Miller L. Ramey
Attorney

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UNITED STATES PATENT OFFICE.

JOSEPH HAWKRIDGE, DAVID ROBERTSON, AND CHARLES JESU NAIRNE, OF LONDON, ENGLAND.

NONCONDUCTING COVERING FOR BOILERS AND OTHER VESSELS.

Application filed November 3, 1921. Serial No. 512,683.

To all whom it may concern:

Be it known that we, JOSEPH HAWKRIDGE, DAVID ROBERTSON, and CHARLES JESU NAIRNE, all subjects of the King of Great Britain, all residing in London, England, have jointly invented certain new and useful Improvements Relating to Nonconducting Coverings for Boilers and Other Vessels, of which the following is a specification.

The invention consists in improvements relating to fire-resisting coverings or laggings for preventing the passage of heat out of or into boilers or other vessels.

According to the invention, millboard tubes of asbestos or of other suitable fire-resisting material are inserted in slabs composed of fibres of similar material and covered by a wrapping of woven fibres also of the same material.

These tubes are of any required number and vary in diameter to suit the thickness of the mattress and by the air spaces provided improve the non-conducting property of the covering.

In the usual practice the coverings have been made in sizes to extend over large surfaces, but their dimensions render it difficult to place and keep them in position and when repairs are necessary the lagging is often torn and rendered unfit for further use.

According to the invention, these drawbacks are obviated by making the coverings of slabs of comparatively small size, for example about a foot square, which are easily manipulated and can be securely linked together by means described below.

Metal sheets suitably interlocked are provided to protect the fastenings of the coverings, more particularly at places, such as the tops of the boilers, where they are liable to be trodden on.

In the accompanying drawing which represents an example of a covering according to the invention, Fig. 1 is a view showing two slabs connected together, Fig. 2 is a section on the line 2—2 of Fig. 1, Fig. 3 shows two slabs joined together in a slightly modified manner; Fig. 4 is a section on line 4—4 of Fig. 3.

Referring to Figs. 1 and 2, A^1, A^2 are two slabs of asbestos-filled fibre enclosed in a woven wrapping of the same material; B are tubes of asbestos mill board containing air and enclosed in the wrapping; C are hooks provided on wires D secured in any suitable manner to the slabs near the edges of the latter and adapted to engage with the similarly arranged wires D^1 of the adjacent slab. An overlapping portion E of the wrapping covers the joint between two slabs which are preferably bevelled as shown.

Figs. 3 and 4 show a modified method of attaching two slabs A^1, A^2. F is a rectangle of wire secured by thin wires G to the wrapping of the slab A^1; H are metal bands of the form shown in Fig. 4 connecting the slab A^1 with the slab A^2 by a hinged joint. The end slab at each side of the boiler may be fastened to an angle iron by similar means. The wire F also serves to prevent direct contact between the slabs and the boiler plating and provides a thin layer of air between these parts which lessens the thermal conductivity and allows any moisture deposited on the plating to escape. The hinge joints may be replaced by copper or other wire, lacing together the adjacent wires.

Metal sheets I cover the joints, each sheet being bent back upon itself at its ends to engage with the ends of the next adjacent sheet as shown.

Having thus described the nature of the said invention and the best means we know of carrying the same into practical effect, we claim:

1. A boiler lagging comprising fibres of fire-resisting material of low thermal conductivity, tubes of a material having similar properties inserted and retained within said fibres and a wrapping of similar material enclosing said fibres.

2. A boiler lagging consisting of slabs of asbestos fibre, tubes of asbestos inserted in said slabs and a wrapping of felted asbestos fibres enclosing said slabs.

3. A boiler lagging comprising small slabs of asbestos, tubes of asbestos inserted in said slabs, wires secured to said slabs and metal hooks forming hinged joints connecting said wires on said adjacent slabs.

4. A boiler lagging comprising small slabs of asbestos, said slabs being bevelled at the edges, tubes of asbestos inserted in said slabs, wires secured to said slabs and metal hooks forming hinged joints connecting said wires on said adjacent slabs.

5. A boiler lagging comprising small slabs

of asbestos, wires substantially of rectangular form secured to said slabs and metal strips with hooked ends connecting said wires on adjacent slabs.

6. A boiler lagging comprising small slabs of asbestos, wires secured to said slabs, metal hooks forming hinged joints connecting said wires on said adjacent slabs, and metal sheets hooked together covering said joints.

7. A boiler lagging comprising small slabs of fire-resisting material of low thermal conductivity, tubes of a material having similar properties inserted in said slabs, wires of substantially rectangular form secured to said slabs and metal strips with hooked ends connecting said wires on adjacent slabs.

In testimony whereof we have signed our names to this specification.

JOSEPH HAWKRIDGE.
DAVID ROBERTSON.
CHARLES JESU NAIRNE.

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