(No Model.)

H. C. BRADLEY.

NON CONDUCTING COVERING FOR STEAM PIPES, &c.

No. 259,744. Patented June 20, 1882.

Fig 1

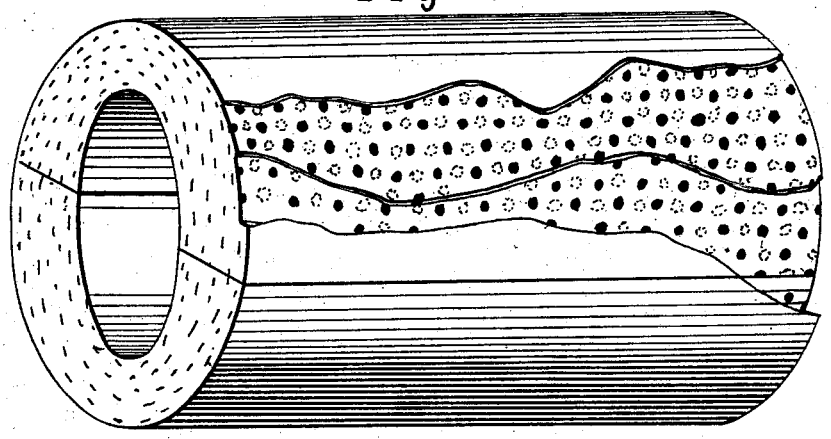
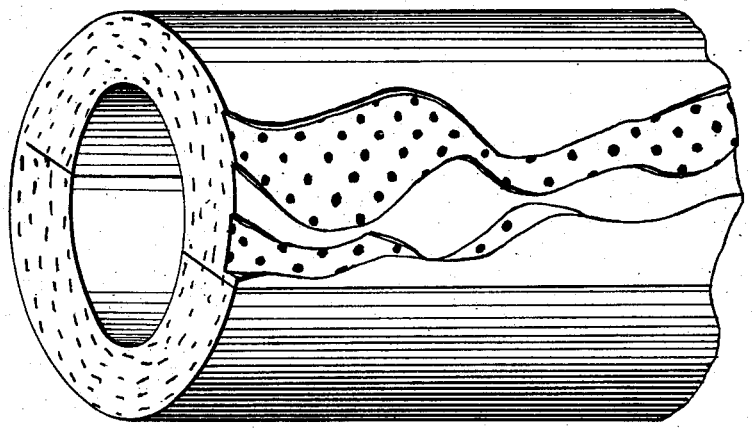


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY C. BRADLEY, OF MILWAUKEE, WISCONSIN.

NON-CONDUCTING COVERING FOR STEAM-PIPES, &c.

SPECIFICATION forming part of Letters Patent No. 259,744, dated June 20, 1882.

Application filed November 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. BRADLEY, a citizen of the United States, residing at the city of Milwaukee, county of Milwaukee, and State of Wisconsin, have invented a new and useful Improvement in Non-Conducting Coverings for Steam-Pipes, Boilers, and other Surfaces, of which the following is a specification.

The object of my invention is to provide a covering for steam-pipes, boilers, and other surfaces, which covering shall have isolated cellular spaces distributed throughout the material composing the covering, these spaces forming confined or dead air chambers within the material with which the steam-pipes, boilers, &c., are covered.

Air-spaces, as heretofore generally constructed in the use of non-conducting coverings, are formed when applying the covering by leaving space between the pipes or surface to be covered and the inner surface of the covering. This space is usually of the same length as the pipe or surface covered, and in no way forms a permanent "confined" or "dead" air space, for the reason that it is impossible to make such a covering permanently air-tight with any materials used for non-conducting purposes. Contraction and expansion and the action of heat and the atmosphere will open the joints and seams and separate the covering from the surface covered, thereby converting these spaces into flues or ventilators, permitting drafts, which carry off the heat, and render such covering of little value. Another serious objection to using coverings with space between the covering and the surface covered is that when an opening occurs into this space at any point drafts immediately take place throughout its whole length and destroy the usefulness of such space.

My invention consists in incorporating isolated cellular or confined air spaces in the covering during the process of manufacture, thereby forming a large number of small permanent non-circulating or confined air-spaces throughout the material composing the covering, thus obviating the objection to air-spaces heretofore used. The cellular spaces, being small and isolated from each other, limit any damage done in breaking into the space to the particular point damaged.

Any suitable material may be used, but I preferably use paper; but do not limit myself to that material.

I attain the improvement above mentioned by the arrangement illustrated in the accompanying drawings.

Figure 1 is a view of the covering, having a portion removed so as to show the isolated cellular spaces which are distributed throughout the material used. Fig. 2 is a view of a section of a covering, having a part of the covering removed so as to show one method of constructing the same, which consists in having two or more alternate layers or wrappings of perforated and non-perforated material.

My covering is constructed by wrapping one or more layers or wrappings of perforated paper or other suitable material around a mandrel, the number of layers or wrappings being limited by the thickness of the covering required, the perforations being so placed and the material used being so wrapped or placed about the mandrel that the perforations in each layer or wrapping are closed by the succeeding layer or wrapping; or the perforations of each layer or wrapping may be closed by alternate or intervening layers of non-perforated material, in either case each layer or wrapping being pasted or cemented together. The covering then may have one or more layers of plain non-perforated material placed about the outside, if desired. The covering is then removed from the mandrel and dried, after which it is cut longitudinally, so that it may be placed about the surfaces to be covered.

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

1. As a new article of manufacture, a non-conducting covering for steam-pipes, boilers, and other surfaces, said covering being composed of two or more layers or wrappings of perforated material, the whole being cemented or pasted together so as to form a series of

confined-air spaces distributed throughout the entire material composing the covering.

2. A non-conducting covering for steam-pipes, boilers, and other surfaces, said covering being composed of two or more alternate layers or wrappings of perforated and non-perforated material, the whole being cemented or pasted together so as to form a series of confined-air spaces distributed throughout and within the material composing the covering.

HENRY C. BRADLEY.

In presence of—
FRANK M. HOYT,
GEO. W. MORTON.