(No Model.)

H. C. MICHELL.

NON-CONDUCTING MATERIAL AND METHOD OF FORMING SAME.

No. 527,439. Patented Oct. 16, 1894.

Fig. 1.

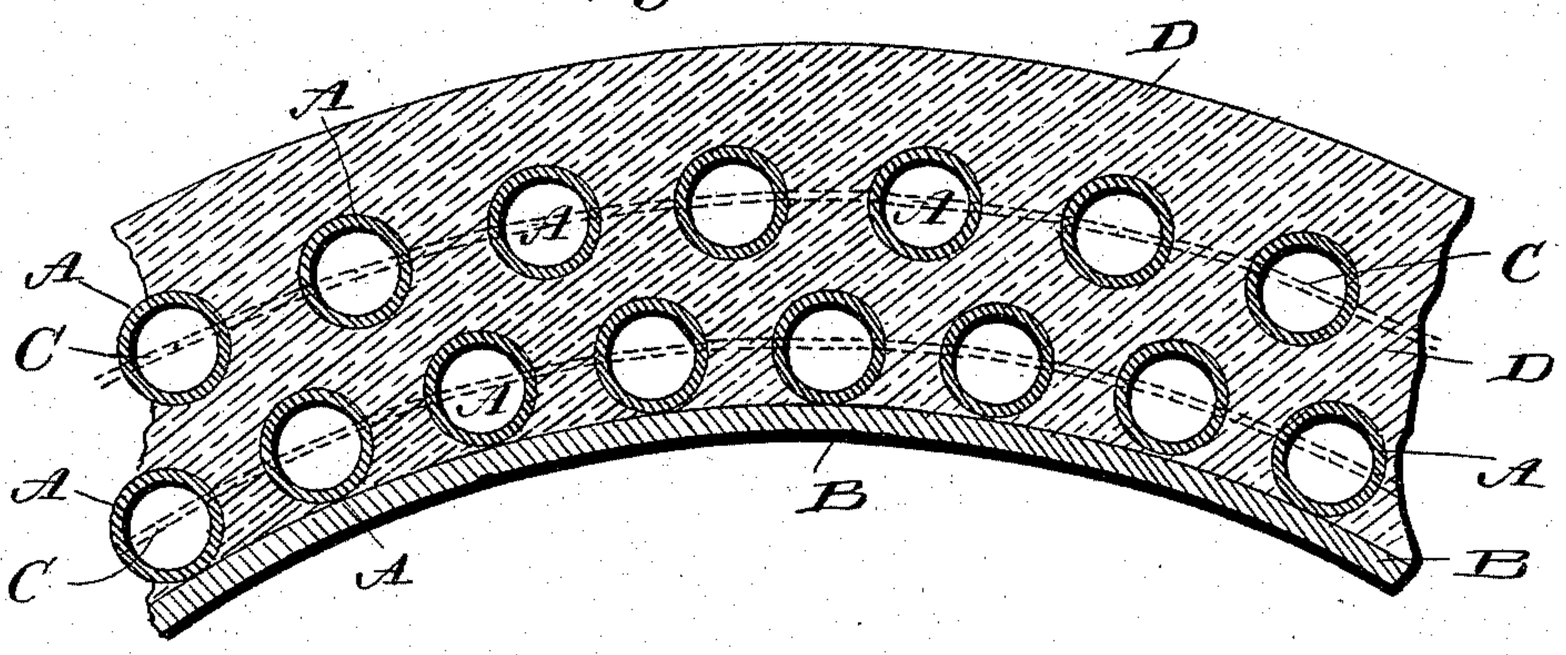
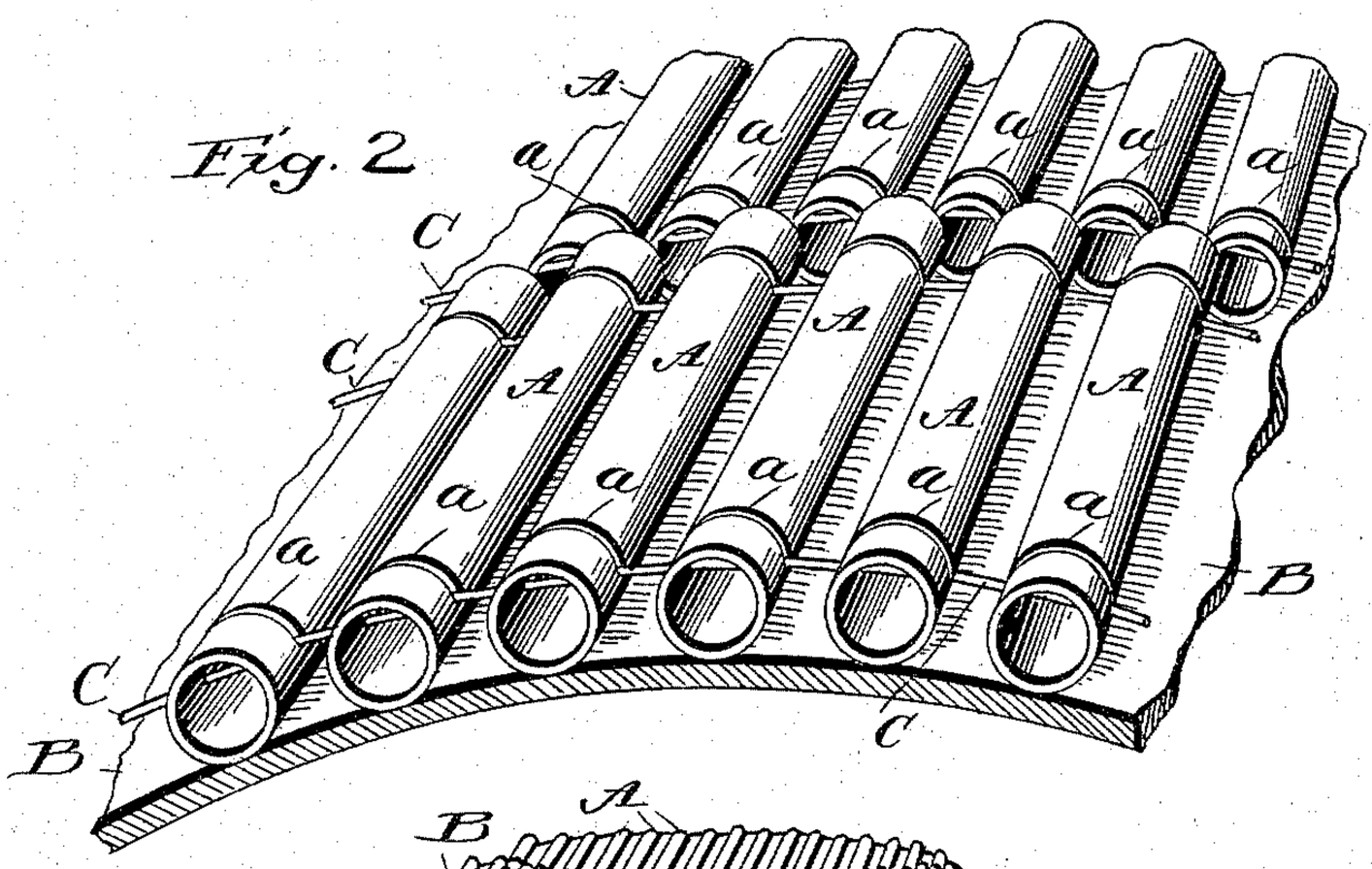


Fig. 2



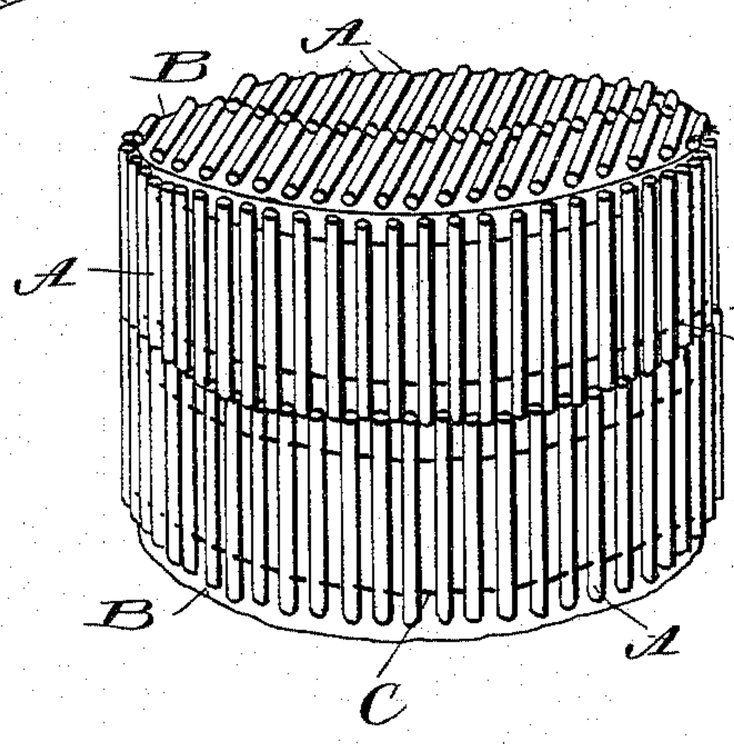


Fig. 3.

Witnesses:
L. C. Hills.
E. K. Bond

Inventor
Henry C. Michell,
by E. B. Stocking
Atty.

UNITED STATES PATENT OFFICE.

HENRY C. MICHELL, OF TORONTO, CANADA.

NON-CONDUCTING MATERIAL AND METHOD OF FORMING SAME.

SPECIFICATION forming part of Letters Patent No. 527,439, dated October 16, 1894.

Application filed April 24, 1894. Serial No. 508,862. (No specimens.) Patented in Canada March 27, 1894, No. 45,642.

To all whom it may concern:

Be it known that I, HENRY C. MICHELL, a subject of the Queen of Great Britain, residing at Toronto, Province of Ontario, Canada, have invented certain new and useful Improvements in Non-Conducting Material and Methods of Forming the Same, (for which I have obtained a patent in Canada, No. 45,642, dated March 27, 1894,) of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in a method of forming an improved non-conductor for use in connection with steam boilers, pipes and any and all uses and places where such article is necessary or desired; also in the article or non-conducting covering itself.

It has for its object among others to provide a simple and cheap covering by a simple and inexpensive method, and one in which its efficacy will be increased by use. I employ some suitable material for forming the air spaces and about which the cement is applied. After the plastic mass has hardened sufficiently the air-space-forming devices may be removed, or they may be of such a material as will quickly be burned out, and as they are burned out the size of the air chambers will be increased accordingly. More or less tubes or pipes may be employed, and they may be arranged at any suitable distance apart. I may sometimes employ a single row, and again two or more according to the character of the use to which the covering is to be put.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claim.

The embodiment of the invention in some of its forms is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a sectional view showing one form of my covering applied about a portion of a boiler. Fig. 2 is a perspective view showing the tubes before the plastic composition is applied. Fig. 3 is a perspective view, on a smaller scale, showing the tubes around a boiler, ready for the application of the plastic composition thereabout.

Like letters of reference indicate like parts throughout the several views.

In carrying out my invention I usually take the desired number of tubes or pipes A, which may be of any suitable material, in most cases being preferably of paper, and arrange them around the boiler or pipe B which it is designed to protect or cover. They may be strung on or held the proper distance apart by cords or wires C, which may be passed through the pipes or tubes, or seated in slots or grooves *a* therein as seen in Fig. 2. These tubes may be placed any suitable distance apart and may extend for a greater or less length. They may be arranged in one or more rows with the rows alternating as seen in Fig. 1, or they may be arranged in short lengths with the tubes or pipes of each two adjacent sets alternating as seen in Fig. 2. Now, having the tubes or pipes arranged around the boiler or pipe the covering is applied thereabout. I may use any suitable material, as for instance a cement which will be applied about the pipes or tubes A as shown in Fig. 1, the tubes or pipes being embedded therein. When a cement is employed the pipes or tubes A may be painted or tarred or covered with any suitable substance to preserve them from the moisture of the cement until the cement is dry. When the plastic composition has hardened the tubes or pipes will be separately embedded therein and each will form a separate and distinct air space or chamber, thus forming a very serviceable non-conductor of heat and cold. After the tubes or pipes are embedded in the plastic mass it is immaterial how long they last, so that they may be made of paper which will in the course of time carbonize by the action of the heat, and when they are destroyed they add the well known non-conducting properties of carbon to the covering, and the space occupied thereby will only add to the size of the air chamber. I may therefore employ tin, bamboo, iron, wood, or cane or any other material, those

which will not be destroyed being withdrawn after the plastic mass has hardened.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

Instead of stringing the tubes or pipes A about the pipe or boiler they may be embedded in a coating of cement or other substance applied directly to the boiler or pipe.

Other variations from the mode of procedure hereinbefore set forth may be had, the essence of this invention being the formation of the air chambers or spaces in the covering D by artificial means, whether the said means be permanently held in the plastic mass or removed therefrom after the same has hardened.

What is claimed as new is—

The combination with tubes or pipes having transverse grooves near their ends, of cords or wires seated in said grooves and a plastic composition surrounding the tubes and wires or grooves, substantially as shown and described.

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

HENRY C. MICHELL.

Witnesses:

G. S. MILLS,

P. G. WILSON.