(No Model.)

F. L. BARTLETT.

STEAM PIPE COVERING.

No. 417,768. Patented Dec. 24, 1889.

Fig. 1.

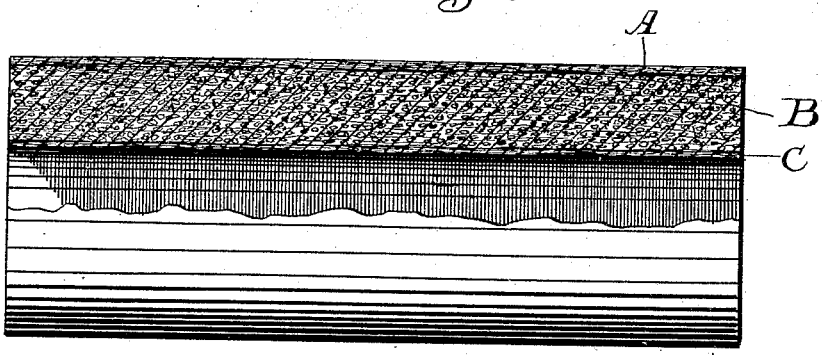


Fig. 2

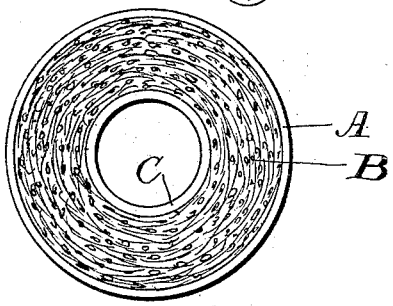
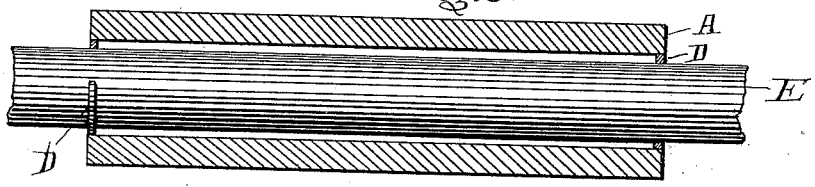


Fig. 3.



Witnesses
L. Deane.
W. W. Deane.

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UNITED STATES PATENT OFFICE.

FRANK L. BARTLETT, OF PORTLAND, MAINE.

STEAM-PIPE COVERING.

SPECIFICATION forming part of Letters Patent No. 417,768, dated December 24, 1889.

Application filed September 21, 1889. Serial No. 324,654. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. BARTLETT, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Steam-Pipe Coverings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to a non-conducting covering for steam-pipes, boilers, &c.; and the object of the invention is to produce a fabric which may be cheaply made, easily applied, and which shall have such a structure as will prevent to the greatest possible extent the radiation of heat.

My invention consists of a steam-pipe covering the body of which is composed of wood or other pulp mixed with sawdust or other granular material and having a laminated structure with laminations extending longitudinally or parallel with the surface, the adjacent laminæ being united by the knitting together of the pulp fibers.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 is a side elevation showing a part section. Fig. 2 is an end elevation, and Fig. 3 is a central longitudinal section showing the covering as applied to a steam-pipe.

The pipe-covering, as shown in the drawings, is cylindrical in form and has a center or body A of pulp mixed with sawdust in about equal proportions and laid with a laminated structure having air cells or spaces, which extend concentrically and parallel to the surfaces of the cylinder. The presence of the sawdust within the pulp forms a great number of air-cells which separate the adjacent layers of pulp. The effect of this formation on the material is to render it a perfect non-conductor of heat, the air-cells being flattened and most numerous in a transverse direction. It is also found that whereas pure pulp tends to shrink very materially when it dries, pulp and sawdust united in this manner shrink but very little. On the outside and inside surfaces of the cylinder I have formed a very thin layer A and C of substantially pure pulp, which, being more close and compact than the pulp and sawdust, entirely prevents any current of air from passing through the material transversely.

The pulp and sawdust may be mixed in any desired proportion, according to the amount of strength desired in the material; but, the sawdust being the cheaper material, it is desirable to use as large a proportion as possible. In place of sawdust I may incorporate with the pulp any other granular material which will separate the fibers of the pulp to form the necessary air-cells.

One or both of the layers A C may be dispensed with, leaving the covering composed wholly of the pulp and sawdust. In place of wood-pulp, which I prefer to use on account of its cheapness, any pulpable fiber may be used.

It is evident that the tube here shown and claimed may be used for many other purposes besides steam-pipe covering—as, for instance, for conduits for underground wires. I am aware that pipe-covering has been made of concentric layers of paper cemented together with fibrous and granular material; but I do not claim such structure.

My structure has the advantage over that disclaimed from the fact that it can be made more cheaply, being, as it is, in one piece and not built up of numerous pieces. It can be worked readily by cutting or sawing, as the other cannot without tearing it to pieces, and it is a better non-conductor, because the structure is more open, no part of it being solidly compressed, as on the layers of paper in the covering mentioned.

In Fig. 3 I have illustrated the manner in which I prefer to apply my covering to a steam or other pipe. E represents the pipe, and D is a ring of metal interposed between the pipe and the covering at each end of the section.

I claim—

The herein-described covering for steam-pipes and other like purposes, which consists

of pulp or other fibrous material mixed with a granular material, as sawdust, and formed with a laminated structure, the laminations extending parallel with the surface, the fibers of adjacent laminæ knitting together to unite the mass, substantially as shown and described.

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

FRANK L. BARTLETT.

Witnesses:
S. W. BATES,
ARTHUR N. DENNIS.