

(No Model.)

R. BURNS.

NON-CONDUCTING PIPE COVERING.

No. 348,187.

Patented Aug. 31, 1886.

FIG. 1.

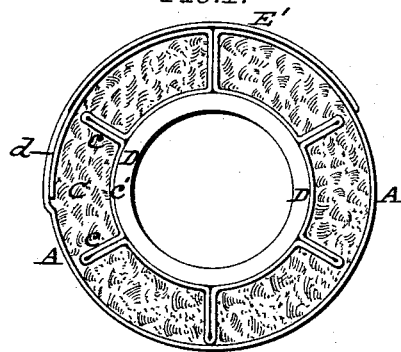


FIG. 2.

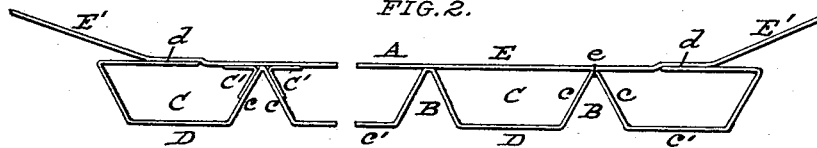
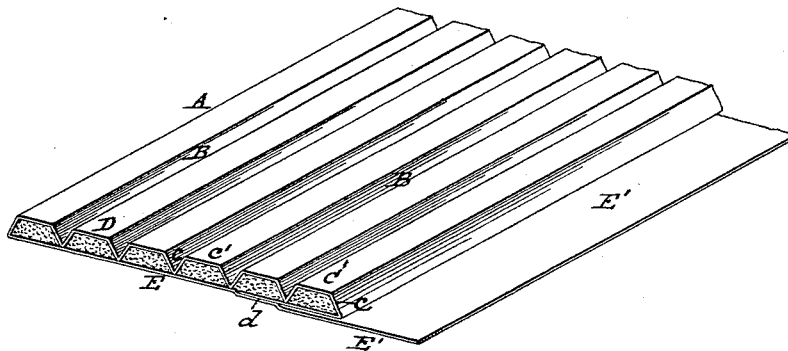


FIG. 3.



ATTEST:

*Geo H Arthur*

*J. L. Schroeder*

INVENTOR:

*Robert Burns*

# UNITED STATES PATENT OFFICE.

ROBERT BURNS, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO EDWIN S. SKINNER, OF SAME PLACE.

## NON-CONDUCTING PIPE-COVERING.

SPECIFICATION forming part of Letters Patent No. 348,187, dated August 31, 1886.

Application filed June 26, 1886. Serial No. 206,374. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT BURNS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Non-Conducting Pipe-Coverings; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in that class of insulating or non-conducting casings or coverings for steam and other pipes, tubes, or surfaces employed to prevent radiation and loss of heat therefrom, or the absorption of heat thereby, in accordance with the purpose for which such pipe is employed, whether for containing or conveying steam or other heated body, or a body of artificially-cooled air or other refrigerant; and the present invention has for its objects, first, to furnish a ready and convenient means for putting up fibrous and other loose non-conducting material in a portable form ready for application to a pipe or other surface, and which is adapted to be readily and conveniently cut or subdivided into smaller-sized sections of the required size to form coverings for the various sizes of pipes met with in filling an order or contract; second, to provide an improved construction of such casing whereby the cutting up of the finished article into sections of the required size can be conveniently and quickly accomplished, and which at the same time admits of such sections being provided with sealing-flaps for closing and uniting the longitudinal seam formed by the meeting of the edges of the covering-section around the pipe; and, third, to supply an improved mode of attaching the outer layer or wrapper-sheet of the casing to the inner layer or walls of the same, so that sealing-flaps will be formed and the point of strain removed from the pasted or other union of the parts. I accomplish such objects by the arrangement and construction of parts illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation illustrating my

improvement in position on a steam or other pipe; Fig. 2, a detail end elevation of my improved article of covering in its flat or open form, as supplied to the trade, and Fig. 3 a perspective view of the same.

Similar letters of reference indicate like parts in the several views.

As represented in Figs. 2 and 3 of the drawings, my improved article of non-conducting covering is composed of a filling of fibrous or other loose non-conducting material inclosed in a casing, A, of a flat rectangular shape, one surface of which is formed with a series of longitudinal V-shaped channels or depressions, B, extending to, or nearly to, the opposite surface, which divides the article of covering into a series of flat-sided truncated prisms, C, united together at their bases, their walls *c* and top *c'* being formed by the inner or lining sheet, D, of the covering, bent to such shape in any usual and suitable manner, and preferably made of asbestos or other suitable fire-proof material, while the bases of such prisms C are formed by the outer sheet or wrapper, E, of the covering, which may be of any suitable material, not necessarily fire-proof—such, for instance, as canvas, paper-board, &c. The base of such prisms C, in cases where the material used to form them is of sufficient stiffness to preserve the “set” given it during manufacture, need not be otherwise secured to the base sheet or wrapper E than at the outer edges of the article where the outer and inner sheets, E and D, forming the covering or casing, are secured together, preferably in the manner hereinafter described. Where the material does not possess the requisite stiffness, as above described, and which will generally be the case in forming an article of covering of the proper lightness and cheapness, I unite the base of said prisms to the base sheet or wrapper E by means of one or more rows of stitches or wire clips *e*, as indicated in Fig. 2, or by cementing the edges directly to the sheet E, but preferably by means of separate pasted strips *C'*, as indicated in Fig. 2, which are pasted inside of the prisms, and admit of the same being cut apart or severed without affecting the joint or attachment.

The purpose of the longitudinal V-shaped depressions B in the covering article is two-

fold—first, to admit of the same being readily and practically cut into sections of the required size, and, secondly, to permit of the section being formed in the flat, and yet capable of ready adaptation to the circular, shape of the pipe over which it is placed by the closing together of the adjacent side walls, *c*, of its truncated cone-sections *C* in manner indicated in Fig. 1.

In the process of manufacture the truncated face *c'* of the prism-shaped sections *C* will be made of a width equal to or a divisor of the difference in circumference of one standard size of pipe and the next size thereto, so as to enable the covering article to be cut accurately to suit the size of pipe to be covered without loss or waste.

In connecting together the sheets composing the casing it is preferable to extend the inner sheet or layer, *D*, so as to overlap a part of the outer surface of the article and form a pasting surface or surfaces, *d*, on which the outer sheet or wrapper, *E*, of the covering is pasted or secured, with its edges free and overlapping to form securing-flaps *E'*, for securing the covering in place around a steam or other pipe. By locating the pasting-surfaces *d* at a limited distance from the edges of the covering, as shown in Figs. 1 and 2, I remove a point of great weakness in the casings heretofore used, and in which the joint or seam between the inner and outer walls of the casing were made directly at such edge, and which, owing to the excessive strain put upon such edges in applying the casing around the pipes, was continuously parting or tearing apart. With my present arrangement such liability is entirely avoided, as such joint or seam is removed to a position in which it is exposed to but little if any strain during the application of the covering.

My improved covering article will usually and preferably be made of sufficient size to form two complete sections of tubular covering, and in which case the end laps, *E'*, will form an integral means for securing the longitudinal applying-seam of such sections together around a pipe. Where such article is cut into three or more sections, the intermediate section or sections will necessarily require the applying-seam to be secured together by some independent means, which may be accomplished by a separate pasted strip or other suitable device.

With my improvements the covering article is adapted for shipment, storage, &c., in a flat form, which admits of being packed in a very compact form as distinguished from the usual tubular shape in which this type of coverings has been formed for shipment to the trade.

I am aware that prior to my invention it has been common to form a casing for containing a body of fibrous or other loose non-conducting material with a longitudinal seam and an attaching-flap, by means of which it could be applied around a pipe. I am also aware that bars of non-conducting material

having inclined sides and secured to a suitable flexible backing to form a pipe covering or jacket have been proposed prior to my invention. I therefore do not claim such construction, broadly; but

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

1. As an improved article of manufacture, a non-conducting pipe-covering consisting of a body of fibrous or other loose material inclosed in a casing that is provided with a series of longitudinal V-shaped channels or depressions, substantially as described, and for the purpose set forth.

2. As an improved article of manufacture, a non-conducting covering consisting of a body of fibrous or other loose material inclosed in a casing that is provided with a series of V-shaped channels or depressions, *B*, and an overlapping flap, *E'*, substantially as described, and for the purpose set forth.

3. As an improved article of manufacture, a non-conducting covering consisting of a body of fibrous or other loose material inclosed in a casing that is provided with a series of V-shaped channels or depressions, *B*, and an overlapping flap, *E'*, at each end, substantially as and for the purpose set forth.

4. In a non-conducting covering for pipes, a casing for fibrous or other loose non-conducting material, consisting of a series of hollow truncated prisms, *C*, secured together at their bases in manner substantially as herein shown, and for the purpose set forth.

5. In a non-conducting covering for pipes, a casing for fibrous or other loose non-conducting material, consisting of a series of hollow truncated prisms or cones, *C*, secured together at their bases to a base sheet or wrapper, *E'*, in manner substantially as herein shown, and for the purpose set forth.

6. In a non-conducting covering for pipes, a casing for fibrous or other loose non-conducting material, consisting of a series of hollow truncated prisms or cones, *C*, secured together at their bases to a base sheet or wrapper, *E'*, by separate attaching or pasting strips *C'*, as and for the purpose set forth.

7. In a non-conducting covering for pipes, a casing constructed, substantially as shown, for fibrous or other loose non conducting material, having the pasting surface or surfaces *d* for the inner and outer sheets composing the casing located at a point removed from the edges of the casing which forms the longitudinal applying-seam of the completed covering, as and for the purpose set forth.

8. In a non-conducting covering for pipes, a casing for fibrous or other loose non-conducting material, composed of an inner or lining sheet, *D*, formed with a series of V-shaped channels or depressions, *B*, in combination with the outer sheet or wrapper, *E*, secured thereto by pasting surface or surfaces *d*, located as described, and for the purpose set forth.

9. In a non-conducting covering for pipes,

a casing for fibrous or other loose non-con-  
ducting material, composed of an inner or  
lining sheet, D, formed with a series of V-  
shaped channels or depressions, B, in combi-  
5 nation with the outer sheet or wrapper, E,  
having flap or flaps E<sup>2</sup>, and secured to the  
sheet D by pasting surface or surfaces *d*, located  
as described, and for the purpose set forth.

In testimony whereof witness my hand this  
7th day of June, 1886, at Chicago, Cook coun- 10  
ty, Illinois.

ROBERT BURNS.

In presence of—

I. L. SCHROEDER,  
GEO. H. ARLTNER.