

No. 682,434.

Patented Sept. 10, 1901.

M. SULLIVAN.  
FIREPROOF COVERING.

(Application filed Apr. 17, 1901.)

(No Model.)

Fig. 1

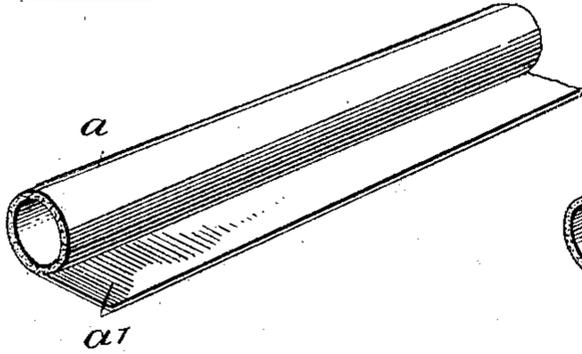


Fig. 2

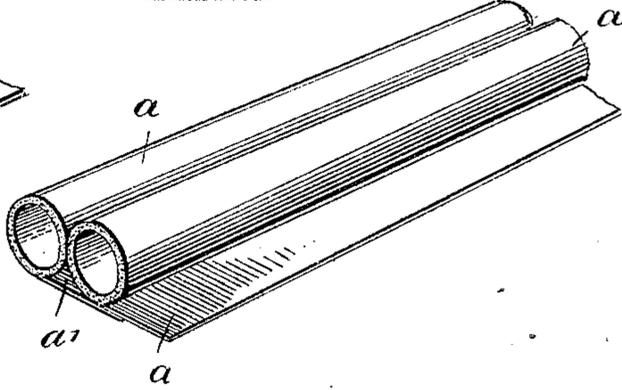


Fig. 3

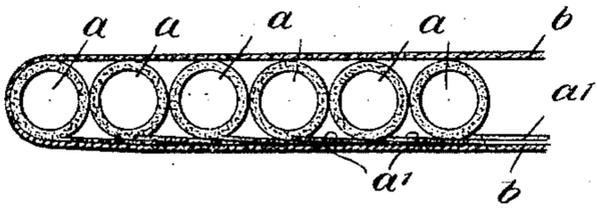


Fig. 4

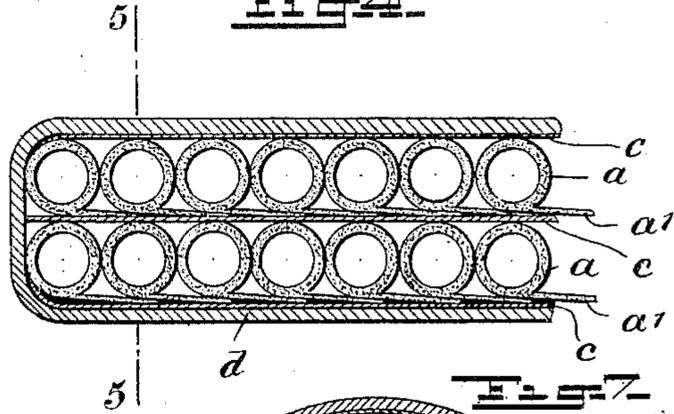


Fig. 5

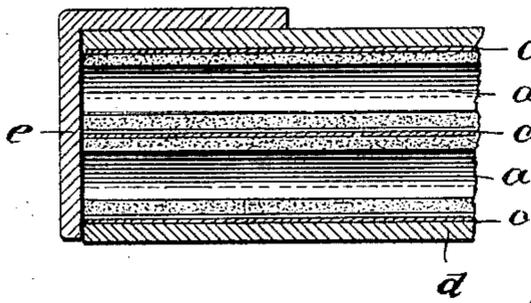


Fig. 6

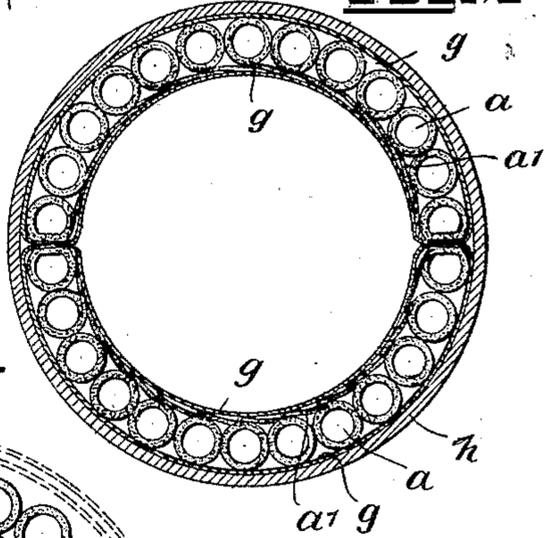
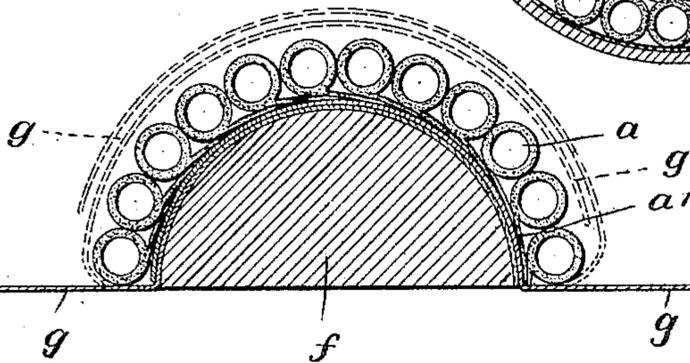


Fig. 7



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MAURICE SULLIVAN, OF NEW YORK, N. Y.

## FIREPROOF COVERING.

SPECIFICATION forming part of Letters Patent No. 682,434, dated September 10, 1901.

Application filed April 17, 1901. Serial No. 56,237. (No model.)

*To all whom it may concern:*

Be it known that I, MAURICE SULLIVAN, a citizen of the United States, and a resident of the city of New York, (Corona, borough of Queens,) in the county of Queens and State of New York, have invented new and useful Improvements in Fireproof Coverings, of which the following is a full, clear, and exact description.

This invention relates to a non-heat-conducting and fireproof covering to be used in buildings, steam-fitting, and in every other connection where it is desired to protect one part from heat or fire at another. It is especially useful as a covering for pipes, columns, pillars, &c., and also as a structure for ceilings, floors, and walls.

This specification is a specific description of several forms of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of one of the sections of which the covering is made. Fig. 2 is a perspective view showing the manner of placing these sections together. Fig. 3 is a sectional view showing the covering with a single layer of tubes laid flat for use in connection with walls, ceilings, floors, &c. Fig. 4 is a view of the same construction, except that two layers of tubes are employed. Fig. 5 is a view showing the end cap for sealing the ends of the tubes to form therein dead-air spaces. Fig. 6 is a sectional view of the cylindrical form of the covering adapted for use on pipes, columns, &c.; and Fig. 7 is a sectional view illustrating the manner of forming this cylindrical covering.

The covering, irrespective of the form in which it is made, is formed of a number of tubular sections  $a$ , of asbestos or other fireproof or non-conducting material. From each tubular section  $a$  passes, tangentially, a wing or apron  $a'$ , these wings extending longitudinally with the sections, as shown best in Fig. 1. A convenient way of forming the tubes with these wings or aprons is to roll a sheet of the material from which the tube is formed, thus producing the body of the tube, and then

project one end of the sheet to form the flap or wing thereof. In building up the covering the sections  $a$  are laid together side by side, as indicated in Fig. 2, the wing of one section projecting under the body of the adjacent section, and these wings and sections are then cemented or otherwise secured together.

Fig. 3 shows a number of sections laid together in the same plane to form a flat board-like structure, which may be used for walls and other similar structures in buildings. The tubular sections  $a$  being joined in Fig. 3, as explained above, are then covered on both sides by a sheet of asbestos or other material  $b$ . Any number of sections may be joined together to make the covering of any size desired, and the sections themselves may be of any length desired, all depending upon the nature of the use to which the covering is to be put.

Fig. 4 shows two layers of the tubes forming a board to be used similarly to the structure shown in Fig. 3. In this arrangement strips  $c$  of sheet material, preferably paper, are laid next to the tubes and between the layers thereof, and over the whole is placed a stout covering  $d$ , preferably of asbestos. It should be understood that all of these parts are cemented or otherwise secured together to form a rigid stiff structure.

Fig. 5 shows an end cap  $e$ , which is applied to the ends of the tubes to seal the same and form what I term a "dead-air" space within the covering. The tubes being thus sealed, a thoroughly-insulating structure is formed, and yet there is no possibility of a draft through this structure, which draft would tend to promote or transmit combustion. When the covering is made in tubular form for the protection of pipes, columns, &c., the tubes  $a$  are laid over a mold, which I have indicated at  $f$  in Fig. 6, this mold being semi-cylindrical in form and the wings or aprons of the tube lying toward the mold. Before the tubes  $a$  are placed on the mold the mold is covered with a strip or strips of paper  $g$ , the ends of which project beyond each side of the mold. After the tubes are placed in position the ends of the paper  $g$  are folded up over the outsides of the tubes and secured thereto. This forms a semicylindrical cover-

ing constituting one section of the complete tubular form. A similar half-section of the tubular form is placed against the first section in the manner indicated in Fig. 7, and  
5 then a stout covering of asbestos or other material *h* is placed over the sections, binding them together and forming the tubular protector.

Various changes in the form, proportions,  
10 and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

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

1. A fireproof covering, built up of a number of tubular sections having circular exte-

rior form in cross-section, and having pro- 20  
jected tangentially from their exteriors a wing or apron, said wing or apron extending continuously along the section throughout the length thereof.

2. A fireproof covering, made up of a num- 25  
ber of tubular sections having circular exterior form, each section having a wing or apron projecting tangentially from its side and lying against the adjacent section, said wings or  
aprons extending continuously throughout 30  
the length of the sections.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAURICE SULLIVAN.

Witnesses:

BENJAMINE CASE,  
JOHN DOWNING.