March 6, 1928.

1,661,254

W. R. GILLIES

PIPE COVERING

Filed Jan. 25, 1926

Fig. 1.

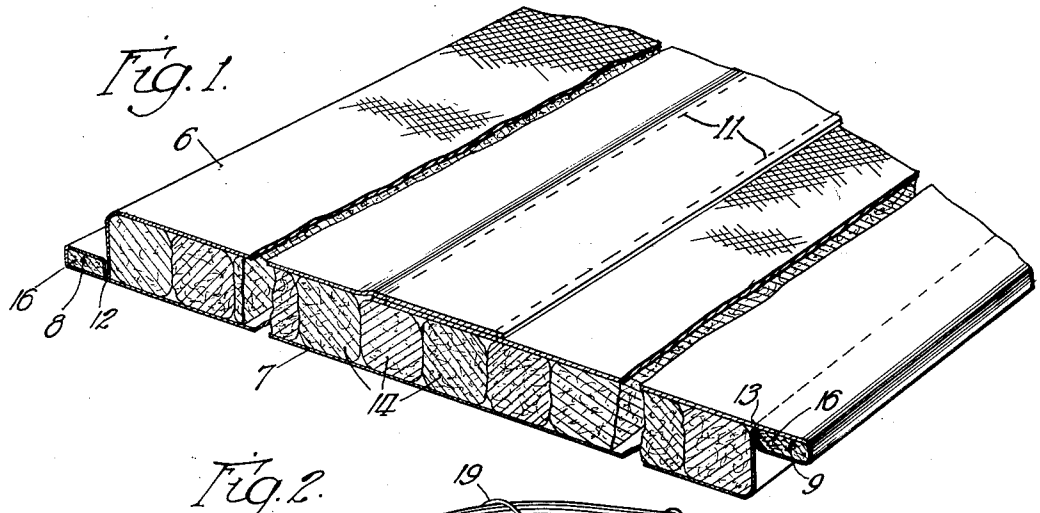



Fig. 2.

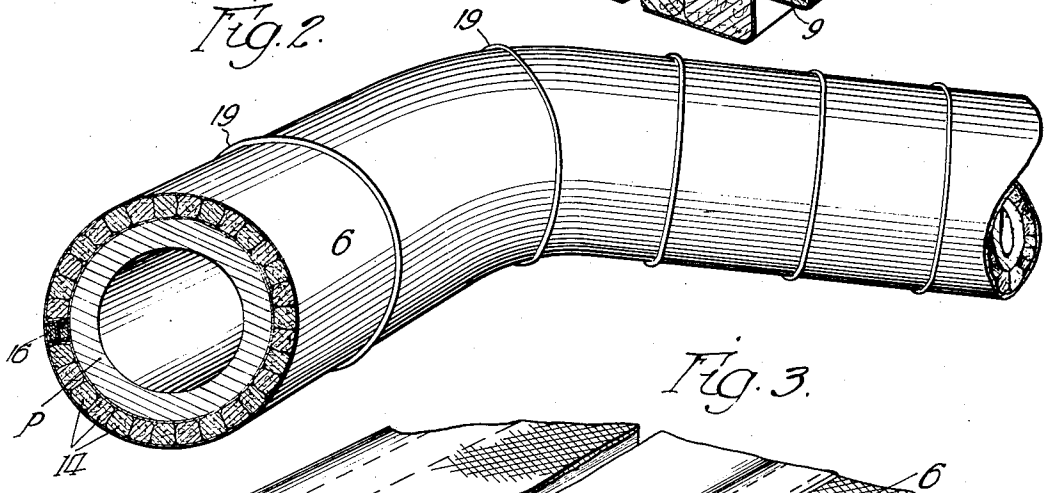



Fig. 3.

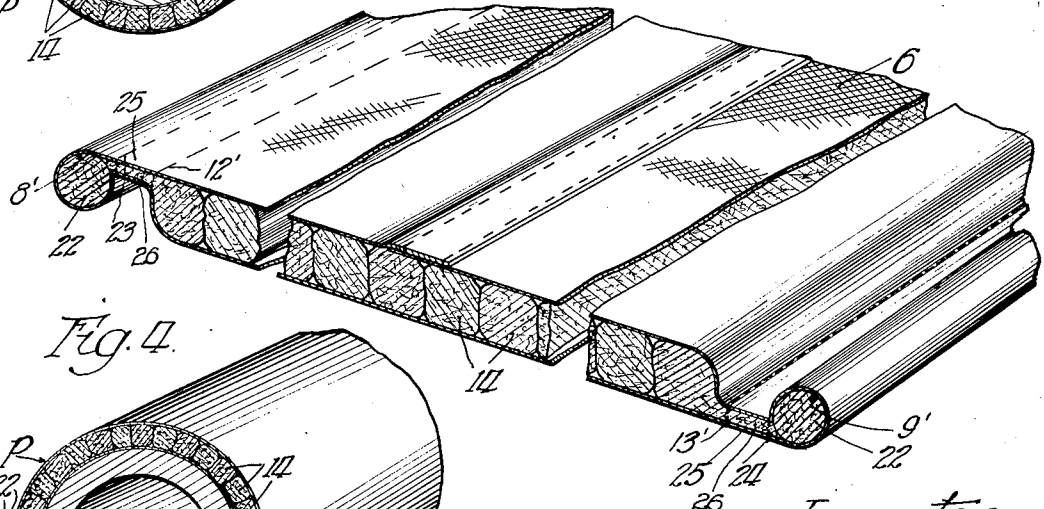
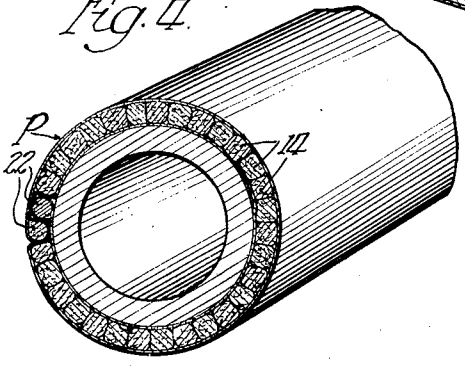



Fig. 4.




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Williams, Bradbury, McCaleb & Hinkle. Attys.



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Patented Mar. 6, 1928. 1,661,254

# UNITED STATES PATENT OFFICE.

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## PIPE COVERING.

Application filed January 25, 1926. Serial No. 83,461.

The present invention relates to pipe coverings, and more particularly to that type of heat insulating pipe covering adapted to be folded or wrapped circumferentially about the pipe with the lateral edges of the covering meeting in a longitudinal seam.

One of the particular objects of the present invention is to provide a pipe covering of this general type characterized by an improved arrangement of reinforced or stiffened edges to provide and maintain an overlapped joint between the lateral edges of the covering along the entire length of the pipe.

The further object is to provide a pipe covering of this type in which the main insulating filler and the stiffened edges for overlapping are all enclosed in a single casing or sheath.

Another object is to provide a pipe covering in which the casing or sheath has its woof and warp threads so disposed relative to the length of the covering as to enable the covering to adapt itself more readily to bends in the pipe.

Referring to the accompanying drawing illustrating my invention:

Fig. 1 is a perspective view of one embodiment of my improved pipe covering, the end of the covering being illustrated in section to show the component parts thereof.

Fig. 2 illustrates the application of this embodiment of covering to a pipe.

Fig. 3 is a view similar to Fig. 1, of a modified construction, and

Fig. 4 illustrates the application of this latter embodiment to a pipe.

The covering comprises a casing of sheath 6 which is preferably formed of a heat insulating and heat resisting material such, for instance, as a textile fabric having woof and warp threads of asbestos fibre. The casing or sheath is formed, seamed or stitched upon itself to form three parallel compartments or pockets, all of which are coextensive with the covering, namely the middle pocket 7 and the lateral pockets 8 and 9. Preferably, the edges of the casing or sheath are overlapped at a point substantially intermediate the width of the covering and are stitched together as indicated at 11. The lateral pockets 8 and 9 are also preferably formed by stitching together the outer and inner plies of the casing along the lines 12 and 13.

Disposed side by side within the intermediate pocket 7 and extending continuously and longitudinally therethrough is a plurality of independent strands or ropes 14, each of which is preferably formed of relatively soft felted asbestos fibre. Each of the elements 14—14 may consist of felted or twisted fibre, or may consist of a number of asbestos cords twisted together to form a rope. However while I prefer to fill the pocket 7 with a plurality of asbestos ropes as hereinbefore explained a single strip or body of asbestos felt, or an equivalent material, may be inserted in the pocket 7 in accordance with my invention.

The intermediate portion of the covering filled by this heat insulating filler 14 is of sufficient width substantially to embrace the circumference of the pipe.

Disposed in each of the lateral pockets 8 and 9 and extending continuously and longitudinally therethrough are the stiffening elements 16 consisting, in this embodiment, of asbestos fibre boards. These asbestos fibre boards have a certain degree of pliability, but are decidedly stiffer than the intermediate body portion of the covering to secure and maintain the overlapped joint. These reinforced boards are preferably of a thickness equal to substantially one-half of the thickness of the intermediate body portion so that the resultant joint will not protrude objectionably from the pipe covering.

This covering is folded or lapped about the pipe $p$ circumferentially, as indicated in Fig. 2. When thus placed about the pipe one of the relatively stiff edge portions 16 will be placed on top of the other edge portion in overlapping relation. Thereupon the usual binding ties 19 of wire or flexible metal strapping will be fastened around the covering at spaced intervals. The overlapping relation of the two reinforced edges will provide a snugly fitting overlapping joint which will have practically the same heat insulating properties as the intermediate body portion of the covering. This overlapping joint will also be of substantially the same thickness as the intermediate body portion. The stiffness of the reinforced edges will maintain the overlapped joint and prevent the edges of the covering from opening up or spreading, particularly in the intervals between binding ties 19. By virtue of this stiffness of the marginal edges tending


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to maintain the joint the binding ties 19 do not have to be placed as close together as has been heretofore necessary. Where the covering is to be extended around a bend in the pipe the covering may be so disposed on the pipe as to place the joint on the outside of the curve where the reinforced edge portions will be subjected to endwise tension stresses tending to hold the joint closed.

Pipe coverings of this general type, as ordinarily made, are difficult to shape around bends in the pipe without bunching and bulging of the material. I have found that this can be alleviated to a large extent by constructing the sheath with its woof and warp threads or strands on the bias. That is to say, the sheath or casing has its woof and warp extending diagonally thereof, substantially as indicated in Fig. 1, and when the covering is on the pipe these woof and warp threads will extend diagonally relative to the axis of the pipe. This diagonal direction of woof and warp permits a greater expansion of the material around the outside of the bend and a greater compression of the material around the inside of the bend without bunching or bulging, whereby the covering can be shaped more snugly to the bend.

In the modification shown in Figs. 3 and 4 the edge reinforcement is obtained by inserting in the lateral pockets 8′ and 9′ lengths of hemp or manila rope 22. In contradistinction to the relatively soft insulating filler 14, these hemp or manila ropes have considerable tensile strength, are considerably stiffer than the insulating filler, and are not subject to any considerable cross-sectional distortion under the stresses to which they are subjected in the process of forming the overlapped joint. The pockets 8′ and 9′ may be formed by single lines of stitching 12′ and 13′ as previously described; or secondary lines of stitching 23 and 24 may be spaced outwardly from the first lines of stitching to provide intervening web portions of fabric 25 of a width substantially equal to the width of the reinforced edges 8′ and 9′. The heat insulating filler is preferably extended out in relatively thin plies 26 between the upper and lower plies of the sheath in these intervening web portions to pad these web portions.

The edges when thus reinforced by the ropes 22 form beads having an interlocking action in the lapped joint. That is to say, when the covering is folded or lapped about the pipe as shown in Fig. 4 each beaded edge is forced down into the intervening web portion 25 of the other edge, whereby both beaded edges overlap and interlock with each other. Because of the greater stiffness of the ropes in these beaded edges this interlocking relation of the edges will be maintained over long spans of the pipe. This modified construction will also have the woof and warp of its sheath extending on the bias, as shown.

Having thus described my invention what I claim as new is:

1. A pipe covering adapted to be wrapped circumferentially around the pipe with its seam extending longitudinally thereof, comprising a fabric casing filled with a relatively pliable heat insulating material across the greatest portion of its width, and marginal portions of relatively stiffer asbestos board along the lateral edges of said casing, said marginal portions being overlapped in a seam extending longitudinally of the pipe.

2. A pipe covering adapted to be folded circumferentially around a pipe with its seam extending longitudinally thereof, comprising a fabric sheath stitched longitudinally upon itself to afford an elongated central pocket of considerable area in transverse cross section and lateral pockets of lesser transverse cross sectional area which are co-extensive with said central pocket, said central pocket containing a filler in the form of a relatively pliable heat insulating material, each of said lateral pockets containing a relatively stiffer asbestos board to reinforce the edges of the sheath, said reinforced edges being overlapped in a seam extending substantially longitudinally of the pipe.

3. A pipe covering adapted to be wrapped circumferentially around the pipe with its seam extending longitudinally thereof, comprising a body portion of heat insulating material, reinforced edge portions of relatively stiffer asbestos board and a fabric sheath enclosing said body portion and said reinforced edge portions, said reinforced edge portions being overlapped in a seam extending longitudinally of the pipe.

4. A heat insulating pipe covering adapted to be wrapped circumferentially around a pipe with its seam extending longitudinally thereof, said covering comprising a fabric casing having its threads diagonally disposed, said casing being filled with a relatively pliable heat insulating material adapted to embrace the greater portion of the pipe circumference and inserts of relatively stiffer asbestos board secured in the lateral edges of said casing to reinforce the edges thereof, said stuffing inserts being overlapped in a seam to extend longitudinally of the pipe.

5. A pipe covering adapted to be folded circumferentially around the pipe with its seam extending longitudinally thereof, comprising a fabric sheath filled across the greater portion of its width with a relatively pliable heat insulating material, and a reinforcing insert of asbestos board in one edge of said sheath adapted to be overlapped with the other edge of the sheath in a seam

extending substantially longitudinally of the pipe.

6. A pipe covering adapted to be folded circumferentially around the pipe with its seam extending longitudinally thereof, comprising a fabric sheath, a heat insulating filler filling the greater portion of said sheath, and asbestos fibre boards inserted in the lateral edges of said sheath, said asbestos fibre boards being overlapped in a seam extending substantially longitudinally of the pipe.

7. A pipe covering comprising a fabric sheath, a heat insulating filler in said sheath across the greater portion of its width, and asbestos fibre boards in said sheath along its marginal edges for reinforcing said edges.

8. A pipe covering comprising a tube of heat insulating fabric stitched longitudinally upon itself to afford an elongated central pocket of considerable area in transverse cross section and lateral pockets of lesser cross sectional area, said central pocket containing a relatively pliable heat insulating filler, and each of said lateral pockets containing a length of asbestos fibre board.

9. A pipe covering adapted to be wrapped circumferentially around the pipe with its seam extending longitudinally thereof, comprising a fabric sheath, a relatively pliable heat insulating filler in said sheath across the greater portion of its width, and a reinforcing strand of relatively stiffer asbestos board in one edge of said sheath to stiffen and reinforce the margin thereof, said stiffened marginal portion being engaged with the other marginal edge of said sheath in a lapped joint extending longitudinally of the pipe.

10. A pipe covering adapted to be folded circumferentially around the pipe with its lateral edges meeting in a seam extending longitudinally of the pipe comprising a fabric sheath, a heat insulating filler filling the greater portion of said sheath, and reinforcing means comprising asbestos board in one edge of said sheath for stiffening the edge thereof, said sheath having its woof and warp extending diagonally thereof to facilitate conforming the covering to curves in the pipe.

In witness whereof, I hereunto subscribe my name this 18th day of January, 1926.

WILLIAM R. GILLIES.


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