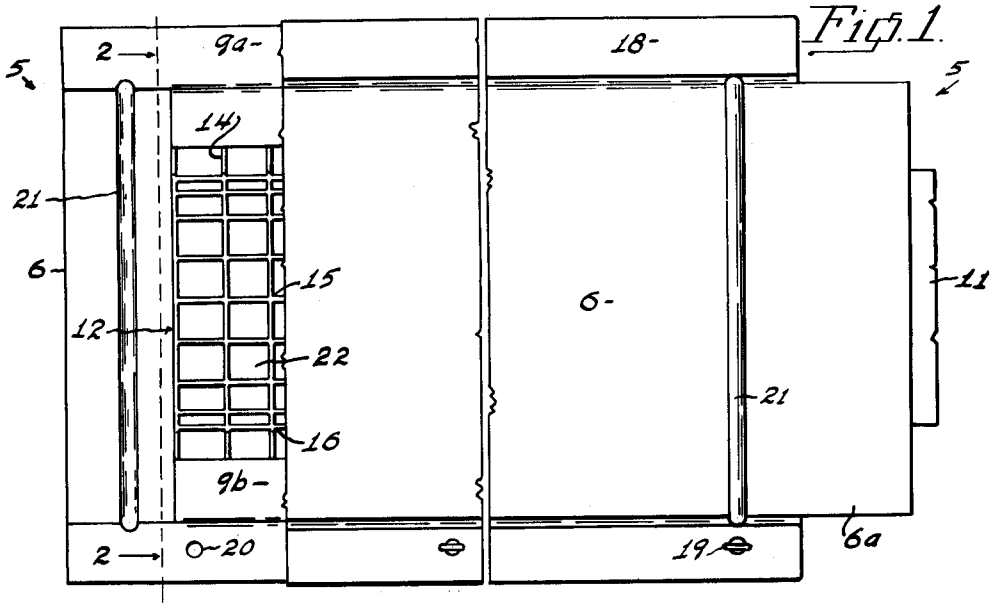
Sept. 13, 1938. C. L. NEWPORT ET AL 2,129,865

PIPE COVERING

Filed May 11, 1936

Fig. 1.



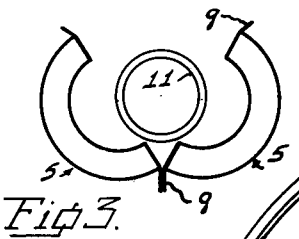


Fig. 3.

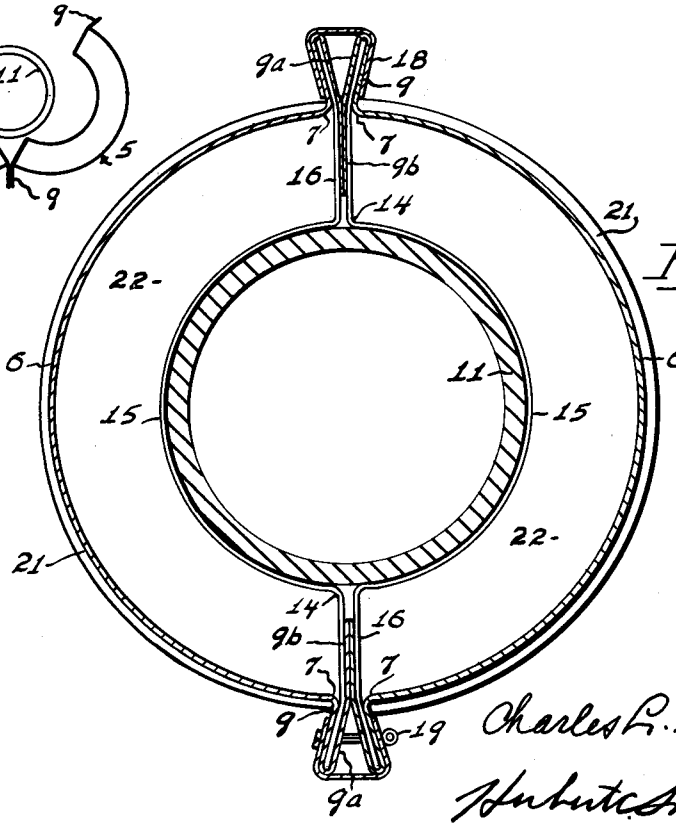


Fig. 2.

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PIPE COVERING

Charles L. Newport and Herbert C. Smith, Los Angeles, Calif.

Application May 11, 1936, Serial No. 79,194

3 Claims. (Cl. 154—44)

The present invention relates to metal jacketed pipe-covering comprising an outer metal shell lined internally with a layer of insulating material.

It is an important object of the invention to provide a construction for pipe-covering of this class by which the covering may be made in two or more segments; each segment being practically non-deformable so that there is no danger of the covering going out-of round during shipment or during or after application.

Another object of the invention is to provide a multi-segment pipe-covering in which the segments are hinged to one another by means which form a suitably sealed joint when the covering is in place.

Altho the invention permits of using molded, felted, or any other suitable form of insulation with the jacket, it is a particular object of this invention to provide for lining the jacket with felted rock wool, so held in place that without at any time being subjected to excess compression or to distortion, it nevertheless comes in direct contact with the pipe which is covered.

Another object of the invention is to provide for retaining rock wool in place in a pipe-covering of this character, so that it is protected from pressure while the pipe covering as a whole presents a practically neglible heat-conducting area of metal or the like leading from the pipe to the outer shell or jacket.

Easy application; uniformity and interchangeability of parts; high efficiency; and rigidity and long life are among the objects of this invention.

The present invention provides pipe covering which in some particulars resembles the covering set forth in the patent to Herbert C. Smith, one of the present applicants, which patent bears Number 1,907,307 and was issued May 2, 1933.

In the said patent a one-piece deformable sleeve is provided, with a flexible wire-cloth screen to retain insulation between them, while the present invention provides for all parts being rigid and definitely shaped and properly spaced with respect to the axis of the pipe. Improvements in means for locking or clamping the abutting edges is another object of this invention. Still another object is the provision of simpler means for maintaining the metal jacket spaced concentrically of the pipe.

Still other objects and advantages of this invention will appear hereinafter and it will be seen that by this invention the highly efficient product rock-wool may be employed without the wool being at any time compressed to a density other than that which provides the proper insulating value. The invention, it will appear, is applicable alike to conserving either heat or refrigeration and in the latter case any waterproof or water-proofed fibre or the like may be used instead of rock wool in cases where rock wool would not be suitable. The invention provides for spacing the outer shell with respect to the covered pipe in such manner that while compressible insulating material is well protected, the conductivity of the spacing means is so slight with respect to area of the metal jacket that condensation would not appear on the metal jacket even when the refrigeration temperature is low.

We have shown by the accompanying drawing one practical embodiment of our invention. In the drawing:

Figure 1 is a reduced-scale side elevation of a pipe-covering length constructed according to this invention.

Figure 2 is an enlarged cross sectional view thereof.

Figure 3 is a single-line diagram showing the two hinged semicircular pipe-covering sections of Figure 2 in the relative position which they assume when the pipe-covering is "opened" or spread over the pipe in the act of applying it thereto.

The pipe covering shown in this drawing consists of the two segments **5**, **5** which are exactly similar and interchangeable. A segment consists of a shell or outer metal wall **6** of arcuate cross section terminating in two opposed parallel axially extending edges **7**, **7**; each edge of a segment arranged to abut a corresponding edge of another segment, as shown in Figure 2, so that two segments, in this embodiment, form a completely circumferential cover.

At each edge each segment is provided with a corresponding outwardly projecting flange **9** which is co-extensive of the segment and which in the present embodiment is at an acute angle with respect to the wall **6**, instead of being truly normal or right-angular. Thus when two segments are abutted to form a complete pipe-covering, corresponding flanges flare outwardly rather than lying parallel. Each flange is preferably continued radially inwardly as at **9***b* to co-operate with the corresponding portion of the corresponding flange of the other segment to provide a tight joint thereat, but this portion **9***b* is not continued in far enough to contact with the pipe **11**. Instead it has a depth slightly less than that of the thinnest insulation layer which might be ordinarily used with a given shell.

In forming the flanges **9** the metal is first bent to form the main flange **9**, then it is bent back upon itself as at **9***a* and continues inwardly to form the portion **9***b*, so that the shell **6** and both flanges are formed from a single metal blank.

One of the features of the present embodiment is that this disposition of the parts **9** and **9***a* re-

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spectively of the flange provides a space between them which in the drawing, Figure 2, is shown filled with wire mesh or hardware cloth; one piece of such material, indicated by the numeral 12, extending from one such space radially inwardly of a segment as at 13; thence bent at right-angle as at 14 and continuing as at 15 in spaced parallel or concentric relation to the jacket or shell 6 to a point 16, corresponding to point 14, where it is again bent normally to continue radially into the space 12 of the opposite flange from whence it started.

Thus the screening provides an inner semi-annular wall as at 15 as well as complementing the flanges 9b. The hardware cloth, screening, or like suitable material employed may be decidedly coarse mesh but it is important that it be quite rigid, since its rigidity has much to do with keeping the shell 6 properly spaced. The intervening space between the shell 6 and the mesh is filled with the insulation which may be rock wool, or any other fiber, or a moulded material if preferred.

It will be apparent now that two such segments each composed of the metal outer walls and the heavy wire-mesh inner walls, associated as they are, provide a decidedly rigid but light weight and simply constructed pipe-covering in which the concentricity of the walls is definite and well maintained under usual loads, while intervening material is protected against compression. When the insulating material is rock wool or the like it naturally projects slightly thru each opening of the wire cloth and comes in actual contact with the pipe 11, while the heat conductivity capacity of this coarse mesh from the pipe to the outer metal shell or jacket is very slight; this feature further adapting the pipe covering to use for brine and refrigerant pipes.

For each set of abutting flanges 9 there is provided a channel clip 18; which to conform with the acute-angular flanges, is of decreasing width toward its open side. This inwardly constricted channel is fitted over the corresponding pair of flanges by being moved lengthwise of the flanges, and when in place holds the flanges under slight compression and brings portions 9b of abutting flanges into close contact.

When the two parts are around a pipe to form a complete covering, or, even when they are clamped together as shown without encompassing a pipe, the action between the two channels and the four flanges, is to provide a securely locked and tightly clamped pair of co-operating segments which jointly form an insulating tube.

When one channel is removed to free the corresponding flanges, and the other channel is still in place; all as is indicated by the diagram Figure 3, the disconnected flanged ends which are not clamped by a channel are free to move apart. This causes the two segments to hinge or rock on each other at the opposed edges 7, 7, which are still held in abutment by the corresponding channel. The flare of the flanges is such that before portions 9a of the last named flanges, are in full abutment, the other edges of the segments will have moved apart far enough, as shown in Figure 3, to permit of the segments being jointly fitted over the pipe 11 without the second channel being removed.

To provide for shipping the coverings in complete pairs, and/or to provide for ease of handling and application or removal, and/or for other advantages, we propose to keep one channel in place at all times. This may be done in various ways and in the drawing we have shown an example thereof. In this embodiment pins 19 are passed jointly thru outwardly projecting parts of the flanges and thru the corresponding walls of the channel so that the two segments of a complete covering are hingedly secured to the one channel and to each other; the pins being a loose fit in corresponding holes such as 20 so that the segments may pivot freely. Practically speaking, the pins have no function when both channels are in place except that when a covering is to be removed from a pipe for any reason these pins prevent more than one channel from being removed, and keep two matched segments intact as a single annular pipe cover.

The complete pipe-cover shown in Figure 1 is shown as provided at one end with an extension indicated at 6a; being an extension of shell 6 but devoid of flanges and the like. At each end of each segment, including extension 6a, the wall 6 is provided with a bead 21 or like circumferential re-enforcement which serves to greatly strenghen the shell against going out of round and which forms a stop for any adjacent pipe-covering length. Obviously the extension 6a may fit into the other end of another pipe-covering length to provide suitably sealed telescopic joints between sections or lengths of pipe-covering.

It will be apparent now that we have provided for carrying out the objects of our invention and have improved upon the covering set forth in Patent Number 1,907,307, and while we have been specific as to one embodiment such is done only by way of example and does not impose limitations upon the scope of our invention.

We claim:

1. A pipe covering comprising two semicircular shells abutting at their longitudinal edges flanges, one for and coextensive of each edge of each segment; corresponding of the covering flanges diverging from each other outwardly at an unchanging angle to form a corresponding V the median line of which is radial to the pipe covering, and a pair of channels of constantly decreasing width toward their open ends; one channel for and slidable over each pair of diverging flanges to hold same in closer than normal angularity to thereby hold the edges of shells in compressive abutment; each flange being of U cross section with their open ends all directed toward the center of the covering, and for each shell a sheet of metal screening inserted in the U space of one flange thence extending radially inward of the covering a distance equal to the thickness of insulation required, then extending semi-circumferentially of the covering concentric to the corresponding shell, thence turning and extending radially to and into the U space of the other corresponding flange.

2. The pipe covering as in claim 1 and in which said flanges are each bent acutely with respect to said shell and obtusely with respect to the corresponding radially extending portion of the metal screening.

3. The pipe covering as in claim 1 and further including means for permanently securing one of said channels with respect to the corresponding flanges.

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