Feb. 10, 1925. 1,525,758

J. H. NICHOLLS

CASING FOR STEAM PIPES AND THE LIKE

Filed June 18, 1923

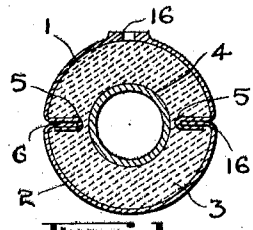


FIG. 1.

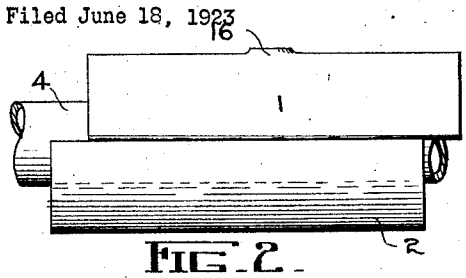


FIG. 2.

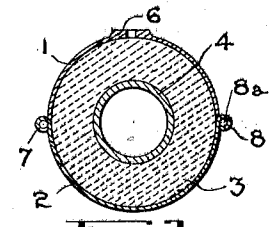


FIG. 3.

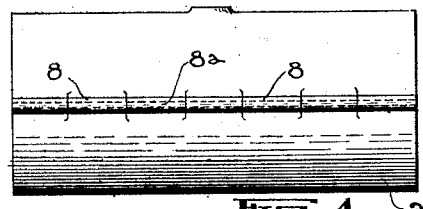


FIG. 4.

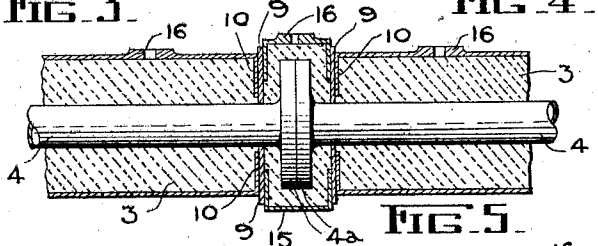


FIG. 5.

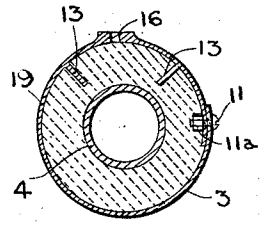


FIG. 6.

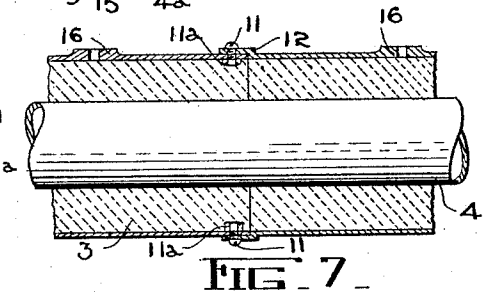


FIG. 7.

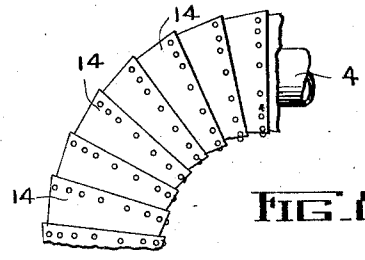


FIG. 8.

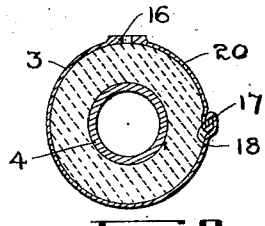


FIG. 9.

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UNITED STATES PATENT OFFICE.

JAMES HOCKIN NICHOLLS, OF NAPIER, NEW ZEALAND.

CASING FOR STEAM PIPES AND THE LIKE.

Application filed June 18, 1923. Serial No. 646,269.

To all whom it may concern:

Be it known that I, JAMES HOCKIN NICHOLLS, citizen of the Dominion of New Zealand, residing at 6 Carlyle Street, Napier, in the Provincial District of Hawkes Bay, New Zealand, have invented an Improved Casing for Steam Pipes and the like, of which the following is a specification.

This invention relates to coverings placed on steam and ammonia pipes and the like and has for its object the provision of an improved casing, whereby not only are said pipes enabled to be covered in a better manner than heretofore but joints and leakages are enabled to be quickly located, time and material are saved and better protection is given to the lagging against the effects of weather, vermin and ordinary wear and tear.

According to the invention the improved casing is formed from sheet metal or other springy material and is in short lengths or sections capable of being opened and placed over the lagging or covering on the pipes, without being slid thereon from an end of the pipe.

Each short length or section contains a vent and can if desired be slightly larger at one end than at the other end to take the smaller end of an adjoining length or section, or it can be provided with ends through which the pipe passes without contacting with said pipe. In one form the lengths or sections can be divided longitudinally into halves and hinged together at one side, the opposite meeting edges of the halves being secured together by a pin.

In another form the halves of the sections have their edges bent so as to be capable of being inter-engaged said halves slid together longitudinally, the ends of the halves not being slid flush with each other in order that the joints between the sections will not continue right around the pipe. In a further form each short length or section is cut longitudinally along one side only, the lengths or sections being sprung open to encircle the pipe and its covering and the meeting edges afterwards secured together by bolts, or by being doubled so as to engage or hook the one in the other.

Longitudinal strips or fins can be secured along the inside of the short lengths or sections in order to prevent the lagging or covering from working around the pipe.

Casings for bends are formed by securing together overlapping strips of sheet metal bent to a circular formation each strip narrowing towards the inner side of the pipe bend, in order to give the casing the necessary shape, said casing being cut along its inner side so as to be capable of being sprung open and placed over the bend and its covering, the meeting edges being then bolted together. Other shapes of casings for elbows, T's and the like are constructed in a similar manner. Flanged joints in a pipe line are enclosed by separate sections of casing of a greater diameter than the ordinary sections.

The invention will however be further described with the aid of the accompanying drawing wherein:—

Figure 1 is a cross sectional view and

Figure 2 an elevation of a section of one form of the casing and a portion of pipe therein.

Figure 3 is a cross sectional view and

Figure 4 an elevation showing a further form.

Figure 5 is a longitudinal sectional elevation showing another form, and a method of enclosing a flanged pipe joint.

Figure 6 is a cross sectional view of a casing cut longitudinally at one side and with means for uniting the edges thereof, also showing internal ribs or fins.

Figure 7 is a longitudinal sectional elevation showing the securing together of sections with socketed ends.

Figure 8 shows the method of forming a casing for a bend and

Figure 9 is a cross sectional view of a casing cut longitudinally along one side and provided with inter-engaging edges.

In the form shown in Figures 1 and 2, each short length or section of casing is divided longitudinally into halves 1, 2 capable of being slid together in order to be united around the lagging or covering 3 and pipe 4. As shown in the drawing one of the halves has its edges turned inwards and then outwards in order to provide grooves 5 in which the inturned edges 6 of the other half can be slid. If desired each half can be provided at one edge with a groove 5 and on the opposite side with an inturned edge 6 to mate with an inturned edge 6 and a groove 5 respectively on the other half.

The halves 1 and 2 when secured around

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the pipe 4 do not have their ends flush but are left as shown in Figure 2 with each half projecting beyond the other at opposite ends. As each section is treated the same, the joints made between the short lengths or sections of casing are broken or do not continue right around the pipe 4.

The section is first placed around the pipe 4, and the end pushed into or jointed with a preceding section, the lagging is then packed into the section the pressure on the internal surface of the section holding the flanges of the section in rigid engagement.

The form of casing in Figures 3 and 4 shows a short length or section of casing divided longitudinally into halves 1, 2 as before, said halves being hinged together along one side as at 7 so as to be capable of being opened out and placed around the lagging or covering 3 around the pipe 4. The other edges of the halves 1, 2 are rolled as at 8 each rolled edge being recessed or cut away at intervals to receive portions of the other rolled edge so that a pin 8^a can be passed through the aligned rolled portions, or interengaging rolled edges, and so hold the two halves 1, 2, together around the lagging 3 or covering and the pipe 4.

The sections may have inturned or flanged ends 10, Figure 5, which when used are prevented from making contact with the pipe 4 and flanges 4^a thereof, or with the ends of adjacent sections, by insulating material 9.

In a further form each section 19 (Figure 6) can be in one piece with one side cut longitudinally to enable it to be opened and sprung over the pipe 4 and lagging or covering 3 thereon, the meeting edges of the section being secured together by being made to overlap and by bolts 11 passed through the overlapping portions.

The sections can be made to overlap the ends of preceding sections by being provided with sockets 12, the overlapping ends being bolted together (Figure 7) or by said sections being tapered from one end to the other, the larger end of each section receiving the smaller end of an adjacent section and being bolted thereto.

Internal ribs or strips 13 (Figure 6) secured longitudinally in the sections are provided at each side of the latter near the top thereof to prevent the lagging or covering 3 from slipping around in the casing and uncovering the top or crown of the pipes, where the protection or insulation is most needed.

Sections of casing for bends are formed by overlapping circular strips 14 of sheet metal towards the inner curve of the bend, (Figure 8) in order to give the section the required shape and riveted together and cut on the inner side so as to enable them to be sprung over the pipe 4 and covering, and to be bolted together thereon in similar manner to the other sections.

Sections of casing for elbows and T's can also be formed, the sections in all cases being made to overlap, so that they can be bolted together or otherwise united.

Joints in pipe lines are not covered by the sections of casing, the latter being made to terminate a short distance from and being insulated from the flanges 4^a of the joint (Figure 5) after which a separate shorter section 15 of larger diameter than the other sections is secured around the united pipe flanges 4^a and covering thereon, said larger sections 15 serving as pipe joint indicators.

In using bolts and nuts to connect sections or to bolt together overlapping edges, the nuts 11^a are secured on the inside of the inner edge, each opposite or registering with a hole in the latter. Holes in the other edge are made to register with the holes opposite which the nuts 11^a are secured, whereupon the bolts 11 can be screwed into the nuts 11^a through the registering holes, from the outside of the casing, in order to clamp the overlapping edges together.

Each section is provided with a small opening 16 which in the event of a leakage in that portion of the pipe enclosed by a particular section, serves as an escape or vent and thereby indicates at once the position of the leak.

When a leakage occurs in a pipe, the position of same is located by the issue of steam or the like through the nearest opening in a section. Not only is time thereby saved in locating the leak, but lagging or covering enclosed by other sections is not damaged, and need not be removed or replaced.

Where pipes are located outside buildings or are exposed to the weather, the sheet metal casing affords efficient protection against the effects of the weather.

In the form shown in Figure 9 each section 20 is cut longitudinally along one side, one edge being doubled or turned inwards as at 17 and the other edge being doubled or turned outwards as at 18. To place and secure the section 20 on the pipe 4 it is sprung open and made to encircle the latter, the doubled edges 17 and 18 being caused to engage or hook the one in the other as shown, the outward pressure of the lagging or covering 3 packed in the annular space between the casing and the pipe, keeping said edges 17 and 18 in engagement with each other.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A casing for steam and other pipes,

comprising, a plurality of sections, certain of the sections being provided with vents.

2. A casing for steam and other pipes, according to claim 1, the sections being cut longitudinally along one side to permit them to be opened out and placed around the pipe, the edges at the sides of the cut being then secured together.

3. A casing for steam and other pipes, according to claim 1, the sections being cut longitudinally along one side to permit them to be opened out and placed around the pipe, the edges at the sides of the cut being then secured together, the edges at the sides of the cut being bent to provide interengaging portions.

4. A casing for steam and other pipes formed in short sections, each section being provided with inturned ends through which a pipe passes, when the casing is in position.

5. A casing for steam and other pipes formed in short sections in combination with lengths of larger diameter for encircling pipe joints, the lengths and sections being out of contact with the pipe, and each length being gripped between two adjacent sections, when in position.

6. A casing for steam and other pipes, comprising, overlapping connected strips, bent to a circular formation, said strips narrowing at one side to make the casing conform to a pipe bend, the casing being cut at the inside of the bend, to enable it to be placed on the pipe bend, and means for securing the cut edges together.

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