C. G. SODERGREEN.

FOLDING INSULATION FOR FLANGE JOINTS.

APPLICATION FILED NOV. 15, 1920.

1,411,386. Patented Apr. 4, 1922.

Fig. 1.

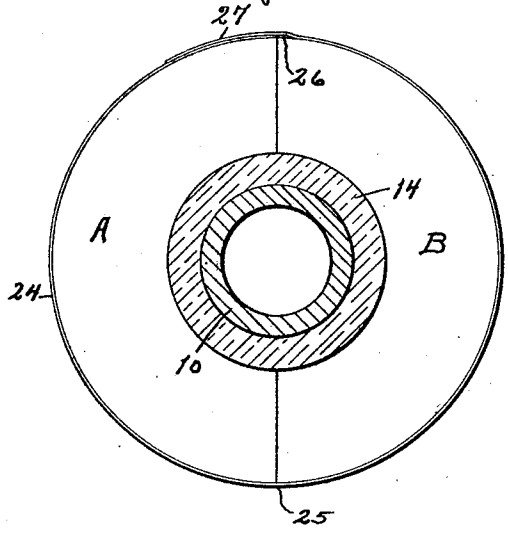


Fig. 2.

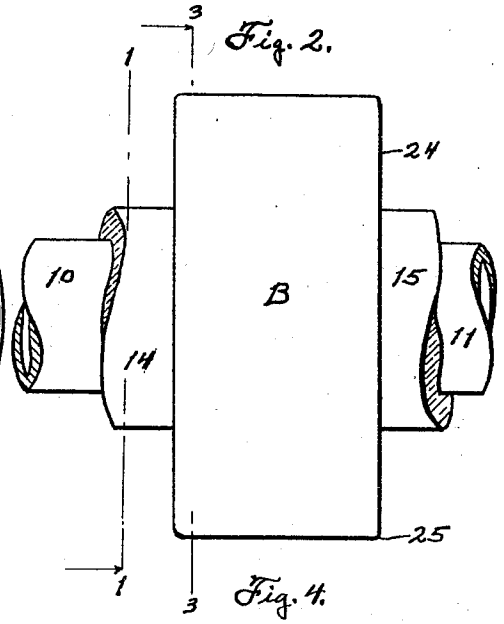


Fig. 3.

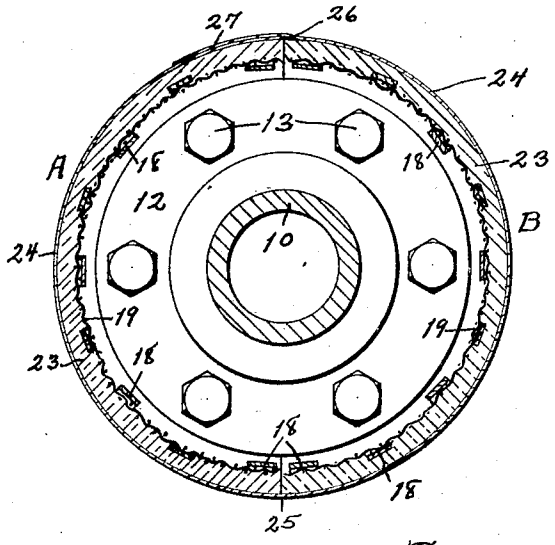


Fig. 4.

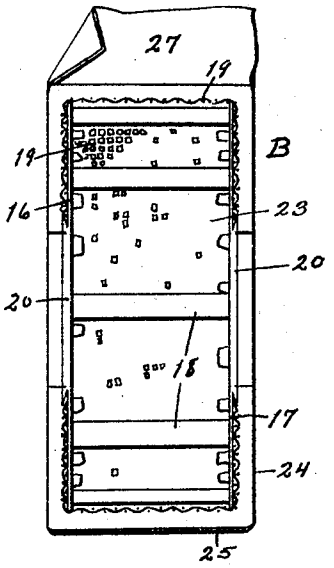
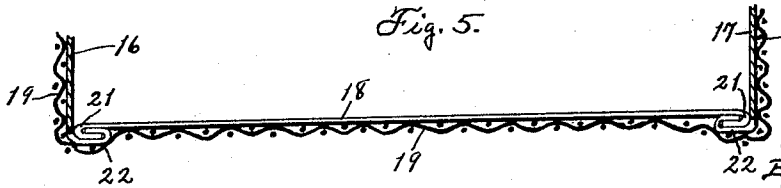


Fig. 5.



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FOLDING INSULATION FOR FLANGE JOINTS.

1,411,386. Specification of Letters Patent. Patented Apr. 4, 1922.

Application filed November 15, 1920. Serial No. 424,192.

To all whom it may concern:

Be it known that I, CARL G. SODERGREEN, a citizen of the United States of America, and resident of Centerville, Appanoose County, Iowa, have invented a new and useful Folding Insulation for Flange Joints, of which the following is a specification.

The object of this invention is to provide a removable and replaceable insulator especially adapted for use on flange-joints of steam-pipes.

A further object of this invention is to provide improved means for insulating pipe joints, the insulation being carried by a hinged frame which is removable and replaceable relative to the joint.

My invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in my claims and illustrated by the accompanying drawing, in which—

Figure 1 is a cross-section on the line 1—1 of Figure 2 and shows in elevation my improved insulator mounted in position for practical use. Figure 2 is an elevation at right angles to Figure 1. Figure 3 is a cross-section on the line 3—3 of Figure 1. Figure 4 is an inner view of one of the mating members of the insulator, in section through the hinging and connecting member. Figure 5 is a cross-section through a portion of the frame, on an enlarged scale.

In the construction and mounting of the device as shown the numerals 10, 11 designate abutting sections or lengths of pipe, such as steam pipe, each formed at its end with a peripheral flange 12. The flanges 12 of abutting lengths of pipe are adapted to contact and be secured together in a common manner by bolts 13. The pipes themselves are adapted to be covered by sections of cylindrical insulating material, indicated by the numerals 14, 15. It has been the custom to smear, coat and cover the flange-joints with plastic insulating material, such as asbestos cement, which must be broken away and wasted when for any reason it is necessary to gain access to the joint.

The insulator which I have provided for the joint is formed of two mating members, designated generally by the letters A and B, each of said members being semi-cylindrical in form and of slightly greater diameter than the joint to be enclosed. The members A, B are together formed with cylindrical openings for the pipes 10, 11, at their ends, said openings being formed one-half in each of said members, so that the insulator may be mounted in embracing relation to the flanges 12, the insulating jackets 14, 15 abutting end portions of said members and forming a tight and snug joint therewith.

Each of the members A, B is formed with a relatively rigid frame, composed principally of spaced semi-annular plates 16, 17, preferably of sheet metal, suitably connected by circumferentially spaced braces 18 of any desired number. The outer circumferences of the semi-annular plates 16, 17 of each insulator member also are connected by circumferentially extending sections 19 of wire mesh or other suitable material. The sections 19 of mesh also are extended over and in contact with the outer faces of the plates 16, 17, in semi-annular form, and are engaged at their margins by outturned flanges 20 at the inner circumferences of said plates. Alternate cross-bars or braces 18 preferably are arranged against the inner faces of the circumferential portions of the sections 19, while the others of said cross-bars are arranged against the outer faces of said sections, so that said sections are interwoven relative to said braces or cross-bars, circumferentially of the insulator. The cross-bars or braces 18 are formed at their ends with recurved portions or hooks 21 interengaging with inturned hooked lugs 22 formed on outer circumferential portions of the side plates 16 and 17, and those cross-bars which are outside of the mesh sections 19 extend through the same near their ends.

The frame or skeleton thus formed by the side plates, cross-bars and mesh of each insulator member is covered with a coating of suitable plastic material such as asbestos cement, indicated by the numeral 23, some of which may extend through the circumferential portions of the mesh and substantially cover the inner surface thereof, as indicated in Figure 4. The frames thus support the plastic insulating material so that, after it has set and hardened, the insulator may be readily handled and applied to the pipe joints as desired. The insulator thus formed preferably is covered, at its end and circumferential portions, by a layer 24 of fabric, separate portions of such fabric being employed for the opposite ends of each member A and B, but a common portion or section of fabric being employed for the circumferential portions of the two mem-

bers and joining them together, by a hinge connection at the point 25, thus permitting the two members to be swung toward and away from the closed or assembled relation shown in Figures 1, 2 and 3. The free ends of the circumferential portion of the fabric cover 24 are extended to form flaps 26, 27, which may be caused to overlie each other across the point diametrically opposite the hinge connection 25, to hold the two members in closed position, and secured as by pasting.

In practice the insulator is constructed as shown and described and may be applied to a pipe joint by flexing the two members A and B on the hinge 25, then causing them to encompass the joint, after which they are secured by fastening the flaps 26, 27. This process of insulating and protecting the joint may be accomplished neatly and rapidly, and the insulator may be removed at any time it is desired to have access to the joint, by unsealing the flaps, and without injury to the insulator, which may be replaced and used again as desired. This makes for economy in time and labor required for the operation, as well as of material.

I claim as my invention—

1. An insulating device for pipe joints, comprising spaced side frames of annular form adapted to embrace abutting end portions of adjacent pipe sections, cross-bars rigidly connecting outer circumferential portions of said side frames, mesh arranged around the outer circumferences of and connecting said side plates and some of said cross-bars and also adapted to enclose the joint common to said pipe sections, and suitable insulating material covering said side-plates, cross-bars and mesh.

2. An insulating device, comprising counterpart semi-annular members each including spaced semi-annular side plates, rigid cross-bars connecting the side plates, mesh sections connecting the side plates, and insulating material carried by and covering said side plates, mesh and cross-bars, together with fabric extending circumferentially of said members and providing flexible connecting means therefor.

3. In an insulating device, spaced side frames of annular form, cross-bars spaced circumferentially of and connecting said said side plates, wire mesh arranged around the outer circumferences of and connecting said side plates, and plastic insulating material carried by and covering outer surfaces of said side plates and mesh.

4. In an insulating device, spaced side frames of annular form, cross-bars spaced circumferentially of and connecting said side plates, said side plates being formed with inturned hooked lugs on their outer circumferences, said cross-bars being formed with hooks on their ends engaging said hooked lugs, wire mesh arranged around the outer circumference of and connecting said side plates and the cross-bars, some of said cross-bars being within and others being without and extending through said mesh, and suitable insulating material carried by and covering outer surfaces of said side plates and mesh.

Signed at Centerville, in the county of Appanoose and State of Iowa, this 16 day of October, 1920.

CARL G. SODERGREEN.