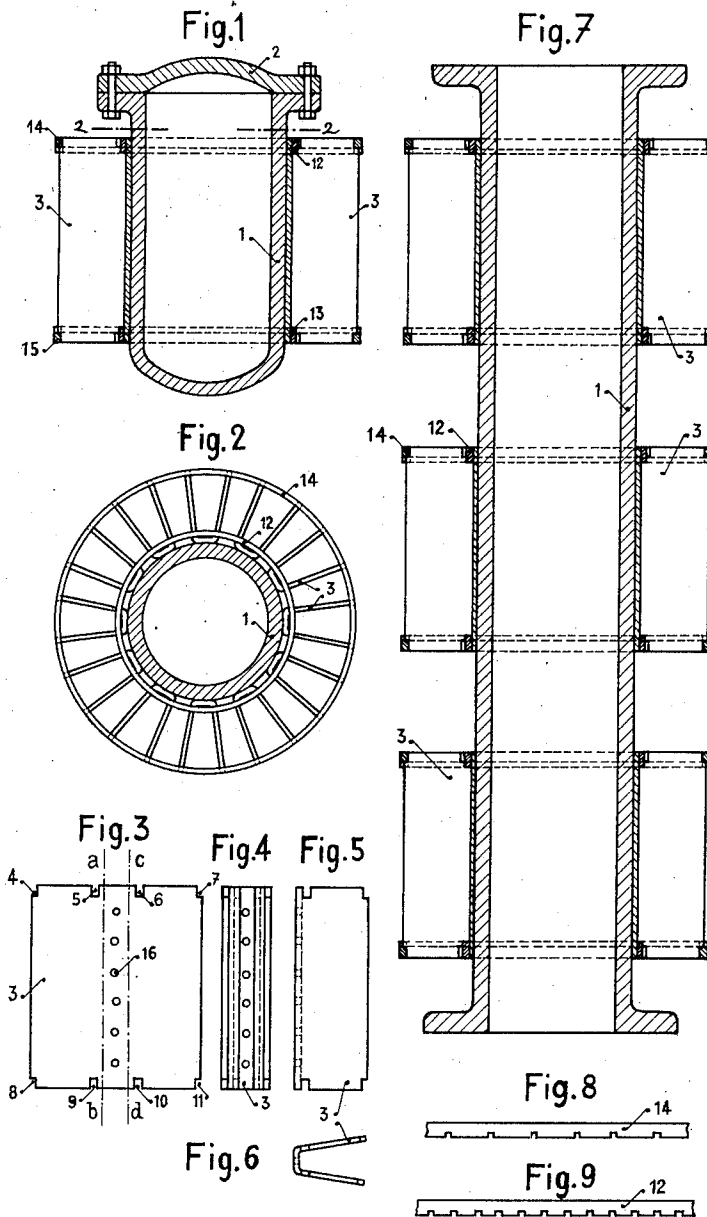


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 RIBBED BODY FOR HEAT INTERCHANGE DEVICES.
 APPLICATION FILED SEPT. 23, 1918.

1,339,385.

Patented May 11, 1920.



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RIBBED BODY FOR HEAT-INTERCHANGE DEVICES.

1,339,385.

Specification of Letters Patent.

Patented May 11, 1920.

Application filed September 23, 1918. Serial No. 255,309.

To all whom it may concern:

Be it known that I, HANS GUYER, a citizen of the Republic of Switzerland, residing at Zurich, Switzerland, have invented certain new and useful Improvements in Ribbed Bodies for Heat-Interchange Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in compound ribbed bodies for heat interchange devices. The invention consists in pressing U-shaped ribs of sheet-metal with the transverse side of their U-shape by means of shrunk rings against the main body and in soldering said ribs to the main body by means of a metallic coating produced in a metallic bath. When the ribbed body has a cylindrical shape and is provided with ribs parallel to its axis, several groups of U-shaped ribs of sheet-metal can be distributed over the length of said main body.

The invention will now be more particularly described with reference to the accompanying drawing illustrating by way of example two embodiments of the invention. In this drawing:

Figure 1 is a vertical longitudinal section through a vessel-shaped ribbed body provided with a group of ribs.

Fig. 2 is a corresponding horizontal section on line 2—2 of Fig. 1.

Figs. 3 to 6 illustrate the manner in which the ribs are manufactured and

Fig. 7 is a vertical longitudinal section through a tube provided with three groups of ribs of sheet-metal.

Fig. 8 is a view of a portion of an outer ring showing the notches for spacing the U-shaped ribs, and

Fig. 9 is a similar view of an inner ring.

Referring to Fig. 1, 1 denotes a pressed pot or pan of wrought iron having a cover 2 and U-shaped ribs 3. The latter are stamped out of a piece of sheet-metal and have first the shape shown in Fig. 3. They are already provided with recesses 4 to 11

which are for receiving the shrunk rings. The sheet-metal of flat form shown in Fig. 3 is then bent outward about the lines *a—b* and *c—d* at nearly right angles at the base, a finished rib having a U-shaped cross-section being thus obtained. Fig. 4 is a front view, Fig. 5 a side view and Fig. 6 a plan view of such a rib. Figs. 1 and 2 show how twelve such ribs may be arranged at an equal distance from one another around about the vessel 1. They are pressed by means of inner shrunk rings 12 and 13 at the bases of the ribs and outer shrunk rings 14 and 15 at their outer edges against the main body. The shrunk rings shown in Figs. 8 and 9 have on their edge corresponding notches, so that they are adapted to fix and space the U-shaped ribs accurately in their proper position. The compound body hereinbefore described is then dipped into a bath of zinc. The liquid zinc coats the whole outer surface of the compound body acting as a rust preventing layer. The liquid zinc penetrates moreover from both sides of each rib and also through the holes 16 (Fig. 3) punched into the ribs of sheet-metal into the spaces existing between the transverse side of the U-shaped ribs and the main body, soldering thereby the ribs to the main body. The connection thus obtained provides for a good transmission of heat.

The ribs can be manufactured as a wholesale article. When a comparatively long tube has to be provided with ribs, several groups of U-shaped ribs of sheet-metal are distributed over the length of said tube. (A group consists of all the ribs arranged on the same height around about the tube.) Fig. 7 shows a vertical cross-section through a tube provided with three groups of ribs.

What I claim is:

1. A compound ribbed body for heat interchanging devices, comprising a main body, U-shaped ribs of sheet metal, narrow shrunk rings adapted to press the transverse side of the U-shaped ribs against said main body, and a metallic coating produced in a metallic bath and soldering said ribs to the main body, each of said sheet-metal ribs defining a straight channel extending over the whole of its length and open at the top, bottom and at the side lying opposite the transverse side pressed against the main body,

and each two adjacent ribs defining between their opposite sides a similar channel.

2. A ribbed body for heat interchange devices, comprising a cylindrical main body, U-shaped ribs of sheet-metal arranged parallel to the axis of said body, shrunk rings engaging the ends of the ribs and pressing the ribs with the transverse side of their U-shape against the main body, and a metallic coating for the whole, said ribs being soldered through said coating to the main body.

3. A ribbed body for heat interchange devices, comprising a main body, groups of U-shaped ribs of sheet-metal distributed over the surface of the main body, shrunk rings pressing the ribs of the single groups with the transverse side of their U-shape against the main body, and a metallic coating soldering the ribs to the main body.

4. A ribbed body for heat interchange devices, comprising a cylindrical main body, groups of U-shaped ribs arranged parallel to the axis and distributed over the length of said main body, each of said groups of ribs forming a ring, shrunk rings pressing the ribs of the single groups with the transverse side of their U-shape against the main body, and a metallic coating soldering the ribs to the main body.

5. A ribbed body for heat interchange devices, comprising a cylindrical main body, U-shaped ribs of sheet-metal arranged parallel to the axis of said body, said ribs being provided with recesses at their ends near the outer edges and near the transverse side, inner and outer shrunk rings provided with notches, said rings resting in the recesses of the ribs and fixing the latter by engaging them by means of their notches and pressing the ribs with the transverse side of their U-shape against the main body, and a metallic

coating for the whole, the ribs being soldered through the coating to the main body.

6. A ribbed body for heat interchange devices, comprising a cylindrical main body, U-shaped ribs of sheet-metal arranged parallel to the axis of said body, inner shrunk rings engaging the transverse sides of the ribs and pressing them against the main body, outer shrunk rings engaging the free ends of the sides of said ribs and spacing the latter at a regular pitch and stiffening them, and a metallic coating for the whole soldering the ribs to said shrunk rings and to the main body.

7. A heat interchange device comprising a body portion, radial sheet metal ribs for said body portion having notches at their bases and on their outer edges and rings engaging said notches and shrinking the ribs to said body portion.

8. A heat interchange device comprising a body portion, radial sheet metal ribs for said body portion having notches at their bases and at their outer corners, and rings in shrunk engagement with said notches.

9. A heat interchange device, comprising a body portion, radial ribs, U-shaped in section and having notches at their bases and in their outer edges, and securing rings in shrunk engagement with said ribs in said notches.

10. A heat interchange device, comprising a body portion, sheet metal ribs radial of said body portion and having notches at their bases and outer edges, and notched rings in shrunk engagement with said ribs in said notches, and the ribs entering the notches in the rings and maintained spaced thereby.

In testimony that I claim the foregoing as my invention, I have signed my name.

HANS GUYER.