CONSTRUCTION OF DOUBLE-WALLED METAL TANKS.

To all whom it may concern:

Be it known that HARRY V. BRADY, a citizen of Canada and subject of the King of England, residing at Framingham, in the county of Middlesex and State of Massachusetts, has invented certain new and useful Improvements in the Construction of Double-Walled Metal Tanks, of which the following is a specification.

The structure embodying this invention may be used for various purposes but for the sake of clearness it will be here considered a steam-heated tank of that sort wherein an inner vessel or container is surrounded by a jacket spaced away therefrom to form the steam chamber.

The walls of the container are under stress of compression and must be suitably reinforced. It has been the practice to use staybolts for this purpose and permit their heads to protrude from the inner surface of the container. These projecting heads are in some instances subject to wear as in tankage driers and in that event leakage about the bolts soon ensues. Said projecting heads are often objectionable for other reasons. The present invention overcomes all these objections and consists in the structure of parts and their combination substantially as herein set forth and claimed.

In the accompanying drawings Figure 1 represents in longitudinal axial section one end of a tankage drier embodying this invention while Fig. 2 is a transverse section thereof on the line 2—2; Fig. 3 is a view like Fig. 1 and shows a modification of the reinforcing means while Fig. 4 is a transverse section thereof on the line 3—3; Figs. 5 and 6 are enlarged detail views showing the manner of applying staybolts.

In the main the illustrations are simply typical of any double-walled structure of the class in question. The inner vessel or container is represented at 7 the jacket at 8 the intake at 9 the outlet at 10 and the steam ports at 11. The walls 7 and 8 may be spaced apart and joined at their ends by a ring 12. The intake and outlet are preferably formed by flanging out the wall 7 at 13 inserting through the wall 8 a flanged ring 14 to meet the flange 18 and overlapping the joint by a collar 15 and welding all joints. The nipples at the steam ports are also preferably welded in place.

Compression resisting hoops or rings 16, Figs. 1 and 2, are added to the container and are preferably welded to the same. These rings are drilled and tapped and staybolts 17 are inserted through wall 8 and screwed down firmly to the bottoms of the holes 60 Fig. 5, which their ends are shaped to fit. The bolts are then headed over as in Fig. 6.

While the employment of staybolts as described insures greater strength they may in some instances be omitted and the rings or hoops made of T-bars 18 and welded by their broad sides to the container as indicated in Figs. 3 and 4. By the use of either of these reinforcing means the required strength is added to the container without puncturing its wall or interfering with the smooth inner surface thereof.

The invention claimed is:

1. In a double-walled vessel, the combination of an inner wall whose inner surface is imperforate and uninterrupted save at inlet and outlet of the vessel, reinforcing hoops secured to the outer surface only of said inner wall, an outer wall, and staybolts passed through the outer wall and screwed into sockets in said hoops, substantially as and for the purpose set forth.

2. In a double-walled vessel, the combination of an inner wall whose inner surface is imperforate and uninterrupted save at the vessel's inlet and outlet, projections welded to the outer surface of said inner wall and having threaded staybolt sockets therein, an outer wall, and staybolts inserted through said outer wall, turned in to the bottom of said threaded sockets and headed over against the outer wall, substantially as and for the purpose set forth.

In testimony whereof I have affixed my signature.

HARRY V. BRADY.