

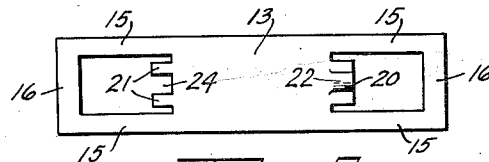
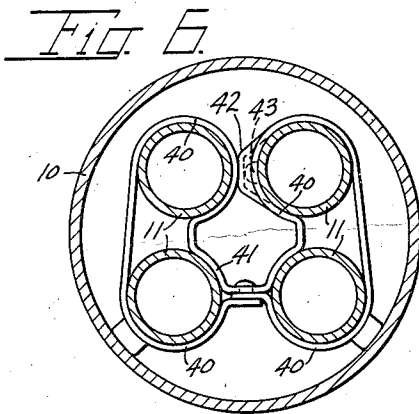
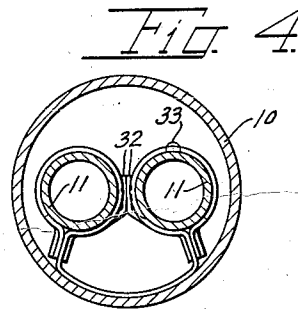
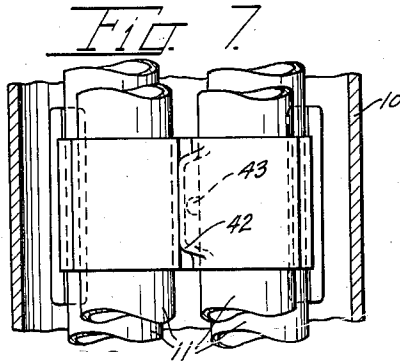
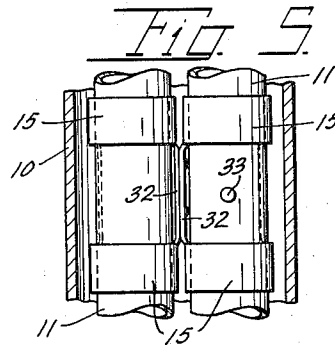
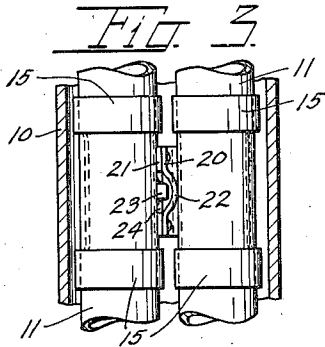
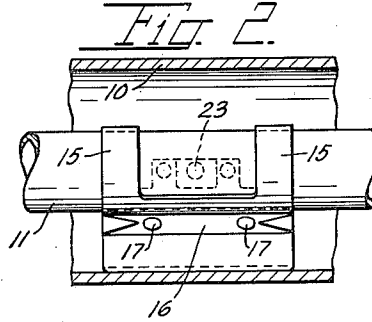
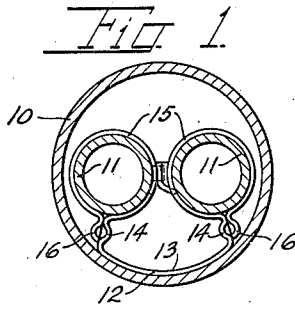
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C. RINGEL

2,297,165

TUBE BAND

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2,297,165

TUBE BAND

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4 Claims. (Cl. 248—49)

The present invention relates to tube bands and particularly to improvements in bands utilized with superheater tubes or the like mounted in flues of a fire tube boiler.

The invention is directed to tube bands of the type formed by shaping a metallic strip to provide tube encircling eyes and also spacer portions which hold the tubes apart in the flue. The invention is concerned primarily with forming the tube spacing portion of the band directly from the body of the strip from which the band is made rather than as a separate element attached thereto. A further feature of the invention consists in so forming the spacer member of the band that it may enclose and protect a protuberance secured to the tube and designed to limit the movement of the band axially of the tubes.

In the drawing:

Figure 1 is a transverse sectional view through a flue of a fire tube boiler showing a pair of parallel superheater tubes with a band embodying the present invention;

Fig. 2 shows the support in side elevation, the flue being shown in section;

Fig. 3 shows a support in plan view, the upper part of the flue being cut away;

Figures 4 and 5 are views similar to Figures 1 and 3 illustrating a modification of the invention;

Figures 6 and 7 are views also similar to Figures 1 and 3 showing a still further modification of the invention as embodied in a band utilized with two pairs of superheater tubes; and

Figure 8 is a plan view of a metal blank from which the band shown in Figs. 1 to 3 is formed.

Referring first to Figures 1 to 3 and 8, the numeral 10 designates the flue of a fire tube boiler within which are mounted two parallel superheater tubes 11. The tubes 11 are supported and held in spaced relation in the flue by means of a band designated as a whole by the numeral 12 having an arcuate bottom section 13 resting on the inner bottom surface of flue 10. At the ends of the arcuate section 13 the band 12 has short sections 14 bent toward the center of the arc of base portion 13. At the inner ends of the sections 14 the metal strip from which the band 12 is formed is bent into eyes or loops 15, shown as closely embracing the tubes 11. From the sections 13 the metal curves inwardly beneath and in contact with the lower faces of the tubes 11 then up between the tubes and across their tops so that the loops 15 completely encircle the tubes. The extreme ends of the metal strip meet the radial sections 14, the strip being at its ends

formed with radial sections 16 secured to the portions 14 by welding or riveting as indicated at 17. As is shown in Fig. 8 the blank or strip from which the band is formed is cut away adjacent the loop forming portions 15 providing apertures which facilitate the bending of the metal around the tubes to form the loop portions. In forming these recesses, the operation is performed so as to leave tabs 20 and 21 in such locations that when the band is applied to the tubes the tabs 20 and 21 are disposed between the tubes and located axially of the tubes 11 at a point intermediate the loops 15.

The construction described above is essentially that disclosed in the Smith Patent 2,032,445 issued March 3, 1936. In accordance with the present invention, one (or both) of the tabs 20 or 21 has a depression formed in one face thereof so as to provide a projection 22 lying between and spacing the tubes 11 apart. A spacing element or portion on the band is required because the tubes 11 are to be held further apart than twice the thickness of the metal of band 12. In the form shown in Fig. 1, only one of the tabs, that designated 20, has the projection formed thereon whereas in the form shown in Figs. 4 and 5 projections 32 are formed on each tab portion and contact each other to space the tubes. In the band illustrated in Figs. 1 to 3, the depression formed in the tab 20 to create the projection 22 is also utilized to enclose and thus protect a "button" or other like protuberance 23 secured to one of the tubes 11 for limiting the axial movement of the band along the tube. It will be noted that an aperture or slot 24 is formed in the tab 21 so that the protuberance 23 may project therethrough to lie within the depression creating the projection 22 on the tab 20.

In Figs. 6 and 7 there is illustrated a band of the type utilized in mounting two pairs of superheater tubes in a flue. The band has loop portions 40 receiving the tubes and a spacer member 41 serving to space the two tubes of the lower pair from each other and each of them from one of the tubes of the upper pair. To space the two tubes of the upper pair from each other the inside portion of the loop extending about one of the tubes is formed on its inner face with a depression so as to provide a projection 42 which contacts the inside portion of the loop extending about the opposite tube. The depression forming projection 42 also encloses the locating button or protuberance 43 on the tube.

It will be noted that the tube bands and spacers described above are simple in construction result-

ing in cheapening the cost of manufacture of such bands and facilitating their application to superheater tubes or the like.

What is claimed is:

1. In combination with a pair of parallel tubes; 5
a protuberance on one tube for limiting movement of a band axially thereof; a band for said tubes comprising a metallic strip provided with loops embracing said tubes and a portion lying between the latter that is formed with a depression in one face enclosing said protuberance. 10

2. A band for closely positioned parallel tubes having tube embracing loops at least one of which is formed intermediate the side edges of the portion thereof lying between the tubes with an integral projection contacting the loop embracing the adjacent tube for spacing the tubes apart. 15

3. A band for closely positioned parallel tubes comprising narrow metallic strip material shaped 20
to form a plurality of tube embracing loops, one

of which is formed intermediate the side edges of the strip portion lying between the tubes with a depression in the face contacting the related tube to provide a projection extending toward and contacting the loop embracing the adjacent tube for spacing the tubes apart.

4. A band for parallel tubes comprising narrow metallic strip material shaped to form a plurality of tube embracing loops one of which is formed intermediate the side edges of the strip portion that lies between the tubes with a depression in the face which contacts the related tube to provide a projection extending toward and contacting the loop embracing the adjacent tube for spacing the tubes apart, and a protuberance on the tube that is embraced by said one loop so positioned as to lie in said depression for limiting movement of said band with respect to said tubes.

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