

(No Model.)

C. A. COTTER.
TUBE FOR BEER COOLERS.

No. 479,205.

Patented July 19, 1892.

Fig. 1.

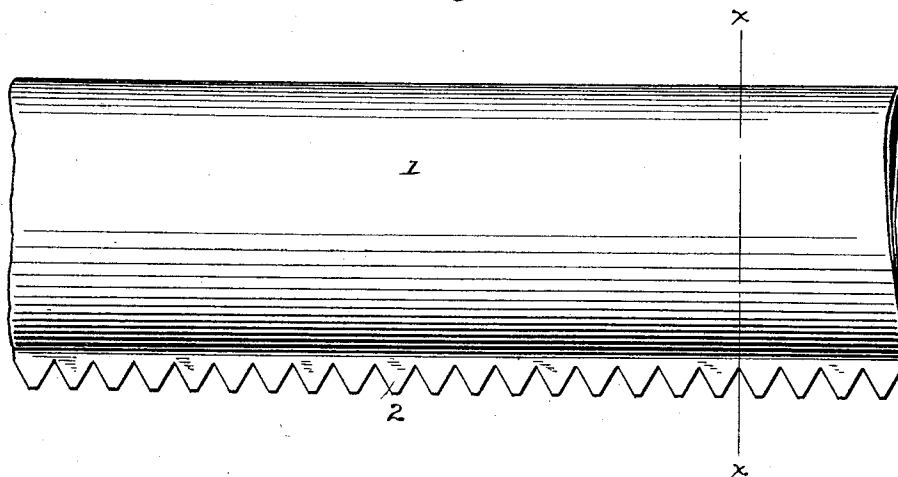


Fig. 2.

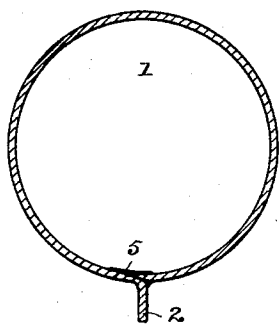
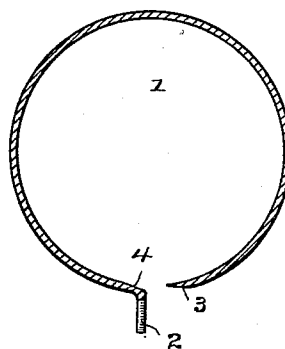


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES A. COTTER, OF WATERBURY, CONNECTICUT, ASSIGNOR TO
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TUBE FOR BEER-COOLERS.

SPECIFICATION forming part of Letters Patent No. 479,205, dated July 19, 1892.

Application filed February 29, 1892. Serial No. 423,170. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. COTTER, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Tubes for Beer-Coolers; 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.

My invention relates to the class of tubes used for conveying gases or liquids under high pressure—as, for instance, the tubes through which ammonia is passed in beer-coolers. It is essential that this class of tubes should be provided on their lower sides with flanges from which the beer or other liquid that is being cooled will pass in drops. It is, furthermore, essential that the tubes be made perfectly tight, so as to prevent the escape of gas or liquid therefrom.

My invention has for its object to provide a flanged tube which shall be perfectly tight and which shall be formed from a single piece of metal, thereby reducing the cost of production to the minimum.

With this end in view I have devised the novel tube which I will now describe, referring by numbers to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a section of my improved tube; Fig. 2, a cross-section thereof on the line *xx*, and Fig. 3 is a section of the blank before the edge is closed down upon the inner side of the tube and secured.

1 denotes the tube, and 2 the flange, which is formed integral therewith. In forming my novel flanged tube I take a strip of metal of sufficient length to give the full length required to the tube and of sufficient width to give the required diameter to the tube and also to form the flange in addition. The tube and flange are formed to approximately the condition shown in Fig. 3, by drawing the strip or blank of metal through suitable dies in the ordinary or in any preferred manner. As this is a common operation in metal working, and as the dies, bench, chain,

and clamp are in common use in all mills which make this class of tubing it is not deemed necessary to illustrate them in this specification. Having formed the blank to substantially the shape shown in Fig. 3, the outer face of the curved end of the blank is ordinarily beveled and smoothed, as at 3, and the inner face of the tube at the base of the flange is ordinarily also beveled and smoothed, as at 4. The curved end of the blank is then by another operation closed down upon the base of the flange, after which it is secured there in any suitable manner, as by soldering or brazing, as indicated at 5 in Fig. 2. When a serrated flange is required, as shown in Fig. 1, the edge of the flange is submitted to the operation of a metal-cutting machine, or any other preferred operation which cuts out notches, as clearly shown, leaving the flange serrated. It will be noticed that the notches are not cut into the flange far enough to weaken the tube in the slightest, it being essential that the tube shall be as strong at the joint as at any other part. An important use to which these tubes are adapted is in breweries, where they are placed one above the other and ammonia forced through them. The beer that is to be cooled drips slowly over a series of these tubes and runs down upon the flanges, so as to pass from each tube down to the next one below it drop by drop, thus becoming thoroughly cooled during the operation.

Having thus described my invention, I claim—

A tube for beer-coolers and similar uses, having a longitudinally outwardly-projecting flange extending from the body of the tube, said flange being integral with and formed upon one side only of the metallic strip from which the tube is made, the curved end of the blank being secured to the base of the flange, the tube and its flange thus consisting of one piece of metal.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES A. COTTER.

Witnesses:

A. M. WOOSTER,
JESSIE MASON.