

W. S. SHARPNECK.
Boiler-Tube Expanders.

No. 157,875.

Patented Dec. 15, 1874.

Fig. 1.

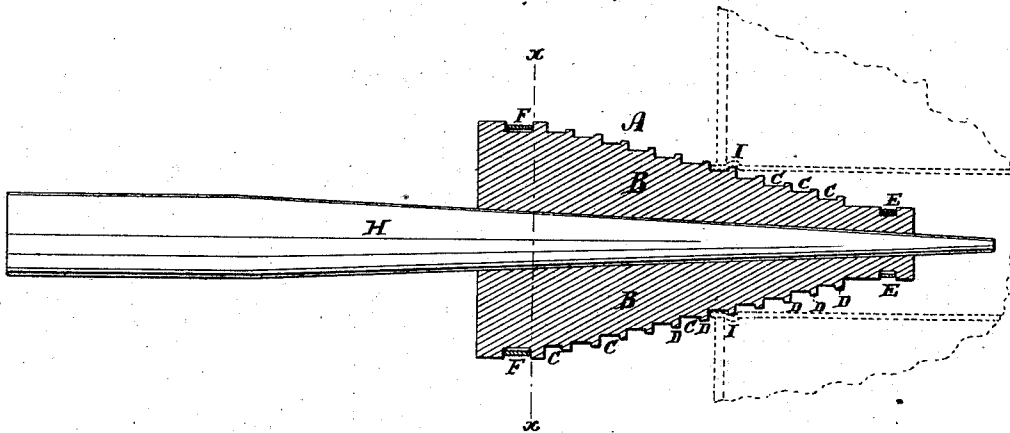
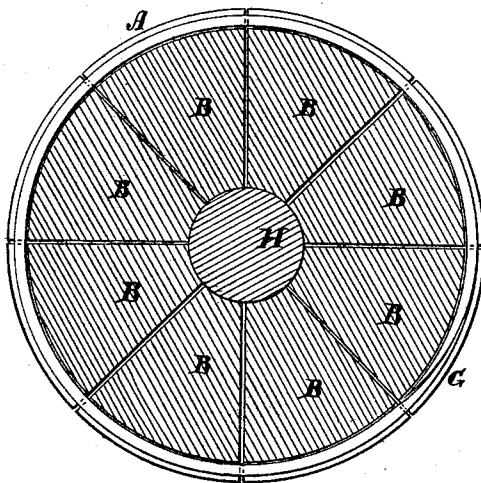


Fig. 2.



WITNESSES:

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WILLIAM S. SHARPNECK, OF ONAWA CITY, IOWA.

IMPROVEMENT IN BOILER-TUBE EXPANDERS.

Specification forming part of Letters Patent No. **157,875**, dated December 15, 1874; application filed November 7, 1874.

To all whom it may concern:

Be it known that I, WM. S. SHARPNECK, of Onawa City and county of Monona and State of Iowa, have invented a new and useful Improvement in Boiler-Tube Expanders, of which the following is a specification:

The difficulty usually experienced by boiler-makers in properly setting boiler-tubes is frequently very great, as it is a very particular job, and unless it is performed in a proper manner the boiler leaks around the flues, and occasions much trouble. This imperfection arises mainly from the want of a properly-constituted expander, or one suited for the particular caliber of the tube.

My invention consists in an expander adapted to all sized tubes made in longitudinal sections, the outer surface of which is turned to various diameters distinct from each other, each gradation being provided with a collar for forming the bead inside the head of the boiler.

Figure 1 is a longitudinal section of my improved expander. Fig. 2 is a cross-section of Fig. 1, taken in the line *x x*.

Similar letters of reference indicate corresponding parts.

A is the expander, formed of longitudinal sections B, eight (more or less) in number, turned on the outside in separate grades C, to suit the different sizes of tube used in boiler-making. D is a collar in each grade or size for forming the bead inside of the head or tube plate. The sections B are fitted together and turned as a single piece, substantially as

seen in the drawing. Near each end a groove, E, is turned, and in these grooves spring-bands F F are placed, which hold the sections B together. The ends of these bands are tapering and thin, and lap past each other, as seen at G, Fig. 2; consequently they expand and contract as may be required. H is the drift or tapering pin, which is driven into the central tapering aperture of the expander. This drift is made of proper length and size, and as it is driven in the sections are expanded. When the drift is driven the effect is represented by tube and tube-sheet seen in dotted lines in Fig. 1, where I represents the bead on the tube inside the head or tube-sheet.

With this expander tubes of any ordinary size may be set in the most perfect and complete manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A boiler-tube expander constructed as shown and described—that is, consisting of sections B, with grades C and collars D, arranged to operate in combination with the drift H, substantially as described.

2. The expanding-bands F F, in combination with a sectional tube-expander, substantially as described, and for the purposes specified.

WILLIAM S. SHARPNECK.

Witnesses:

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