No. 684,661. Patented Oct. 15, 1901.

D. B. YOUNG & M. SPEYER.

TUBE EXPANDER.

(Application filed Apr. 30, 1900.)

(No Model.)

Fig. 1.

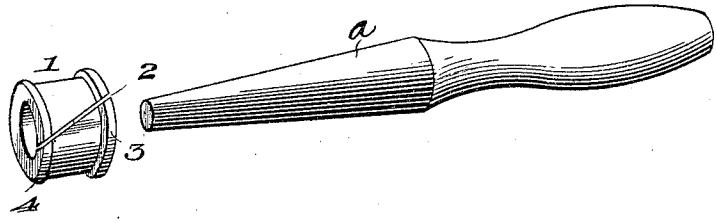
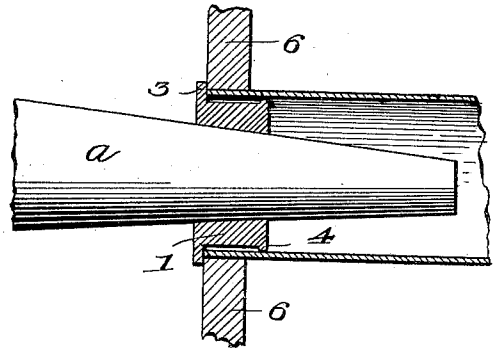


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

DAVID B. YOUNG AND MARY SPEYER, OF NEAR PLYMOUTH, INDIANA.

TUBE-EXPANDER.

SPECIFICATION forming part of Letters Patent No. 684,661, dated October 15, 1901.

Application filed April 30, 1900. Serial No. 14,966. (No model.)

To all whom it may concern:

Be it known that we, DAVID B. YOUNG and MARY SPEYER, citizens of the United States of America, residing near Plymouth, in the county of Marshall and State of Indiana, have invented certain new and useful Improvements in Tube-Expanders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to tube-expanders or flanging-tools for boiler-flues, and has for its primary object the provision of an integral expanding-ring in conjunction with a suitable mandrel that will prove simple in construction, durable, strong, and efficient in practice, and comparatively inexpensive to manufacture.

Another object of the invention is to provide a novel tool whereby the tube may be set and tightened in the tube-sheet by the labor of one man only.

With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in both views, and in which—

Figure 1 is a view in perspective of a tool embodying the invention, and Fig. 2 is a longitudinal section of the same when in use.

In the drawings, 1 indicates an integral ring, of suitable resilient metal, having a diagonal slit 2. On the outer end of the ring is a flange 3 and on the inner end a beading 4. It will be noticed that the inner surface of the ring is tapered, thereby assuring greater expansion when the mandrel *a* is applied in practice, since the mandrel is also tapered from approximately midway of its length and engages the whole of the inner surface of the ring. By this construction it will be observed that the expansion will occur throughout the length of the ring.

By having the outer surface of the tool straight and the inner surface tapered the successful operation of the device will readily be assured.

The minor details of construction and operation will, it is thought, be understood from the foregoing, as the invention consists in the broad idea of a flanging-tool comprising a slit ring having its outer surface straight and its inner surface tapered.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a flanging-tool, the combination of an integral split ring having a beading on the edge of its periphery and a flange of greater width than the bead, said ring having an inwardly-tapered opening and in combination therewith a mandrel having a taper corresponding to the taper of the opening of the ring, substantially as and for the purpose described.

In testimony whereof we affix our signatures in the presence of two witnesses.

DAVID B. YOUNG.
MARY SPEYER.

Witnesses:
GEORGE W. VOREIS,
CHARLES S. WISEMAN.