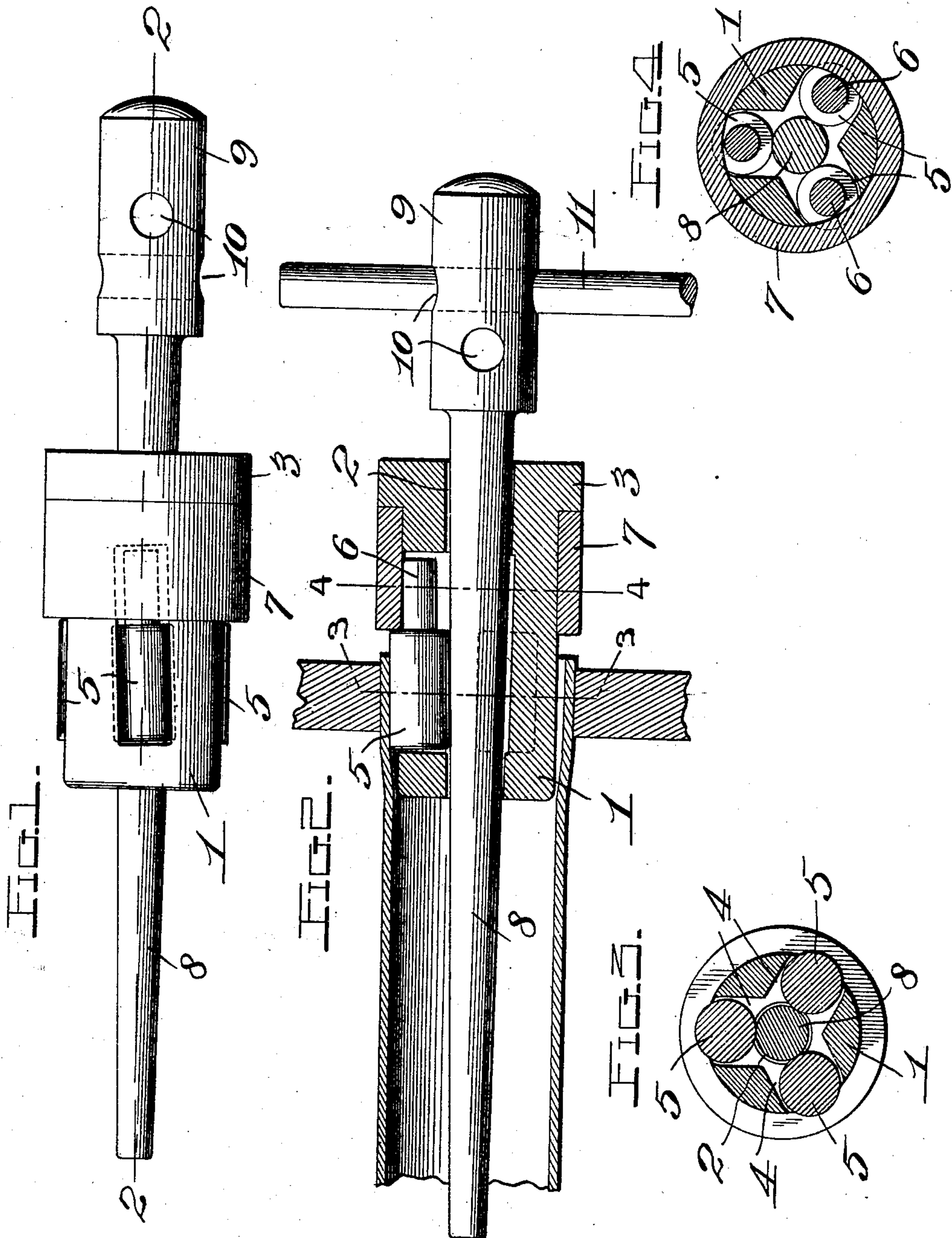


No. 898,202.

PATENTED SEPT. 8, 1908.

J. W. FAESSLER.  
BOILER TUBE EXPANDER.  
APPLICATION FILED JAN. 18, 1907.



ATTEST.

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# UNITED STATES PATENT OFFICE.

JOHN W. FAESSLER, OF MOBERLY, MISSOURI.

## BOILER-TUBE EXPANDER.

No. 898,202.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed January 18, 1907. Serial No. 352,893.

*To all whom it may concern:*

Be it known that I, JOHN W. FAESSLER, a citizen of the United States, and resident of Moberly, Randolph county, Missouri, have  
5 invented certain new and useful Improvements in Boiler-Tube Expanders, of which the following is a specification, containing a full, clear, and exact description, reference being had to the accompanying drawings,  
10 forming a part hereof.

My invention relates to a boiler tube expander, the object of my invention being to construct a simple, inexpensive and easily  
15 operated device for expanding the ends of boiler tubes in flue sheets, and the like.

To the above purposes, my invention consists of certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in my  
20 claim, and illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of an expanding tool of my improved construction; Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1 and showing the expander in position in the  
25 end of a boiler tube; Fig. 3 is a transverse section taken on the line 3—3 of Fig. 2; and Fig. 4 is a transverse section taken on the line 4—4 of Fig. 2.

Referring by numerals to the accompanying drawings: 1 designates the body of my improved tool, which is in the form of a cylindrical block, through the center of which is  
30 formed a circular opening 2, and formed integral with the rear end of this block is an outwardly projecting flange 3.

Formed in the body of the block, at equal distances apart and connecting with the opening through the center thereof, are the  
40 radially arranged openings 4, which are occupied by hardened metal rollers 5, and the rear ends of said rollers being provided with cylindrical stems 6. The openings 4 are formed at slight angles relative the opening 2  
45 through the center of the block 1, and thus the rollers 5 are maintained at slight angles, and when the tool is rotated said rollers will feed into or out of the end of the tube which is being expanded, depending on the direction of the rotation of said tool.  
50

Loosely arranged on the rear portion of the block 1 inclosing the stems 6 and bearing against the flange 3 is a ring 7, which, when the tool is in operation, forms a stop to limit  
55 the movement thereof in the boiler tube.

Adapted to enter the opening 2 and to

force the rollers 5 outwardly against the tube is a gradually tapered spindle 8, provided on its rear end with an integral head 9, which is perforated as designated by 10 in order to  
60 receive the pin or bar 11, by means of which the spindle is rotated.

When a tool of my improved construction is in operation, the forward end thereof is inserted in the end of the boiler tube, after  
65 which the spindle 8 is passed through the opening 2, thus causing the rollers 5 to be forced outwardly against that portion of the boiler tube adjacent the sheet, and the bar 11 is now engaged and manipulated so as to rotate the spindle, and at the same time said  
70 spindle is forced inwardly with considerable pressure. This action presses the rollers outwardly against the boiler tube and as a result of the friction due to the pressure, the rollers,  
75 together with the tubular head 1, will rotate with the spindle 8, and said rollers 5 being set at a slight angle will gradually feed into the end of the boiler tube and as the spindle is continually forcing said rollers outwardly,  
80 this action expands the end of the tube in the sheet. As soon as the end of the tube has been sufficiently expanded, the spindle 8 is withdrawn from the tubular head 1, which action releases the pressure on the rollers 5  
85 and the entire device is now removed from the end of the boiler tube.

The ring 7 acts as a stop to limit the forward movement of the cylindrical head and also serves as a bearing for the stems 6 on the  
90 rear ends of the rollers 5.

A tool of my improved construction is very simple, inexpensive, easily operated, and is very effective in the expanding of the ends of  
95 boiler tubes.

I claim:

The herein described boiler tube expander, comprising the cylindrical body 1, through the center of which is formed a longitudinally disposed opening, the flange 3 formed integral with the rear end of the body 1, there being a series of radially arranged openings 4 formed through the body and communicating with the opening therethrough, the ring 7 loosely mounted on the rear portion of the  
100 body and inclosing the rear portions of the radially arranged openings and which ring is of the same diameter as is the flange on the rear end of the body, the rollers 5 loosely arranged in the radially arranged openings, the  
105 rear ends of which rollers bear against the front face of the ring, the stems 6 integral

with the rollers, which stems bear against the inner periphery of the ring, a tapered spindle adapted to pass through the opening in the cylindrical head and engage all of the rollers,  
5 and a handle detachably applied to the outer end of the spindle.

In testimony whereof, I have signed my

name to this specification, in presence of two subscribing witnesses.

JOHN W. FAESSLER.

Witnesses:

GEO. W. SPARKS,  
JOHN W. SCOTT.