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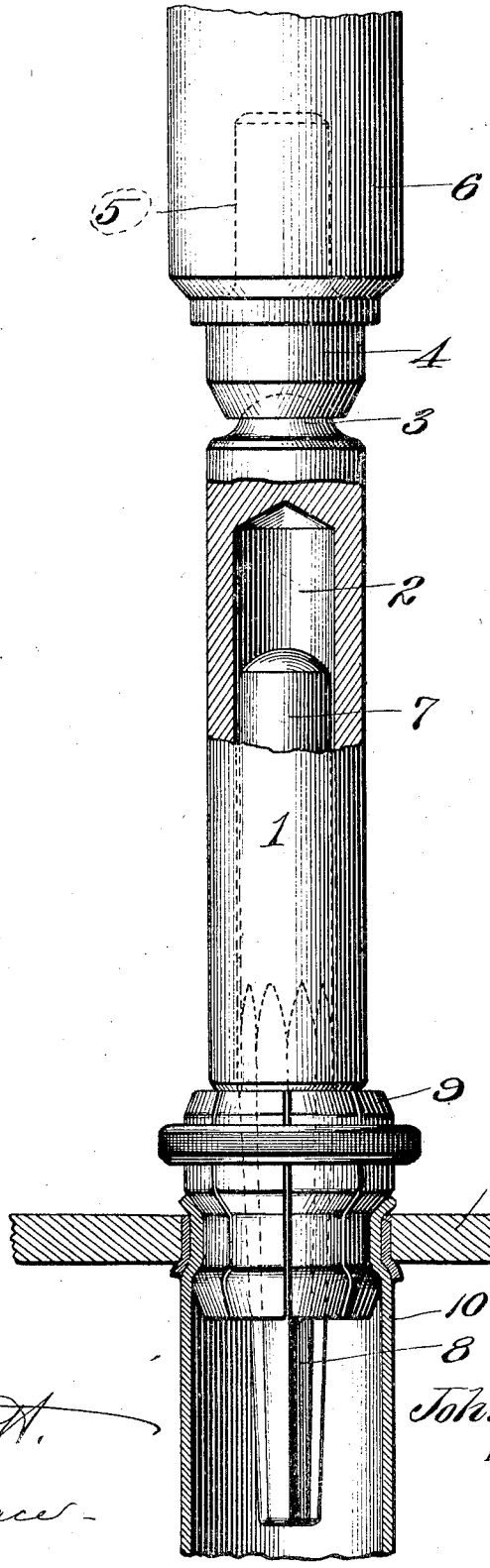
MANDREL EXTRACTOR FOR BOILER TUBE OR FLUE EXPANDERS.

APPLICATION FILED FEB. 19, 1912.

**1,053,372.** Patented Feb. 18, 1913.

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# UNITED STATES PATENT OFFICE.

JOHN W. FAESSLER, OF MOBERLY, MISSOURI.

## MANDREL-EXTRACTOR FOR BOILER TUBE OR FLUE EXPANDERS.

1,053,372. Specification of Letters Patent. Patented Feb. 18, 1913.

Application filed February 19, 1912. Serial No. 678,531.

*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 invented certain new and useful Improvements in Mandrel-Extractors for Boiler Tube or Flue Expanders, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in mandrel extractors for boiler tube or flue expanders, and the object of my invention is to construct a mandrel extractor arranged to be fitted over the mandrel and against the expander and to be impacted in order to remove the mandrel from the expander.

With the above purposes in view my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter more fully described, pointed out in the claims and illustrated by the accompanying drawing, in which the figure represents in elevation an expander and a mandrel therefor, and my improved extractor partly in section embracing the mandrel and in engagement with the expander in a position to extract the mandrel.

Referring by numerals to the accompanying drawing: 1 designates the body of my extractor having a bore 2 leading from the blunt circular impact end to a point adjacent the opposite end of the body.

3 designates a boss which projects from the closed end of the body 1 and is arranged to be received by a cavity formed in the end of a tool 4. The tool 4 is provided with a shank 5 arranged to be inserted in the body portion 6 of a pneumatic hammer.

7 designates a mandrel having a tapering end 8 which is polygonal in cross section.

9 designates a sectional expander, the sections of which are arranged as usual in the form of a ring or cylinder and inserted into the end of a flue or tube 10 in order that the end of the tube may be securely held in an opening formed in the sheet 11.

In the drawing, the operation of expanding the flue has been accomplished and the mandrel has been seated in the expander.

In order to remove the mandrel the extractor 1 is placed over the mandrel as shown in the drawing with its circular blunt impact end against all the sections of the expander and the blunt pneumatic-hammer connection 3 in engagement with the tool 4 of the pneumatic hammer. The hammer is then set in operation and the extractor is impacted, each impact tending to move simultaneously all of the expander sections relative to the mandrel and in the rebound after each impact the expander sections will find a new seat on the mandrel nearer to the end of the taper. Due to the inertia of the mandrel and the frequency of the impacts of a pneumatic hammer the mandrel slips outward very rapidly relative to the expander sections, so that the operation of extracting the mandrel is accomplished with great rapidity in comparison with the present day method of loosening the mandrel by side blows delivered upon said mandrel with hand hammers.

I claim:

1. A mandrel extractor for sectional boiler tube-expanders, comprising a tool constructed with a blunt circular impact surface at one end and a blunt hammering surface at its opposite end, to be interposed between the ring of sections of said tube-expander and a hammer, to simultaneously drive upon all the sections of said expander and by the inertia of the mandrel loosen the same.

2. A mandrel extractor for sectional boiler tube-expanders, comprising a tool constructed with a blunt circular impact surface at one end and a blunt pneumatic-hammer connection at its opposite end, to be interposed between the ring of sections of said tube-expander and a hammer, and to receive blows from said hammer and simultaneously impart the same to all the sections of said expander and thereby extract the mandrel.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

JOHN W. FAESSLER.

Witnesses:
GRAVES R. MAUPIN,
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