June 23, 1925. 1,543,583

R. L. MASON

TOOL

Filed April 26, 1924 2 Sheets-Sheet 1

Fig. 1.

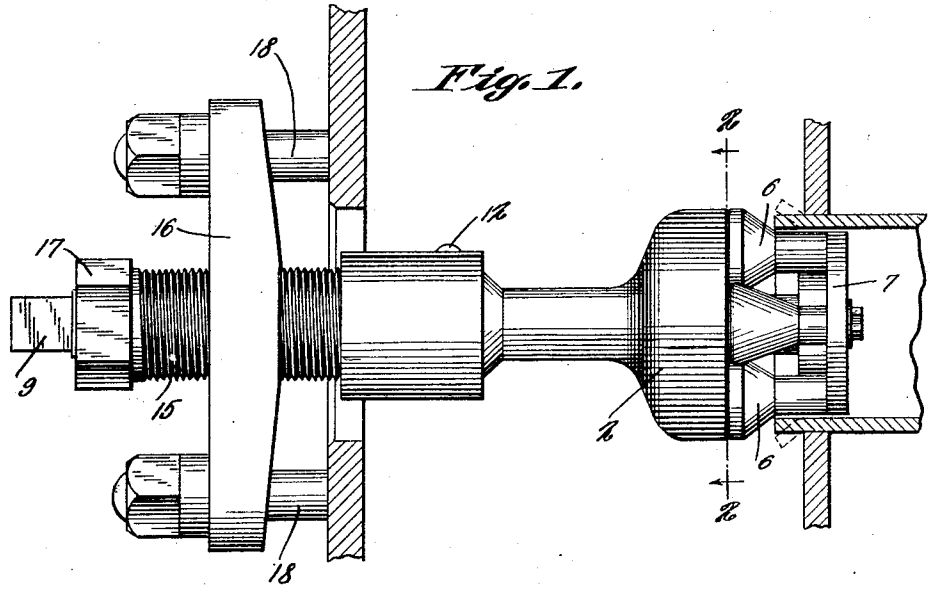


Fig. 2.

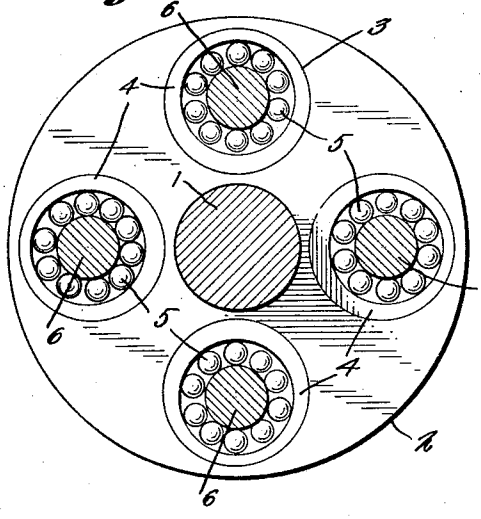
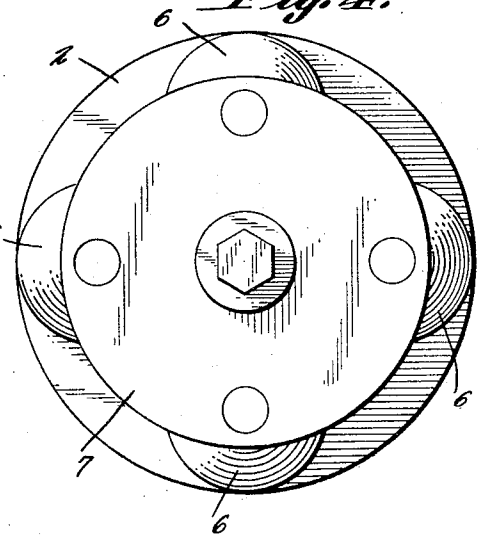


Fig. 4.



R. L. Mason, INVENTOR

BY Victor J. Evans

ATTORNEY

R. T. Hickey,
L. B. Middleton.

WITNESS:

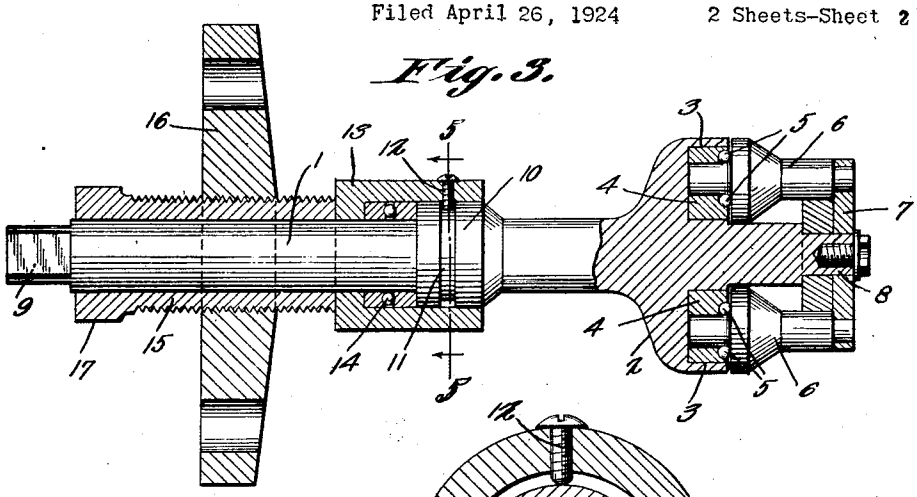
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R. L. MASON

TOOL

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Fig. 3.



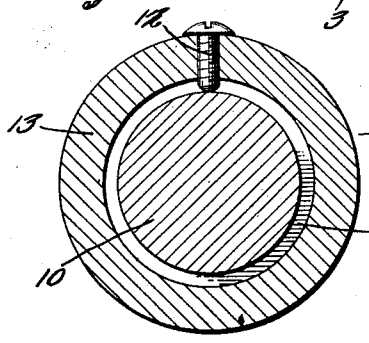
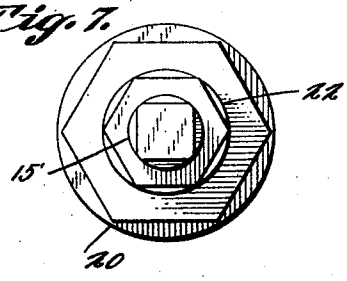


Fig. 5.

Fig. 7.



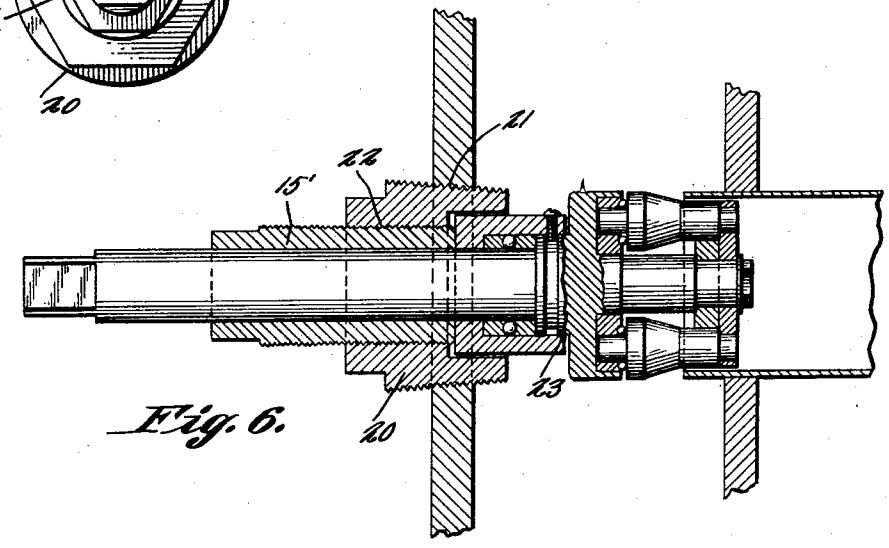


Fig. 6.

P. T. Hickey.
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WITNESS:

R. L. Mason,
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BY Victor J. Evans

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Patented June 23, 1925. 1,543,583

UNITED STATES PATENT OFFICE.

RALPH L. MASON, OF TACOMA, WASHINGTON.

TOOL.

Application filed April 26, 1924. Serial No. 709,292.

To all whom it may concern:

Be it known that I, RALPH L. MASON, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented new and useful Improvements in Tools, of which the following is a specification.

This invention relates to improvements in tools, the general object of the invention being to provide a tool for belling tubes after they have been expanded in the tube sheets, the tool comprising cone-shaped rollers for belling the tubes and threaded means for thrusting the rollers against the ends of the tubes.

Another object of the invention is to provide means whereby the tool can be held in position by a part attached to the flue cap or to a part which engages one of the washout holes of the boiler.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a view showing the invention in use.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a longitudinal sectional view through the tool itself.

Figure 4 is an end view.

Figure 5 is a section on line 5—5 of Figure 3.

Figures 6 and 7 are views of a modification.

In these views, 1 indicates the shank of the tool and 2 the head thereof which is formed with the eccentric recesses 3 therein for receiving the ball races 4 for the ball bearings 5. The reduced ends of the cone-shaped rollers 6 engage the ball bearings and the other ends of the rollers are supported by the plate 7 which is carried by the extension 8 at the center of the head. The opposite end of the shank is provided with a wrench receiving part 9 and an enlargement 10 is formed adjacent the center of the shank and this enlargement is provided with an annular groove 11 to receive the pin 12 on the thrust cap 13, ball bearings 14 being located between the cap and the shoulder formed by the enlargement 10. The shank passes through a threaded sleeve 15 which passes through a threaded hole in the plate 16 and said sleeve has a wrench engaging head 17 thereon. The plate 16 is adapted to be placed in engagement with the studs 18 of the arch flue cap so as to support the tool within a boiler. After the plate is put in position the sleeve 15 is rotated by a suitable wrench so that its pressure against the cap 13 will press the cone parts of the rollers 6 against the projecting end of a tube which has been expanded in the tube plate. The tool is then rotated by means of a suitable tool engaging the part 9 so that the cone rollers will bell the projecting end of the tube. The sleeve 15 acts as a feeding means for keeping the rollers against the end of the tube.

Where it is desired to place the device in the washout hole a tapered and threaded plug 20 is placed in the washout hole 21 and a threaded sleeve 15′ engages the threaded bore 22 of said plug and acts to feed the tool to the tube as before explained. In this form of the invention the tool is slightly different from the first form in that the thrust cap is attached to a collar 23 formed on the head of the tool.

From the foregoing it will be seen that this invention will permit the tubes to be belled very easily and quickly and without danger of damaging the tubes or the tube plates as is the case with the tools now in use where the tool is struck with a hammer. If desired, power means may be used for turning the parts.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

A tool for belling tubes in boilers and the

like comprising a shank, a head, cone-shaped rollers carried by the head for engaging the ends of tubes, a threaded sleeve through which the shank passes, a thrust member rotatably mounted on the shank and engaged by the sleeve, anti-friction means between the thrust member and the shank and a supporting member having a threaded hole therein for receiving the sleeve with means for fastening the member to a part of the boiler.

In testimony whereof I affix my signature.

RALPH L. MASON.