Oct. 16, 1923. 1,471,062

V. T. RIBLETT

FLUE TOOL

Filed March 24, 1923

Fig. 1.

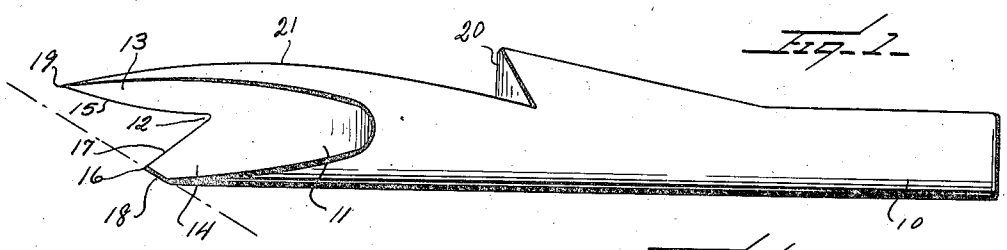


Fig. 3.

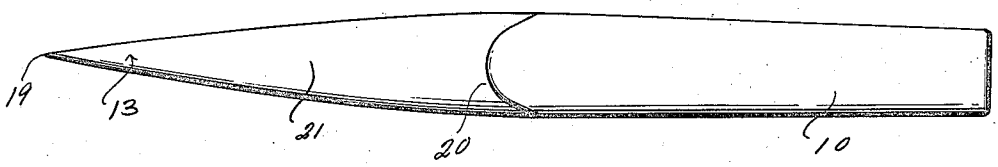


Fig. 2.

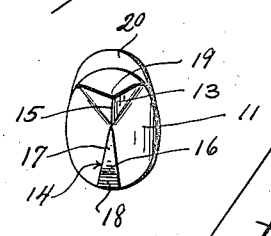


Fig. 6.

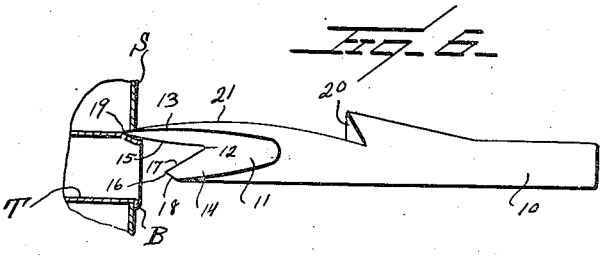


Fig. 4.

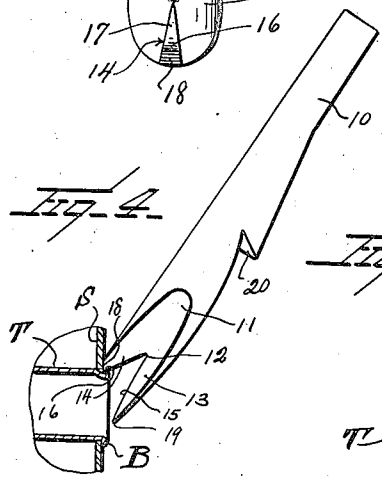


Fig. 8.

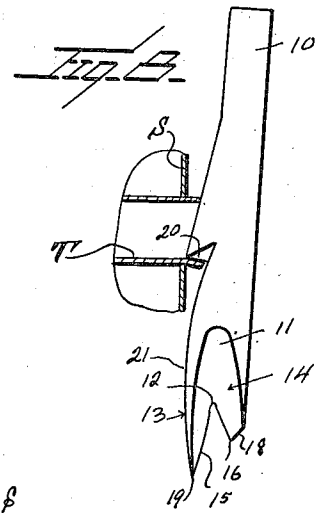


Fig. 7.

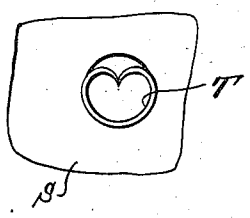
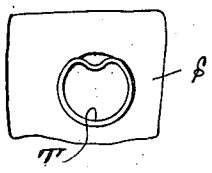


Fig. 5.



INVENTOR.
V. T. Riblett
BY
Watson E. Coleman
ATTORNEY.

Patented Oct. 16, 1923. 1,471,062

UNITED STATES PATENT OFFICE.

VICTOR T. RIBLETT, OF SHINNSTON, WEST VIRGINIA.

FLUE TOOL.

Application filed March 24, 1923. Serial No. 627,368.

To all whom it may concern:

Be it known that I, VICTOR T. RIBLETT, a citizen of the United States, residing at Shinnston, in the county of Harrison and State of West Virginia, have invented certain new and useful Improvements in Flue Tools, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to flue tools and more particularly to a device adapted for use in the removal and replacement of the tubes of boilers.

An important object of the invention is to provide in a single tool means for loosening and crimping a boiler tube so that the same may be removed from the opening of the crown sheet, together with means whereby a new tube when installed may be initially expanded so that the expander proper when employed with the tube may be readily entered.

A still further object of the invention is to provide a device of this character which is simple in construction, may be cheaply produced and will be durable and efficient in service.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a side elevation of the tool constructed in accordance with my invention;

Figure 2 is an end elevation thereof;

Figure 3 is an edge elevation thereof;

Figures 4, 6 and 8 show various manners of employing the tool; and

Figures 5 and 7 show the resulting formation of the tube.

Referring now more particularly to the drawings, numeral 10 designates a tool shank, flattened and broadened at one end, as indicated at 11, this end of the tool is furcated, as at 12, to provide long and short cutters 13 and 14. The cutter 13 is substantially tri-angular in cross section, the inner face thereof being in the form of a cutting edge, as indicated at 15. The short cutter 14 is formed to provide a spade chisel point, as indicated at 16, the wall of the furcation being flatly ground, as indicated at 17, and meeting a beveled face 18 set angularly to the outer wall of the broadened end of the shank to form a spade point.

This ground face 18 is at such an angle that the plane in which it lies extends in advance of the forward extremity of the long cutter 13, thus permitting use of the cutting edge 16 against the plane, with the face 18 lying in the plane and the point 19 of the long cutting edge clearing such plane. Intermediate its ends the shank 10 is provided upon a side face thereof with an outstanding shoulder 20, the lower face of which is disposed at right angles to the axis of the shank and curved transversely of the shank, as more clearly shown in Figure 3.

In the use of the tool for removing a tube T from a crown sheet S, the spade point 16 is abutting against the bead B formed in rolling the tube in position with the usual expander with the face 18 abutting the crown sheet S. By a few sharp blows with a hammer the tube can be deformed at the point of engagement, as indicated in Figure 5, so that a space is formed between the formed tube and the adjacent edge of the opening of the crown sheet, permitting the insertion of the long cutter 17. This cutter is inserted, as indicated in Figure 6, with the curved face 21 thereof in engagement with the crown sheet at the edge of the opening and the cutter edge 15 thereof engaging the deformed portion of the tube. By a few sharp blows with the hammer this long cutting edge is formed into the opening of the tube with the result that the tube is crimped inwardly, as more clearly shown in Figure 7, and so reduced in size that it may be readily forced through the opening of the crown sheet. In the use of the tool in installing new boiler tubes, after the tube has been inserted and extended through the crown sheet, the shoulder 20 is engaged interiorly of the tube, as indicated in Figure 8, and struck several hard blows with the hammer, with the result that the extended wall of the tube is flared outwardly in such manner as to permit ready insertion of the usual expander not herein shown.

It will be obvious that a tool of this character is capable of performing a plurality of functions, each necessary in the application and removal of boiler tubes, and will be of great assistance to mechanics performing such operation, who ordinarily find it necessary to employ several different chisels to release the tube and to rely upon a hammer to swage the outer end of the new tube

to permit the insertion of the expander. I desire it to be understood that I may make slight 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 claims.

I claim:—

1. The tool for the purpose described, a shank flattened at one end and furcated to provide long and short cutter arms, the long cutter arm being provided upon its inner surface with a V-shaped cutting face and short cutter arm being provided with a spade point, formed by the juncture of two beveled surfaces, one of which is disposed in a plane intersecting the axis of the tool and passing in advance of extreme forward point of the long cutter.

2. The tool for the purpose described, a shank flattened at one end and furcated to provide long and short cutter arms, the long cutter arm being provided upon its inner surface with a V-shaped cutting face and short cutter arm being provided with a spade point, formed by the juncture of two beveled surfaces, one of which is disposed in a plane intersecting the axis of the tool and passing in advance of extreme forward point of the long cutter, said shank being provided upon its side wall with beading shoulder.

3. The tool for the purpose described, a shank flattened at one end and furcated to provide long and short cutter arms, the long cutter arm being provided upon its inner surface with a V-shaped cutting face and short cutter arm being provided with a spade point, formed by the juncture of two beveled surfaces, one of which is disposed in a plane intersecting the axis of the tool and passing in advance of extreme forward point of the long cutter, said shank being provided upon its side wall with beading shoulder having the wall thereof disposed toward such flattened end at right angles to the axis of the shank and curved transversely of the shank.

In testimony whereof I hereunto affix my signature.

VICTOR T. RIBLETT.