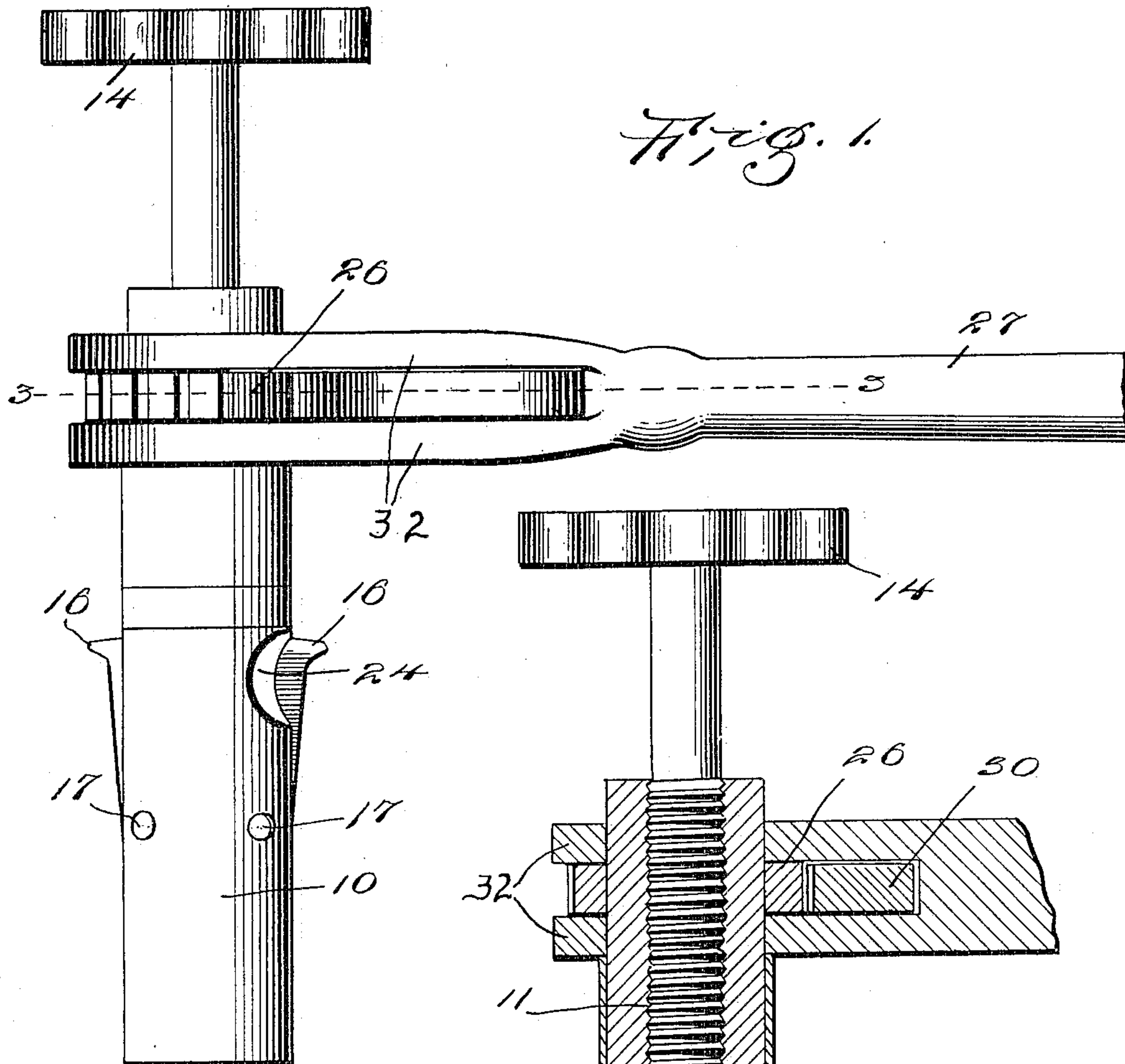


No. 819,598.

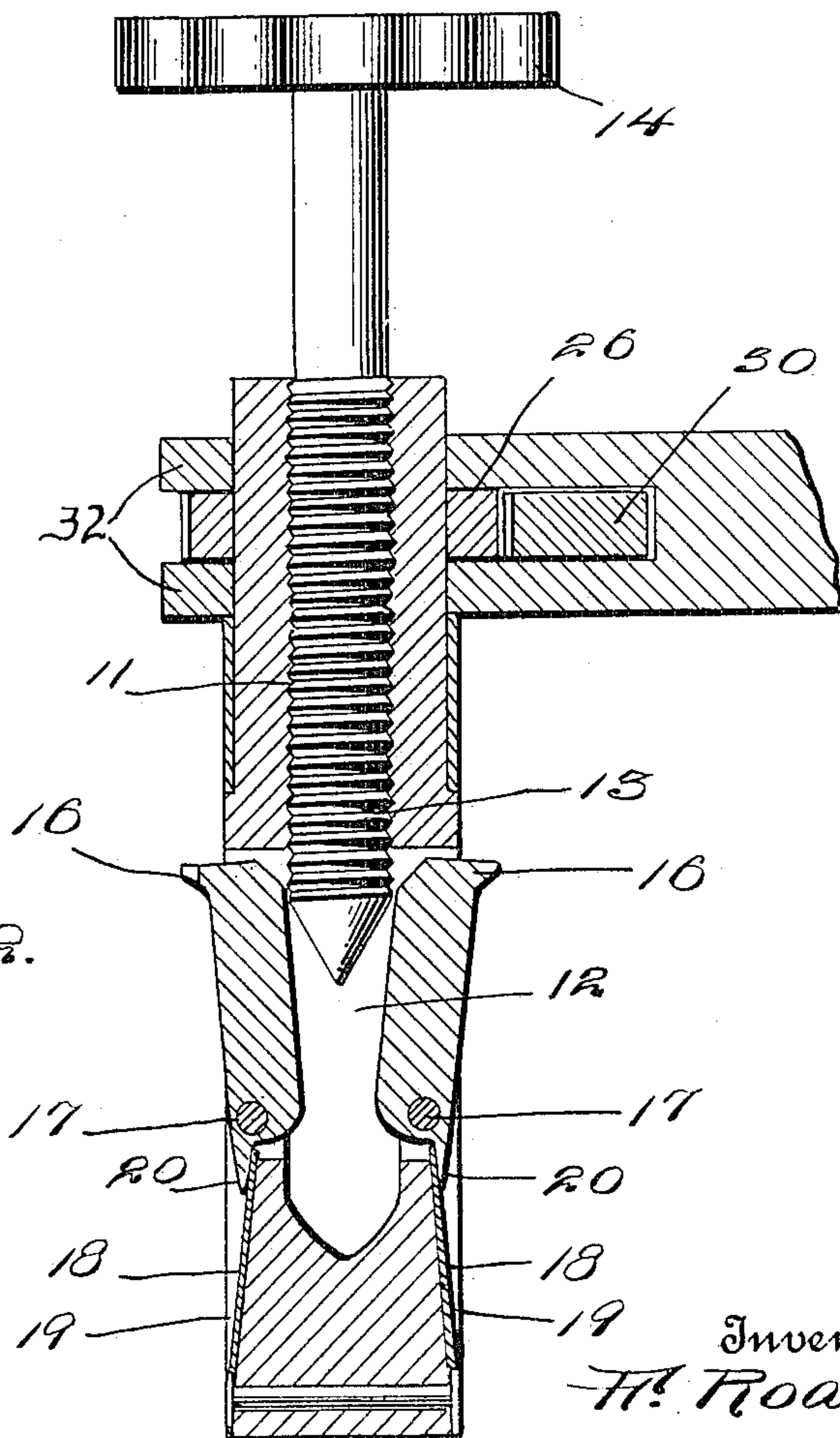
PATENTED MAY 1, 1906.

F. ROATCH.  
BOILER FLUE CUTTER.  
APPLICATION FILED AUG. 3, 1904.

2 SHEETS—SHEET 1.



*Fig. 2.*



Witnesses  
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2 SHEETS—SHEET 2.

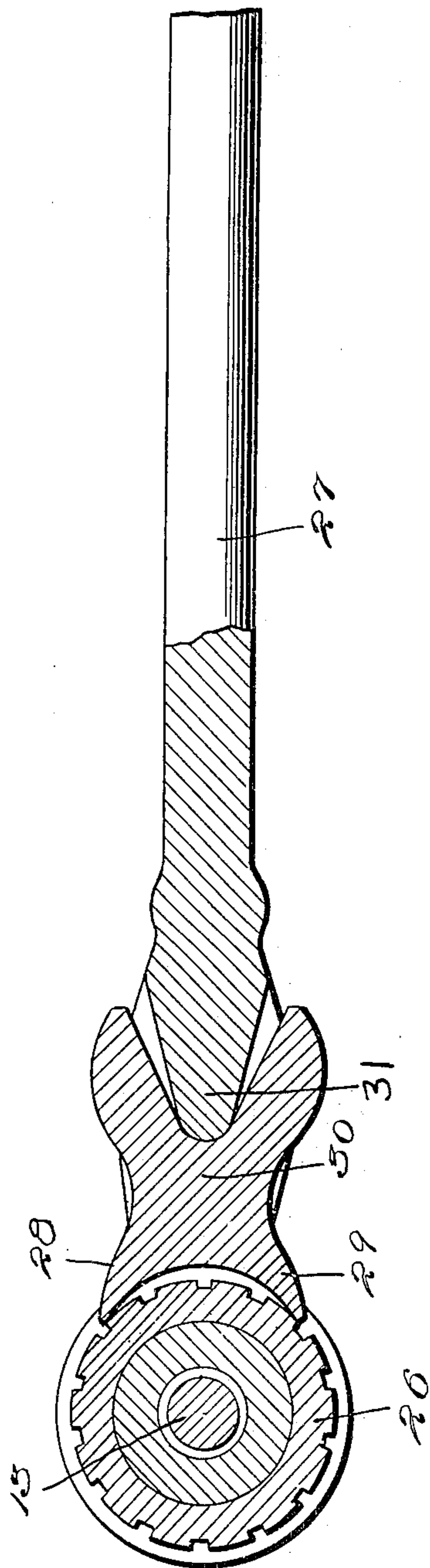


Fig. 3.

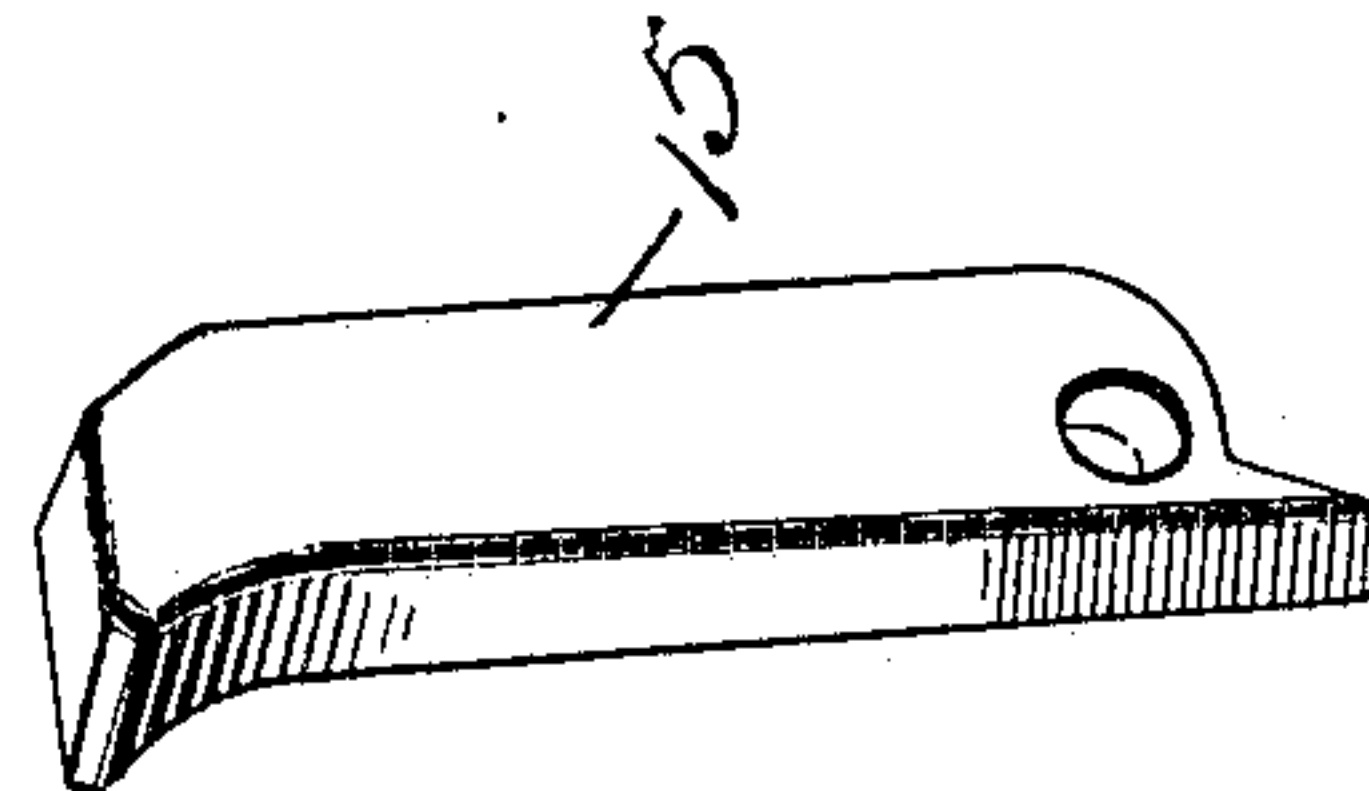


Fig. 4.

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# UNITED STATES PATENT OFFICE.

FRANK ROATCH, OF NEWBERRY, MICHIGAN.

## BOILER-FLUE CUTTER.

No. 819,598.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed August 3, 1904. Serial No. 219,410.

*To all whom it may concern:*

Be it known that I, FRANK ROATCH, a citizen of the United States, residing at Newberry, in the county of Luce, State of Michigan, have invented certain new and useful Improvements in Boiler-Flue Cutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to boiler-flue cutters; and it has for its object to provide a tool by means of which the flues of a boiler may be cut off inside the boiler preparatory to removing the flues, a further object of the invention being to provide a construction which will be simple and cheap of manufacture and which will be efficient in its operation.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an elevation of the tool with the cutters projected. Fig. 2 is a longitudinal section through the body of the tool with the cutters projected. Fig. 3 is a section on line 3 3 of Fig. 1, said section passing through the handle. Fig. 4 is a detail perspective view of one of the cutters.

Referring now to the drawings, there is shown a tool comprising a cylindrical body portion 10, having a central longitudinal passage 11 opening through one end thereof, and which intersects the transverse passage 12, which extends diametrically through the body portion, the passage 11 from its outer end to its intersection with the transverse passage being threaded, as illustrated, to receive a screw 13. The screw 13 is tapered or conical at its inner end, and at its outer end it is provided with a hand-wheel 14, which facilitates rotation of the screw.

In the end portions of the transverse passage 12 are disposed cutters, each including a body portion 15, pivoted at one end in the passage and having at its opposite end a laterally-directed nose 16, which is sharpened to the shape of the ordinary "cutting-off tool" used in lathe-work. As the tool is moved upon its pivot 17 the nose is caused to project beyond the face of the body portion 10 or to lie entirely within the transverse slot. To hold the cutting-tools with their noses retracted yieldably, plate-springs 18 are pro-

vided and are secured in longitudinal grooves 19 in the outer face of the body 10, and which grooves communicate with the portions of the transverse slot farthest from the hand-wheel. The plate-springs engage beneath fingers 20, that project from the adjacent ends of the bodies of the tools, and by pressing outwardly against these fingers force the opposite ends of the tools into the passage.

The inner faces of the bodies of the tools are beveled at their ends farthest from the pivots 17, and when the screw is fed into the body 10 the conical end of the screw wedges between the beveled portions and forces the ends of the tools with their noses outwardly beyond the surface of the body 10.

In the use of the tool the body portion 10 is passed into the end of a boiler-flue and the feeding-screw is adjusted to force the tools or cutters with their noses outwardly from the body portion 10 and into engagement with the inner surface of the boiler-flue. By then rotating the body 10 in the proper direction a groove will be cut in the inner face of the boiler-flue, and by feeding the screw inwardly the cutters will be shifted, so that they will gradually cut through the flue. In the face of the body 10 in advance of the nose of each cutter is formed a recess 24, which receives the chips as they are cut from the tube and which otherwise would tend to wedge between the body 10 and the flue.

The end of the body 10 adjacent to the hand-wheel is reduced in diameter, as illustrated, and upon this reduced portion adjacent to its outer end is fixed a ratchet-wheel 26. A handle 27 is provided having a bifurcated head which is pivotally or rotatably engaged with the reduced portion of the body at both sides of the ratchet-wheel. Between the bifurcations of the head are pawls 28 and 29, one end of each of which projects from a slot of the head, while the opposite end engages the ratchet-wheel. The pawls engage the ratchet-wheel at opposite sides of the latter and hold the ratchet-wheel against rotation in opposite directions. The two pawls are formed integral and are connected by the web 30. Between the bifurcated portions of the head is a portion 31 of the handle entering between the ends of the pawls at one side of the web to prevent the pawls from dropping from place, while permitting lateral shifting of the pawls to engage them interchangeably with the ratchet-wheel. When

using the tool with the body in horizontal position, the upper pawl drops by gravity into engagement with the ratchet-wheel.

What is claimed is—

- 5 A boiler-tube cutter comprising a body portion, cutters carried by the body portion and movable into and out of position to project therefrom, means for holding the cutter yieldably retracted, means for feeding the  
10 cutters from the body portion, a ratchet-wheel fixed to the body, a handle having a bifurcated head engaged with the body at both

sides of the ratchet-wheel, a tapered portion of the handle, pawls mounted between the bifurcations of the head and disposed to en- 15  
gage the ratchet-wheel and the tapered portion of the handle, and a web connecting the said pawls.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK ROATCH.

Witnesses:

JOHN TAIT,

CLAUDE LEIGHTON.