J. W. FAESSLER.

FLUE CUTTER.

APPLICATION FILED DEC. 11, 1907.

906,866.

Patented Dec. 15, 1908.

2 SHEETS—SHEET 1.

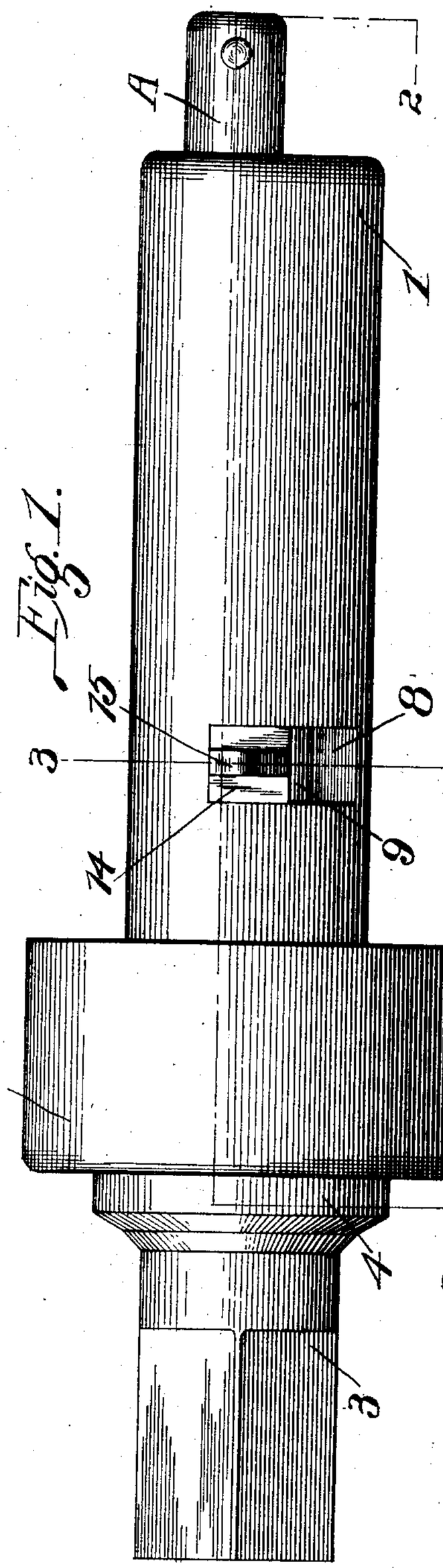

Fig. 1.

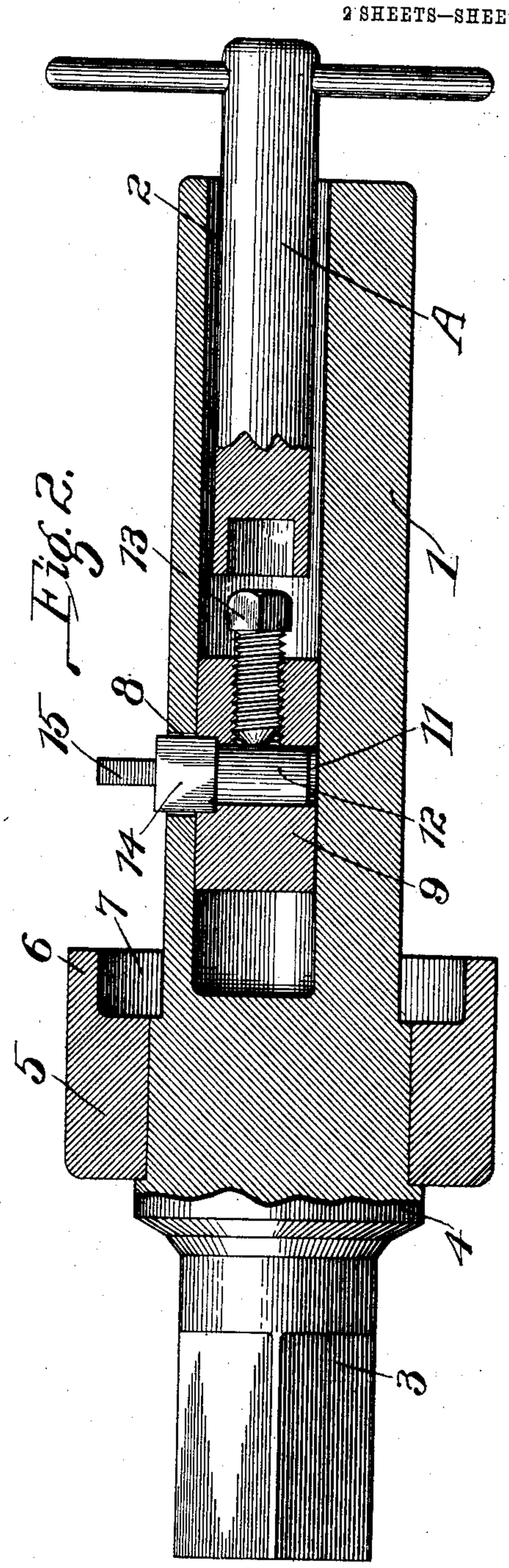

Fig. 2.

ATTEST:

Edgar J. Farmer.

W. P. Smith

INVENTOR:-

JOHN W. FAESSLER.

BY Kidgour & Longan.

ATTYS.

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2 SHEETS—SHEET 2.

Fig. 4.

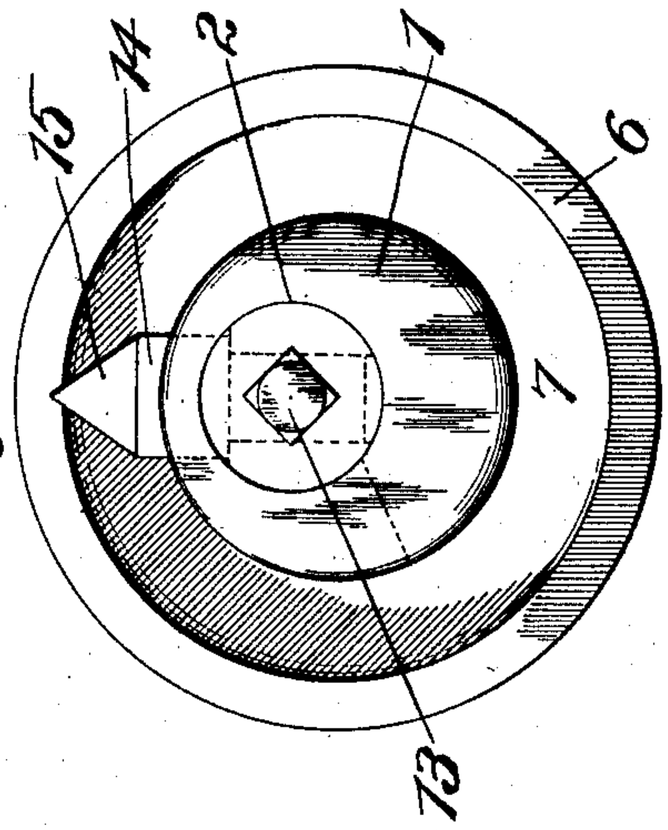


Fig. 6.

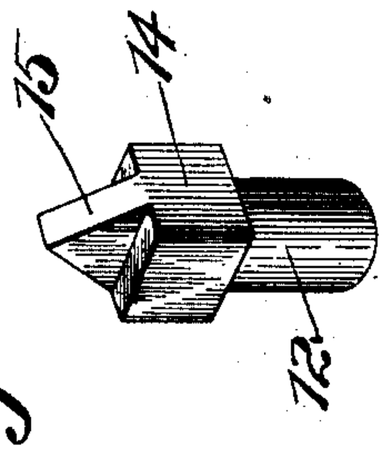


Fig. 3.

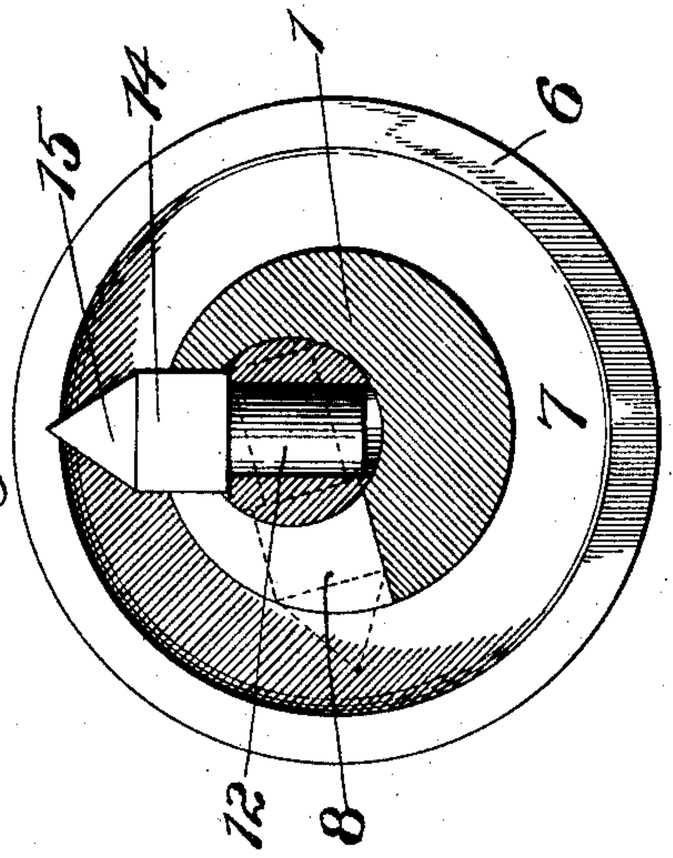
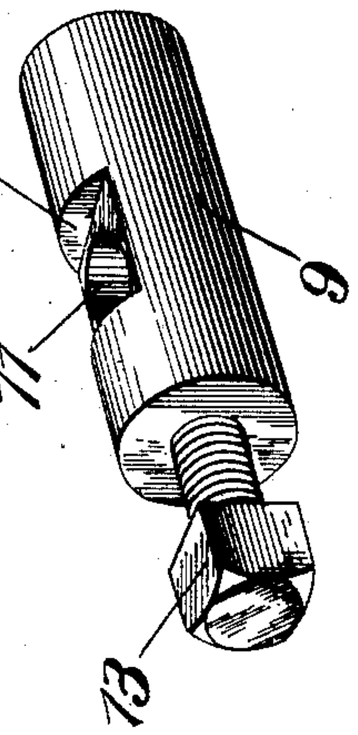


Fig. 5.



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ATTYS.

UNITED STATES PATENT OFFICE.

JOHN W. FAESSLER, OF MOBERLY, MISSOURI.

FLUE-CUTTER.

No. 906,866. Specification of Letters Patent. Patented Dec. 15, 1908.

Application filed December 11, 1907. Serial No. 406,087.

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 Flue-Cutters, 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 that class of devices which are employed for cutting flues or boiler tubes at a point within the flue sheet, and the object of my present invention is to generally improve the construction of the devices shown in my prior patents, No. 768,437, issued August 23, 1904, and No. 770,052, issued September 13, 1904.

A further object of my invention is to construct an improved cutter and holder therefor, which latter is so formed as that the lower end of the cutter is prevented from engaging against the main body of the tool and cutting thereinto, which action is an objectionable feature in both constructions disclosed in the above mentioned patents.

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

Figure 1 is a plan or side view of the complete flue cutter; Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1; Fig. 3 is a transverse section taken on the line 3—3 of Fig. 1; Fig. 4 is an end elevation of the tool; Fig. 5 is a perspective view of the cutter holder; Fig. 6 is a perspective view of the cutter.

Referring by numerals to the accompanying drawings:—1 designates the body of the tool, which is cylindrical in form, provided with the longitudinally extending eccentric bore 2, and on one end with a non-circular shank 3, adjacent which is formed an integral flange 4.

Arranged for rotation on the body 1, and bearing against the flange 4 is a collar 5, provided at one end with a projecting lip or flange 6, thus forming an annular space or groove 7 between said lip and the periphery of the body 1.

Formed in the body 1 and communicating with the eccentric bore 2 therein is a transversely disposed slot 8, which extends through a radius of approximately 95° or 100°, and the purpose of which will be hereinafter described.

Adapted to fit snugly within the bore 2 and to rotate therein is a tool holder, (see Fig. 5,) which comprises a cylindrical body 9, in one side of which is formed a rectangular notch or recess 10, and extending through the body of the holder, from the center of this notch or recess, is an aperture 11.

The cutter of my improved tool, (Fig. 6,) comprises a short shank 12, adapted to fit snugly in the aperture 11, and which shank is locked in the holder by means of a set screw 13 passing through one end of the holder and bearing against the side of said shank.

Formed integral with the upper end of the shank is a square head or block 14, the lower portion of which fits snugly within the recess 10; and formed integral with the upper end of the head is the cutting point 15.

When a tool of my improved construction is to be used, the holder 9 is rotated in the bore 2 so as to move the head 14 of the cutter into the lower end of the slot 8, which movement by reason of the eccentric arrangement of the bore 2 brings the outer end of the cutting point 15 close to the periphery of the body 1, and into such position as that said body can be inserted in the end of the flue.

When the tool has been properly positioned in the flue, with the end of the latter occupying the annular space 7 beneath the flange 6, the tool is rotated in any suitable manner to the right, and the end of the point 15 engaging the inner face of the flue will bear there against with a cutting action; and as said action progresses, the holder 9 is slowly rotated in the bore 2, and the point of the cutter consequently travels in a gradually increasing circle until the wall of the tube is cut through.

The cutter is rigidly held in the holder 9 by tightening the end of the set screw 13 against the shank 12 by means of a suitable tool A inserted in the outer end of the eccentric bore 2, and by constructing the cutter with the square head 14, which occupies the notch or recess 10, said cutter is prevented from moving through the holder by reason of the pressure incident to the cutting operation; which movement, if permitted, would allow the lower end of the cutter to bear against and cut or wear the surface of the bore 2.

A tool of my improved construction comprises a minimum number of parts, can be readily assembled for use or taken apart, can be operated by hand or mechanical power, and very rapidly performs the work of cutting flues or boiler tubes inside the flue sheet.

I claim:—

1. The herein described flue cutter, comprising a cylindrical body in which is formed an eccentric bore, there being a radial slot formed in said body and communicating with the bore, a cylindrical holder positioned in the bore, there being a non-circular notch formed in the face of the holder, there being an aperture formed through the holder from the notch, a cutter shank occupying the aperture, a non-circular cutter head integral with the shank and occupying the non-circular notch, and a cutter point integral with the head, which point extends through the radial slot in the cylindrical body of the flue cutter.

2. The herein described flue cutter, comprising a cylindrical body in which is formed an eccentric bore, there being a radial slot formed in said body and communicating with the bore, a cylindrical holder positioned in the bore, there being a non-cylindrical notch formed in the face of the holder, there being an aperture formed through the holder from the notch, a cutter shank occupying the aperture, a cutter head integral with the shank and occupying the non-circular notch, a cutter point integral with the head, which point extends through the radial slot in the cylindrical body of the flue cutter, and a set screw passing longitudinally through one end of the cylindrical holder and engaging the cutter shank.

3. The herein described flue cutter, comprising a cylindrical body in which is formed an eccentric bore, there being a radial slot formed in said body and communicating with the bore, a cylindrical holder positioned in the bore, there being a rectangular notch formed in the face of the holder, there being an aperture formed through the holder from the notch, a short cutter shank occupying the bore, a rectangular cutter head integral with the shank and occupying the rectangular notch, a cutter point integral with the head, which point extends through the slot in the cylindrical body of the flue cutter, and means seated in the holder for engaging and locking the cutter shank to said holder.

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

JOHN W. FAESSLER.

Witnesses:

A. C. DINGLE,

G. R. MAUPIN.