

(No Model.)

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FLUE CUTTER.

No. 419,310.

Patented Jan. 14, 1890.

Fig. 1.

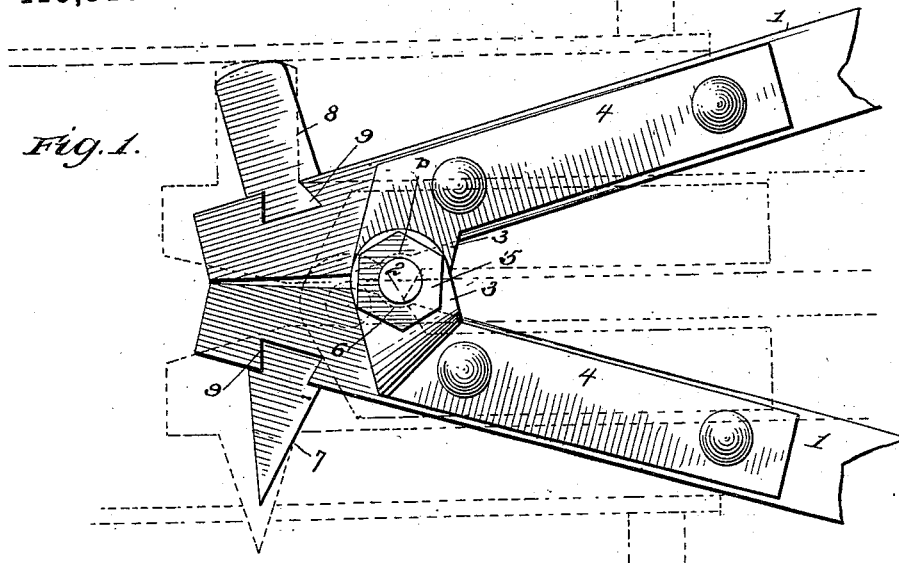


Fig. 2.

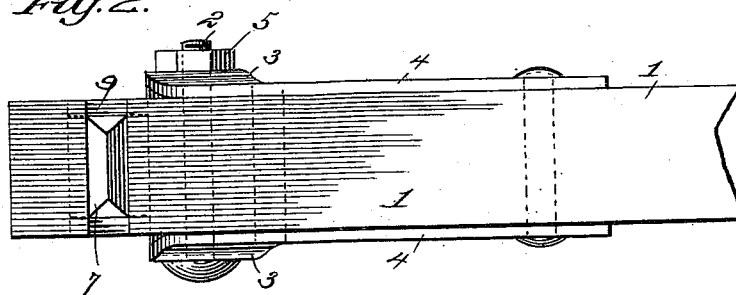


Fig. 3.

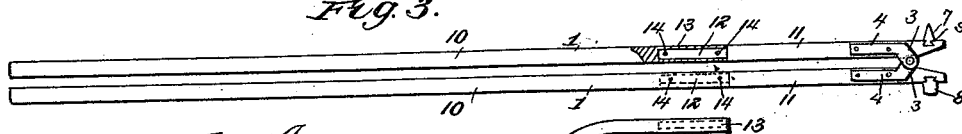


Fig. 4.

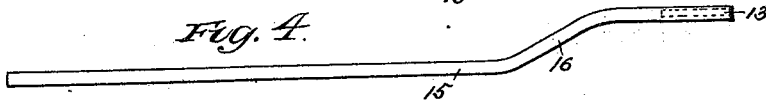


Fig. 5.

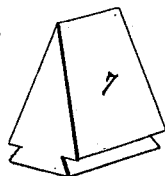
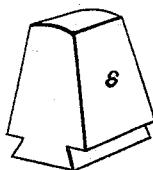


Fig. 6.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GUSTAV BOGUSCH, OF VALLECILLO, MEXICO, AND AUGUST ZINCKE, OF LLANO, TEXAS, ADMINISTRATOR OF ROBERT J. BOGUSCH, DECEASED.

## FLUE-CUTTER.

**SPECIFICATION** forming part of Letters Patent No. 419,310, dated January 14, 1890.

Application filed June 15, 1889. Serial No. 314,379. (No model.)

*To all whom it may concern:*

Be it known that ROBERT J. BOGUSCH, deceased, (AUGUST ZINCKE, of Llano, Llano county, Texas, administrator,) and GUSTAV BOGUSCH, of Vallecillo, Nuevo Leon, Mexico, 5 invented a new and Improved Flue-Cutter, of which the following is a full, clear, and exact description.

This invention relates to flue-cutters, and 10 has for its object to provide a flue-cutter by means of which flues may be quickly and easily cut.

The invention consists in a flue-cutter constructed as hereinafter described and claimed.

15 Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the invention in 20 position for cutting, showing the arms broken away. Fig. 2 is an edge view of the invention with arms broken away. Fig. 3 is a side view of the invention, showing detachable arms. Fig. 4 is a modified form of arm detached. Fig. 5 is a view of the cutter-head 25 detached, and Fig. 6 is a view of the bearing-block detached.

In the construction of the cutter, arms 1 are hinged together adjacent to one end by 30 means of a bolt 2, extending between the arms 1 and projecting through holes in the bent overlapping ends 3 of metallic straps 4, bolted to the arms 1. The bolt 2 is held in place by a nut 5, and is located between semicircular 35 recesses 6 in the arms 1, whereby the latter may move on the bolt without binding. The arms 1 are provided, adjacent to their ends beyond the fulcrum, with a cutter-head 7 and a bearing-block 8, attached to the arms 40 in any suitable manner, and, as here shown, preferably by means of a dovetailed joint 9, to permit of their readily being detached to be sharpened or repaired and to be replaced by larger or smaller sizes, according to the 45 size of the flue to be cut. To arrange for the

desired leverage the arms 1 may be formed with detachable portions 10, connected in any suitable manner to the main portions 11 of the arms, and, as here shown, by means of a tongue 12 on the portions 11 engaging a 50 socket 13 in one end of portions 10, and secured by pins 14. In this way long or short arms may be used, according to the leverage required.

In order to be able to use the flue-cutter 55 for side or corner flues, a modified form of detachable arm 15, as shown in Fig. 4, may be employed. The arm 15 is formed with the bent portion 16, which, bringing the remainder of the arm 15 farther away from the portion 10 of the other arm when the arms are 60 opened, thereby permits the cutting of flues on the side or corners of a boiler.

In use the tool is placed in position in a flue, as shown in Fig. 1, with the bearing- 65 block 8 resting against the interior wall of the flue at a point diametrically opposite to the point in the flue against which the cutter-head is brought to bear. Upon closing or bringing the longer portion of the arms to- 70 gether the cutter-head 7 is forced through the flue, as shown in dotted lines in Fig. 1. In this way the flue may be effectively cut.

While we have set forth a specific construction of parts, we do not intend to limit our- 75 selves thereto, as the parts may be varied without departing from the essential features of the invention.

If preferred, the arms 1 may be made of 80 piping.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A flue-cutter constructed with a pair of pivoted arms having their shorter pivotal por- 85 tions opening outward, with a lateral bearing-block on one of the shorter pivotal portions and a cutter-head on the other, substantially as shown and described.

2. In a flue-cutter constructed with arms 90

pivoted together and having short pivotal portions opening outward, with a lateral bearing-block on one of the short pivotal portions and a cutter on the other, the detachable arm 5 15, with the bent portion 16, substantially as shown and described.

3. A flue-cutter constructed with arms 1, pivoted together near one end by a bolt 2, projecting through the bent overlapping ends 3 10 of plates 4, secured to arms 1, and held by a nut 5, and having the lateral bearing-block 8 on one of the short portions of arms 1 and the cutter-head 7 on the other, the block 8 and cutter-head 7 attached by means of a 15 dovetailed joint 9, and the arms 1 having de-

tachable handle portions 10, substantially as shown and described.

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