

No. 725,856.

PATENTED APR. 21, 1903.

A. N. LUCAS & C. W. DANGLEMYER.

FLUE CUTTER.

APPLICATION FILED DEC. 8, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

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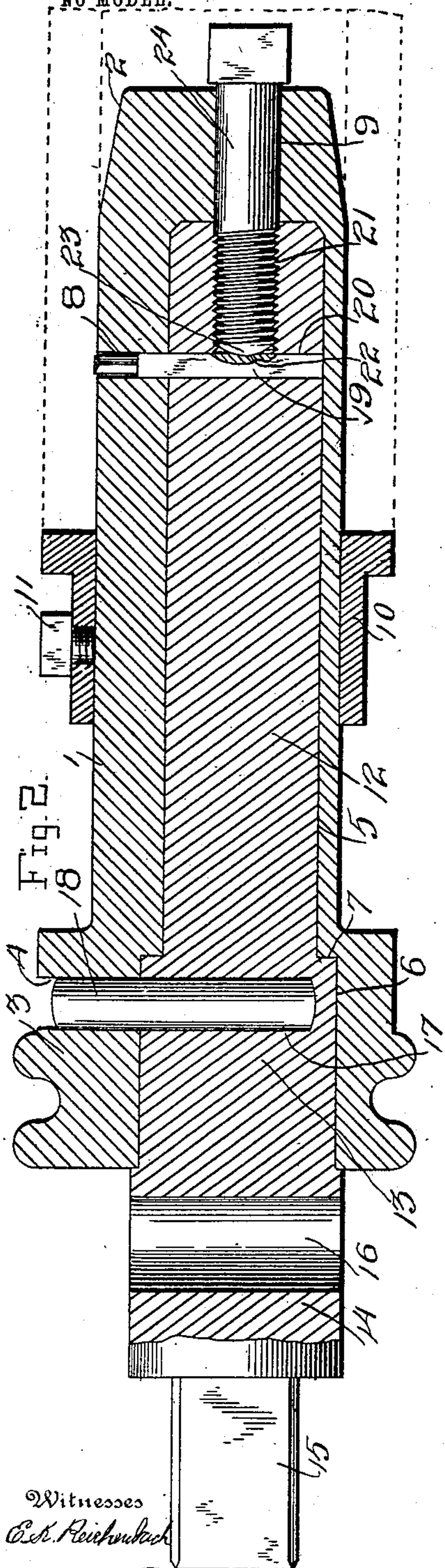
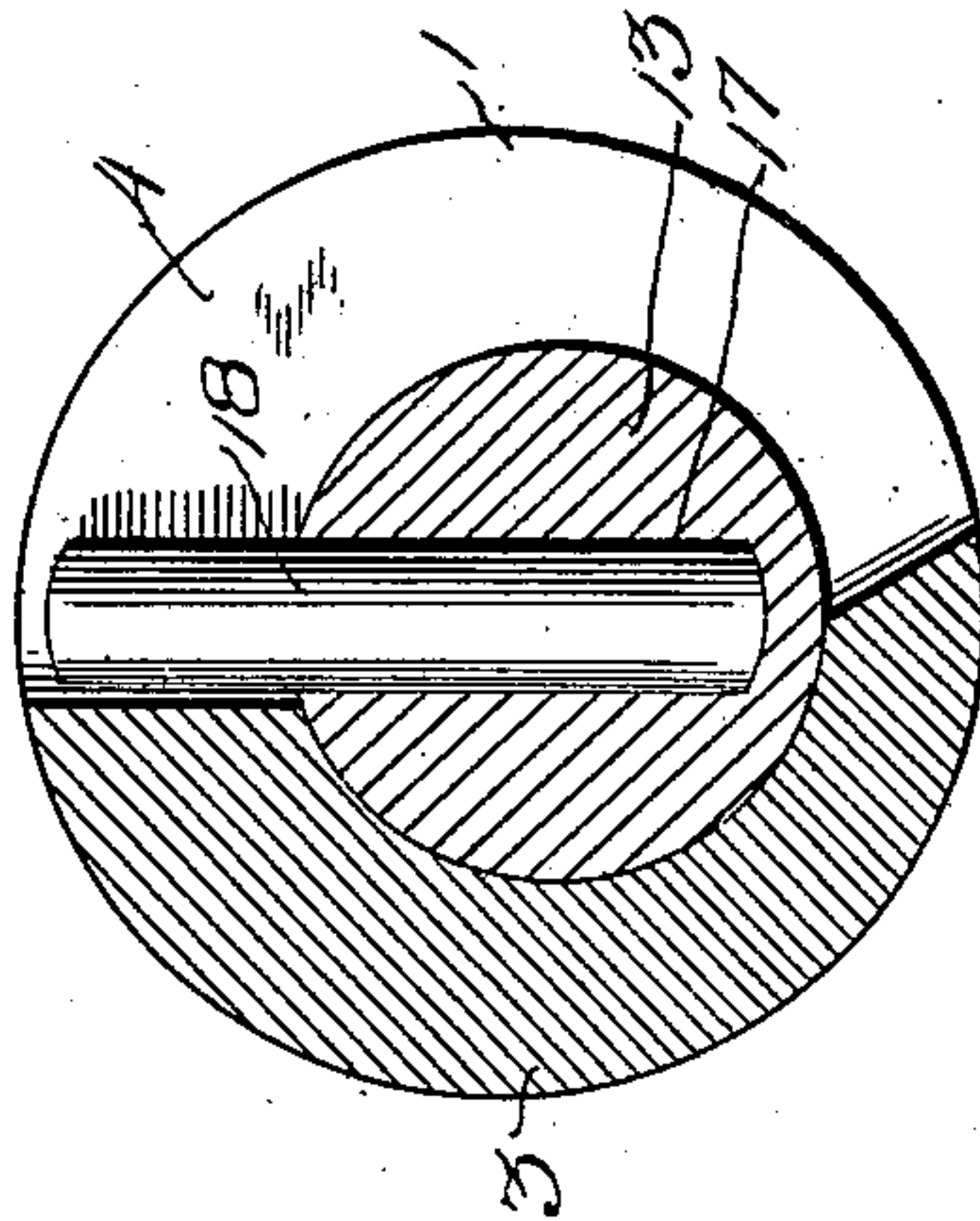


Fig. 2.



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UNITED STATES PATENT OFFICE.

ABRAM N. LUCAS AND CHARLES W. DANGLEMYER, OF DUBUQUE, IOWA.

FLUE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 725,856, dated April 21, 1903.

Application filed December 8, 1902. Serial No. 134,337. (No model.)

To all whom it may concern:

Be it known that we, ABRAM N. LUCAS and CHARLES W. DANGLEMYER, citizens of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Flue-Cutters; and we do 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.

Our invention is an improved pipe and flue cutter; and it consists in the peculiar construction and combination of devices herein-
after fully described and claimed.

The object of our invention is to provide a new and improved pipe or flue cutter which is simple and durable in construction, very effective in operation, may be readily applied to and disconnected from a pipe or flue, and when actuated is adapted to quickly cut the pipe or flue at any desired point.

In the accompanying drawings, Figure 1 is a side elevation of a flue or pipe cutter embodying our improvements. Fig. 2 is a transverse sectional view of the same, taken on the plane indicated by the line *a a* of Fig. 1. Fig. 3 is a longitudinal central sectional view of the same; and Fig. 4 is a transverse sectional view of the same, taken on the plane indicated by the line *b b* of Fig. 1.

In the embodiment of our invention we provide a sleeve 1, which is cylindrical in form, is preferably tapered at its inner end, as at 2, and is provided at its outer end with an enlarged head 3. This head is provided with a segmental slot 4, disposed at right angles to the major axis of the sleeve. The bore 5 of the sleeve is eccentrically disposed therein, extends to within a suitable distance of the inner end thereof, and is provided at its outer end with an annular enlargement 6, whereby a shoulder 7 is formed. The sleeve is provided with a segmental slot 8, which is at right angles to the axis of the sleeve and is adapted for the reception of the flue-cutting bit, hereinafter described. At the inner end of the sleeve is an opening 9 of suitable diameter, which communicates with the eccentrically-disposed bore of the sleeve and is disposed centrally with relation thereto. On the sleeve is an adjusting-collar 10. The same is shift-

able longitudinally on the sleeve within the head 3 and is adapted for the adjustment of the sleeve, so that the flue-cutting bit may be set to operate at any desired distance from that end of the flue or pipe in which the sleeve is inserted. The adjusting-sleeve is provided with a screw 11, by which it may be clamped to the sleeve when properly adjusted thereon. A mandrel 12 is provided, which is fitted accurately to the bore 5 of the sleeve; is adapted to turn therein, is provided with an enlarged portion 13 to fit in the enlarged bore 6 of the sleeve, and is further provided with a projecting head 14 and a projecting stem 15, the latter being cross-sectionally angular. An opening 16 of suitable size extends transversely through the head 14 and is adapted for the reception of a lever-bar, by means of which the mandrel may be turned. The cross-sectionally angular stem 15 is also for the reception of a suitable lever, such as a wrench, for turning the sleeve. In the enlarged portion 13 of the mandrel is an opening 17, which is coincident with the slot 4 of the head 3, and is adapted for the reception of a key-pin 18, the projecting end of which operates in said slot. The flue-cutting bit 19 tapers longitudinally, or, in other words, is wedge-shaped, and is fitted detachably in a wedge-shaped radially-disposed opening 20, with which the mandrel 12 is provided. A threaded opening 21 is at the inner end of the mandrel and extends therefrom to the opening 20, in which the flue-cutting bit is seated, and the outer portion of the said bit operates in the slot 8 in the sleeve. The bit is provided on one side with a countersink 22 to receive the correspondingly-shaped projecting end 23 of a set-screw 24. The latter passes through without engaging the bore 9 of the sleeve, and its threaded portion engages the threaded opening 21 of the mandrel. The inner end of the flue-cutting bit bears against one side of the bore 5 of the sleeve. Hence after the latter has been inserted in the flue or pipe and appropriately adjusted by means of the collar 10 when the mandrel is turned by the means hereinbefore described in one direction the eccentric disposition of the bore 5, in which the mandrel turns independently of the sleeve, causes the cutting-bit to be moved radially to penetrate the pipe or flue.

The mandrel turns independently of the sleeve, while the key-pin 18 moves from one end of the slot 4 to the other. Thereafter the sleeve also is rotated with the mandrel, 5 as will be understood. One rotation of the implement suffices to cut the pipe or flue.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages 10 of our invention will be readily apparent, it is thought, without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be 15 resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is— 20

1. In a pipe or flue cutter, the combination of a sleeve, a mandrel revoluble therein and having a wedge-shaped seat disposed radially therein, a cutter-bit shaped to fit said 25 seat, and a set-screw engaging a threaded opening with which the mandrel is provided

and also engaging the cutter-bit to secure the latter in the seat, substantially as described.

2. The combination in a pipe or flue cutter, of a sleeve adapted to enter a pipe or flue 30 and having an eccentrically-disposed bore, and a bore 9 concentric with said bore, a mandrel revoluble in the eccentric bore of said sleeve and having a seat for a cutter-bit, a bit in said seat and operating in a slot with 35 which the sleeve is provided, said bit having a countersink in one side registering with the bore 9, and a set-screw extending through the key engaging said bore 9 having its threaded portion engaging a threaded opening in the 40 inner end of the mandrel and provided with a projection 23 to engage the countersink in the cutter-bit, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses. 45

ABRAM N. LUCAS.
CHARLES W. DANGLEMYER.

Witnesses:

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JOSEPH P. SAHM.