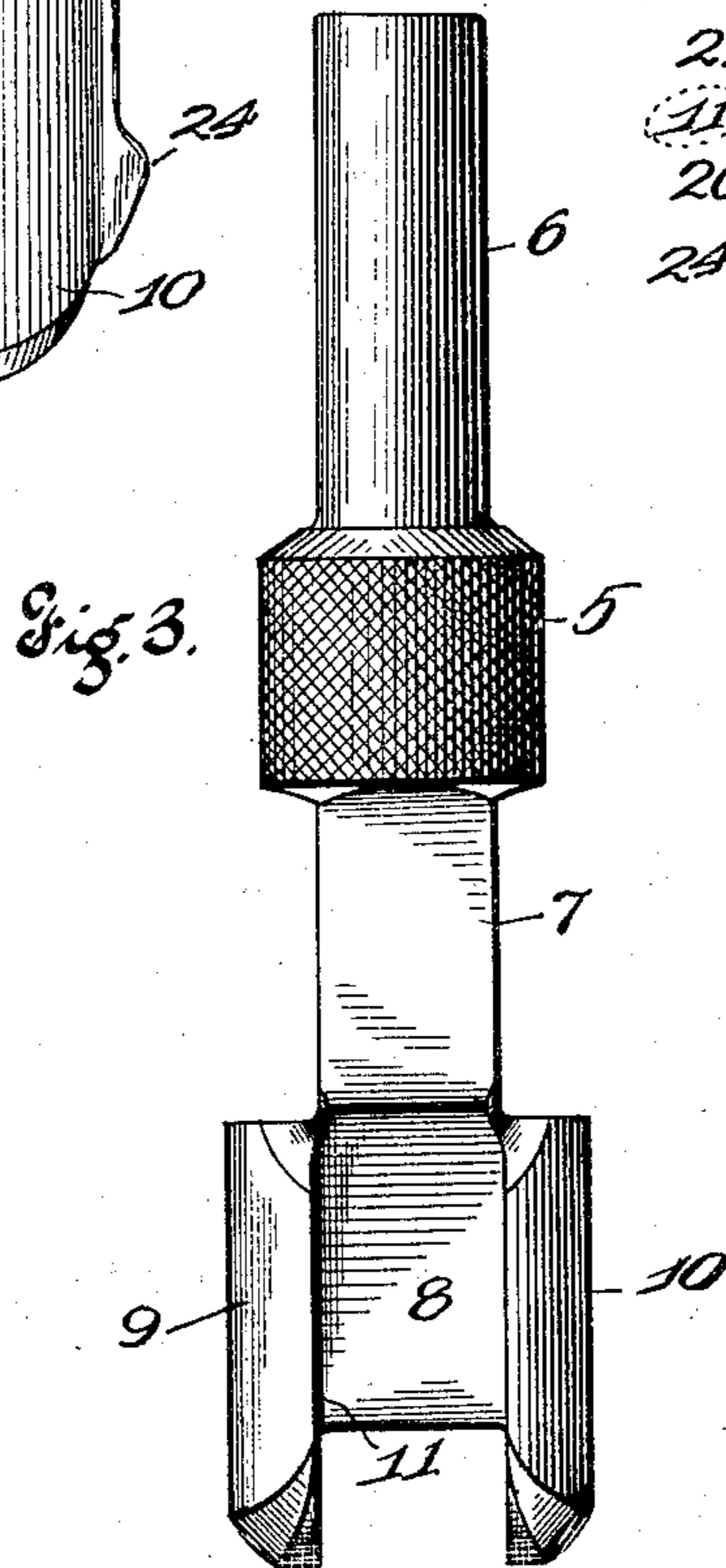
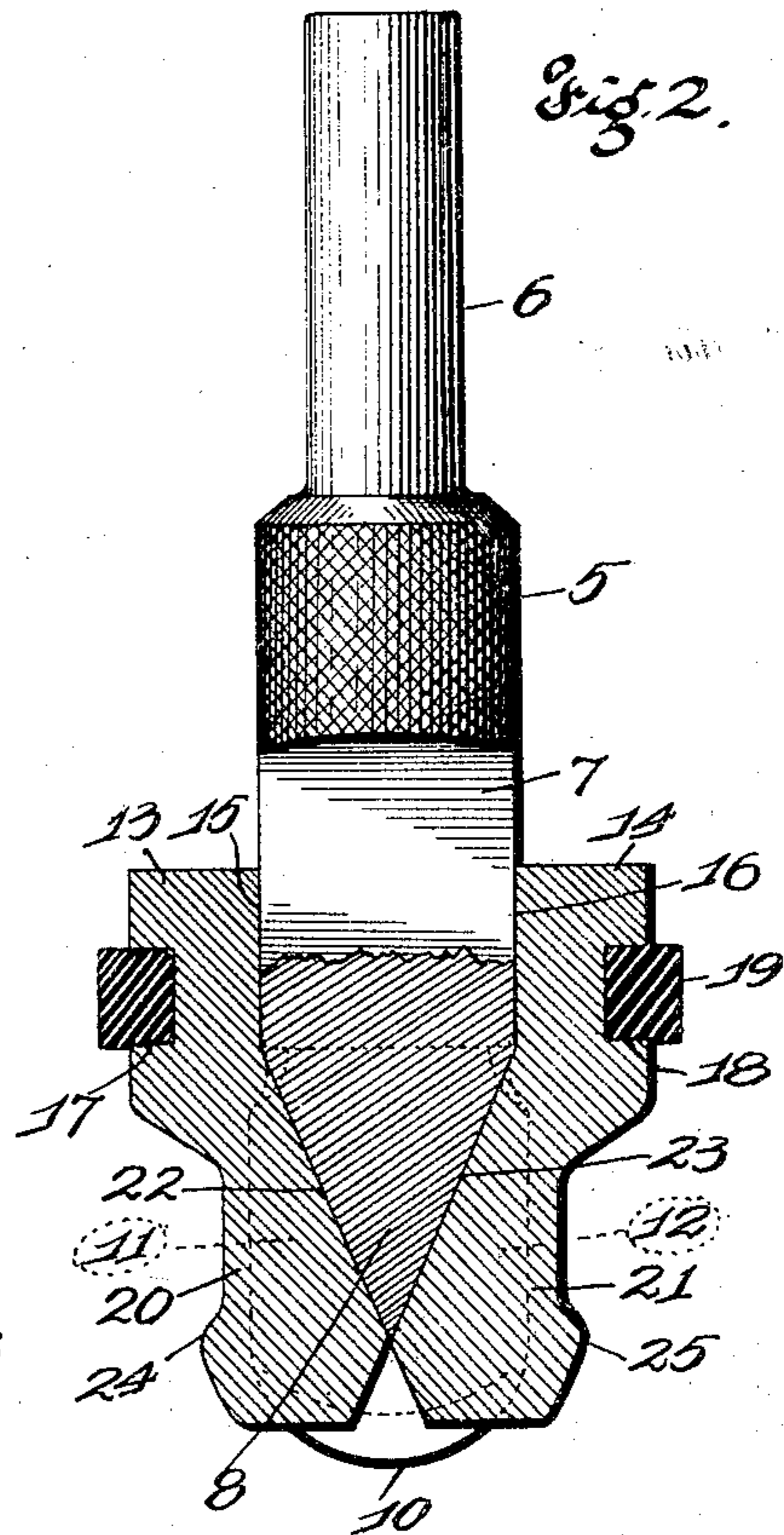
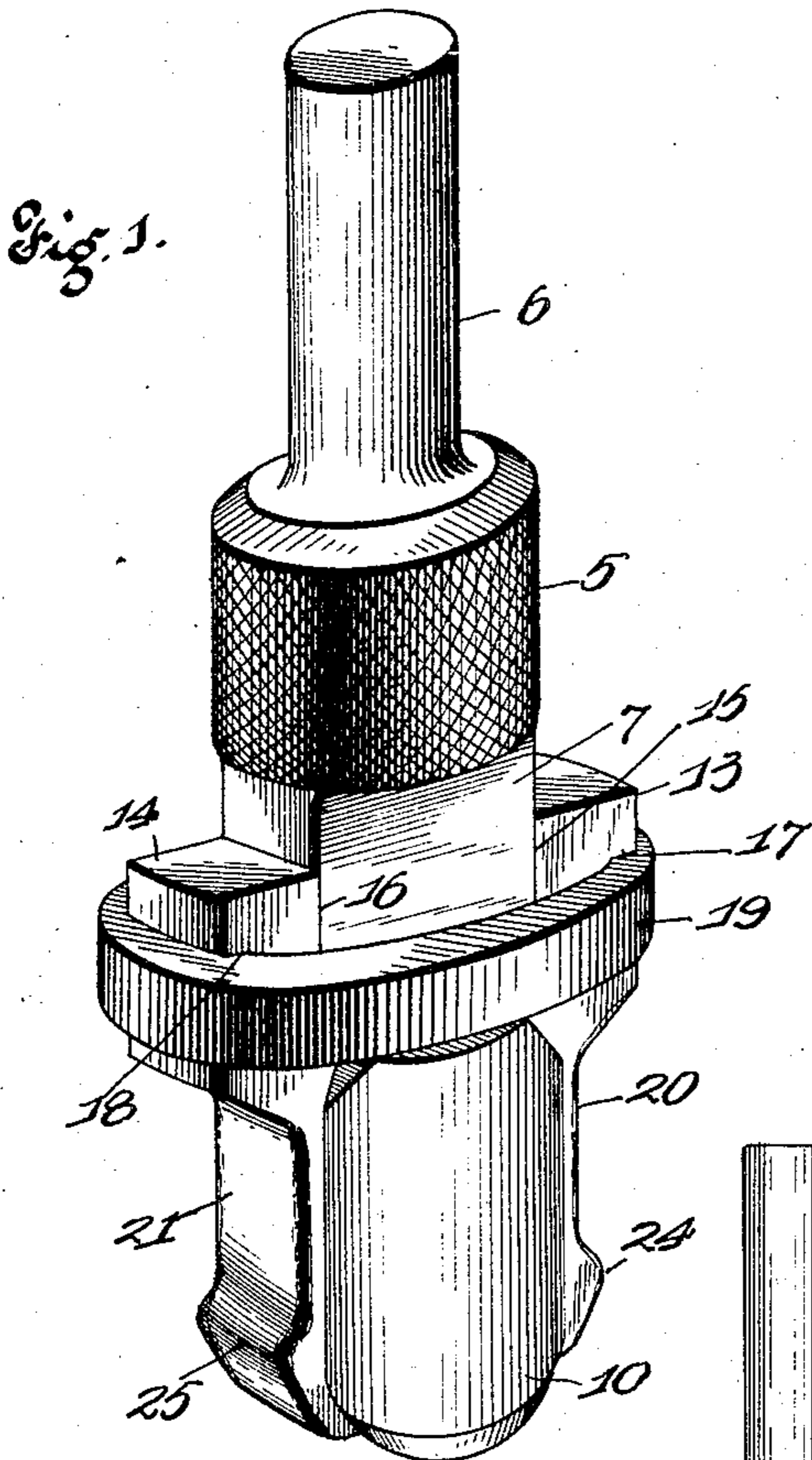


No. 793,572.

PATENTED JUNE 27, 1905.

J. W. FAESSLER.  
FLUE EXPANDER.

APPLICATION FILED OCT. 25, 1904.



Witnesses  
Alfred A. Eicks  
Edw. M. Harrington

Inventor  
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by Higdon & Langan & Hopkins Attys.

# UNITED STATES PATENT OFFICE.

JOHN W. FAESSLER, OF MOBERLY, MISSOURI, ASSIGNOR TO J. FAESSLER MANUFACTURING COMPANY, OF MOBERLY, MISSOURI.

## FLUE-EXPANDER.

SPECIFICATION forming part of Letters Patent No. 793,572, dated June 27, 1905.

Application filed October 25, 1904. Serial No. 229,985.

*to whom it may concern:*

Be it known that I, JOHN W. FAESSLER, a citizen of the United States, and a resident of Moberly, Randolph county, Missouri, have invented certain new and useful Improvements in Flue-Expanders, 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 improvements in flue-expanders; and it consists of the novel features herein shown, described, and claimed.

In the drawings, Figure 1 is a perspective of a flue-expander embodying the principles of my invention. Fig. 2 is a vertical central section of the flue-expander shown in Fig. 1. Fig. 3 is an edge view of the main frame.

Referring to the drawings in detail, the main frame comprises the knurled handle 5, the chuck-shank 6, extending upwardly from the handle, the head 7, extending downwardly from the handle, the flattened wedge-shaped expanding-core 8, extending downwardly from the head, and the mandrel or bearing portions 9 and 10 on opposite sides of the expanding-core, there being recesses 11 and 12 at the inclined sides of the expanding-core between the mandrel portions 9 and 10 to receive the expanding-jaws. The expanding-jaws are mates and comprise the heads 13 and 14, having flat inner faces 15 and 16 to fit the flat faces of the head 7, there being recesses 17 and 18 formed on the outer faces of the heads to receive the soft-rubber retaining-ring 19, which extends across and in frictional contact with the opposite flat sides of said wedge-shaped core 8, the expanding-jaws 20 and 21 extending downwardly from the heads 13 and 14, said jaws having inclined inner faces 22 and 23 to fit the inclined faces of the expanding-core 8, and said jaws having outer working faces 24 and 25 to engage the flue and expand and spin the flue into proper form.

The operation is obvious. The parts are assembled into their normal positions, as shown in Figs. 1 and 2, and the jaws 20 and 21 are inserted into the end of the flue. Then the handle 5 or the shank 6 is manipulated to

force the core 8 downwardly and expand the jaws, and then the expander is rotated and worked until the desired effect is produced upon the flue.

The mandrel portions 9 and 10 serve as a bearing upon which the tool is rotated in the flue. The rubber ring 19 normally engages the upper ends of said portions 9 and 10 to hold the core from being withdrawn from between the jaws beyond its normal position, and thus the rubber band serves to hold the parts together ready for use.

The recesses 17 and 18 are cut deep into the heads 13 and 14, so as to embed more than one-half of the cross-section of the ring in the recesses, the ring being firm and strong and fitting tightly in the recesses, so as to avoid the necessity of all other means for connecting the parts together.

I claim—

1. In a flue-expander: a polygonal head; a flat wedge-shaped expanding-core extending downwardly from the head; two mandrel portions formed integral with and projecting only on two opposite sides of the said flat expanding-core; said mandrel portions projecting laterally to form two opposite recesses at the inclined sides of said expanding-core; expanding-jaws comprising heads having flat inner faces to fit opposite sides of the head; there being two opposite recesses, 17 and 18, in the outer faces of the heads, and a flexible retaining-ring in said recesses in frictional contact with the aligned flat faces of said core and said jaws.

2. In a flue-expander: the knurled handle 5; the chuck-shank 6 extending upwardly from the handle; the head 7 extending downwardly from the handle; the wedge-shaped expanding-core 8 extending downwardly from the head; the mandrel portions 9 and 10 on opposite sides of the expanding-core; there being recesses 11 and 12 at the inclined sides of the expanding-core between the mandrel portions 9 and 10; the expanding-jaws comprising the heads 13 and 14 having the flat inner faces 15 and 16 to fit the flat faces of the head 7; there being recesses 17 and 18 formed on the outer faces of the heads; the soft-rubber retaining-

ring 19 fitting in said recesses and holding the heads in position; the expanding-jaws 20 and 21 extending downwardly from the heads 13 and 14 and having the inclined inner faces 5 22 and 23 to fit the inclined faces of the expanding-core 8; and said jaws having the outer working faces 24 and 25 to engage the flue.

3. In a flue-expander: a flat wedge-shaped expanding-core 8; the mandrel portions 9 and 10 10 on opposite sides of the expanding-core; there being recesses 11 and 12 at the inclined sides of the expanding-core between the mandrel portions 9 and 10; the expanding-jaws comprising the heads 13 and 14 having the 15 flat inner faces 15 and 16; there being recesses formed on the outer faces of the heads; a rub-

ber retaining-ring fitting in said recesses and in frictional contact with the aligned flat faces of said core 8 and said jaws and holding the heads in position; said expanding-jaws 20 and 21 extending outwardly from said heads 13 and 14 and having inclined inner faces 22 and 23 to fit the inclined faces of the expanding-core 8; and said jaws having the outer working faces 24 and 25 to engage the flue. 25

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

JOHN W. FAESSLER.

Witnesses:

WILL A. ROTHWELL,  
J. P. McLELLAN.