

E. W. FLAGG.

FLUE-CLAMP AND EXPANDER.

No. 173,609.

Patented Feb. 15, 1876.

Fig. 1.

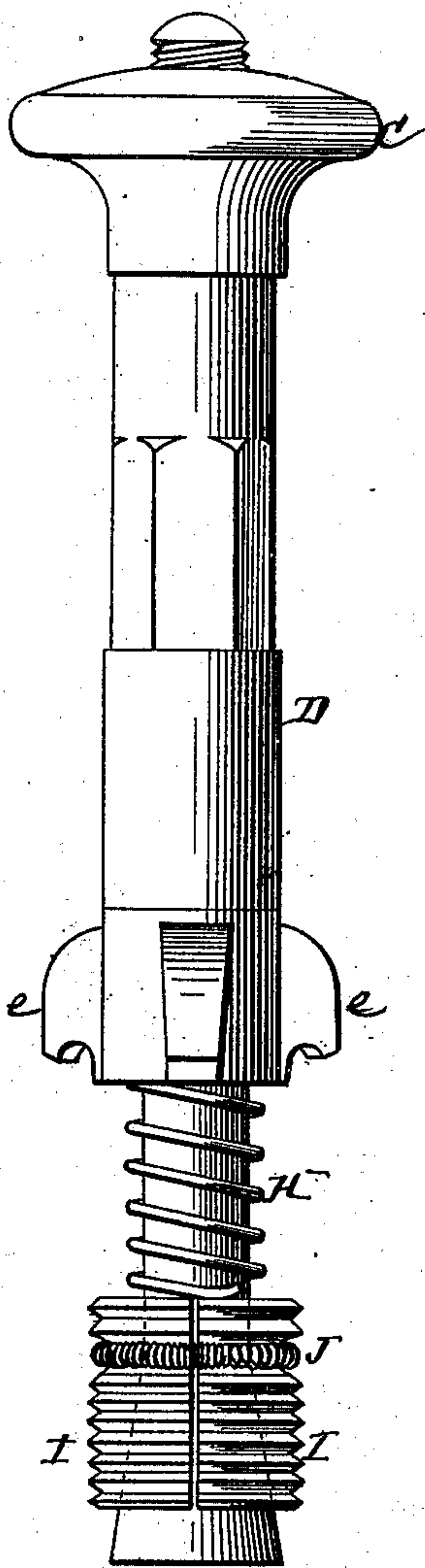
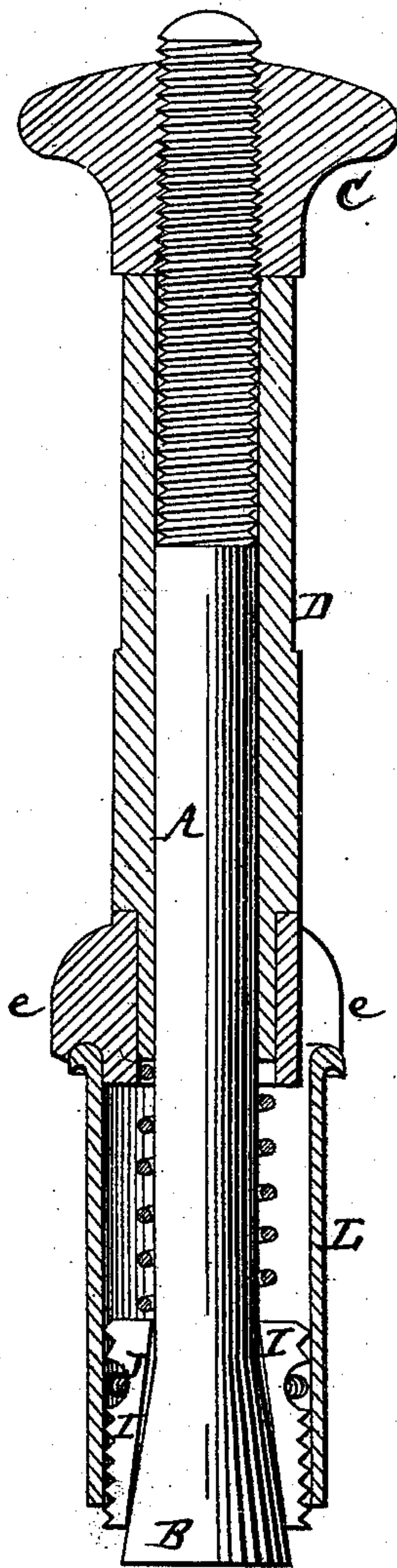


Fig. 2.



WITNESSES

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ELI W. FLAGG, OF BATTLE CREEK, MICHIGAN, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE D. EDMONDS AND WILLIAM H. FLAGG, OF SAME PLACE.

IMPROVEMENT IN FLUE CLAMPS AND EXPANDERS.

Specification forming part of Letters Patent No. **173,609**, dated February 15, 1876; application filed September 18, 1875.

To all whom it may concern:

Be it known that I, ELI W. FLAGG, of Battle Creek, in the county of Calhoun and in the State of Michigan, have invented certain new and useful Improvements in Flue Clamps and Expanders; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction of a tool for the purpose of swaging the ends of tubes or pipes, the peculiarities of which will be hereinafter set forth.

In the annexed drawings, making part of this specification, Figure 1 represents a plan view, and Fig. 2 a longitudinal section, of the tool.

In the figures, A represents a mandrel or shaft, which is provided with a screw-thread a portion of its length near one end, the other end being conical in shape, as seen at B. This shaft passes through a hollow metallic case, D. Upon the periphery of this case, and at one end of it, are formed the turning ears or lugs *e e*, the ends of which have the desired shape for turning over or swaging the end of the tube. C represents a nut, which passes over the screw-thread on the shaft. I I represent the sections of a collar which passes over the conical end of the shaft. These sections are held around the shaft by a suitable spring-band. The inner surfaces of these sections are made conical in shape, but the cone of the collar which they form is reversed upon the cone B. The collar is corrugated upon its

periphery, the corrugations running around it. H represents a coiled spring, which surrounds the shaft, one end of said spring resting against a shoulder in the case D, and the other against the collar. L is the tube to be turned.

In using this tool the tube L is passed over the cone as far as desirable, and then, by turning the nut C, the sections of the collar are expanded by their conical surfaces riding upon that of the cone B, until the tube is tightly and securely clamped upon the collar. The end of the tube to be turned rests against or in the forming-grooves of the ears *e e*. The case D is then revolved, the nut C in the meantime being turned so as to draw the end of the tube into the forming-grooves as fast as the turning operation requires.

When the end has been sufficiently turned, the nut C is reversed, and the tube released from the conical collar.

This is a simple and easy mode of swaging, and the work is very effectually performed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The case D, with its forming lugs or ears *e e*, in combination with the spring H, a sectional collar, and the shaft A, as constructed, for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of August, 1875.

ELI W. FLAGG.

Witnesses:

FOSTER M. METCALF,
MARTIN METCALF.