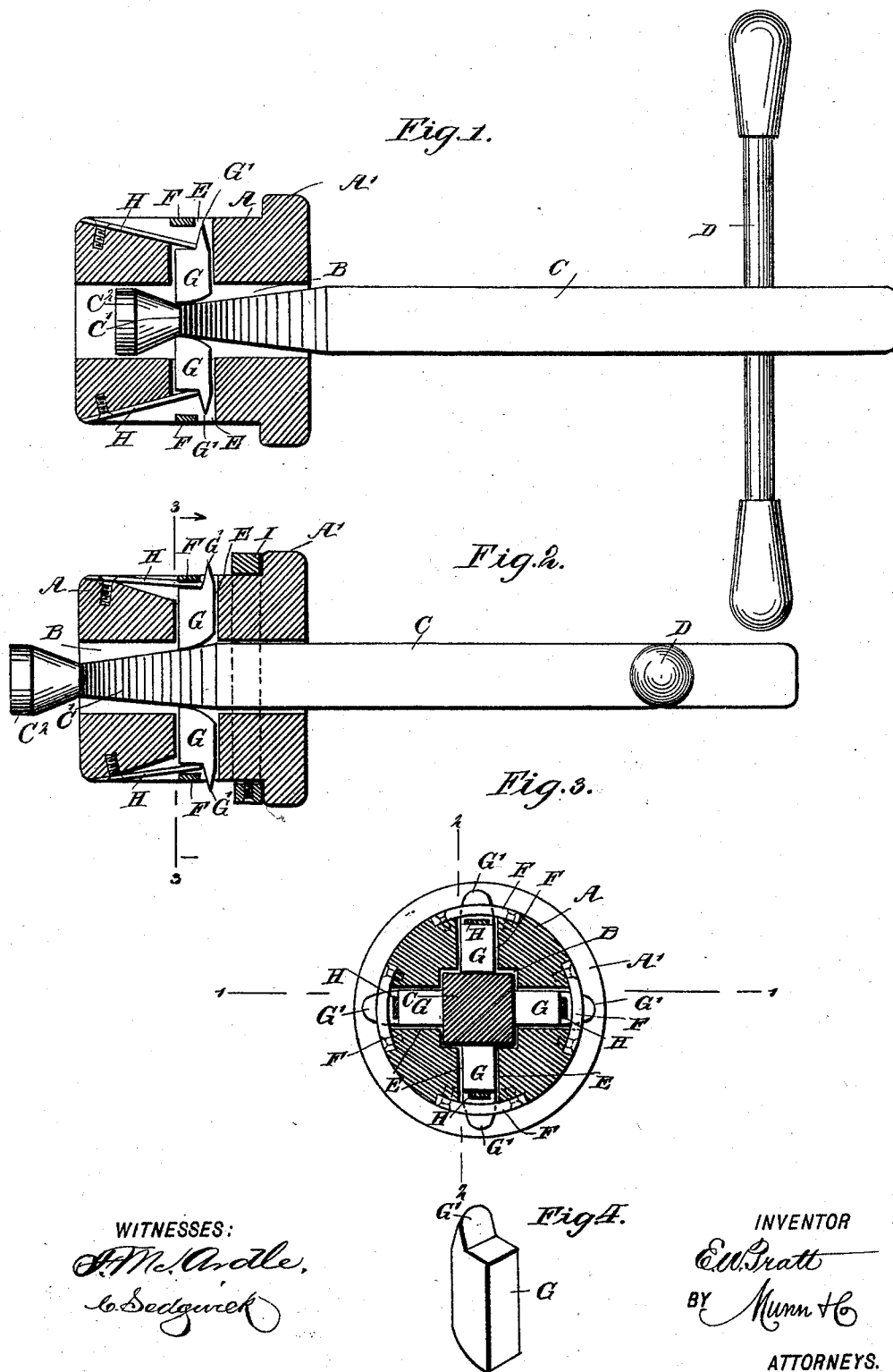


(No Model.)

E. W. PRATT
FLUE CUTTER.

No. 505,328.

Patented Sept. 19, 1893.



UNITED STATES PATENT OFFICE.

EBER W. PRATT, OF IPAVA, ILLINOIS.

FLUE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 505,328, dated September 19, 1893.

Application filed May 8, 1893. Serial No. 473,414. (No model.)

To all whom it may concern:

Be it known that I, EBER W. PRATT, of Ipava, in the county of Fulton and State of Illinois, have invented a new and Improved Flue-Cutter, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved flue cutter, which is simple and durable in construction, very effective in operation, and arranged to quickly cut a flue or pipe and to permit of conveniently withdrawing the tool after the flue is cut.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

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

Figure 1 is a sectional plan view of the improvement on the line 1—1 of Fig. 3, with the cutters withdrawn in the body. Fig. 2 is a sectional side elevation of the same on the line 2—2 of Fig. 3, and showing the cutters moved outward. Fig. 3 is a cross section of the same on the line 3—3 of Fig. 2; and Fig. 4 is a perspective view of one of the cutters.

The improved flue cutter is provided with a cylindrical body A, formed at its outer end with an annular flange A', and also formed with a central aperture B preferably made square in cross section and adapted to receive the mandrel C, shaped similarly in its main portion to the cross section of the aperture B.

On the outer end of the mandrel C is arranged a suitable handle D for conveniently manipulating the mandrel, and the inner end of the latter is contracted, as at C', the apex thereof carrying a head C², preferably made conical, as is plainly illustrated in the drawings.

In the body A is arranged a series of radially extending apertures E, leading from the sides of the longitudinal aperture B to the periphery of the cylindrical body part A, the outer end of each aperture E being covered by a cross-piece F, as is plainly shown in Figs. 1, 2 and 3.

In each of the radially-arranged apertures E is fitted to slide a cutter G formed at its outer end with a cutting edge G', adapted to

pass through the slot formed in the outer end of the opening E by the cross-piece F. The latter forms a stop to limit the outward movement of the cutter. Each cutter G is formed in its body portion to correspond with the shape of the cross section of the aperture E, the latter being preferably square in its main portion, as illustrated in the drawings. On this outer end of the cutter presses the free end of a spring H secured in the body A, at the rear end of the aperture E. The under side or inner edge of each cutter G is somewhat rounded, to readily travel up the side of the reduced end C' of the mandrel C when the latter is pushed inward. The springs H serve to return the cutters G when the mandrel C is withdrawn, and also serve to hold the curved inner end of each cutter in contact with its respective side of the reduced end C' of the mandrel.

The device is used as follows: When the several parts are in the position illustrated in Fig. 1, and the cylindrical body A is inserted in the tube or flue to be cut, with the flange A' resting against the outer end of the tube, then the operator takes hold of the handle D to turn the mandrel, and at the same time exerts an inward pressure on the same, whereby the body A is revolved in the tube or flue, and at the same time the cutters G are forced outward, to come, at their cutting edges G', in contact with the flue, to cut the same. It will be seen that as the cutting edges G' of the several cutters G are in alignment with each other transversely, the said cutters will cut one continuous groove in the pipe or flue, one cutter following the other as the body A is revolved on turning the mandrel C. When the pipe has finally been cut, then the operator exerts a pull on the mandrel C, so that the contracted end C' moves with its apex to the position shown in Fig. 1, to permit the springs H to return the cutters, so that their cutting edges G' are within the periphery of the body A, to permit removal of the same without disturbing the pipe or tube, or the part cut off therefrom. The head C² of the mandrel C prevents withdrawal of the mandrel from the body A, as the cutters abut against the head when the mandrel is pulled outward.

In order to use the device on beaded flues I provide a ring I adapted to be secured on

the body A, by a set screw or other means at or near the flange A', so as to bring the cutting edges G' of the cutters G as close as possible to the bead to cut off the latter from the pipe on manipulating the tool in the manner above described.

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

10 1. A flue cutter, comprising a body provided with a longitudinal central aperture and transverse radial apertures, cutters fitted to slide in the said radial apertures, stops for limiting the outward movement of the cutters,
15 springs secured to the body and adapted to bear on the outer ends of the cutters, and a mandrel adapted to be moved longitudinally in the central aperture of the body, the said mandrel being provided with a beveled portion to engage the inner ends of the cutters
20

and move the latter outwardly in the radial apertures of the body, substantially as described.

2. A flue cutter, comprising a body provided with a longitudinal central aperture and transverse radial apertures, cutters fitted to slide in the said radial apertures, and a mandrel fitted to be moved longitudinally in the central aperture of the body, the said mandrel having a reduced beveled portion adapted to move the cutters outwardly, and an enlarged head at the end of the said reduced portion the said head being adapted to collide with the inner ends of the cutters to prevent the withdrawal of the mandrel from the body, substantially as described.

EBER W. PRATT.

Witnesses:

W. A. BABCOCK,
A. L. WARFEL.