

**M. M. AMMIDOUN.**  
**Boiler-Flue Scrapers.**

No. 138,465.

Patented May 6, 1873.

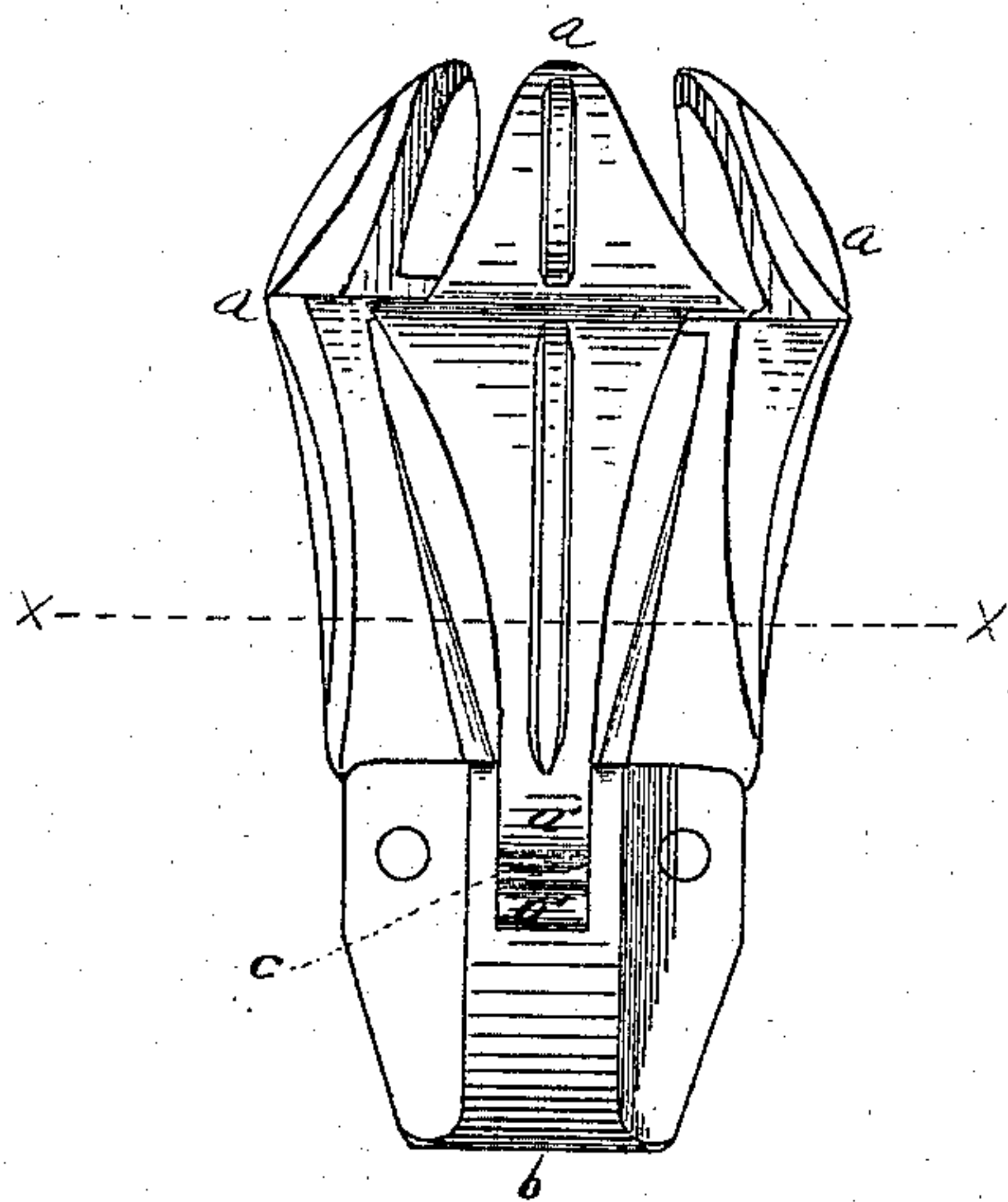


Fig. 1

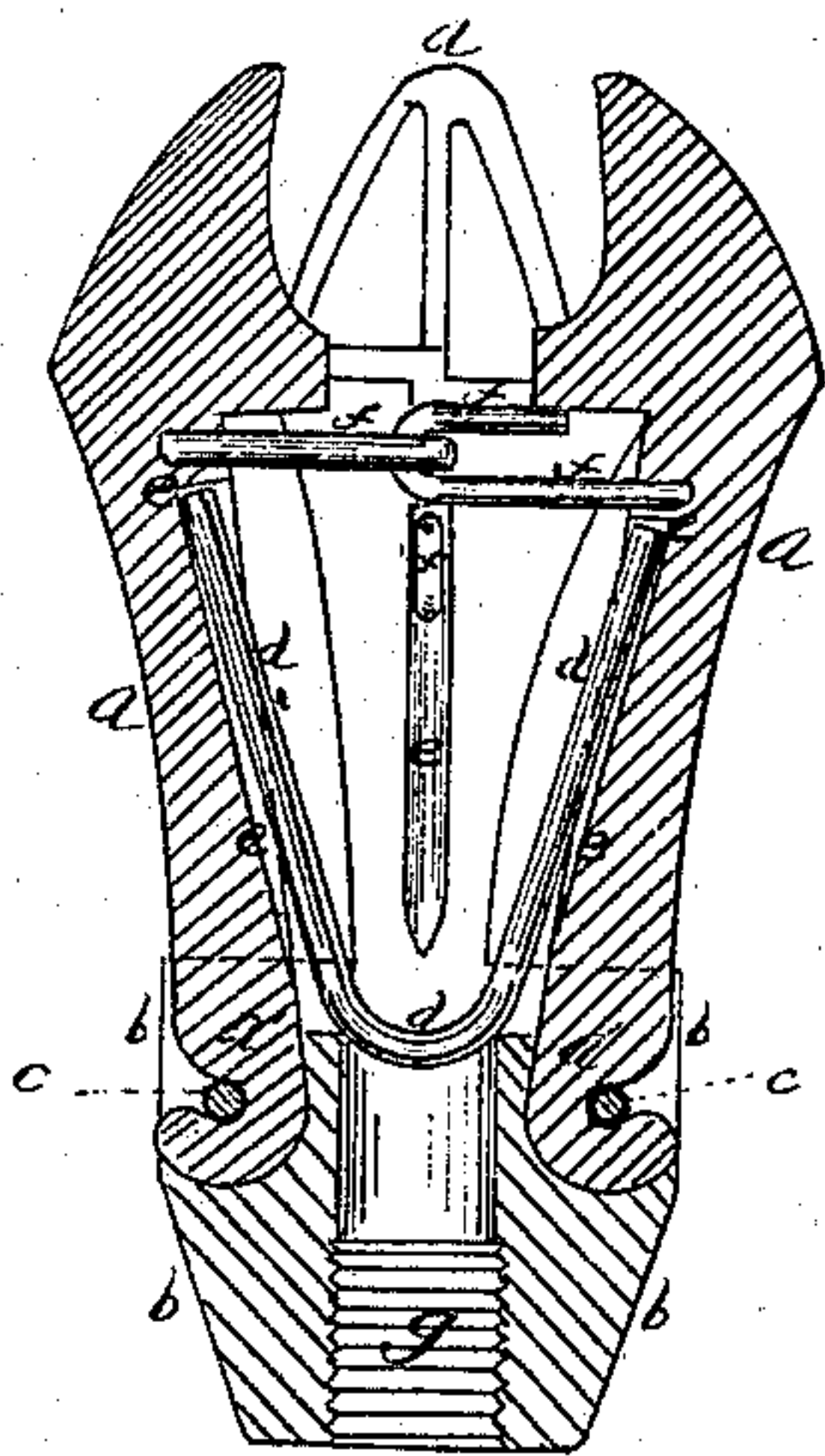


Fig. 2

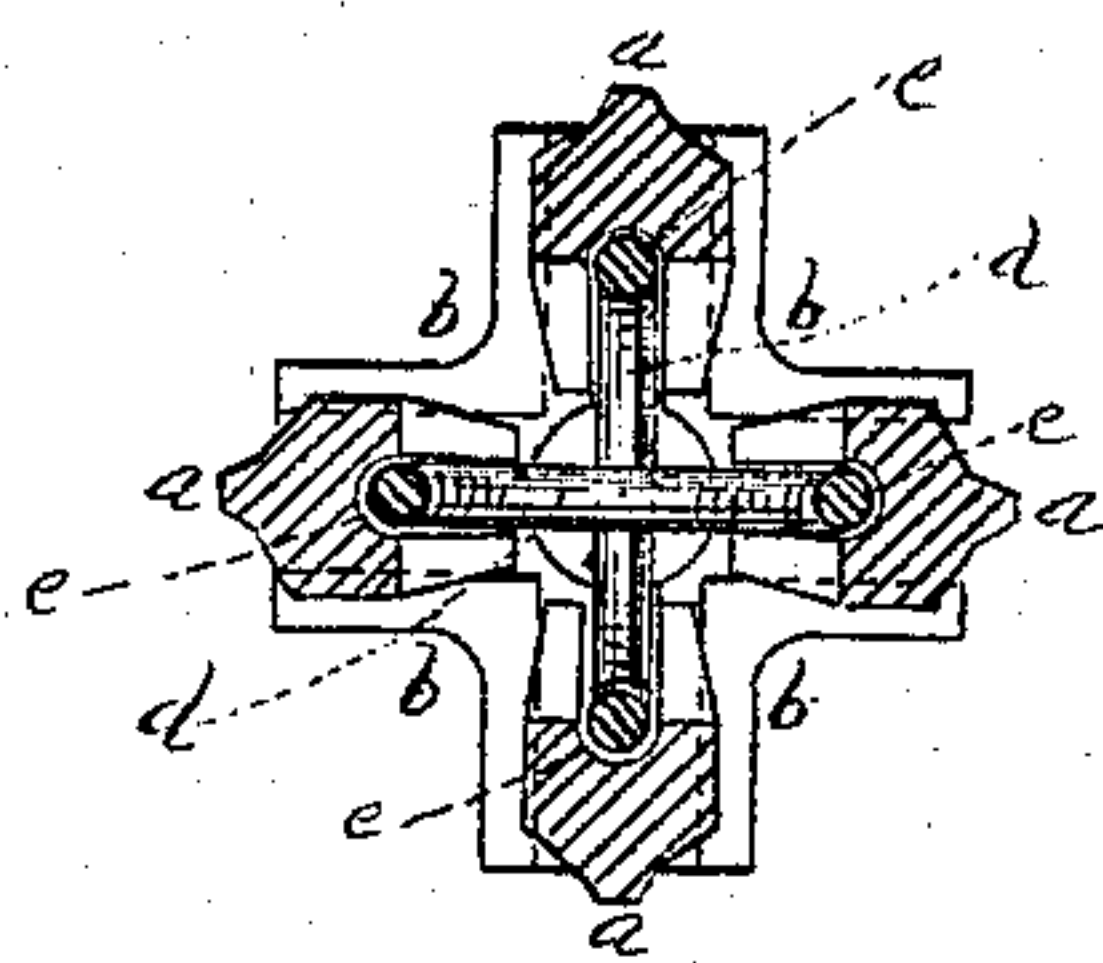


Fig. 3

WITNESSES

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# UNITED STATES PATENT OFFICE.

MARCUS M. AMMIDOUN, OF WEST ROXBURY, MASSACHUSETTS.

## IMPROVEMENT IN BOILER-FLUE SCRAPERS.

Specification forming part of Letters Patent No. **138,465**, dated May 6, 1873; application filed October 30, 1872.

*To all whom it may concern:*

Be it known that I, MARCUS M. AMMIDOUN, of West Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and valuable Improvement in Boiler-Tube Scrapers, of which the following is a specification:

In this invention the arms, four in number, upon which are the scraping-edges, are held apart by two bent springs, one spring being used for two opposite arms, which rest in grooves formed upon the inner sides of the arms. The arms are prevented from springing too far apart by means of hooks or their equivalent, and are so made as to pass around a pin instead of allowing the pins to pass through them, so that they may be readily removed. The arms are made or cast from chilled iron, instead of merely having their cutting-edges chilled by means of a chilling piece.

In the accompanying drawing, Figure 1 is an elevation of a boiler-tube scraper embodying my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a cross-section through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

*a a a a* are the arms having the scraping-edges. *a'* is that portion of the arm which,

passing partially around the pin, forms a hinge. By removing a spring the arm is easily taken off for repairs or other purposes. *b* is that portion of the tube-scraper into which the rod is placed, and to which the arms are attached. *c* is the pin which holds the arm *a a'* in place. *d d* are bent springs, each operating upon two arms. *e e e e* are grooves or recesses into which the springs *d d* are placed to prevent them from slipping out of place. *f f* are hooks intended to prevent the arms from flying apart and keep the scraper at the required size. *g* is the opening into which the rod is screwed, which is used in operating the scraper.

It will be seen that this scraper is so manufactured that no drilling is necessary, and therefore the chilled casting above referred to can be used for each arm.

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

The combination and arrangement of the arms *a a' a a'*, recesses *e e*, and springs *d d*, with the hooks *f f*, substantially as specified.

MARCUS M. AMMIDOUN.

Witnesses:

HENRY W. WILLIAMS,  
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