(No Model.)

J. COCKER.

STEAM BOILER FLUE CLEANER.

No. 309,377. Patented Dec. 16, 1884.

Fig. 1.

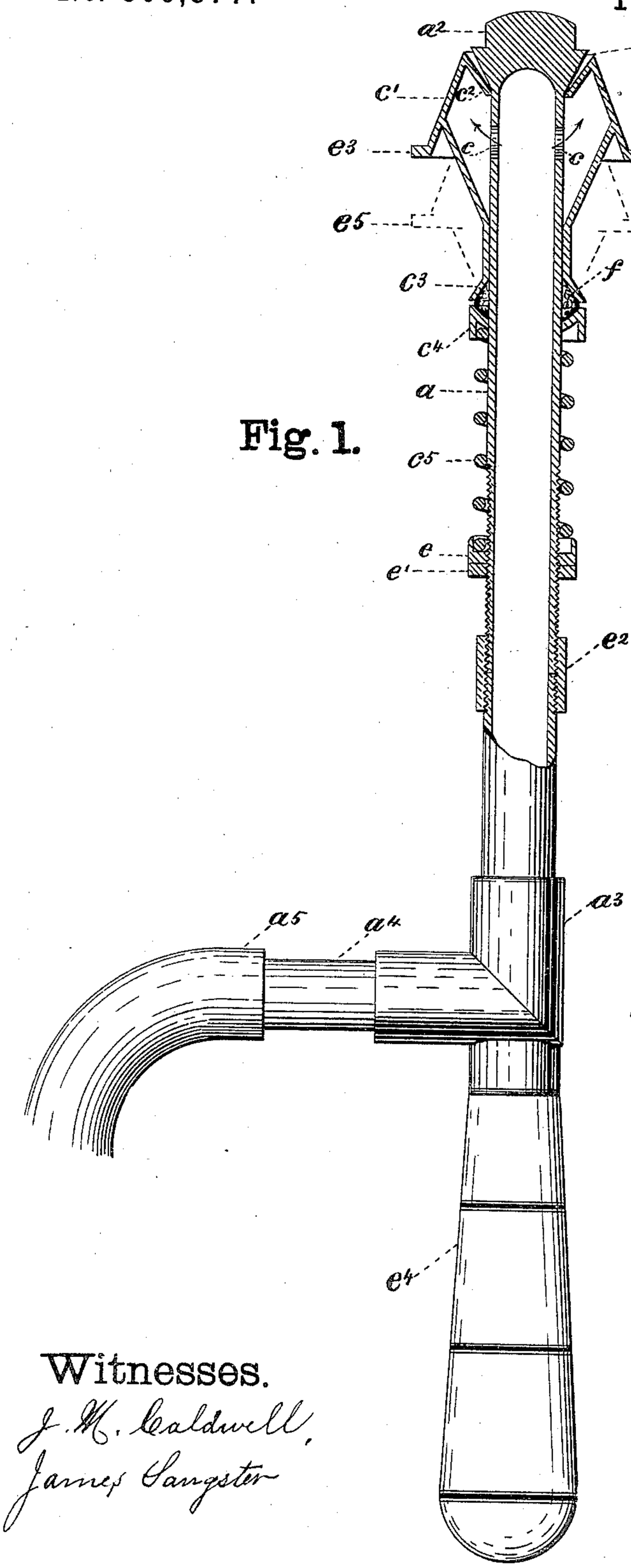
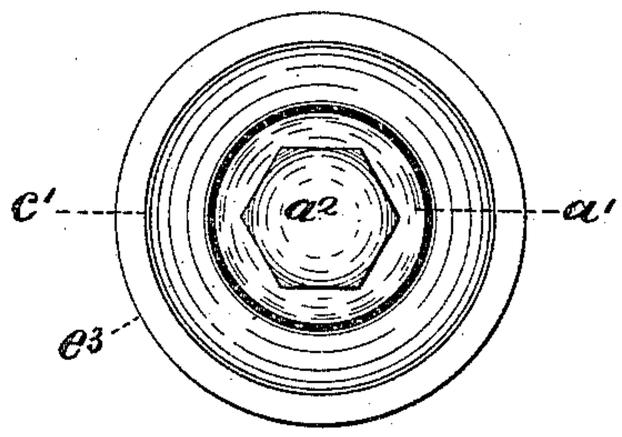


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES COCKER, OF BUFFALO, NEW YORK.

STEAM-BOILER-FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 309,377, dated December 16, 1884.

Application filed May 12, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES COCKER, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Steam-Boiler-Flue Cleaners, of which the following is a specification.

The object of this invention is to produce a simple and effective device for cleaning boiler-tubes by means of a jet of steam, which will be fully and clearly hereinafter shown and described by reference to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of the device complete, and Fig. 2 represents a top view.

The invention consists of a tube, *a*, provided with a head, *a'*, having a square or hexagonal nut, a^2. The lower portion of the tube *a* is connected in the usual way with an elbow, a^3, to which is secured the tube a^4, having a piece of rubber or other flexible tube, a^5, for connecting in any well-known way with a steam-boiler. Just below the tapering head *a'* of the tube *a* is one or more outlet-openings, *c*.

c' is a flaring case adapted to slide back and forth along the tube *a*. It is provided with an inwardly-tapering head, c^2, constructed to fit the tapering head of the tube *a*, so as to form a valve, as shown.

At the lower end of the case *c'* is a flaring rim, c^3, and below it is a flaring collar, c^4, (also adapted to slide along the tube *a*.) Below this collar c^4 is a spiral spring, c^5, and below the spring is a nut, *e*, and a jam-nut, *e'*, both being arranged to screw back and forth on the tube *a*. Their object is to increase or diminish the force of the spring and to keep it in place.

I have shown a coupling, e^2, to be used when the tube *a* is made in two pieces; but this may be used or not, as may be desired.

The head or case *c'* is provided with a flange, e^3.

The object in making *c'* tapering or cone-shaped is to adapt it to be used in flues of different sizes.

e^4 represents a wooden handle by which the device is held while being used.

The operation of the invention is as follows: The tube a^5 being sufficiently long to enable the operator to move about the required distance and connect it with the steam-boiler in the usual way, the operator places the head or case *c'* into a flue and pushes forward with sufficient force to overcome the spring and bring it toward the position shown by the dotted lines e^5. This operation brings the opening *c* out beyond the tapering portion c^2, and allows the steam to pass into the flue and clean it. A close joint is produced between the tube *a* and the lower portion of the case *c'* by means of a packing, *f*, of cotton or other well-known material.

I claim as my invention—

A boiler-flue cleaner consisting of a tubular portion provided with a suitable handle, a tapering head, *a'*, and openings *c*, in combination with a sliding case, *c'*, provided with a valve-seat, c^2, a stuffing-box for keeping a tight joint, a spring and connections for holding the parts in position, and a suitable tube for connecting it with the boiler, as and for the purposes described.

JAMES COCKER.

Witnesses:
J. M. CALDWELL,
JAMES SANGSTER.