

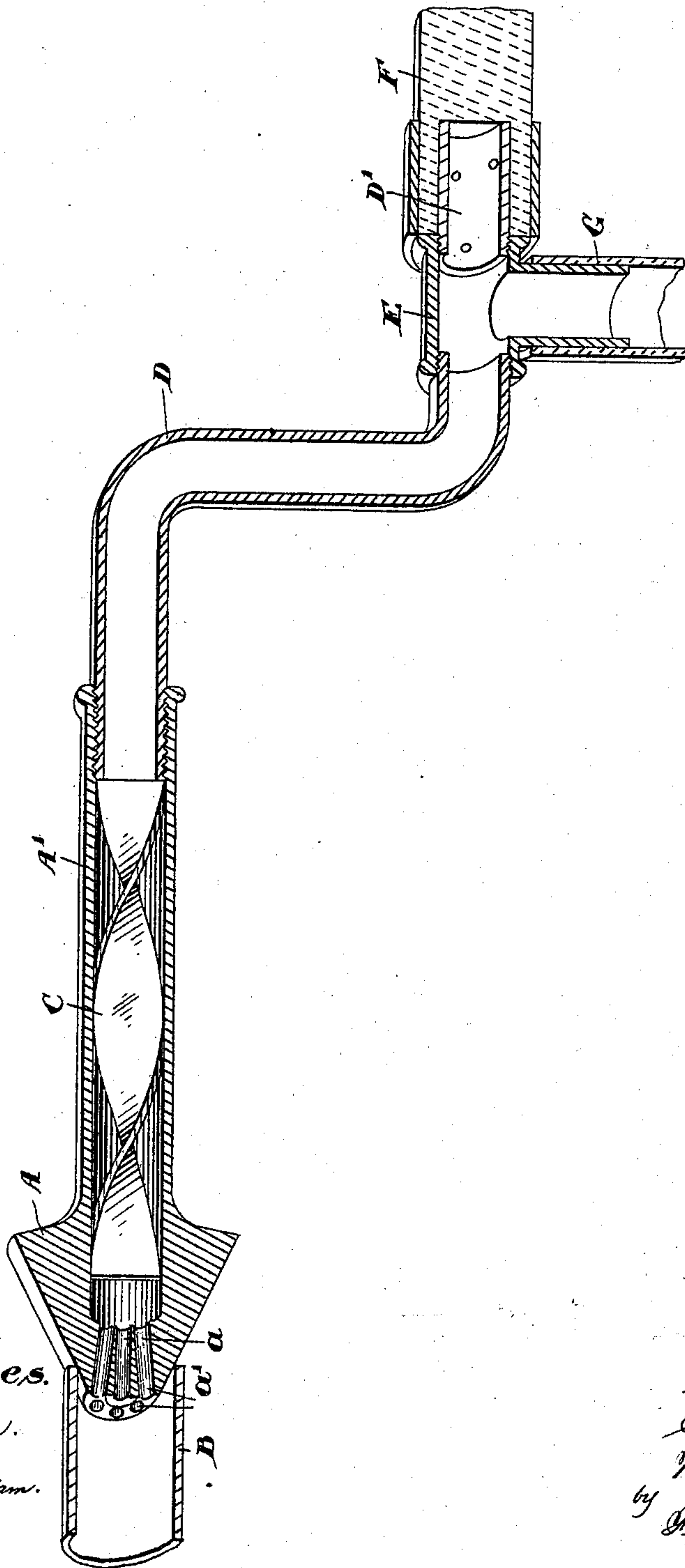
**No. 625,865.**

**Patented May 30, 1899.**

**S. D. & N. C. YEO.**  
**BOILER TUBE CLEANER.**

(Application filed July 7, 1898.)

(No Model.)



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

STANLEY DYER YEO AND NORMAN CARDER YEO, OF PORT HOPE, CANADA,  
ASSIGNORS OF ONE-HALF TO MARTIN HANSMAN, OF SAME PLACE.

## BOILER-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 625,865, dated May 30, 1899.

Application filed July 7, 1898. Serial No. 685,366. (No model.)

*To all whom it may concern:*

Be it known that we, STANLEY DYER YEO, currier, and NORMAN CARDER YEO, grocer, of the town of Port Hope, in the county of Durham, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Boiler-Tube Cleaners, of which the following is a specification.

Our invention relates to improvements in boiler-tube cleaners; and the object of the invention is to design an extremely simple and positive device adaptable to the tubes of any ordinary boiler whereby such tubes may be thoroughly cleansed even during the period that such boilers are being used; and it consists, essentially, of a hollow nozzle provided with a central passage-way and a circle of inclined passage-ways surrounding the same and inclined toward the central passage-way at the rear, the hollow stem of the nozzle being provided with a convolute twisted flat bar which is shrunk into the nozzle, the rear end of the nozzle being provided with suitable elbow-handle and branch pipe, to which the rubber tube is connected for a purpose as will appear hereinafter.

The drawing is a sectional perspective view of our improved boiler-tube cleaner.

A is the nozzle end, which is conical in form, so as to permit of its being inserted into different-sized boiler-tubes B, and A' is the stem of the nozzle, which is tubular in form and the opening of which extends into the solid nozzle A about half-way between the front and back of the nozzle.

*a* is a central aperture or passage-way which extends through the center of the nozzle on a line with the axis of the tubular stem A'.

*a'* are a series of apertures or passage-ways arranged circularly around the central aperture or passage-way *a*, such circularly-arranged passage-ways being bored so that they are closer at the inside to the passage-way *a* than at the outside.

C is a convolute twisted bar fitting within the tube A and suitably shrunk, so that it will not rotate.

D is a pipe-elbow which is screwed into the

tubular stem A' at one end and the T pipe-joint E at the other.

D' is an extension of the pipe D, upon which is secured in any suitable manner a handle F, of wood or any suitable heat-non-conducting material.

G is a tube, preferably of rubber, which is fitted onto the open branch end of the T-shaped pipe-joint E.

By means of the handle F the conical head is held into the mouth of the tube, and the steam is admitted through the tube G and passes up through the pipe-elbow D and in its course is given a whirling motion by its passage through the convolute twisted bar in the tubular stem A', whence it passes out through the passage-ways *a* and *a'*, the passage-way *a'* serving to direct the course of the steam against the side of the tube, and thereby thoroughly cleanse the sides from all soot and dirt. The passage-way *a* serves to carry this loosened soot straight out through the opposite end of the tube.

The effect of the application of our steam-boiler-tube cleaner is most marvelous, and all the soot and dirt of the tube of an ordinary boiler is ejected from the opposite side of the tube with great rapidity—in fact, so much so that ordinary boilers can be cleaned in from ten to fifteen minutes.

What we claim as our invention is—

In a boiler-tube cleaner, the combination with a suitable hollow stem having a convolute twisted bar shrunk into the same and a solid tapered nozzle formed on the end of the stem and leaving a steam-chest at the outer end of the bar, of the central passage-way in the nozzle and inclined passage-ways circularly arranged around the same and more nearly approaching it at the inner end and passing through the solid portion, so as to form direct exits from the steam chest or chamber to the interior of the tube as specified.

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