No. 765,680. PATENTED JULY 26, 1904.

# H. C. RYDING.

## BOILER TUBE CLEANER.

APPLICATION FILED MAY 27, 1903.

NO MODEL.

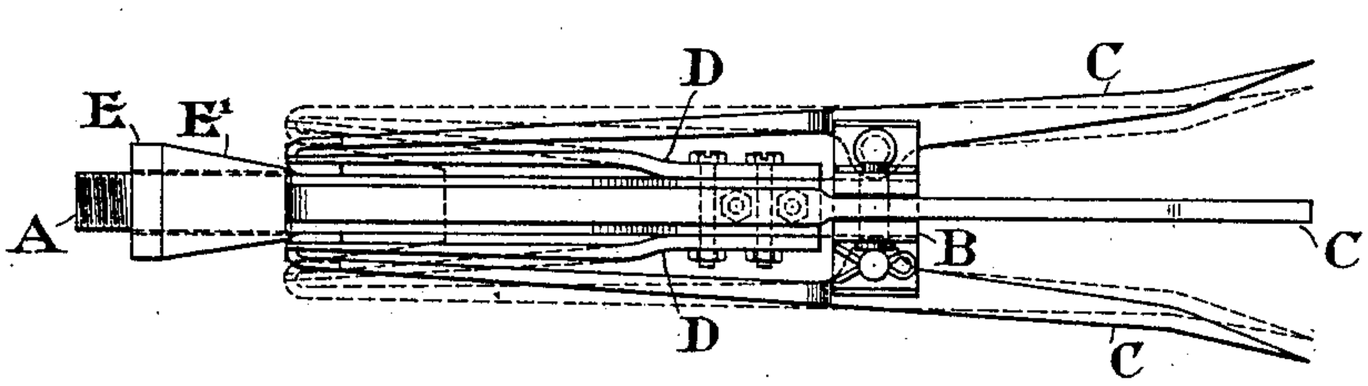


Fig. 1

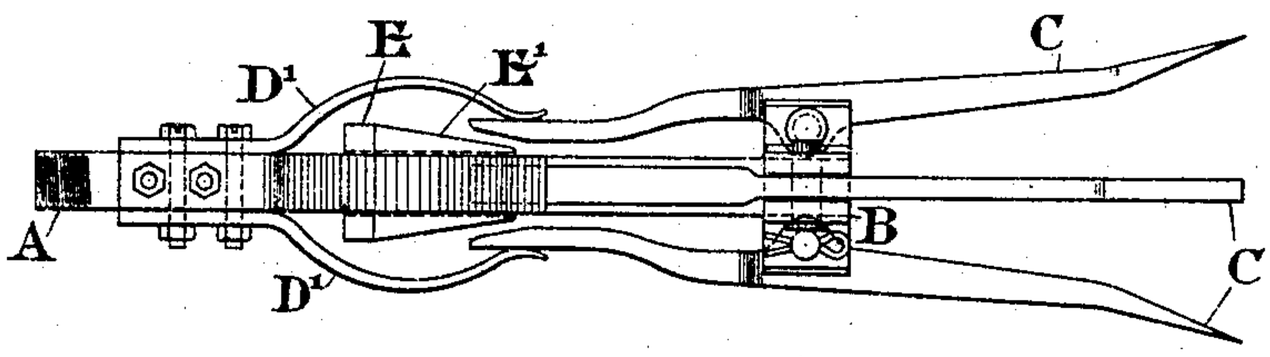


Fig. 2

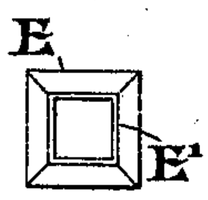


Fig. 3

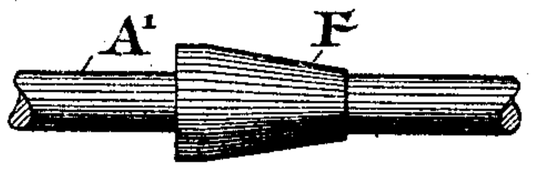


Fig. 4

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No. 765,680. Patented July 26, 1904.

# UNITED STATES PATENT OFFICE.

HERBERT CHARLES RYDING, OF ELYRIA, OHIO.

## BOILER-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 765,680, dated July 26, 1904.

Application filed May 27, 1903. Serial No. 158,950. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT CHARLES RYDING, of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Boiler-Tube Cleaners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in boiler-tube cleaners of the general type shown in my Patent No. 721,609, of February 24, 1893, in which a number of cutting-blades are pivoted to a head or carrier intermediately of their ends, with springs arranged to bear inwardly upon the said blades at the rear of their pivots for the purpose of forcing their cutting edges outwardly to their work.

My present invention is designed to provide means of simple and convenient character for facilitating the introduction of the implement into the tube to be cleaned; and it consists in the combination, with a cleaner of the character above described, of a sliding wedge arranged to be moved between the rear portions of the said blades against the action of the springs, and thus retreat or close their cutting portions sufficiently to enable them to be readily inserted in the tube to be cleaned. Said wedge is so constructed that it will operate to hold the blades retracted during the operation of inserting the implement into the tube, but may then be readily released and when so released is moved back to its normal position by the pressure of the blades upon its inclined surfaces.

My invention also consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a boiler-tube-cleaning implement embodying my invention; Fig. 2, a similar view of a modified implement; Fig. 3, an end view of the wedge, and Fig. 4 a side view of a different form of wedge.

The tube-cleaner shown in Fig. 1 is in general of the same construction as that shown in Fig. 3 of my said patent, A being the shank or stem, B the head secured thereto, in which the cutting-blades C are pivoted, and D the springs, which press inwardly upon the rear portions of the blades.

The wedge, which is arranged to slide on a squared portion of the shank or stem A, consists of the rectangular straight base portion E and the pyramidal four-sided wedge portion proper, E′. The normal position of this wedge is as shown in full lines in Fig. 1. When the implement is to be inserted in a tube, the wedge is forced between or underneath the rear end portions of the blades to the position shown in dotted lines. In this position the blades rest on the straight portion E of the wedge and hold it in place. After the implement has been inserted in the tube the wedge is tapped with a hammer or other tool and being thus released is by the pressure of the blades on its inclined faces thrown back to its normal position.

Fig. 2 shows the wedge applied to the modified form of implement shown in Fig. 1 of my said patent. In this construction the wedge is placed on the stem or shank within the curved springs D′.

Instead of using a pyramidal wedge I may employ one of conical form, as shown at F in Fig. 4. In such cases the stem or shank A′ may be made round instead of square, as it is not necessary to hold the faces of the wedge in any particular relation to the ends of the blades.

I do not wish to limit myself to the precise constructions and arrangements herein shown and described, as my invention with slight modifications may be applied to other forms of tube-cleaners of the same general type as those shown and described.

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

1. The combination of a handle, a hub secured thereto, arms hinged to said hub and provided with scraping portions, a spring device for forcing said scraper-arms outwardly, and an adjustable collar adjacent to and against which the hinged ends of said arms bear to

limit their outward movement, substantially as set forth.

2. The combination of a handle, a hub secured thereto, arms hinged to said hub and provided with scraping portions, a spring device for forcing said scraper-arms outwardly, and an adjustable slide or collar adjacent to and against which the hinged ends of said arms bear to limit their outward movement, said collar or slide having an inclined portion and a straight portion.

In testimony whereof I have affixed my signature in presence of two witnesses.

HERBERT CHARLES RYDING.

Witnesses:
JNO. GARD,
V. V. WALKINSHAW.