

(No Model.)

I. KRISAN.

WATER TUBE CLEANER FOR STEAM BOILERS.

No. 595,780.

Patented Dec. 21, 1897.

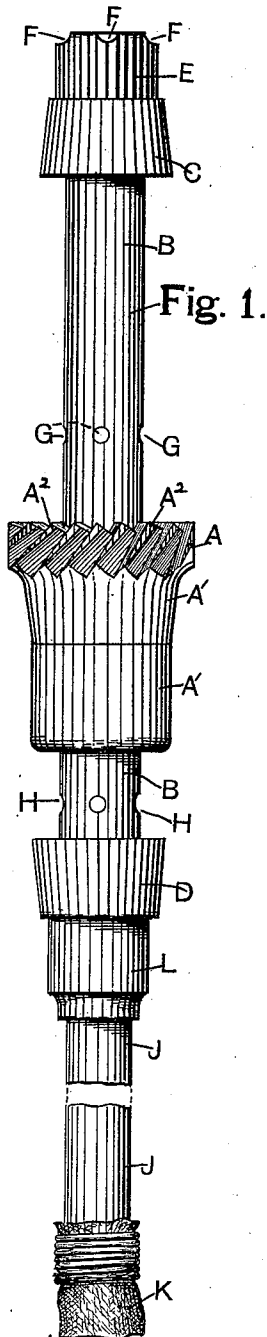


Fig. 1.

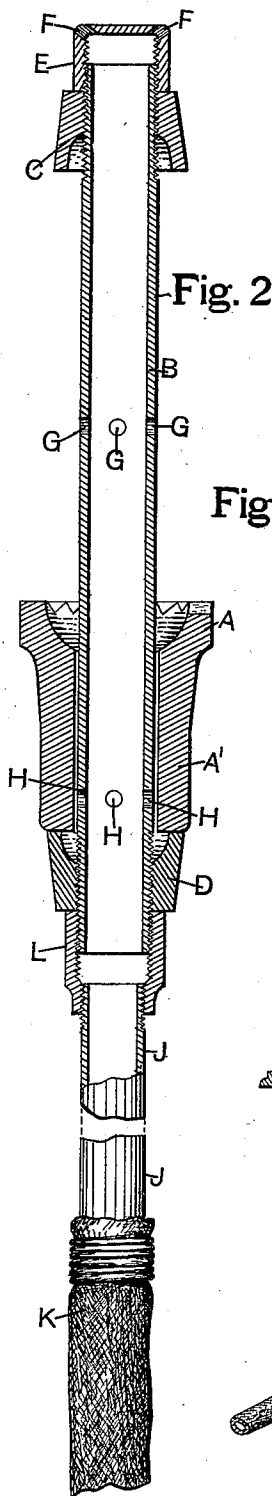


Fig. 2.

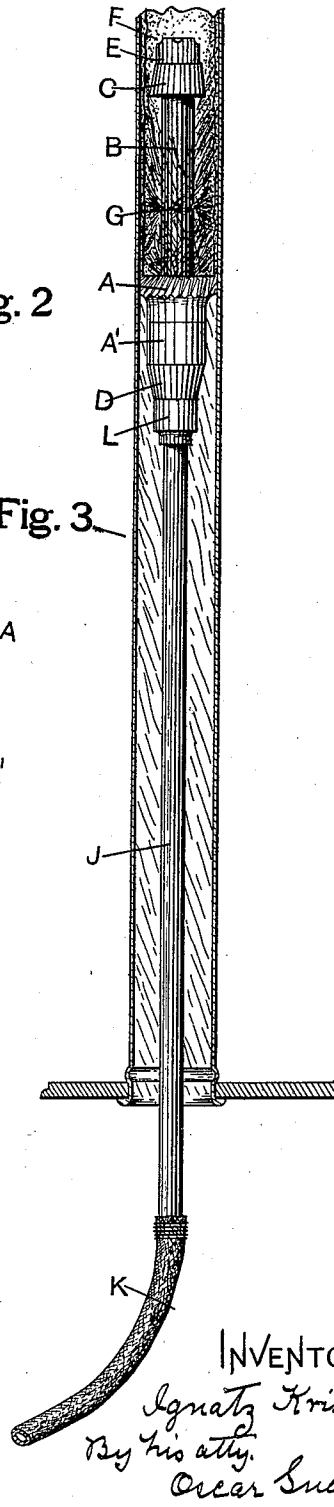


Fig. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

IGNATZ KRISAN, OF CHICAGO, ILLINOIS.

WATER-TUBE CLEANER FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 595,780, dated December 21, 1897.

Application filed August 15, 1896. Serial No. 602,916. (No model.)

To all whom it may concern:

Be it known that I, IGNATZ KRISAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Water-Tube Cleaner for Steam-Boilers, of which the following is a specification.

My invention relates to means for removing the sedimentary deposits from the tubes of water-tube boilers; and my object is to provide a comparatively simple construction adapted to accomplish this duty which may be easily managed by any one of ordinary skill and which may be made to quickly accomplish the result desired without danger of injury to the tubes, the construction and manner of operation being described herein-after, and is illustrated in the accompanying drawings, in which—

Figure 1 is a plan of my new water-tube cleaner with a pipe adapted to form a handle attached thereto, to which latter is shown the end of an attached hose which is connected with some source of water-supply. Fig. 2 is an axial section of the device, showing manner of connecting the several parts. Fig. 3 is an axial section of a water-tube, showing the cleaning device disposed therein as it is when in operation.

Similar letters indicate like parts throughout the several views.

The most important part of this cleaner is the cutting or abrading tool, which has a cylindrically-shaped head portion A, integral with a boss A', of smaller size, the head A being furnished with a series of lateral projections A², disposed around the periphery thereof and at an angle to the longitudinal axis of the device, similar to the threads of a screw, these projections serving as cutters for first abrading and then removing the scale in the water-tubes, as is hereinafter described.

The cutter-head A is mounted to slide and revolve on a pipe B, which is provided with a stop C, screwed on the front end, and another stop D, screwed on the opposite end portion from stop C.

At the front end of pipe B is a cap-nut

E, screwed on the end thereof and serves to close the end of this pipe and as a lock-nut for stop C, which it closely contacts.

Cap-nut C is perforated in several places around its circumference, such as at F, and pipe B is also perforated at several places, such as at G and H, to permit water to flow out when supplied through pipe J from some source of supply through the connected hose-pipe K. Pipe J also serves as a long handle for carrying the cleaning device entirely through a long water-tube.

The rear-end stop D is held in position by means of the coupling L, which serves as a jam-nut against the stop and to connect pipe B and the handle-pipe J.

In operation, the hose K is first connected with a source of water-supply when the instrument is inserted into a water-tube and pushed forward causing the spirally-arranged lateral projections A² to cut spiral grooves longitudinally through the sediment in the tube, the head A easily revolving on pipe B in contact with the rear stop D to permit this action. After the tool has been pushed through the tube it is drawn backward, when from the fact that the projections A² on the head thereof are usually not the same distance apart and being of a rather steep spiral pitch will not again follow the same courses they have cut, but crush down the standing spiral ridges of sediment and reduce the same to comparatively small particles which are washed out of the tube by the water supplied through hose K.

Should the tool become clogged with scale and from any cause become stuck in the tube, the stops C and D may be brought up against the forward or rear ends with great force by pulling or pushing pipe J, when the stops act as jars to easily start or loosen the tool so that it may be removed or operated to finish cleaning the tube.

One great advantage I claim for this cleaning device is that it is not necessary to have the spiral projections so sharp that there would be danger of grooving the metal at the interior of the tubes, for comparatively blunt projections have been employed with the very

best results both in the time required and the quality of the work accomplished.

I claim as my invention—

In a water-tube cleaner for steam-boilers,
5 a handle hollow throughout its length and in communication at one end with a water-supply, and at the opposite end portion provided with two stops mounted thereon and between
10 which stops and at the outer end of the handle, beyond the outer stop, are openings leading into the hollow portion of the handle, in combination with an abrading-tool having

angularly-disposed peripheral cutters mounted upon the handle between the stops, and adapted to slide and to revolve thereon, in 15 the manner and for the purpose stated.

In testimony that I claim the foregoing I have hereunto set my hand, this 29th day of July, 1896, in the presence of witnesses.

IGNATZ KRISAN.

Witnesses:

JACOB PHILLIPOWSKI,
THOMAS DOYLE.