

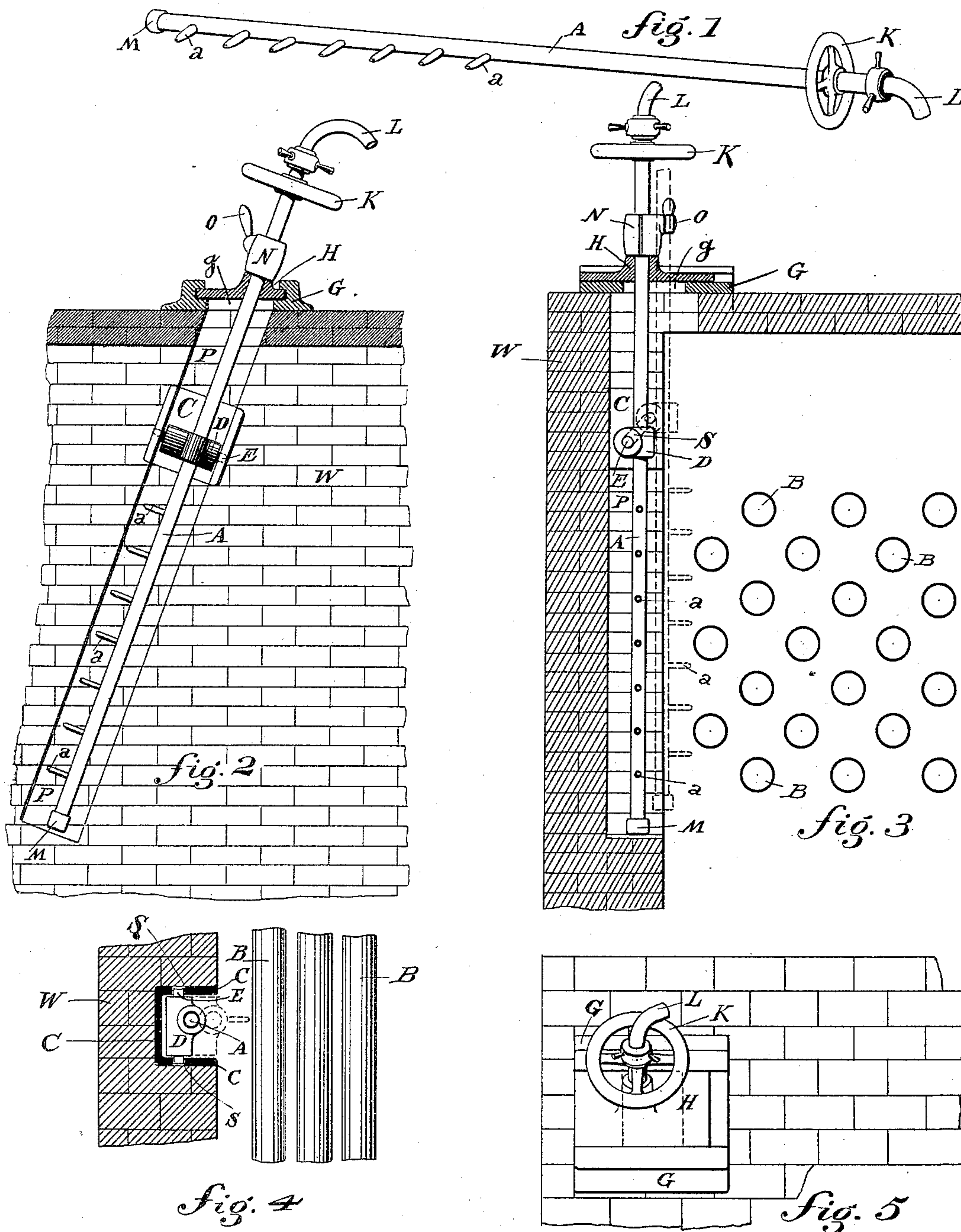
(No Model.)

H. D. RICE & E. VOLKMANN.

BOILER TUBE CLEANER.

No. 398,749.

Patented Feb. 26, 1889.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## BOILER-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 398,749, dated February 26, 1889.

Application filed August 1, 1888. Serial No. 281,653. (No model.)

*To all whom it may concern:*

Be it known that we, HARVEY D. RICE and ERNST VOLKMANN, citizens of the United States, and residents, respectively, of the city of Brooklyn and the city of New York, both in the State of New York, have invented certain new and useful Improvements in Boiler-Tube Cleaners, of which the following is a complete description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to sectional water-tube boilers, and its object is to provide means for blowing off with steam-jets the soot and ashes which accumulate on the outside of the tubes, the special objects of our invention being to provide means whereby the tubes may all be cleaned simultaneously without any cold air being admitted to the fire-chamber, and also to so arrange the blowing device that although located in the fire-chamber it will not be burned out.

In the accompanying drawings, Figure 1 represents the steam-jet. Fig. 2 is a vertical longitudinal section of the fire-chamber on line X X, showing the jet in position. Fig. 3 is a cross-section on line Y Y, showing in full lines the position of the jet when not in use and in dotted lines its position when in use. Fig. 4 is a plan on line Z Z, showing in full lines the position of the jet when not in use and in dotted lines its position when in use. Fig. 5 is a plan of the top of the boiler with the tube-cleaner in position.

Similar letters of reference designate similar parts in the several drawings.

The tube-cleaner consists of a pipe, A, set at right angles to the tube B of the boiler. On this pipe, and at right angles thereto, is attached a row of short branch nipples. The distance between centers of these nipples is the same as the distance between centers of the horizontal rows of boiler-tubes measured on a line perpendicular thereto and parallel with the pipe A. A pocket or recess, P, is provided in the side wall, W, of the boiler, such recess being perpendicular to the boiler-tubes B. The upper part of the recess is provided with a fitting, C, of U-shaped-section,

which is embedded in the masonry in such a way as to form a prolongation of the recess. The sides or wings of the fitting C are provided with slanting slots S matching each other and pitching down toward the bottom of the recess P.

The pipe A is provided with a collar, D, having a side boss out of each side of which projects a pin, E, which engages in the two slots S. The collar D is secured permanently in position on the pipe A. The pipe A runs through the ceiling of the fire-chamber, there being an opening cut therefor in the brick-work. This opening is covered by a stationary plate, G, which has an opening, g, covered by an additional plate, H, which latter is free to slide on the upper side of the plate G in suitably-provided guides. The pipe A runs through the opening g and through a hole bored in the movable plate H, in which it may freely be turned or raised and lowered. A hand-wheel, K, furnishes the means of handling the pipe A. A split collar, N, with a tightening-screw, O, is placed on the pipe A above the plate H. L is a hose for supplying steam to the pipe A, the lower end of which pipe is plugged at M. When not in use, the pipe A is in the position shown in full lines, Figs. 3 and 4. The screw O on the split collar N being slack, the pipe A lies as low as the slots S will allow it to fall and the pitch of those slots has moved the pipe into the recess P, where it is protected from direct contact with the flame. As a further precaution, the hand-wheel K should be turned so as to bring the nipples a also inside of the recess P. In this position the plate H has moved as far to the left as possible. When the pipe A lies in the above position, the sides of the pocket P limit the range through which the jets issuing from the nipples a can play on the length of the boiler-tubes B. Therefore to use the jets to best advantage the tube A should be brought forward out of the recess P. This is done by raising the hand-wheel K. The pin E, following the upward and outward pitch of the slots S, throws the pipe A out of the recess and into the position shown in dotted lines. Then by letting the split collar N

slide down on the plate H and locking it there by means of the screw O the pipe A may be held at any desired height, and still may be revolved so that the jets of steam may be  
5 trained on any point in the length of the tubes.

While a combination of levers could be readily devised to give the pipe A the same throw out of the recess P as the combination  
10 of the slots S and pin E, and while therefore we do not wish to limit ourselves to this mechanism, as shown and described,

What we claim as our invention, and desire to secure by Letters Patent, is—

15 The combination of a boiler-tube cleaner

constructed, as described above, with a recess or pocket, P, in the side wall of the fire-chamber at right angles with the direction of the boiler-tubes, and a suitable mechanism, substantially as described, for revolving said  
20 cleaner and throwing it out of the recess P, as and for the purposes set forth.

In witness whereof we have hereunto set our hands this 19th day of July, 1888.

HARVEY D. RICE. [L. S.]  
ERNST VOLKMANN. [L. S.]

In presence of—

W. H. LEECH,  
A. HOWARD ABENDROTH.