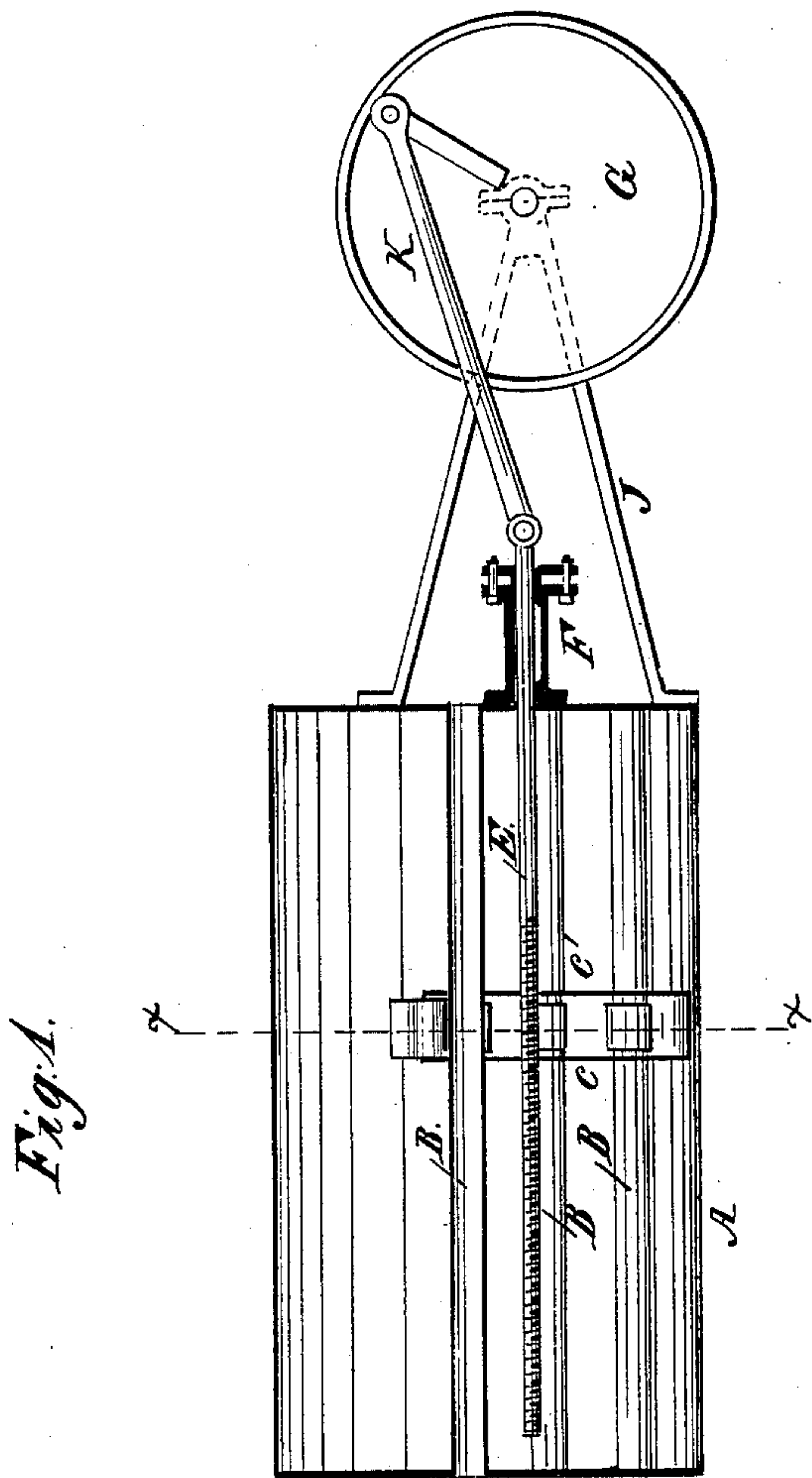


W. P. Slensby,
Steam-Boiler Cleaner.
Nº 67,361. Patented July 30, 1867.

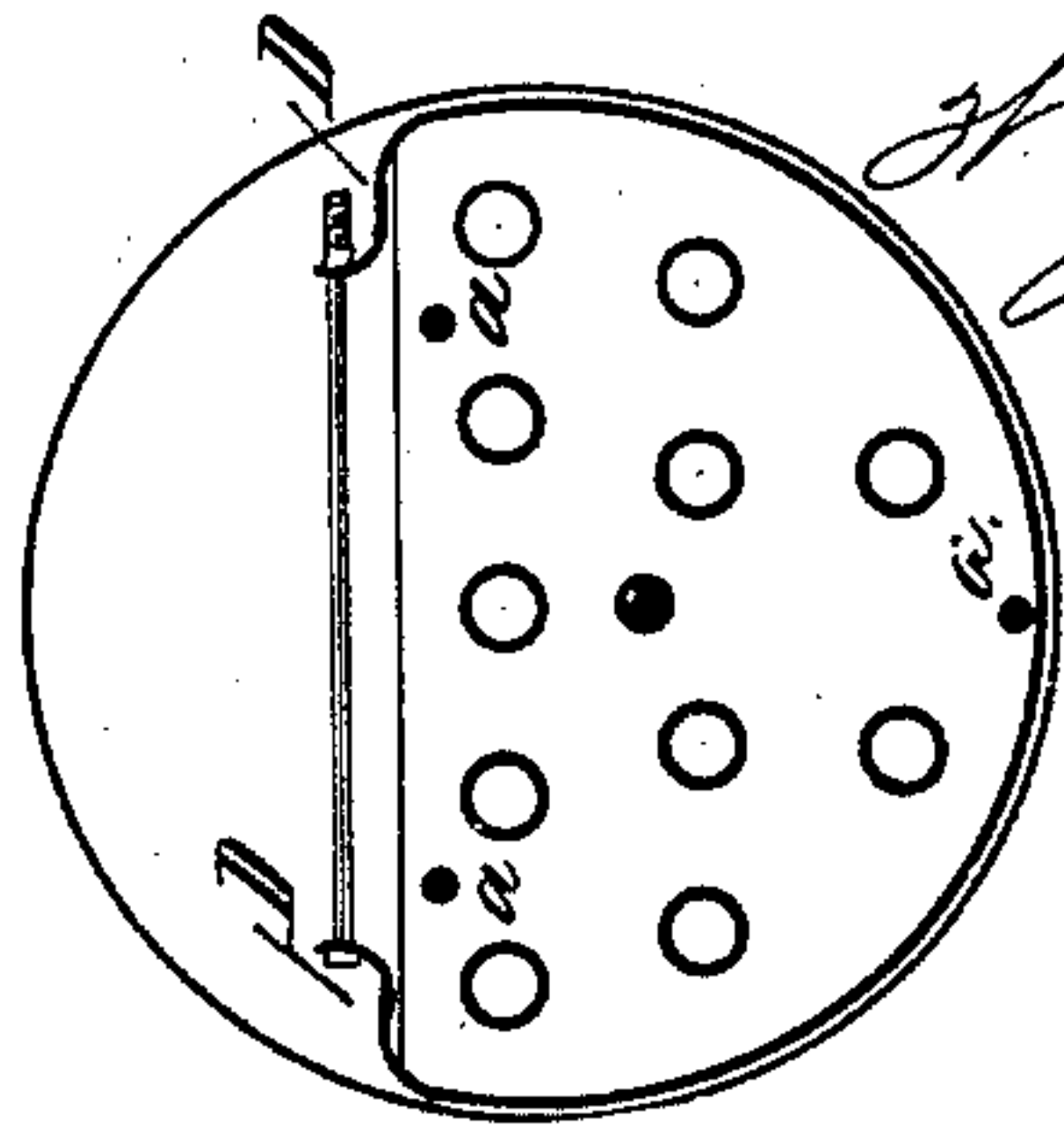


Witnesses:

Theo Fische

Wm Frewin,

Fig. 2



Inventor:

W. P. Slensby
Per [Signature]
Attorneys

United States Patent Office.

W. P. SLENSBY, OF CHICAGO, ILLINOIS.

Letters Patent No. 67,361, dated July 30, 1867.

IMPROVEMENT IN BOILER-CLEANERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, W. P. SLENSBY, of Chicago, in the county of Cook, and State of Illinois, have invented a new and improved Tube-Cleaner and Water-Agitator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The object of this invention is to provide means for removing the scale which is deposited by impure water in the tubes of steam-boilers, and on the inside surface of the boiler-shell; and it consists in arranging scrapers within the boiler and around the tubes, which may be drawn back and forth from one end of the boiler to the other, whereby the scale deposited on the tubes and on the interior surface of the boiler is so loosened that it may be easily removed from the boiler by blowing off the boiler as it is usually practised, and also in providing, in combination with the scrapers and by the same means, a water-agitator, for the purpose of increasing the safety of the boiler, and protecting it from explosion from electricity.

Figure 1 represents a longitudinal vertical section of the boiler, showing the tubes and the apparatus with which I accomplish my object.

Figure 2 is a cross-section of fig. 1 through the line *x x*.

Similar letters of reference indicate like parts.

A represents the shell of the boiler. B represents the tubes. In the class of boilers represented in the drawing, the tubes are surrounded by water, while the smoke and products of combustion pass through them, consequently the scale is deposited upon the outside of the tubes, as well as upon the inside of the boiler-shell. Many compounds and solutions have been invented to remove this scale, or to prevent its deposition, but hitherto such devices have been attended with only partial success. It requires a positive application of power to effect this object. In carrying out my invention, I place two circular plates of metal in the boiler, which are represented by C C' in the drawing. These plates are fastened together by rods, as seen at *a*, fig. 2. D is a band of nearly the same diameter as the plates, which surrounds the plates, the ends being connected by a rod and screw-nut, which allow the diameter to be contracted when desired to lessen the friction. The tubes of the boiler pass through the plates C C', as seen in the drawing. Between the plates there are thimbles or rings placed on the tubes, which are loose enough to play back and forth freely on the tubes between the plates. E is a rod, which passes through the boiler-head, and is attached to the plates. This rod is designed to go through the plates by a screw upon it, so that the position of the scrapers can be changed to operate on different portions of the boiler, while the stroke of the crank may be the same if driven by the machinery. F is a stuffing-box, by which the joint where the rod passes into the boiler is kept steam-tight. This rod and stuffing-box are designed to be placed at the back end of the boiler, and the rod is designed to move plates C C', or the scrapers, nearly the whole length of the tubes on different portions at different times. This rod may be operated by hand, or it may be attached to a band-wheel or pulley, and be driven by the machinery; such a pulley is represented in the drawing marked G. It is supported by a hanger, which may be attached to the boiler-head, as represented, marked J. K is a connecting-rod. The movement of the scrapers over the surface of the tubes and the boiler effectually cleans those surfaces, and prevents scale from forming or adhering to them. It is well known that boiler explosions are attributed to electricity by many observers who have written upon that subject; and it is contended that if the water is not allowed to remain in a quiescent state, or if it is agitated, there is no danger from this source, and experiments which have been made justify this conclusion. My arrangement furnishes an agitator in combination with the cleaner.

What I claim as new, and desire to secure by Letters Patent, is—

The arrangement of the circular plates C C', secured together by rods *a*, band D, thimble or rings between said plates, screw-rod E, substantially as herein shown and described, whereby to clean the interior surfaces of steam-generators and the exterior surface of the boiler-tubes, and at the same time agitate the water in the boiler.

The above specification of my invention signed by me this 27th day of February, 1867.

W. P. SLENSBY.

Witnesses:

ALEX. F. ROBERTS,

J. W. B. COVINGTON.