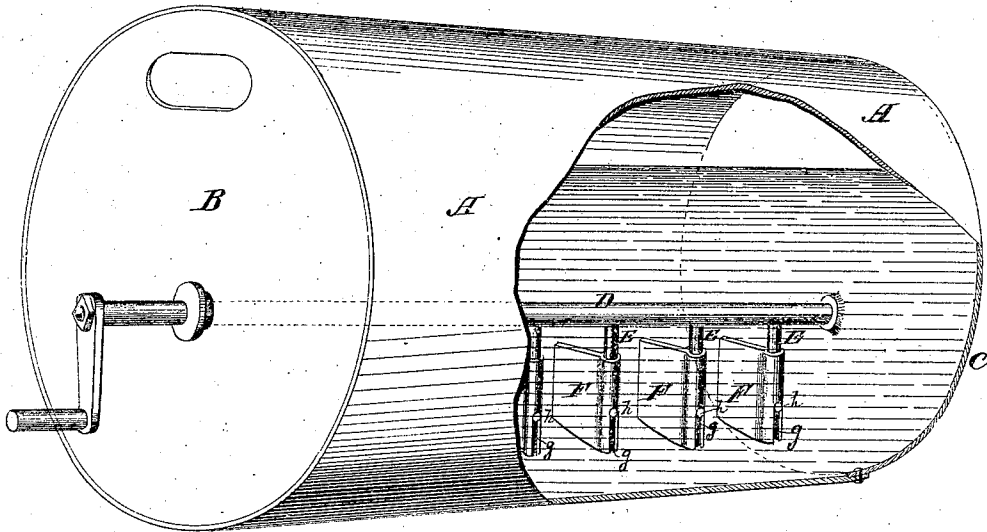


No. 109,453.

PATENTED NOV. 22, 1870.

B. W. REYNOLDS.  
SEDIMENT AGITATOR FOR STEAM BOILERS.



WITNESSES  
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# United States Patent Office.

BAKER W. REYNOLDS, OF EVANSVILLE, INDIANA.

Letters Patent No. 109,453, dated November 22, 1870.

## IMPROVEMENT IN SEDIMENT-AGITATORS FOR STEAM-BOILERS.

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, BAKER W. REYNOLDS, of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and useful Improvement in Sediment-Agitator for Steam-Boilers; 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 drawing forming part of this specification.

This invention relates to a new and useful improvement in an apparatus for preventing the formation of scale on the bottom of steam-boilers, and consists in producing a circulation of the water in the lower portion of the boiler by means of an oscillating shaft with movable vibrating wings connected therewith, arranged and operating as hereinafter more fully described.

The accompanying drawing is a perspective view of a steam-boiler provided with my scale-propeller, a portion of the boiler being broken away to show the construction.

Similar letters of reference indicate corresponding parts.

A is the shell of the boiler.

B is the front head and C is the back head of the boiler.

D is a shaft which passes longitudinally through the boiler, and is supported by the heads, as seen in the drawing, in stuffing-boxes, so that tight joints are formed around the shaft.

E are rods or pins rigidly attached to the shaft, hanging downward from its under side.

F are wings on the rods E, connected by sockets, so

that they have an oscillating or vibrating motion of themselves as the main shaft is oscillated.

g are wide slots in the sockets, and h are pins in the rods E. The width of the slots governs the amount of vibration of the wings, the pins acting as stops.

The shaft is oscillated in any convenient manner so that the rods E describe about one-third of the interior circle of the boiler. When this movement of the shaft takes place the wings F oscillate, and by their movements tend to force the scale, which may have dropped from the boiler-flues or which may have been deposited by the water in the boiler, to the end of the boiler, where it may be readily blown off or otherwise removed. The constant agitation produced by the movement of the wings near the bottom of the boiler would prevent the formation of scale on the bottom, if they exerted no propelling force; but when the scale and sediment are forced to the end of the boiler they are readily removed by means of either a hand-hole or by blowing off from that end of the boiler.

This is a simple and inexpensive device for preventing the formation of scale on the bottoms of steam-boilers, and its advantages will be readily understood by engineers.

Having thus described my invention,

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

In combination with a steam-boiler, the shaft D, rods or pins E, and wings F, arranged to operate substantially as and for the purposes described.

BAKER W. REYNOLDS.

Witnesses:

JOHN H. FAIRBANK,  
P. C. EBERWINE.