(No Model.)

J. R. LANE & A. D. DAVIES.

BOILER CLEANER.

No. 390,866. Patented Oct. 9, 1888.

Fig. 1.

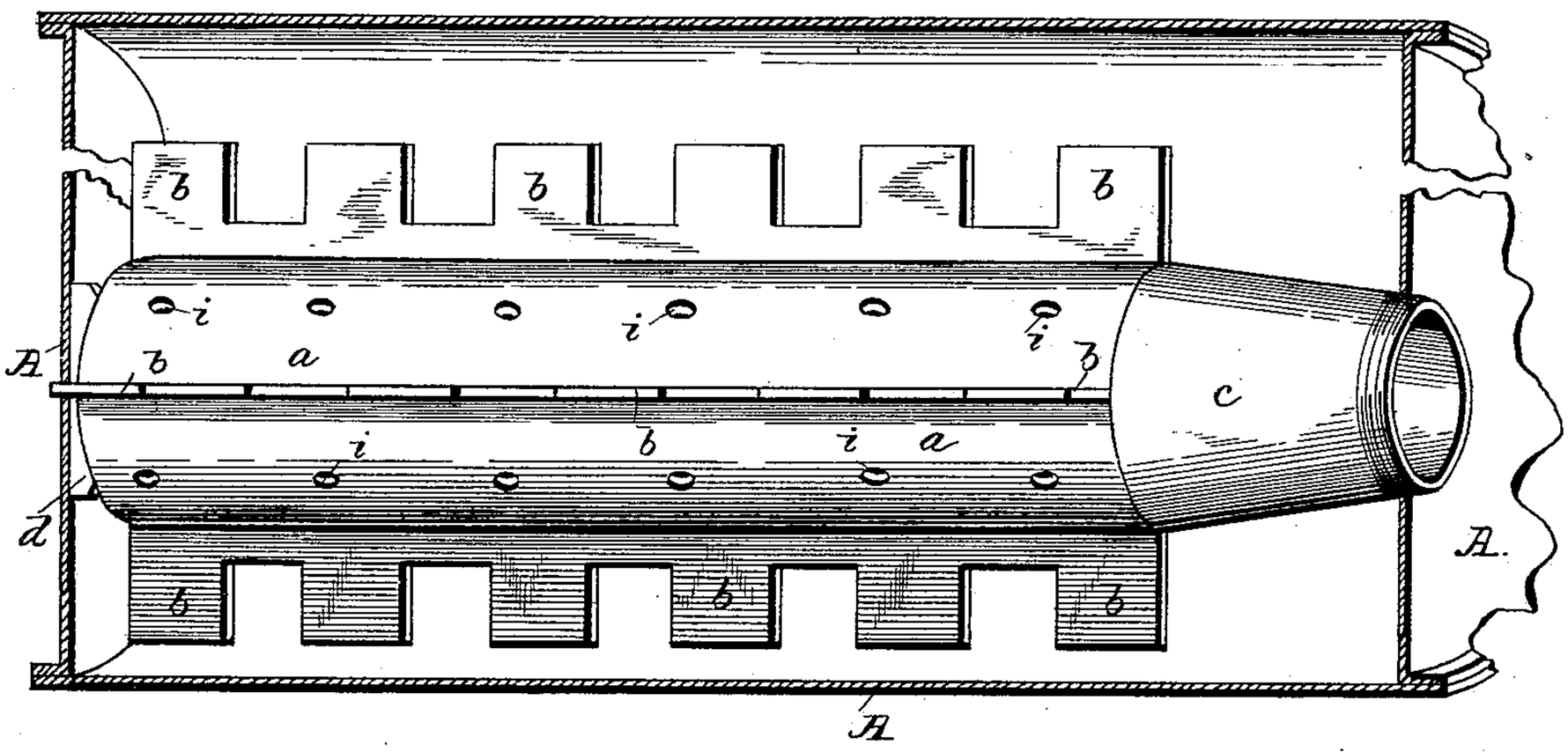
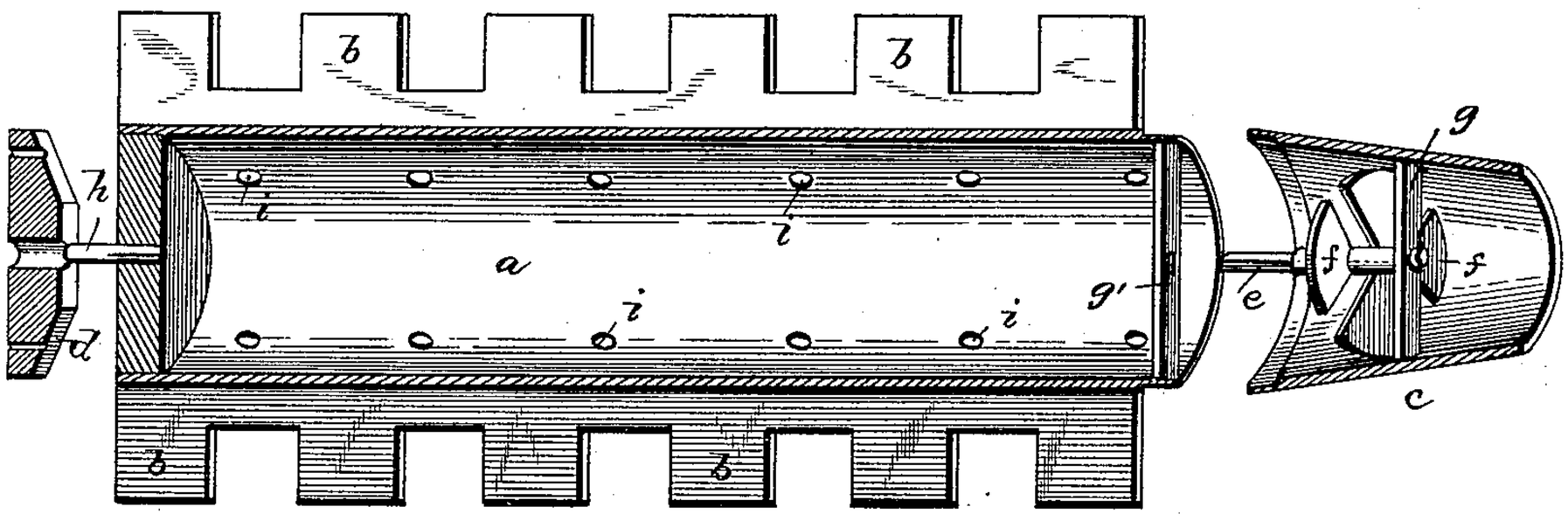


Fig. 2.



Witnesses,
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John R. Lane and Adrian D. Davies, Inventor,
By their Attorney Henry V. Copp.

UNITED STATES PATENT OFFICE.

JOHN R. LANE AND ADRIAN D. DAVIES, OF CALICO, CALIFORNIA.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 390,866, dated October 9, 1888.

Application filed April 14, 1886. Serial No. 198,877. (No model.)

To all whom it may concern:

Be it known that we, JOHN R. LANE, and ADRIAN D. DAVIES, both citizens of the United States, and residing at Calico, county of San Bernardino, State of California, have invented a new and useful Device for Extracting the Mud and Settlings from the Inside of Steam-Boilers, of which the following is a specification.

Our invention relates to steam-boiler cleaners, and has for its object to simplify and cheapen the means used therefor, and to more effectually remove the mud or sediment from the boiler.

To such ends the invention consists in the construction and combination hereinafter particularly described, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a perspective showing the device in the position it will stand in the boiler, a portion of the two ends of the boiler being shown broken away and the bottom of the boiler being in section. Fig. 2 is a longitudinal section through the device, the nipple or cap being separated from the cylinder.

In the drawings, the letter *a* designates a tube or cylinder having a series of perforations, *i*, formed therein and provided with blades or wings *b*. One end of this tube or cylinder is closed by the head *k*, which has a journal or pin, *h*, projecting therefrom to enter a suitable bearing—say a block, *d*, which may be suitably supported within the boiler A at one end thereof. The other end of the tube or cylinder is provided with a cap or nipple, *c*, which will fit over the end of the tube or cylinder, and form any suitable connection or joint therewith that will permit the tube or cylinder to revolve. The outer end of this cap or nipple will fit, say, in the end of the boiler, and be secured in any suitable manner so as preferably not to turn, its outer end also being open for the escape of water.

Within the nipple or cap is a device for revolving the tube or cylinder. This device is, say, a fly-wheel, *f*, or equivalent device, of any well-known construction, that will revolve by the impact of the outflowing water against the same. This wheel is provided with the shaft *e*, one end of which is fitted in the upright or post *g*, so as to run therein, and the other end made angular and fitted, when cap and tube are joined together, into an angular opening in the upright or post *g'*, supported within the tube or cylinder. It will be seen that by such construction when the wheel is revolved the tube or cylinder will likewise revolve.

The cleaner is supposed to extend the whole length of the boiler, and will be located so as to stand or lie, say, two inches (more or less) above the bottom of the boiler, and its dimensions will of course depend on the size of the boiler.

When the device so constructed is placed in the boiler and the water enters it through the perforations and flows against the wheel *f*, the latter will be turned and cause the tube or cylinder to revolve, and as the latter revolves its blades or wings stir up the mud or sediment, which passes with the water into the interior of the tube and out through the open end of the nipple or cap, and thus the mud or sediment is very effectually removed.

The device is not only simple in construction and efficient in operation, but cheap of manufacture, and can be applied easily to boilers already in use. Besides, it is readily put together and taken apart, and its parts, which may all be of iron or metal, are not liable to get out of order.

Having described our invention and set forth its merits, what we claim is—

1. The combination of the revoluble perforated tube or cylinder arranged substantially as shown, provided with the blades or wings and means for revolving the same, substantially as described.

2. The combination of the revoluble apertured tube or cylinder arranged substantially as shown, and the wheel adapted to be operated by a volume of water to revolve the tube or cylinder, substantially as and for the purposes described.

3. The combination of the apertured tube or cylinder arranged substantially as shown, provided with blades or wings, the cap or nipple fitting to said tube or cylinder and the wheel located within said parts and connected with the tube or cylinder to revolve the same when the wheel is acted on by a body of water, substantially as and for the purposes described.

JOHN R. LANE,
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Witnesses:
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