No. 629,563. Patented July 25, 1899.

W. H. HOLCOMB.

BOILER CLEANER.

(Application filed Aug. 31, 1898.)

(No Model.)

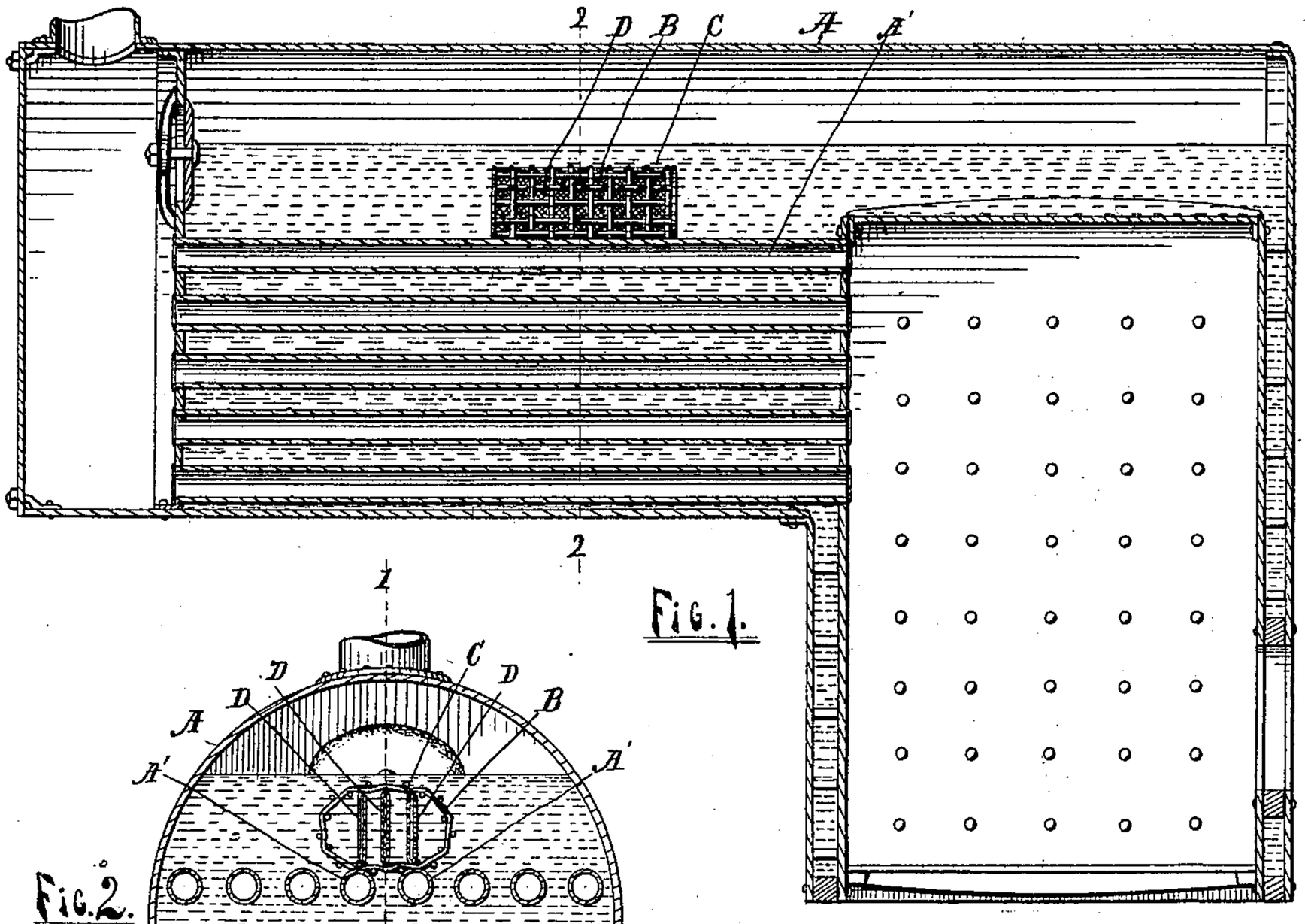

Fig. 1.

Fig. 2.

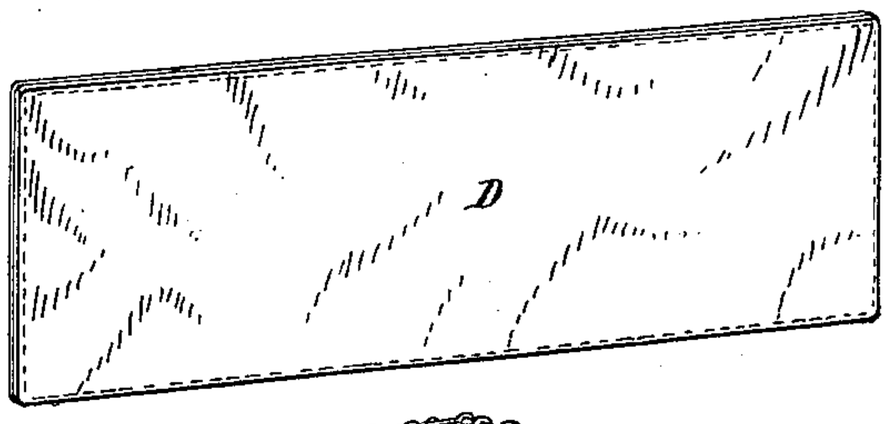

Fig. 5.

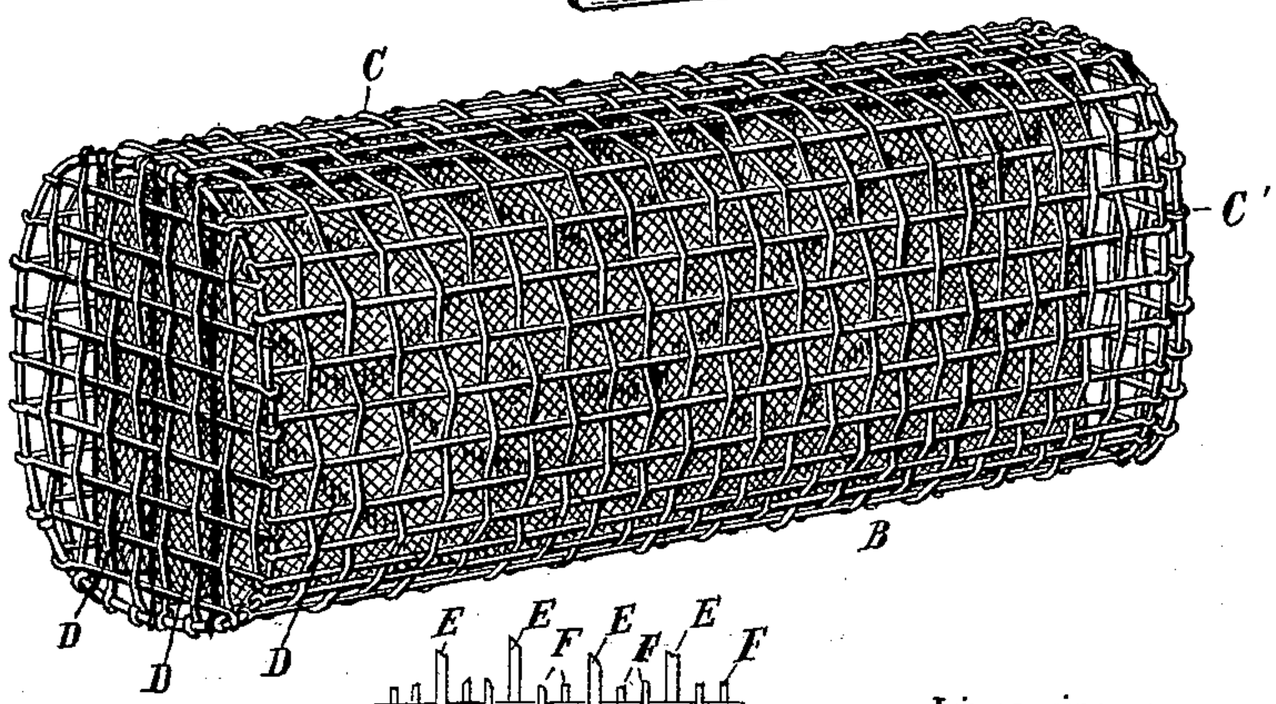

Fig. 3.

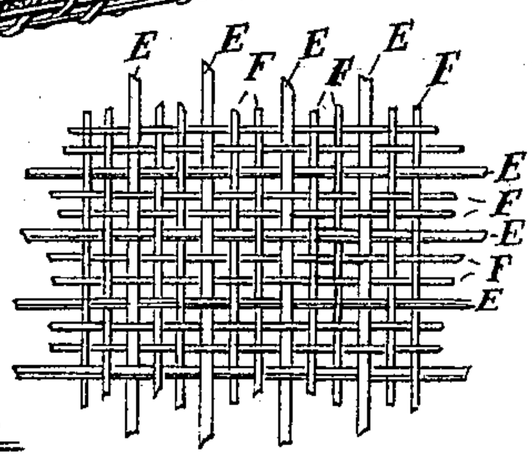

Fig. 4.

WITNESSES:

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WILLIAM H. HOLCOMB, OF STANTON, MICHIGAN.

BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 629,563, dated July 25, 1899.

Application filed August 31, 1898. Serial No. 689,920. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HOLCOMB, a citizen of the United States, residing at Stanton, in the county of Montcalm and State of Michigan, have invented certain new and useful Improvements in Boiler-Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in a device for removing impurities from the water in steam-boilers and preventing the accumulation of scale on the boiler; and its objects are to provide means whereby the impurities in the water that would otherwise be precipitated in the form of scale upon the boiler will be accumulated in the device and removable therewith and to provide the device with certain new and useful features hereinafter more fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal vertical section of an ordinary locomotive type of boiler, taken on the line 1 1 of Fig. 2 and having my device inserted within the same. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1; Fig. 3, an enlarged detail of my device entire; Fig. 4, a detail showing the construction of the fabric of the accumulators, and Fig. 5 a detail of one of the accumulators.

Like letters refer to like parts in all of the figures.

A represents the boiler, having the usual tubes A'.

B represents my device for removing the impurities of the water, which is supported upon the upper tubes and beneath the surface of the water. Said device consists, essentially, of a cage C, of wire or other suitable material, and having a removable end C' for inserting and removing the accumulators D, which latter consist of parallel sheets of suitable fabric of substantially equal area and secured to each other all around at the edges. These accumulators are suspended within the cage C and extend from side to side of the same in parallel planes, being removably secured to the cage C at the edges in any convenient manner and arranged in parallel planes therein. The accumulators are preferably of woven fabric, of hemp, jute, cotton, or other suitable material, but any sheets of porous material will operate. To strengthen the fabric and render it more durable, I insert at intervals strands of wire, as illustrated in Fig. 4, in which F represents the strands of fiber and E the strands of wire.

The lime and other impurities that form scale will be deposited between the respective sheets of fabric comprising the accumulators instead of on the boiler and tubes, and thus the water will be purified and the boiler kept clean. From time to time, as the accumulators fill up, the device can be removed from the boiler through the manhole and the accumulators removed from the cage, the sheets thereof separated, and the deposit removed. The sheets can then be again secured to each other and replaced and the device used again indefinitely. I have shown three of these accumulators in the cage, but the number is not material. One will operate as well. It is also evident that more than one cage can be used, if found necessary, for very impure water or large boilers with small manholes.

Having thus fully described my invention, what I claim, and wish to secure by Letters Patent, is—

1. In a boiler-cleaner, sheets of woven fabric formed of strands of vegetable fiber, and having strands of wire at intervals to strengthen and support the same, substantially as described.

2. A boiler-cleaner, consisting of a wire cage having a removable end, and a number of sheets of porous material arranged in pairs and in parallel planes, and having the edges of each pair secured to each other, said accumulators being removably supported within the cage, substantially as described.

3. In a boiler-cleaner an accumulator consisting of parallel sheets of woven fabric, composed of strands of vegetable fiber, having at intervals strands of wire, said sheets being attached to each other at the edges and a wire cage surrounding said accumulator and supporting the same, and having a removable end, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. HOLCOMB.

Witnesses:

LUTHER V. MOULTON,

THOS. HOWELL.