

(No Model.)

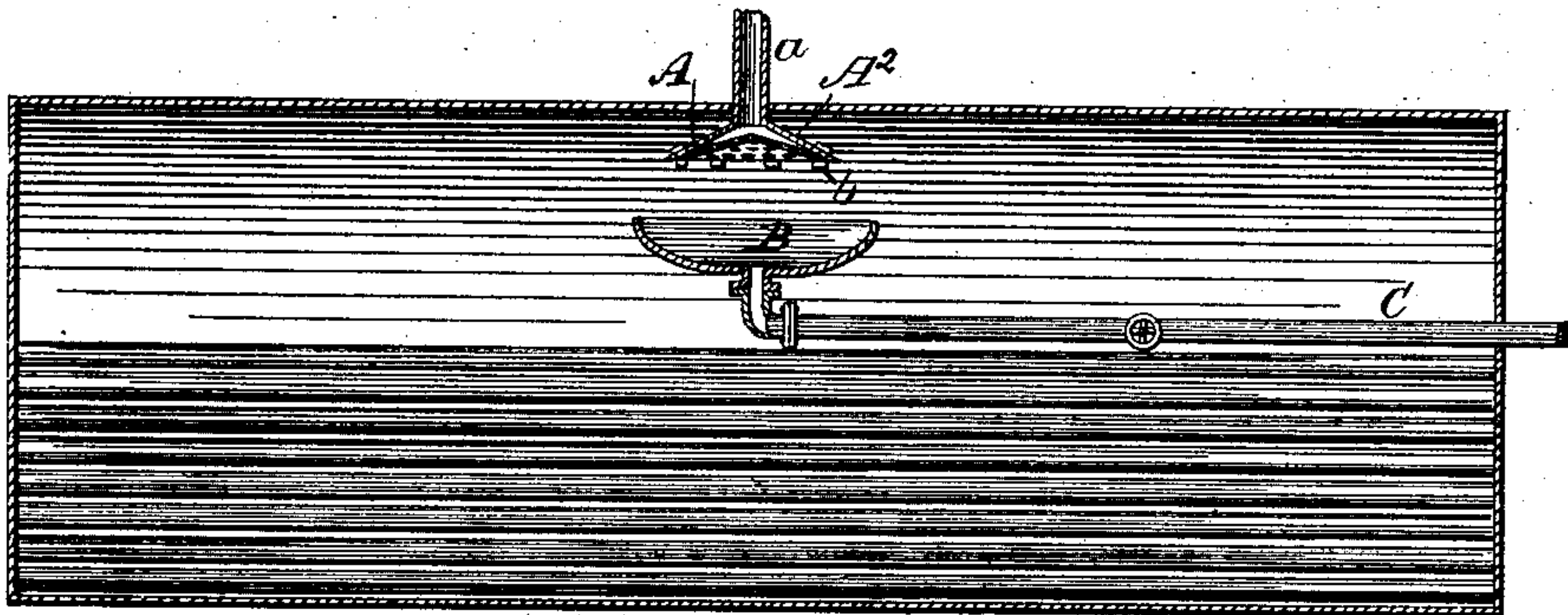
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SEDIMENT COLLECTOR FOR BOILERS.

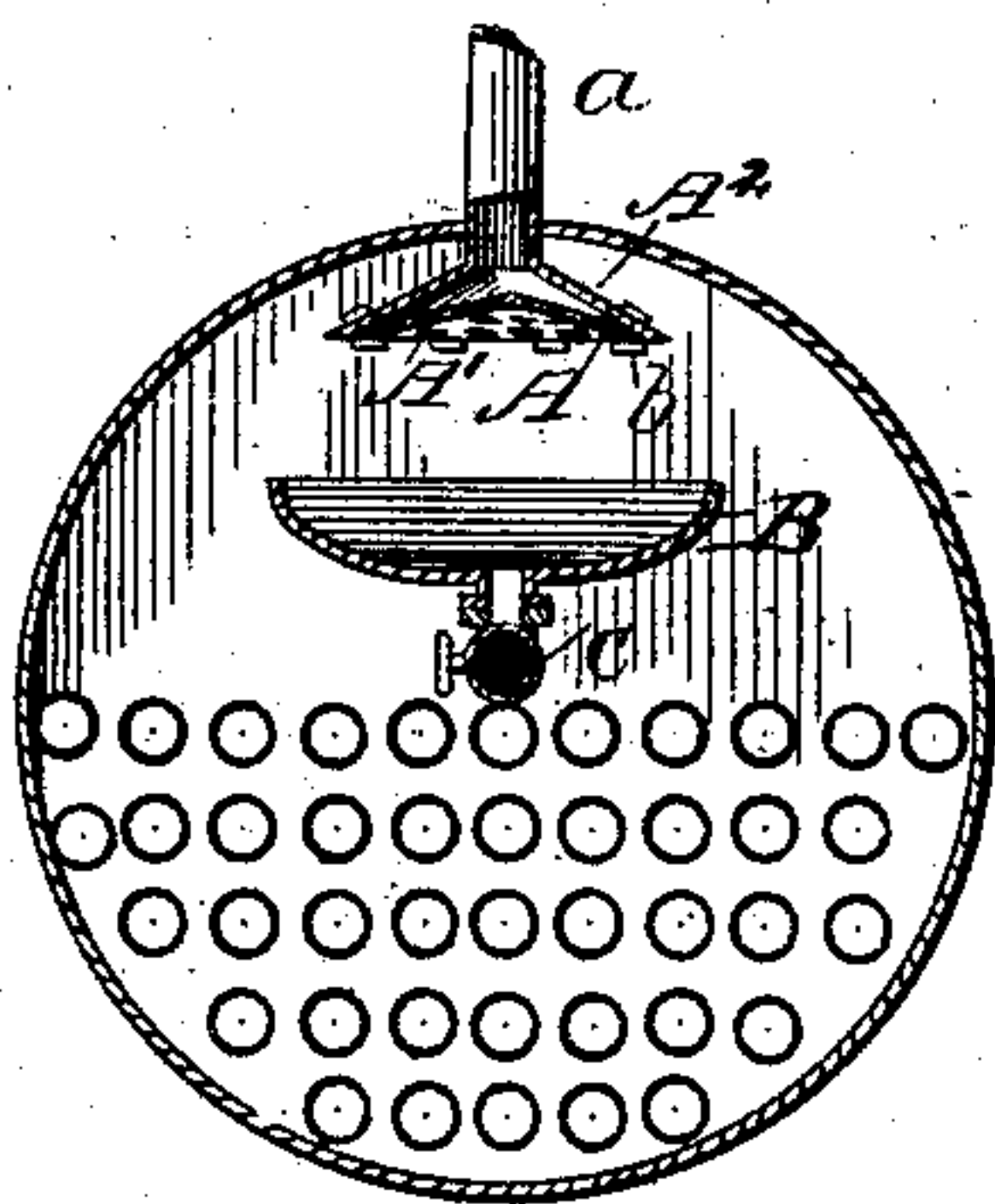
No. 260,676.

Patented July 4, 1882.

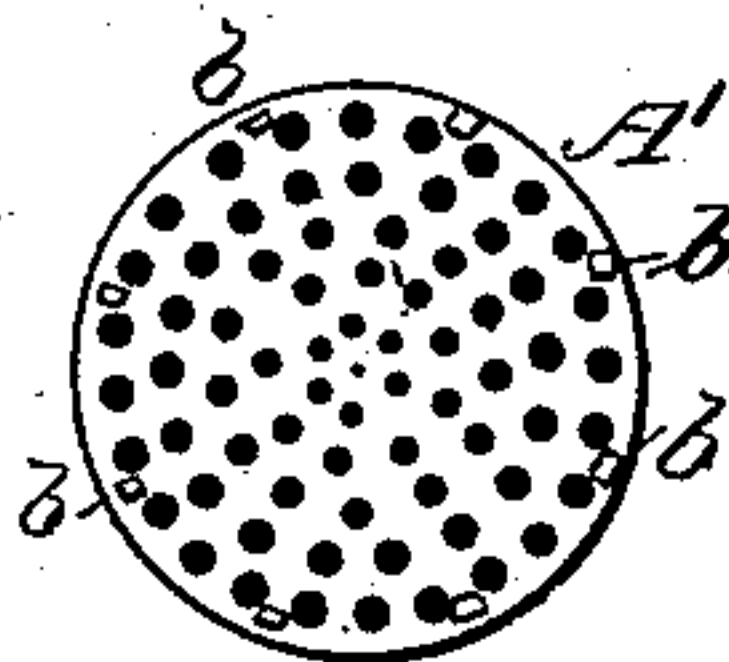
*Fig. 1,*



*Fig. 3,*



*Fig. 2,*



WITNESSES

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# UNITED STATES PATENT OFFICE.

DAVID HANNA, OF OGDENSBURG, NEW YORK.

## SEDIMENT-COLLECTOR FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 260,676, dated July 4, 1882.

Application filed February 28, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID HANNA, of Ogdensburg, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Sediment-Collectors for Boilers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a sectional elevation of my improved feed-water device for boilers. Fig. 2 is an inverted view of the spraying or feeding device proper; and Fig. 3 is also a sectional view of my device, taken at right angles to Fig. 1.

This invention has relation to an-improvement in feed-water devices for boilers, its object being to strengthen the spraying device and to effect the thorough spraying of the feed-water; and it consists principally in providing the spraying device or nozzle with a lower conical surface as well as with an upper conical surface to pass the water into the nozzle in a thin film or sheet, which is thus enabled to be thoroughly sprayed through perforations, graduated in size, made in the lower surface of the nozzle, substantially as herein-after more fully set forth.

In carrying out my invention I employ a spraying device or nozzle, A, affixed to the feed-water pipe *a* of the boiler, and arranged within the steam-chamber of the boiler. The nozzle A is provided with a lower conical surface, A', as well as an upper conical surface, A<sup>2</sup>, its lower surface having a series of graduated perforations increasing in size toward the outer edge of the nozzle. This construction, while by having the reduced-sized apertures at

the inner circumference of the nozzle, retarding the spraying or feeding of the water at the point least desired, or into the sediment-collector, presently described, passes the water in a thin film or sheet of water toward the outer edge of the nozzle, whence it is sprayed or fed through the increasing-sized perforations into the boiler, unaccompanied with an appreciable quantity of sediment, lessening the tendency of clogging the nozzle. The nozzle A has its lower surface or plate bolted to and removable from the upper plate, as at *b*, to permit the ready cleansing of the nozzle or removal for other purpose of the lower plate. Thus bolting the parts together strengthens the nozzle, rendering it more durable and efficient.

B is the sediment-collector, preferably of a saucer or funnel shape, arranged directly under and a short distance from the nozzle A, and attached to and discharging into a pipe, C, leading through one end of the boiler, and provided outside thereof with a blow-off cock to remove sediment therefrom.

I claim and desire to secure by Letters Patent of the United States—

In a sediment-collector for steam-boilers, the combination, with the steam-chamber of the boiler, of the nozzle A, consisting of an upper conical imperforate plate, A<sup>2</sup>, and an under conical plate, A', provided with perforations increasing in size from the center toward its periphery, feed-water pipe *a*, pan or collector B, and blow-off pipe C, substantially as and for the purpose herein shown and specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DAVID HANNA.

Witnesses:

GEO. B. SHEPARD,  
JOHN A. ARNOLD.