

No. 666.408.

Patented Jan. 22, 1901

W. CHESTERMAN.
BOILER-CLEANING DEVICE.

(Application filed June 14, 1900.)

(No Model.)

Fig. 1.

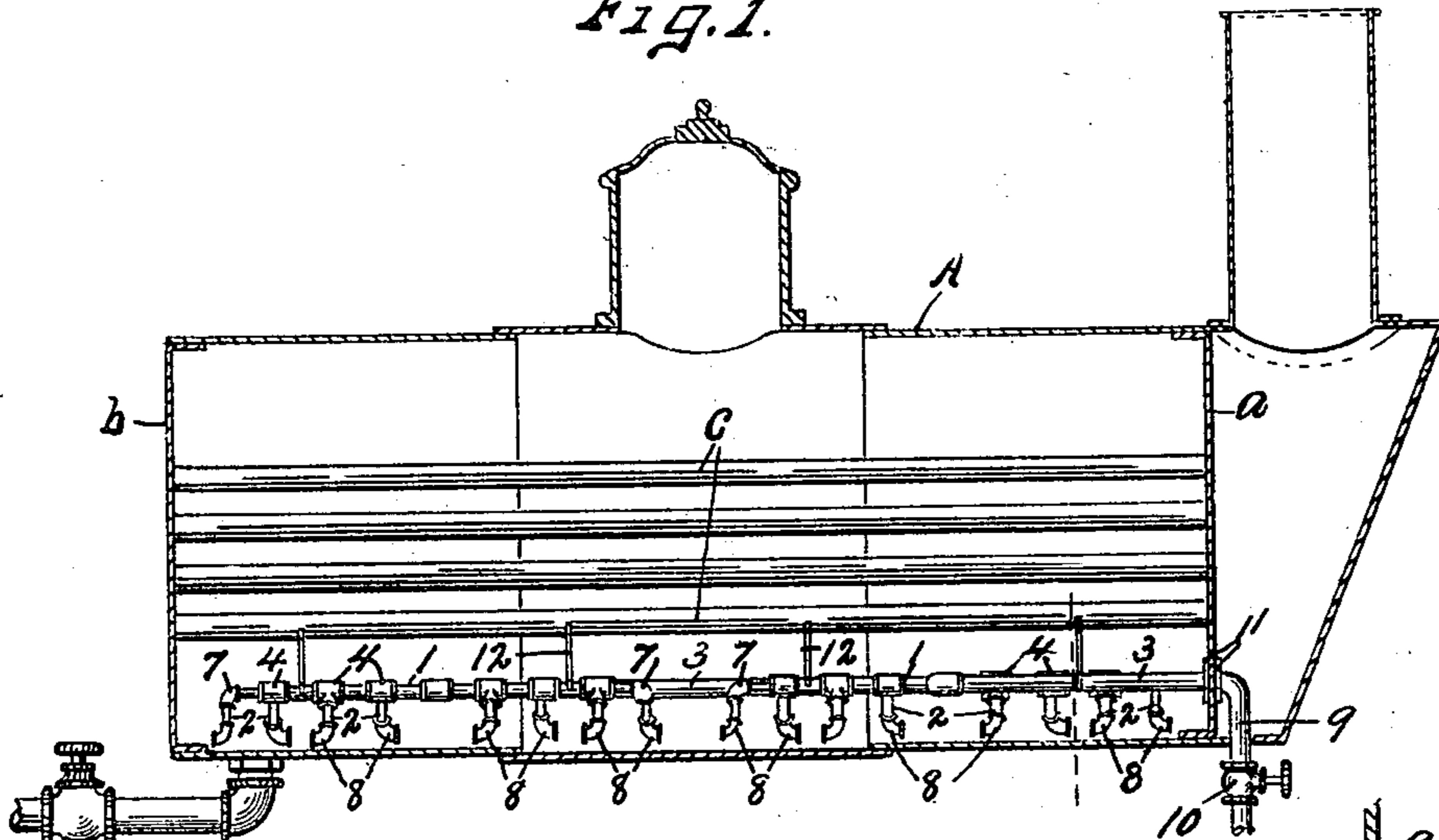


Fig. 2.

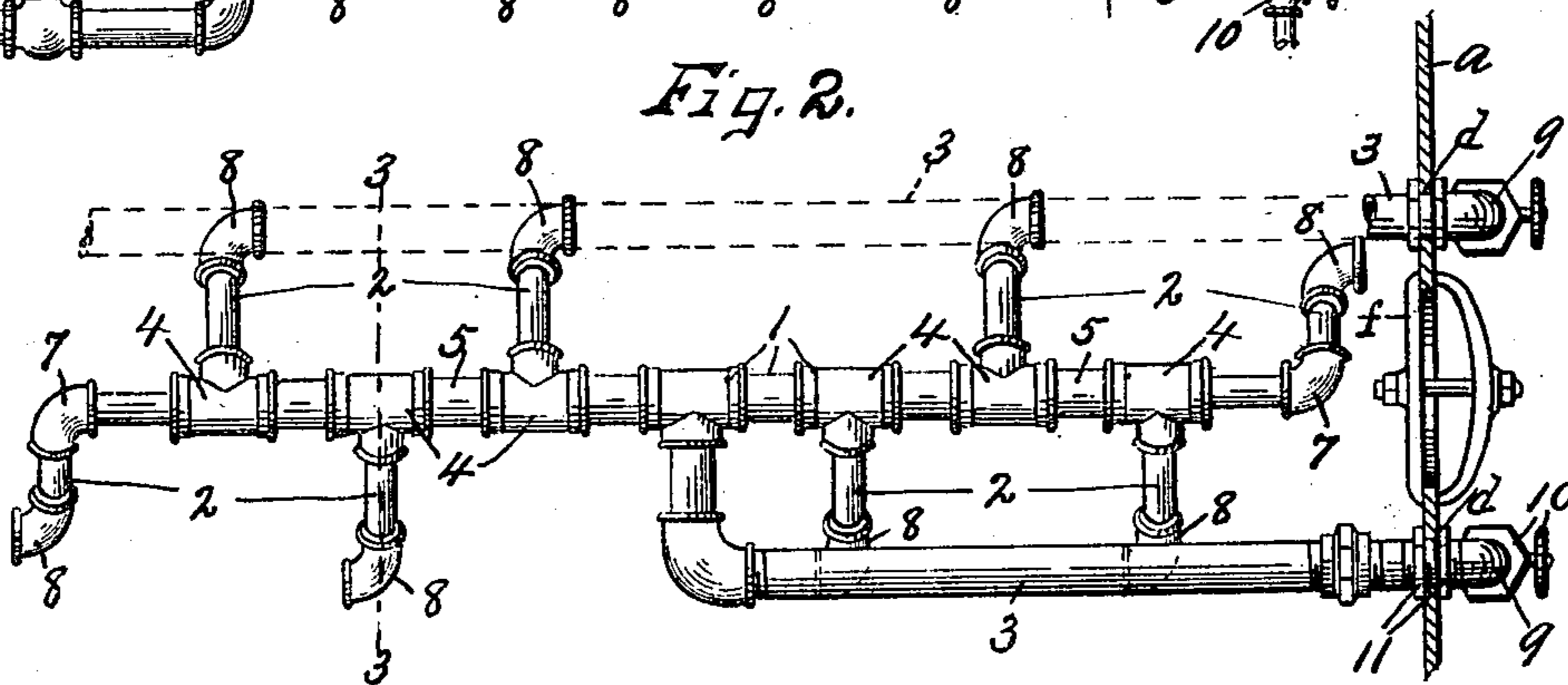
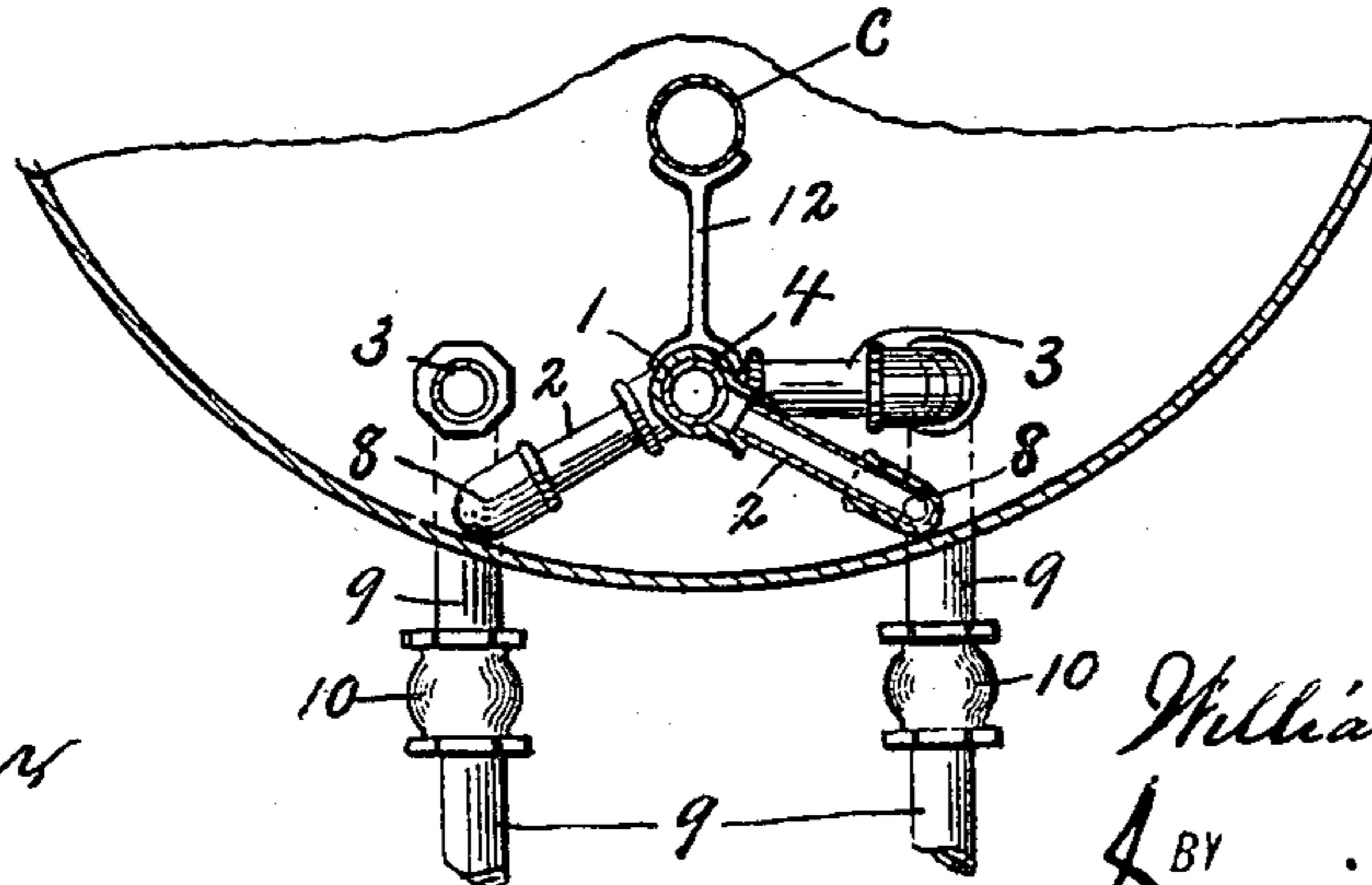


Fig. 3.



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WILLIAM CHESTERMAN, OF PUNXSUTAWNEY, PENNSYLVANIA, ASSIGNOR
OF TWO-THIRDS TO DAVID G. DAVIS AND DANIEL THOMAS, OF SAME
PLACE.

BOILER-CLEANING DEVICE.

SPECIFICATION forming part of Letters Patent No. 666,408, dated January 22, 1901.

Application filed June 14, 1900. Serial No. 20,255. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CHESTERMAN, of Punxsutawney, in the county of Jefferson, in the State of Pennsylvania, have invented new and useful Improvements in Boiler-Cleaning Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in boiler-cleaning devices, and has for its object the production of a simple and practical device for agitating and removing the scale, mud, or other impurities from the boiler; and to this end the invention consists in the construction and arrangement of the parts of a boiler-cleaning device, as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which similar characters indicate corresponding parts in all the views.

Figure 1 is a longitudinal vertical section of a boiler, showing two of the boiler-cleaning devices as operatively mounted therein. Fig. 2 is an enlarged top plan view of my invention as seen in Fig. 1 and a portion of one of the end walls of a boiler to which it is secured. Fig. 3 is a sectional view taken on line 3 3, Fig. 2.

It is well known to those skilled in the art that the accumulation of sediment within a boiler, and particularly immediately above the combustion-chamber, is extremely injurious to the shell of the boiler, retards the formation of steam, and that the sediment soon bakes and forms a thick scale on the inner surface of the boiler which is extremely difficult to remove and soon causes the boiler to rust and otherwise deteriorate. In order to obviate these results, I preferably arrange my improved cleaner within the boiler and usually in proximity to the lower wall in such manner that the sediment accumulating in the bottom of the boiler may be agitated and readily blown off through the several outlets of the cleaner.

A represents a boiler, which may be of any

desired form or construction and is provided with front and rear end walls *a b* and flues *c*.

My improved cleaner preferably consists of a tubular head 1, diverging branch conduits 2, and an additional conduit 3, having one end connected to the intermediate portion of the head 1 and its opposite end leading to the exterior of the boiler. The head 1 is usually composed of a series of sections 4 and 5, arranged end to end, one in advance of the other, and secured together by suitable threads formed on the adjacent ends of said sections. The intermediate sections 4 usually consist of T connections, and the opposite end sections consist of suitable elbows, as 7. The branch conduits 2 are secured at one end to the T's 5 and end elbows 7 and are preferably arranged one in advance of the other and alternate with each other on opposite sides of the head 1. These branch conduits 2 communicate with the interior of the boiler A and the head 1 and are provided at their outer ends with elbows 8, having their extremities arranged substantially parallel with the head 1.

When my improved boiler-cleaner is arranged within the boiler, the free ends of the branch conduits 2 normally rest upon the inner walls of the shell of the boiler, and the head 1 is preferably arranged in a plane above the outer ends of the branch conduits 2, as seen in Fig. 3.

The conduit 3, as previously stated, is secured at one end to the intermediate portion of the head 1, is preferably arranged substantially parallel with said head, and extends through an aperture *d* in the front wall of the boiler A, and is provided with a downturned extension 9, leading to the exterior of the boiler, which may be connected to a sewer or other conduit for carrying away the discharge from the boiler.

The conduit 3 is provided with a suitable valve 10, preferably secured to the extension 9 at the exterior of the boiler, where said valve is readily accessible to the attendant. Suitable jam-nuts 11 are adjustable along the conduit 3 and are arranged to engage the inner and outer faces of the end walls *a* of the

boiler for firmly holding the cleaner in operative position and preventing any leak through the aperture *d*.

It is sometimes necessary to use more than one of my improved cleaners, particularly in boilers of considerable length, and, as seen in Fig. 1, I have shown two cleaners arranged one in advance of the other, both being of substantially the same construction and each provided with discharge-conduits 3, passed through the apertures *d*, said apertures being preferably arranged on opposite sides of a hand-hole *f*, which is usually formed in the front end wall of the boiler.

Suitable braces 12 are interposed between the flues *c* and the head 1 for preventing displacement of the cleaner.

In the operation of my invention the boiler is usually filled with water to a point considerably above the flues. The valve 10 is then opened, and the steam and water pressure within the boiler forces the sediment or other foreign substance outwardly through the branch conduits 2, head 1, and conduit 3 and is discharged from said conduit into the sewer or other conduit. (Not illustrated.)

It is evident that when a plurality of my improved cleaners are used the valves 10 of the conduits 3 may be simultaneously or independently open, thereby thoroughly agitating and removing all sediment or scale which may have accumulated in the bottom of the boiler. If desired, the conduit 3 may be connected to the dome of the boiler or to another steam-boiler and steam admitted through the conduit 3 and discharged through the branch conduits 2 at the base of the boiler for the purpose of agitating the sediment within the boiler, which may be then drawn off or discharged through an additional discharge-conduit, as 13, communicating with the interior of the boiler.

The operation of my invention will now be readily understood upon reference to the fore-

going description and accompanying drawings, and it will be noted that any number of my improved cleaners may be used within the boiler, that the construction of said cleaner may be somewhat varied, and that the supporting means, as 12, may be different from that shown and described without departing from the spirit of this invention. Therefore I do not limit myself to the precise construction and arrangement herein shown and described.

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

1. The combination with a boiler-shell, tubular heads arranged within the shell one in advance of the other, and each provided with a plurality of branch passages leading to the interior of the shell, and independent conduits connected to the heads and leading to the exterior of the shell, each of said conduits being provided with a valve.

2. The combination with the shell and flues of a boiler; of a tubular head within the shell, and provided with diverging branch passages, braces between the head and one of the flues and a conduit having one end connected to the head and its other end leading to the exterior of the shell and provided with a valve.

3. As a new article of manufacture, a boiler-cleaner comprising a head composed of a series of tubular T-sections connected end to end with each other, branch conduits connected to said sections and alternating with each other on opposite sides of the head, said branch conduits having their free extremities arranged substantially parallel with the head.

In witness whereof I have hereunto set my hand this 8th day of June, 1900.

WILLIAM CHESTERMAN.

Witnesses:

JACOB L. FISHER,
S. F. FISHER.