

No. 889,302.

PATENTED JUNE 2, 1908.

A. GRÖNVALD.
BOILER FLUE CLEANER.
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Fig. 1.

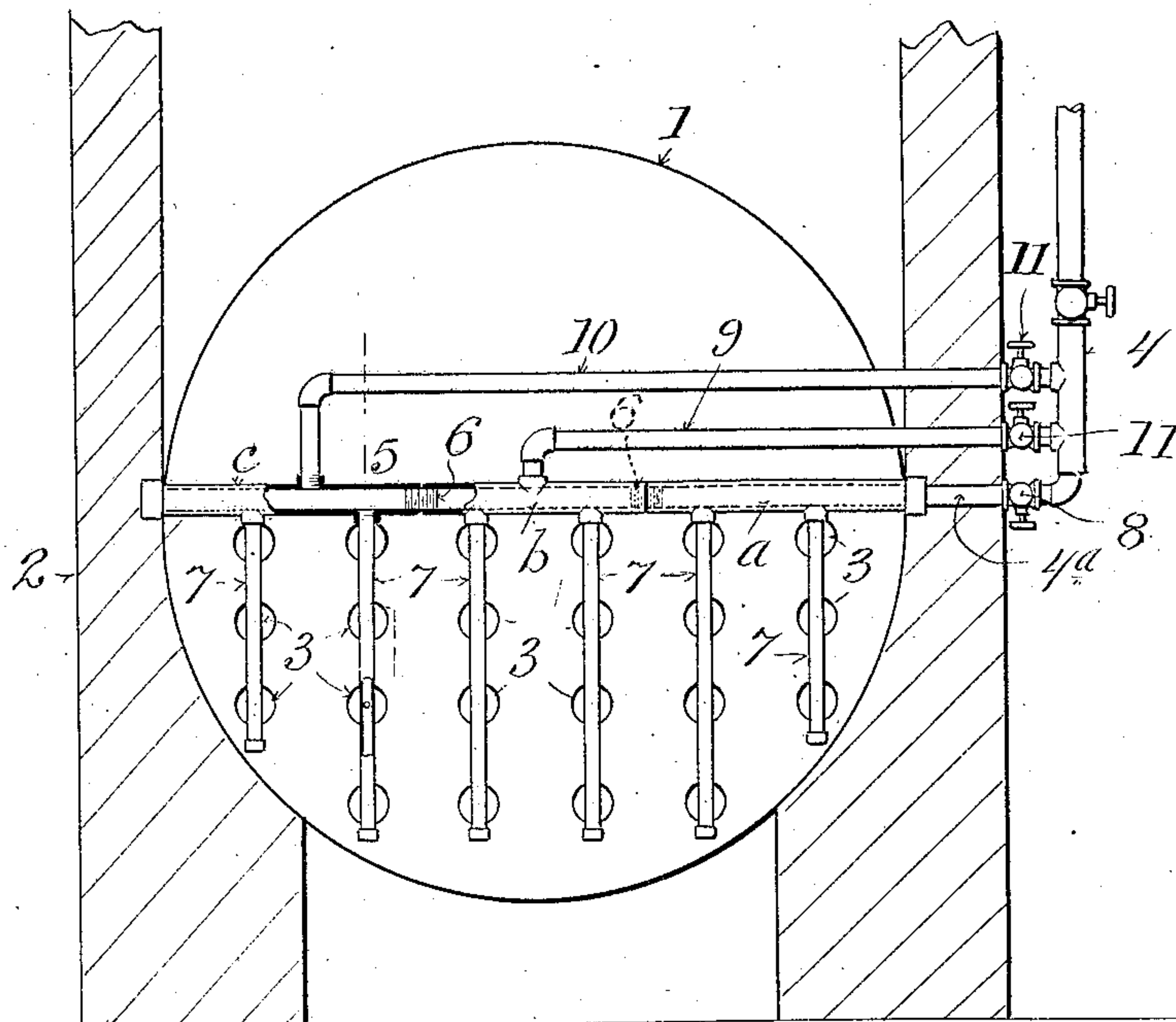
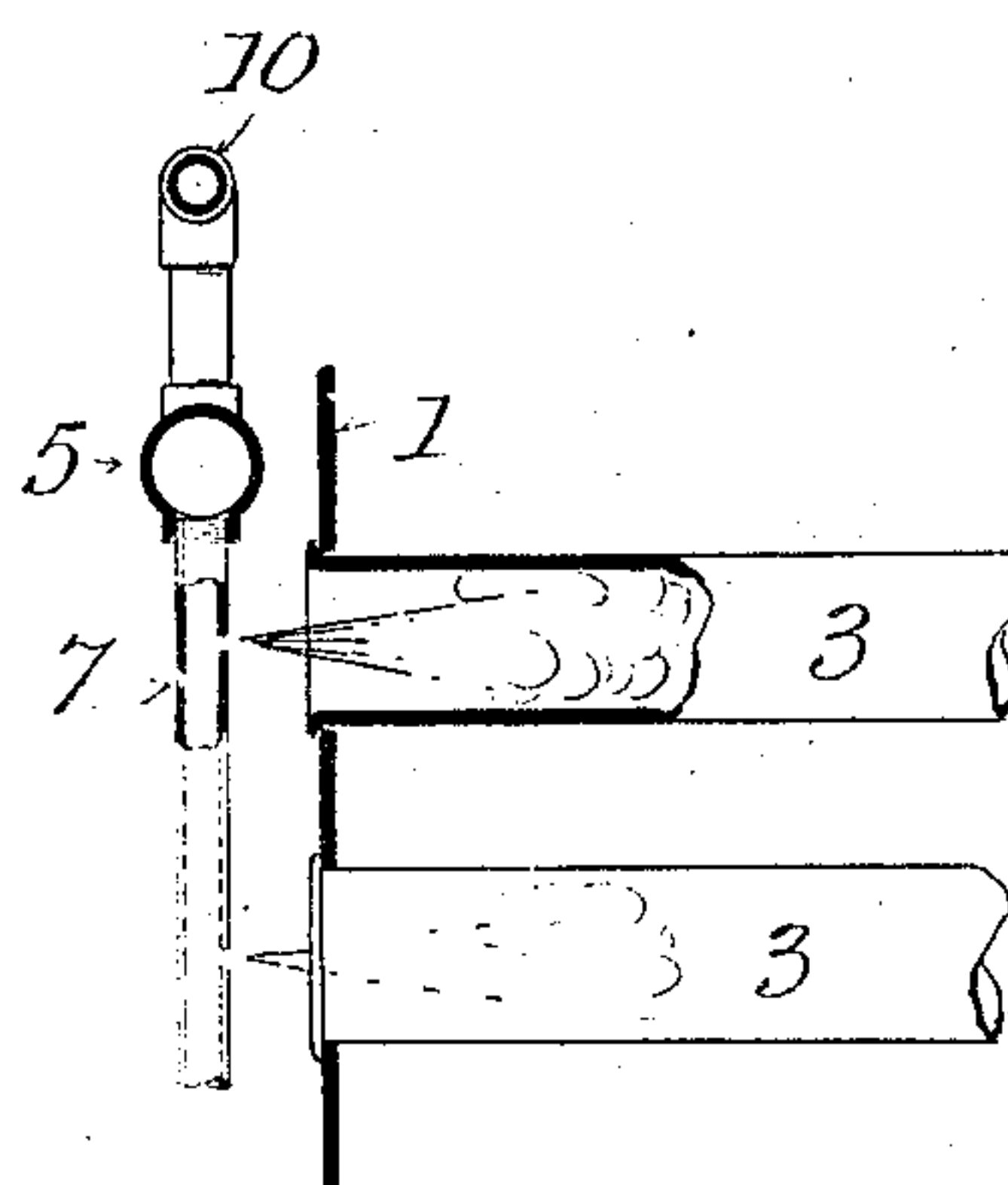


Fig. 2.



Witnesses:
George Felber
Ralph Nelson

Inventor
Andreas Grönvald.
by Christent Young
Attorney.

UNITED STATES PATENT OFFICE.

ANDREAS GRÖNVALD, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO JOSEPH J. ZIMMERMANN,
OF MILWAUKEE, WISCONSIN.

BOILER-FLUE CLEANER.

No. 889,302.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANDREAS GRÖNVALD, a subject of the King of Norway, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Boiler-Flue Cleaners; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 The object of my invention is to provide a simple, economical, and effective device for cleaning boiler-flues, its construction and arrangement being such that by a system of steam-pipes in connection with a header, 15 live-steam is admitted into a series of boiler-tubes, constituting a division of the whole, whereby the series of boiler-tubes are cleaned or "blown out," independent of the remaining boiler-tubes, which tubes are similarly 20 divided into series and connected to the system of steam-pipes but independent of each other.

25 The invention therefore consists in various details of construction and combination of parts as hereinafter fully set forth with reference to the accompanying drawings and subsequently claimed.

30 In the drawings: Figure 1 represents a sectional front elevation of a steam-boiler having attached thereto a flue-cleaner embodying the features of my invention, and Fig. 2, a detail longitudinal section of the same, as indicated by line 2—2 of Fig. 1.

35 Referring by numeral to the drawings, 1 indicates a steam-boiler supported in the masonry walls 2, the boiler being provided with the usual flues 3 at suitably spaced intervals. Directly outside of one of the walls 2 is a vertically disposed valve-controlled steam-supply pipe or header 4, which header is preferably in pipe-connection with the boiler steam-dome not shown. Connected to the lower end of the header, by a branch-pipe 4^a, is a horizontally disposed lead-pipe 5, which pipe 45 extends across the front of the boiler-head just above the top row of flues and is provided with a cap at its opposite end, there being intermediate plugs 6 fitted into the pipe whereby separate divisions are obtained 50 therein. Each division of the lead-pipe 5 is provided with a series of depending tubes 7,

closed at their lower ends and having series of perforations alined with and corresponding in number to the boiler-flues, which flues are directly opposite the depending tubes. 55

As shown in the drawings, the lead-pipe 5 is separated into three divisions *a*, *b*, *c*, respectively by the plugs, the first division *a* being in direct communication with the header and controlled by a valve 8. The 60 divisions *b*, *c*, are connected to the header by means of branch-pipes 9, 10, respectively, each branch-pipe having fitted therein a valve 11, which valve together with the valve 8 serves to admit live-steam to divisions *a*, 65 *b*, *c*, of the pipe 5, independent of each other.

From the foregoing description it will be readily understood that by opening any one of the valves, steam will be admitted into the corresponding division of the lead-pipe 5, 70 and through its depending tubes to one series of boiler-flues, after thoroughly blowing out the same the valve is closed, the operation being repeated in the next series of flues, and so on until the entire boiler has been 75 cleaned. Thus by simply operating a valve, the steam is admitted in any one of the series independently, it being understood that any number of series may be employed by interposing a greater or less number of plugs 80 in the lead-pipe and providing a corresponding number of branches in connection with the header.

I claim:

1. A boiler-flue cleaner comprising a vertically disposed header, a horizontal lead-pipe extending forward of the boiler-head, plugs fitted in the lead-pipe, whereby separate divisions are formed therein, series of perforated depending tubes extending from 90 said lead-pipe, branch-pipes connecting the divisions of the aforesaid lead-pipe with the header, and an independent controlling-valve for each branch-pipe interposed between the header and branch-pipes. 95

2. A boiler-flue cleaner having a vertically disposed header, a lead-pipe extending from the lower terminal of the header, the lead-pipe comprising a series of sections connected by screw-threaded plugs whereby 100 separate divisions are formed therein, series of perforated depending tubes extending

from said lead-pipe, branch-pipes connecting the divisions of the aforesaid lead-pipe with the header, and an independent controlling-valve for each branch-pipe interposed between the header and branch-pipes.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in

the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

ANDREAS GRÖNVALD.

Witnesses:

GEO. W. YOUNG,

JOSEPH J. ZIMMERMANN.