

No. 641,295.

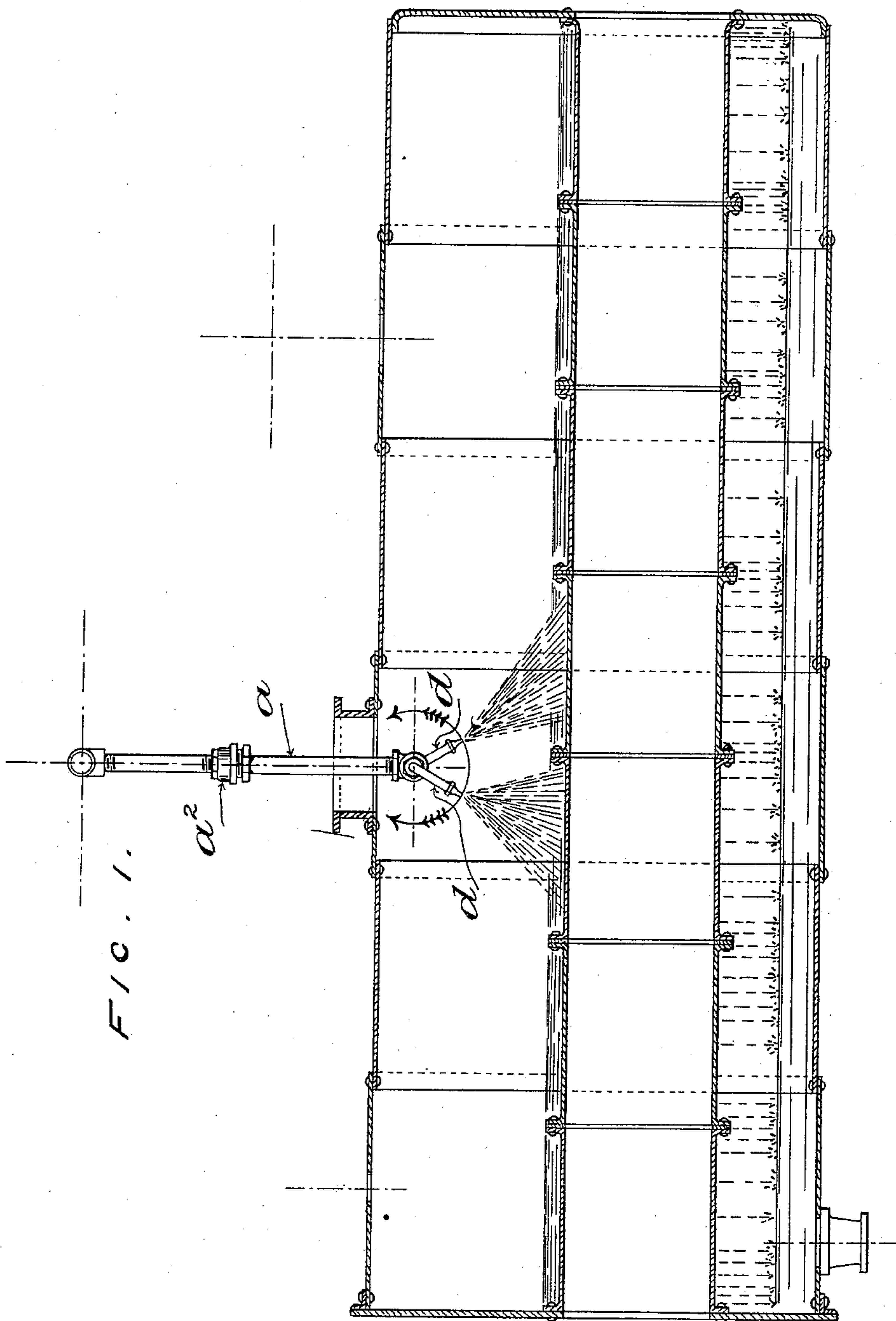
Patented Jan. 16, 1900.

W. JACKSON.  
BOILER CLEANER.

(Application filed Nov. 14, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.

*Ellas L. Giles*

*Oldman*

INVENTOR.

*Walter Jackson.*

By his Attorneys *Richard R.*

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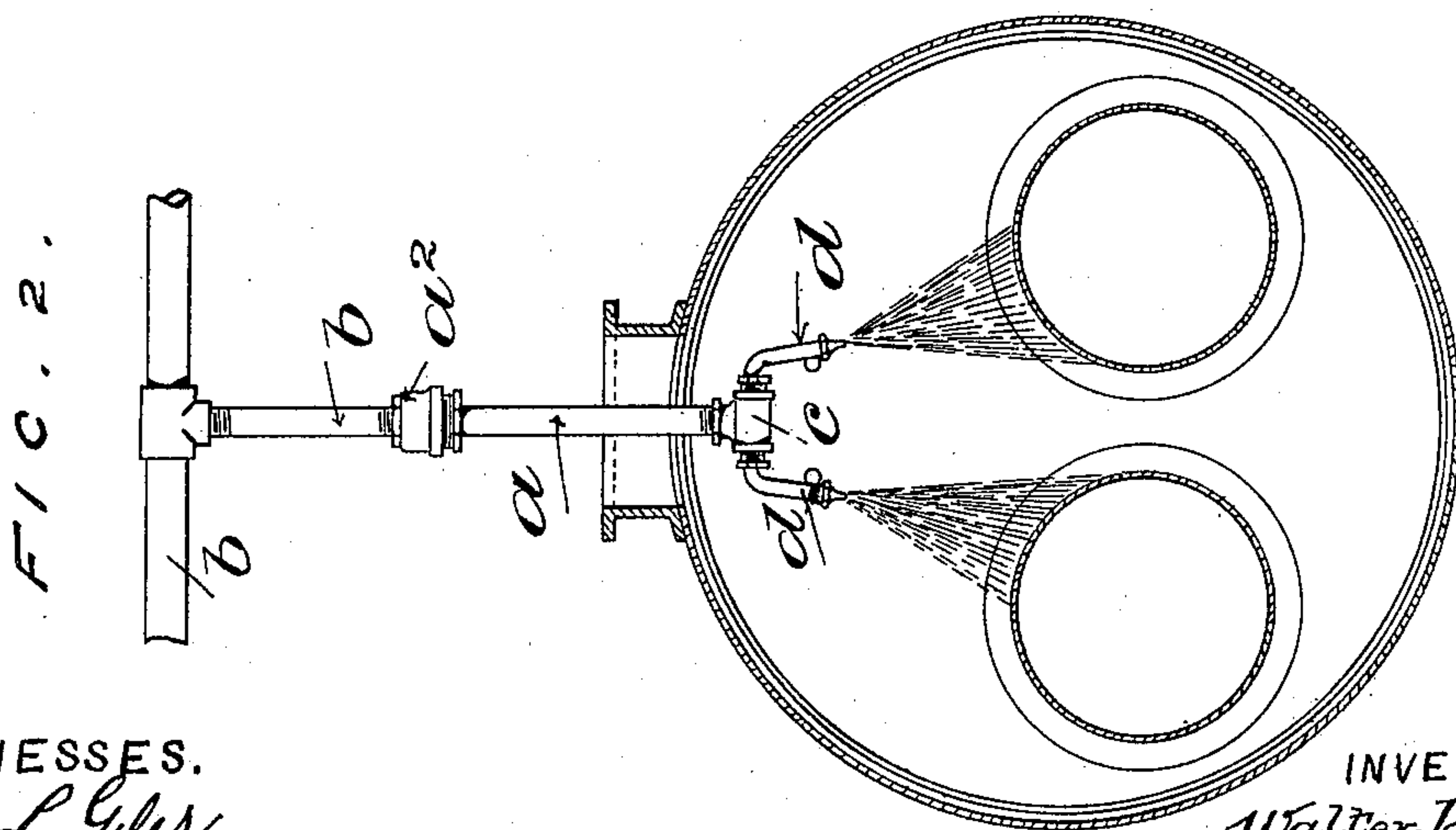
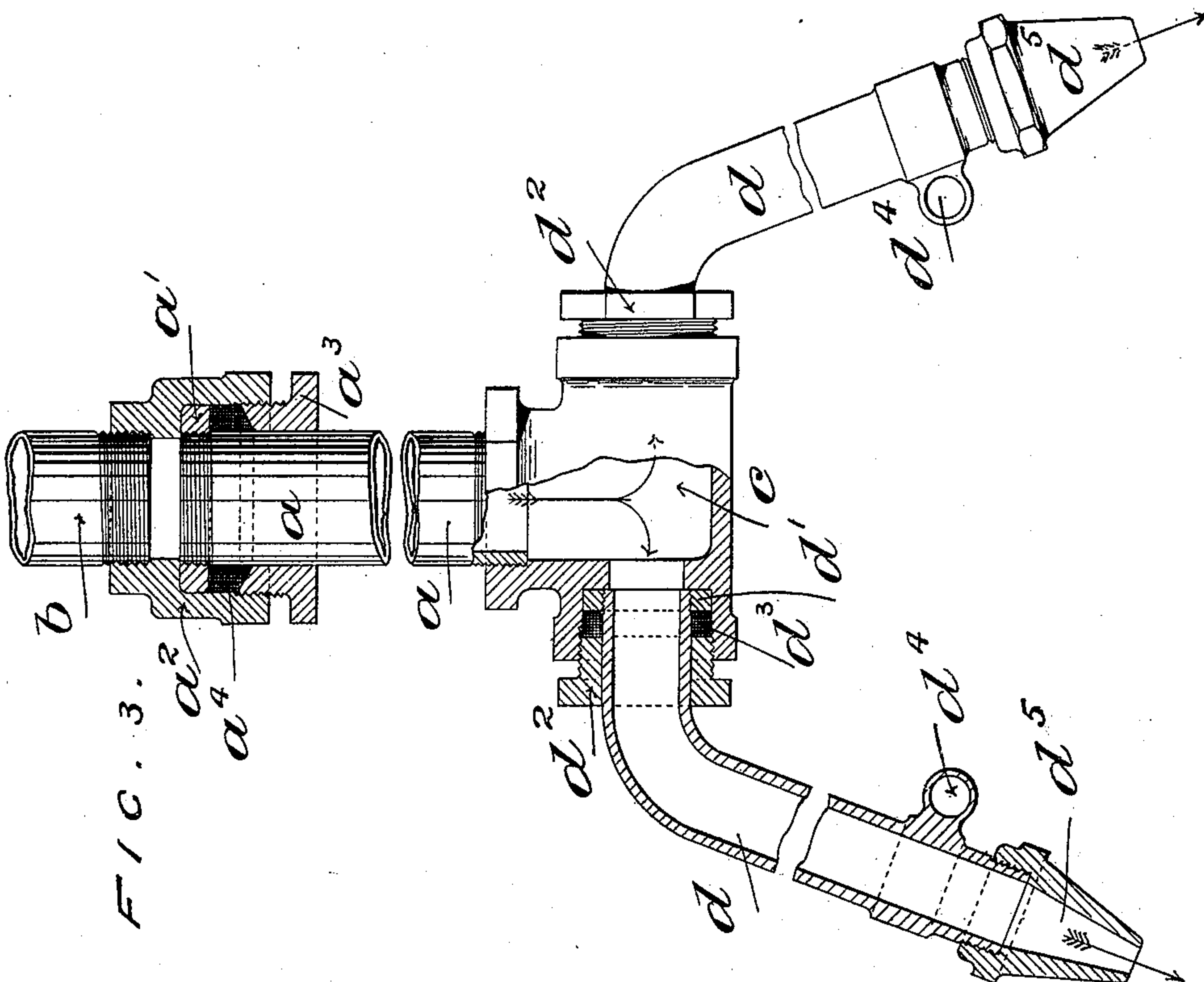
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*Ella L. Giles*

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INVENTOR.

*Walter Jackson.*

By his Attorneys *Richard*



# UNITED STATES PATENT OFFICE.

WALTER JACKSON, OF WHITEFIELD, ENGLAND.

## BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 641,295, dated January 16, 1900.

Application filed November 14, 1899. Serial No. 736,952. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER JACKSON, manufacturer of boiler composition, a subject of the Queen of Great Britain and Ireland, residing at No. 284 Bury New Road, Whitefield, near Manchester, in the county of Lancaster, England, have invented a certain new and useful improvement in the method of and means for cleansing or removing incrustation from the interior of steam-generators, (for which I have made application in Great Britain, No. 14,862, dated July 19, 1899,) of which the following is a specification.

My said invention relates to improvements in the method of and means for removing incrustation or scale, mud, and the like from the interior of steam-generators.

As is well known, the general course followed when removing incrustation is to blow off the water, enter the boiler, and chip away such incrustation—a most objectionable and tedious task. Moreover, the presence of steam in the boiler after the water has left tends to bake the incrustation on the shell, rendering its removal a matter of difficulty.

In working according to my invention I first allow the whole of the steam to escape, leaving the water standing at a suitable level, and I then thoroughly swill and scour out the interior of the boiler by means of a jet or jets of water delivered through a convenient apparatus, such water being fed under a suitable pressure.

My invention will be clearly understood from the following description when read in conjunction with the annexed sheets of drawings.

In the said drawings, Figure 1 shows the jet-delivering apparatus in position for work in a Lancashire boiler. Fig. 2 is a vertical section of Fig. 1. Fig. 3 is an enlarged view, partly in section, of a form of double jet which I have found specially suitable for my purpose.

In this form of jet-delivering apparatus I take a convenient length of metallic tube or piping *a*, which is capable of being readily

connected with the supply-pipe *b* in connection with the pump or other source of pressure, and I attach thereto a union *c*, which carries the jet-pipes *d d*. The pipe *a* carries a ring or collar *a'*, which fits the interior of the union *a''* and is held in position by a gland *a'''*, bearing on the packing *a''''*. This construction of parts permits of revolution of the pipe *a* and attached jets. The union *c*, screwed to the lower end of the pipe *a*, carries the jets *d d*, each jet being formed or provided with a flange or collar *d'* and held in position by glands *d''*, which press on packing-rings *d'''*. By the insertion of a bar or tool in the key-holes *d''''* the position of the jets may be altered, so that the water can be discharged at various angles through the nozzles *d''''''*.

When cleansing a boiler in accordance with my invention, I first allow the steam to escape, the water being left standing at a suitable level—say just visible in the gage-glasses—and I then introduce the jet-delivery apparatus through the top manhole, as indicated in Figs. 1 and 2. Having got the apparatus into position, the water-supply is next turned on and the jet-delivery pipes *d* manipulated so as to cool the water in the boiler, after which they are turned so as to thoroughly scour and cleanse the interior of the boiler, the action of the discharged water causing the scale to become detached and fall to the bottom.

The water in the boiler is allowed to escape at a suitable rate, so as to permit of the jets acting on all parts of the same.

When the scouring operation is completed, the detached scale may be readily removed through the mud-hole door.

By setting the jet-pipes *d d* in opposite directions the pipe *a* and attached jets may be caused to revolve so as to discharge the water in a circular path.

I find that by allowing the steam to escape first and introducing jets of cold water into the interior of the steam-generator containing the residue of hot water incrustation is readily removed and the interior of the generator very efficiently and economically cleansed.

In cases of severe incrustation several applications of the jet-delivering apparatus may be necessary; but it will be found ultimately that the scale leaves the plates and becomes  
5 detached.

I declare that what I claim is—

In combination, in a boiler-cleaner, a main pipe, a coupling at the end thereof, a pipe leading from each end of the coupling, said

pipes diverging from each other, and engaging devices on each pipe to permit them to be swung independently of each other.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WALTER JACKSON.

Witnesses:

JOSHUA ENTWISLE,  
ALFRED YATES.