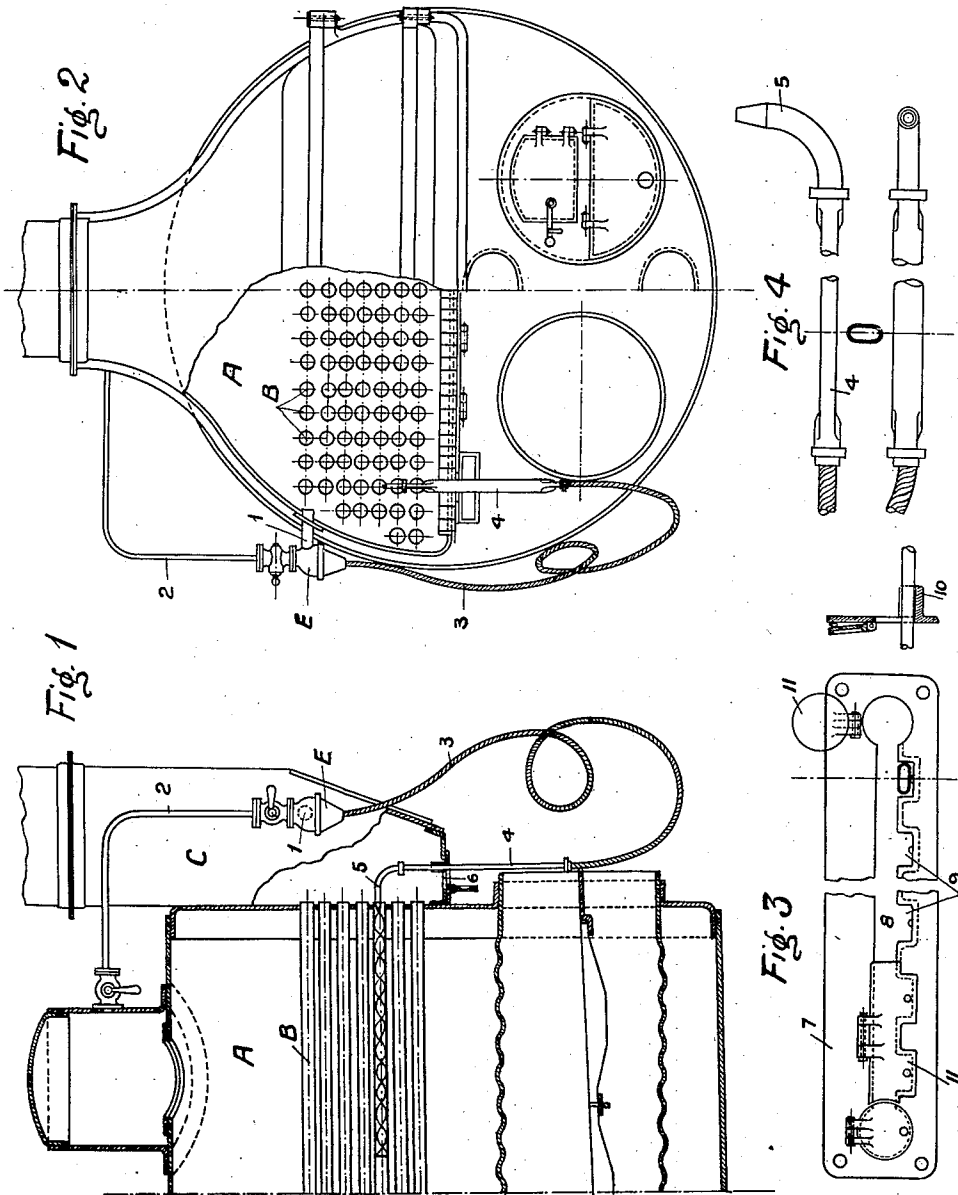


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 FLUID JET BLOWER.
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1,050,126.

Patented Jan. 14, 1913.



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UNITED STATES PATENT OFFICE.

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FLUID-JET BLOWER.

1,050,126.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, TEODORO GRUENWALD, engineer, a subject of the Emperor of Austria-Hungary, residing at Genoa, Italy, have invented a new and useful Fluid-Jet Blower, of which the following is a specification.

The U. S. Patent 1,023,078 is referring to a fluid jet blower for water tube boilers, which apparatus essentially consists in this that a blower casing in communication through an opening with the fire box of the boiler is aspirating the hot gases by means of a jet of steam such that the mixture of hot gases and steam by means of a flexible tube which departs from the blower casing will be blown upon the faces of the tubes to be cleaned whereby this mixture will leave the apparatus by an opening provided in the free end of the flexible tube.

The present invention relates to the same cleaning principle object of the above mentioned Letters Patent which principle is now applied to a flue boiler.

The invention will now be described with reference to the accompanying drawings, in which—

Figure 1 is a partial longitudinal sectional view of a flue boiler with the cleaning apparatus applied thereto; Fig. 2 is a partial end view and a partial sectional transversal view of the flue boiler with the cleaning apparatus applied thereto; Fig. 3 and Fig. 4 are constructive details of the apparatus.

In these figures A designates a flue boiler with a plurality of flues B and a chamber of the hot gases C. The blower casing E will be fastened upon an opening of the chamber C and is provided with a tubular piece 1 for the admission of the hot gases from the gas chamber into the casing. The tube 2 connects the steam space of the boiler with this casing and a flexible tube 3 which connects with a metallic tube 4 is leading the mixture of hot air and of steam before the openings of the flues in order to clean them from the residues of the combustion. The tube 4 connects with the flexible tube 3 by means of a circular section and provides at its free end a bend 5 the latter one also of circular section while the part in the middle of the tube 4 is of a flat elliptical shape. The introduction of the tube 4 in the box of the fire gases C takes place through a slot 6 applied in the wall of said chamber, which slot is shaped such as to form lateral cuts corre-

sponding exactly in width with the length of the elliptical section of the tube 4, so to serve to the latter one as a guide during the working of the apparatus, during which time the tube 4 is moved vertically through every cut. Around this slot or opening will be fastened upon the wall of the chamber C a plate 7 providing a slot 8 and cuts 9 exactly of the same shape as the slots in the wall of the chamber C. The cuts 9 are constituted by walls 10 which serve as guides for the shaft 4 during the cleaning operation. The mentioned slots or openings may be closed by means of a plurality of pivotally mounted shutters 11, any one of which may be left down to expose a portion of the slot for the introducing of the cleaning apparatus.

In order to put the apparatus in working condition there will be opened one of the shutters 11, then introduced the tube 4 to bring it in safe guidance within the walls 10 of the cut 9, as shown on the drawings; and with the opening of the bend 5 against the opening of the flue to be cleaned. The tube 4 will be moved in a determined cut 9 in the vertical direction until all the flues situated in this vertical, will be cleaned in order to be afterward displaced in the next cut, and so on.

As in the apparatus of the Letters Patent 1,023,078 is effected the cleaning of the water tubes of water tube boilers, there will be accomplished with the present apparatus the cleaning of flues of flue boilers at closed doors and without forming means of egress for the hot gases of the fire box which must be utilized in the operation of the device.

I claim:—

1. A boiler provided with flues disposed in vertical rows and having a casing extending about the open ends of the flues and provided with a lower wall having an elongated slot, one wall of said slot having a plurality of guiding recesses disposed in alinement with the centers of a vertical row of flues, and flue cleaning means adapted for insertion through said slots to said casing and movable vertically in said recesses abreast of the said flue openings, substantially as described.

2. A boiler provided with flues disposed in vertical rows and having a casing extending about the ends of the flues and provided with an elongated slot extending abreast of the rows of flues, one wall of the

slot having a plurality of guiding recesses disposed in alinement with the rows of flues, tubular flue cleaning means adapted for manual insertion through said slot and
5 into guiding relation with any one of said recesses and movable abreast of a row of flue ends, and a plurality of independent shutters for closing the major portion of

said slot while said means is in use, substantially as described.

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

TEODORO GRUENWALD.

Witnesses:

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