A. G. MATTSSON.

BLOWER FOR BOILERS.

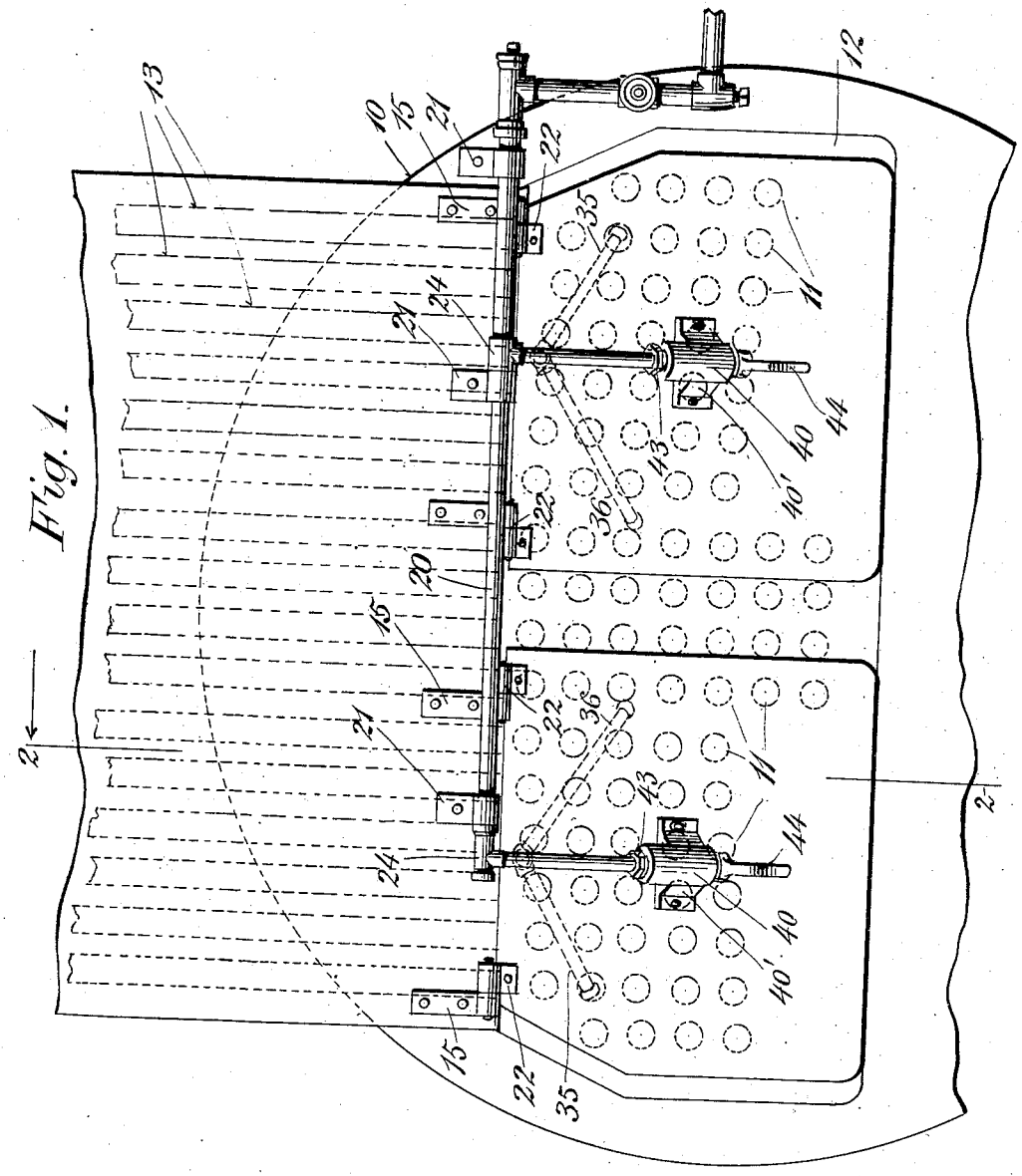
APPLICATION FILED MAR. 9, 1911.

1,012,263.

Patented Dec. 19, 1911

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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3 SHEETS—SHEET 2.

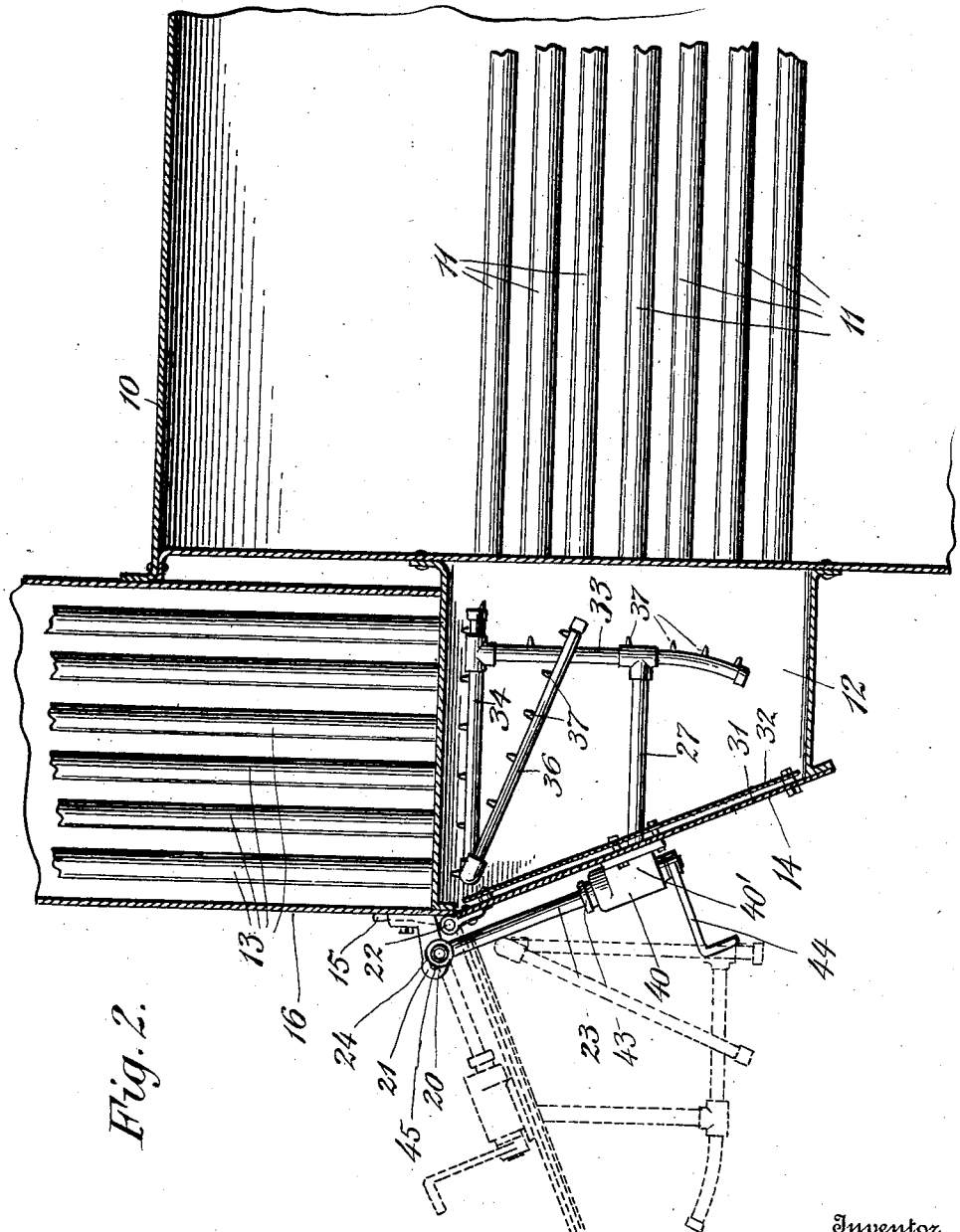

Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 4.

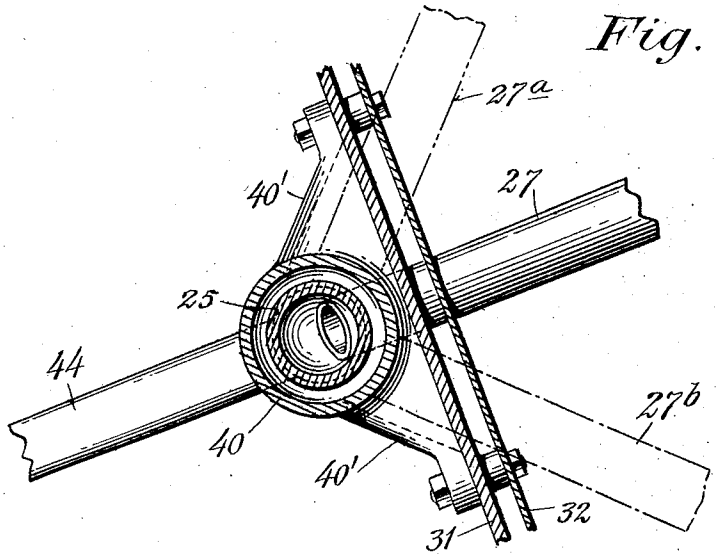
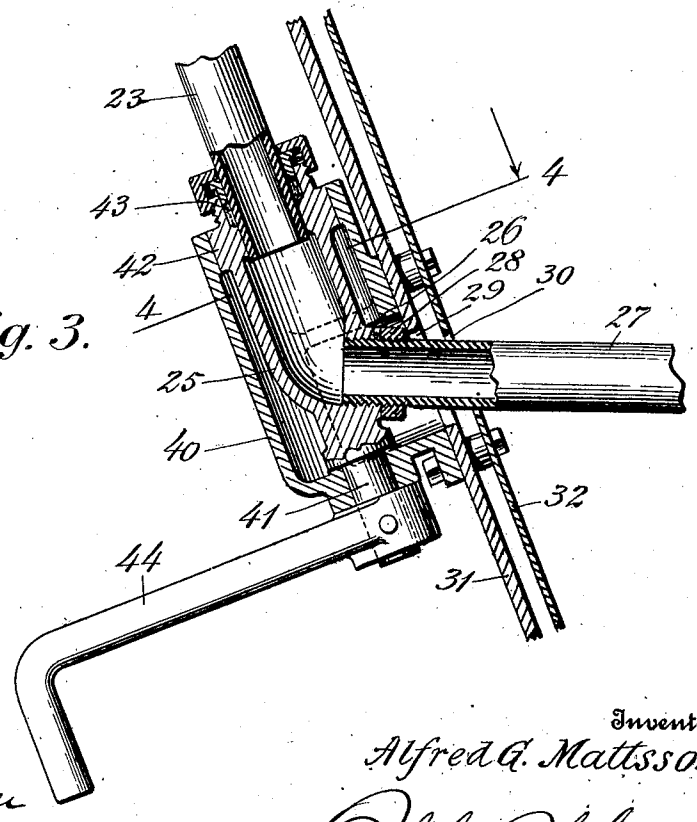


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BLOWER FOR BOILERS.

1,012,263. Specification of Letters Patent. Patented Dec. 19, 1911.

Application filed March 9, 1911. Serial No. 613,401.

To all whom it may concern:

Be it known that I, ALFRED G. MATTSSON, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Blowers for Boilers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to blowers for cleaning the flues of boilers, and more particularly those of marine boilers, and it has for one of its objects the provision of a blowing apparatus which may be readily applied to the boilers while the latter are in use, and without requiring any change by substitution of any special parts for those employed.

The invention has, furthermore, for its object the provision of an improved apparatus of this kind which comprises certain new features, in construction as well as organization as will hereinafter appear and be particularly defined in the claims.

My invention has been clearly illustrated in the accompanying drawings, in which similar characters denote similar parts, and in which—

Figure 1 is a fractional front view of a marine boiler with my attachment in place; Fig. 2 is a vertical section on line 2, 2 of Fig. 1; Fig. 3 represents a central section of the hand-operable member of the device, together with the telescopic union between the leader and the distributing pipe, and Fig. 4 is a horizontal section on line 4, 4 of Fig. 3.

Briefly stated, the present invention is particularly designed to provide an attachment which can be manufactured independently of the boiler and applied thereto without changing the hinge-connections of the breech-doors. Inasmuch as the steam-supply pipe should extend across the boiler front, it must be so placed as to avoid interference with the door-hinges and the swing of the door, so that provision is made to permit a certain telescopic action to take place between the "leader" and the bracket which supports the distributing pipes on the door.

Referring to the drawings, the numeral 10 denotes the main-shell of a marine boiler provided with horizontal flues 11 which open at their front ends into a breech-chamber 12 through which the products of combustion pass before entering the vertical flues 13 of the superheater-structure. The breech 12 is provided with one or more doors 14 pivoted for vertical swinging movement on brackets 15 secured to the boiler-front 16, all these parts being of any desired design or construction.

My improved flue-blower attachment may be readily attached for support on the outside of the boiler front, the only special preparation required being the provision of a slot in the breech door, to permit the steam-distributing pipe to pass therethrough and to be swung from one side to the other, the organization being such that when the door is swung open, the flue-blower will swing with it, therefore allowing unobstructed access to the breech chamber for cleaning-out purposes.

In its preferred form, my improved blower attachment comprises a steam-supply pipe 20 extending horizontally across the front of the boiler and supported in brackets 21 secured to the boiler front, their axis being disposed in a plane slightly in front of the door hinges 22 (see Fig. 2). Leaders 23 are in communication with the steam-supply pipe 20 and have their T-connections 24 pivoted thereon, so that each door with its leader may be swung open independently of the other. The lower end of each leader is in communication with the interior of a barrel-elbow 25 (see Figs. 4 and 5) provided with a nipple 26 into which is screwthreaded a pipe 27 which preferably has a check-nut 28 to prevent rotative movement of said pipe in the nipple, and which extends through apertures 29, 30 in the door 31 and its screen-plate 32 respectively, into the breech chamber 12, where it is connected with the distributing pipes, which comprise a vertical pipe 33 connected at its upper end with a horizontally-disposed pipe 34, the latter having oblique branches 35, 36, and all the pipes being provided with jet-nipples 37 of any desired form and material.

In order to bring the flues under the influence of the steam-jets, the entire pipe-system within the breech chamber may be swung from side to side around the axis of the leader 23 and barrel-elbow 25, the latter being journaled in a casing 40 attached to the breech-door. The barrel 25 is provided at the lower end with a stem 41, and at its upper end with an annular projection 42, for journal supports in the casing, and the leader 23 passes through a stuffing box 43 on the barrel, while at the lower end thereof it has a hand-lever 44 whereby the entire device may be rocked. For this reason the apertures 29, 30 in the door and its screen-plate are in reality slots, and the casing 40 is laterally extended, as at 40', (see Fig. 4) to permit the pipe 27 to be swung from the position 27^a to 27^b, as will be clearly understood.

As above stated, the steam-supply pipe 20 extends across the boiler-front in a plane slightly in advance of the door pivots, the organization being preferably that shown in Fig. 2. Now inasmuch as the casing 40 is preferably rigid on the door, and as, furthermore, the leader 23 will telescope into the casing when the door is swung open, as indicated by the dotted lines in Fig. 2, this telescoping movement being in a permanent straight line as far as the casing is concerned, and inasmuch as the distance between the front face of the door and the axis of the leader 23 will vary according to the amount of swinging movement of the door, means are provided for compensating for this variation so that the leader movement relative to the casing 40 may take place without causing any cramping action, these means consisting of a slot 45 provided in each pipe-hanger 21 and of such length as to accommodate the steam-pipe 20 without cramping the leader 23, when the distance between door-front and leader axis is greatest, viz: when both the door and the leader are swung outward until they are at right angles to a line passing centrally through the door pivots and steam supply pipe. Of course it should be understood that these compensating means may be varied as to organization of the parts or by changing the hanging of the casing 40 on the door. Also, that many other changes in the construction of the parts may be made without departing from the spirit of the invention which particularly applies to the lateral swing of the distributing pipes around a vertical axis which intersects the axis of the supply pipe, and also to the telescopic relation between the leader and its support.

I claim:

1. The combination with the breech-door of a boiler, of a flue-blower comprising a jet pipe extending through said door, means for pivotally supporting one end of said pipe on the outer face of said door, and means for swinging said pipe laterally and in a substantially horizontal plane.

2. The combination with the breech-door of a boiler, of a flue-blower comprising a jet pipe extending through said door, a bracket rigidly attached to said door and pivotally supporting one end of said pipe on the outer face of said door, and means for swinging said pipe laterally and in a substantially horizontal plane.

3. The combination with a breech-door having a horizontal slot, of a flue-blower comprising a jet pipe extending through said slot, a bracket for pivotally supporting the outer end of said jet pipe and having hollow lateral extensions inclosing said slot, and means for swinging said pipe on a substantially vertical axis.

4. The combination with the breech-door of a boiler, of a flue-blower comprising a jet pipe extending through said door, means for pivotally supporting one end of said pipe on the outer face of said door, means for swinging said pipe laterally and in a substantially horizontal plane, a steam-supply pipe supported on the front of the boiler, and a yielding connection between the jet pipe and the supply pipe.

5. The combination with the breech-door of a boiler, of a flue-blower comprising a jet pipe extending through said door, means for pivotally supporting one end of said pipe on the outer face of said door, means for swinging said pipe laterally and in a substantially horizontal plane, a steam supply pipe supported on the front of the boiler, and a leader slidably connecting said jet pipe and supply pipe.

6. The combination with the breech-door of a boiler and hinges therefor, of a flue-blower comprising a jet pipe extending into the interior of said breech, a steam-supply pipe supported on the boiler-front in spaced parallelism with the door-hinges, a leader between the steam pipe and jet-pipe, an elbow connecting the adjacent ends of the jet pipe and the leader and slidably supporting the lower end of the latter, a bracket on the door for pivotally supporting the elbow on the door, and means for rotating said elbow.

7. The combination with the breech-door of a boiler and hinges therefor, of a flue-blower comprising a jet pipe extending into the interior of said breech, a steam supply pipe supported on the boiler-front in spaced parallelism with the door-hinges, a leader between the steam pipe and jet-pipe, an elbow connecting the adjacent ends of the jet pipe and the leader and slidably supporting the lower end of the latter, a bracket on the door for pivotally support-

ing the elbow on the door, means for rotating said elbow, and a horizontally slotted bracket on the boiler-front supporting said steam supply pipe for compensating for the variations in the distance between leader and door during the opening and closing movement of the latter.

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

ALFRED G. MATTSSON.

Witnesses:
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