

J. MAGEE.
BLOWER FOR BOILERS.
APPLICATION FILED JULY 17, 1912.

1,053,842.

Patented Feb. 18, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

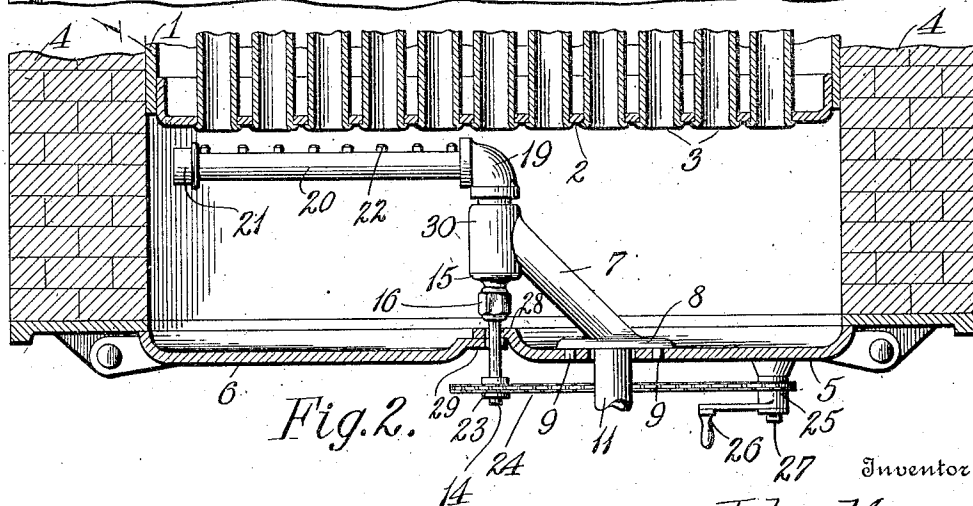
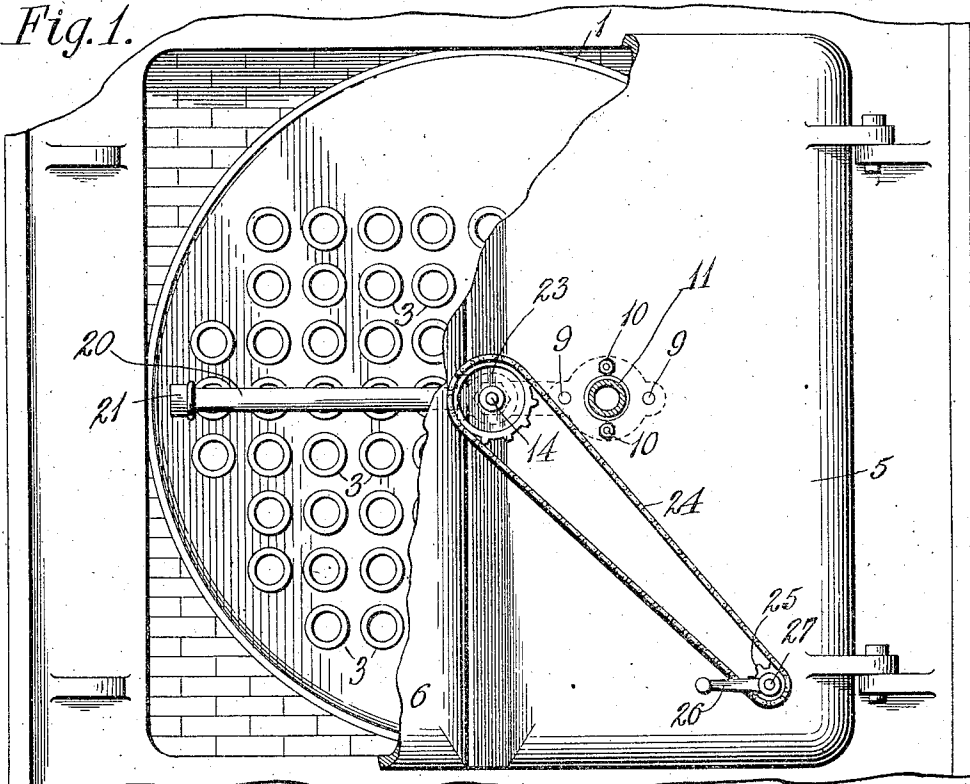


Fig. 2.

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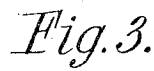
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2 SHEETS--SHEET 2.



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UNITED STATES PATENT OFFICE.

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BLOWER FOR BOILERS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN MAGEE, 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.

10 In the manipulation of boilers and apparatus for cleaning them, etc., it is desirable that the parts be accessible for ready inspection and that the boiler be so disposed in relation to the apparatus that it may be repaired or inspected without hindrance.

15 This invention relates to blowers for boilers and to an arrangement of a front end blower for a flue boiler of the stationary type whereby the operator can readily direct the cleaning jets longitudinally of the flues without opening the smoke doors and without inconvenience to himself while at the same time the parts are so disposed that they can be swung clear of the boiler and outside of the boiler setting leaving it open for inspection and repair.

The invention consists in the matters hereinafter set forth and particularly pointed out in the appended claims.

30 In the drawings, Figure 1 is a view partially in elevation and partially broken away, of a front end portion of a boiler fitted with a blower that embodies features of the invention; Fig. 2 is a view in horizontal central section through the boiler showing the application of the blower; and Fig. 3 is a view in detail in section of the blower and adjacent portions of the supporting doors.

40 Referring to the drawings, a boiler shell 1 is provided with the usual front head 2 and tubular flues 3, and is arranged in the usual setting, a portion of which is indicated at 4 with smoke doors 5 and 6 hinged to the setting and overlapping or closing in the middle in the customary manner. A horizontally disposed bracket is supported on the inner face of the inner door so that a bearing hub 30 on the inner end thereof is substantially in axial alignment with the boiler shell 1 when the door is closed. This bearing portion 30 is integral with an oblique hollow arm 7 whose inner end is formed into a base plate 8 that bears against the inner face of the door. As

a preferred form of construction dowel projections 9 on the inner face of the plate engage sockets in the door 5 to hold the bracket in alignment, bolts 10 or other preferred means being used to secure it in place. A central aperture through the plate which constitutes the inlet to the bore of the arm 7 is screwthreaded or otherwise fitted for connection with a steam pipe 11 leading from a suitable source of supply, such as the boiler itself.

The hub 30 is counterbored, its outer end portion forming the bearing for the reduced part 12 of a tubular shaft whose inner permanently closed head 13 has a spindle 14 that extends through a cap 15 screwthreaded or otherwise detachably secured in the end of the hub 30 and provided with a suitable stuffing box 16 to prevent escape of steam around the stem. The head portion 13 of the shaft is provided with lateral ports 17 affording communication between the enlarged or counterbored portion of the bore of the hub 30 with an axial passage 18 through the shaft. A fitting in the form of an elbow 19 on the outer end of the portion 12 of the shaft carries a jet tube or arm 20 that is closed at its outer end with a cap 21 and is provided with jet nozzles 22 substantially parallel to the planes of the flues 3. The arm 20 is so disposed as to swing in planes parallel to the head 2 of the boiler when the shaft on which it is mounted is turned while the jet nozzles 22 are spaced and arranged so that the various flues of the boiler may be severally brought into register with the nozzles by proper manipulation of the arm.

The spindle 14 may be turned by any convenient means mounted on the outside of the door 5 within easy reach of the operator. As herein shown a sprocket wheel 23 on the outer end of the spindle is driven by means of a sprocket chain 24, sprocket pinion 25 and handle 26, the pinion being mounted on a suitable stud indicated at 27. The spindle 14 passes through an opening in the marginal portion 28 of the door 5 on which the bracket is mounted and also through a slot in the overlapping marginal portion 29 of the companion door, whereby the doors may be swung open for inspection of the boiler without disturbing the blower. By swinging the door 5 against the boiler setting the blower is carried completely

out of the way so that the boiler may be worked on without difficulty.

In operation, steam may be injected through the blower bracket to the jet nozzles and thereafter by proper manipulation of the spindle turning means the jets may be directed through the several flues of the boiler without inconvenience or danger to the operator.

10 The blower is simple in construction and does not require readjustment after having once been set up and is positive and certain in its operation.

Obviously, changes in the details of construction may be made without departing from the spirit of my invention and I do not wish to limit myself to any particular form or arrangement of parts.

What I claim is:—

20 1. The combination with a flue boiler and smoke door therefor, of a jet arm journaled on the inner side of the door to revolve in a plane substantially parallel to the adjacent boiler head when the door is closed and adapted to direct jets into the flues when moved past the ends thereof, a supply connection for the arm extending outside of the door, and means exterior to the door for revolving the arm.

30 2. The combination with a flue boiler and smoke door, of a jet arm, means for pivotally supporting the arm near one end on the inner side of the door to swing in a plane substantially parallel to the adjacent boiler head when the door is closed, jet nozzles adapted to direct jets into the flues when moved past the ends thereof, a supply connection for the arm extending outside the door, and means exterior to the door for swinging the arm.

3. The combination with a flue boiler and smoke door, of a jet arm, a bearing member on the inner side of the door adapted to pivotally support the arm to revolve in a plane substantially parallel to the adjacent boiler head when the door is closed and adapted to deliver steam to the arm, a supply connection extending from the bearing member outside the door, and means exterior to the door for swinging the arm.

4. The combination with a flue boiler, of a bearing member adapted to be moved in and out of operative relation to one of the boiler heads, a jet arm journaled at one end in the bearing member to revolve in a plane substantially parallel to the head when the bearing is in operative position, jet nozzles on the arm adapted to direct jets into the boiler flues when the arm is swung past them, a supply connection for the arm, and means adapted to move with the bearing and to operate the arm.

5. The combination with a flue boiler and smoke door, of a jet arm, a bearing forming a pivotal support for the arm near one end

thereof to swing in a plane substantially parallel to the adjacent boiler head when the door is closed, jet nozzles on the arm adapted to direct jets into the flues when moved past the ends thereof by the motion of the arm, the bearing being secured to the inner side of the door and having a steam supply connection through the door for furnishing steam to the arm, an extension of the arm extending through the door, and means on the outside of the door operatively coupled to the extension to swing the arm.

6. The combination with a flue boiler and door at one end thereof, of a bracket on the inner face of the door, a bearing on the bracket, a hollow shaft journaled in the bearing with ports opening into the bearing, a jet arm secured on the outer end of the shaft in communication therewith to swing in a plane substantially parallel to the adjacent boiler head when the door is closed, jet nozzles on the arm adapted to direct jets into the boiler flues as the arm is moved past them, a steam pipe extending through the door in communication with the bracket bearing, a spindle on the shaft extending through the door, and means for turning the spindle.

7. The combination with a flue boiler and door at one end thereof, of a hollow bracket member on the inner side of the door having a bearing that is substantially in alignment longitudinally with the boiler shell when the door is closed, a steam connection for the bracket extending through the door, an arm revolvably mounted on the bracket to swing across the flue ends of the boiler when the door is closed, jet nozzles on the arm adapted to direct jets into flue ends traversed by the arm, and means on the outside of the door for swinging the arm.

8. The combination with a flue boiler and doors at one end thereof, of a bracket having a base plate engaging with the inner face of a door, an obliquely disposed hollow arm on the base plate, and a hollow bearing hub on the outer end of and in communication with the arm, the hub being in substantially central alignment with the boiler when the door is closed, a shaft having a hollow body journaled in the bearing with ports forming communication between the interior of the shaft and the bracket arm, a jet arm secured on the outer end of the shaft in communication therewith and provided with jet nozzles adapted to direct jets into the boiler flues as the arm is moved past them as the door is in closed position, a steam pipe extending through the door and connecting with the bracket, a spindle on the shaft adapted to pass through openings in the doors when the latter are in closed position, and means exterior to the doors for turning the spindle.

9. The combination with a flue boiler and doors at one end thereof, of a bracket having a base plate engaging with the inner face of a door, an obliquely disposed hollow arm on the base plate, and a hollow bearing hub on the outer end of and in communication with the arm, the hub being in substantially central alinement with the boiler when the door is closed, a shaft having a hollow body journaled in the bearing with ports forming communication between the interior of the shaft and the bracket arm, a jet arm secured on the outer end of the shaft in communication therewith and
15 provided with jet nozzles adapted to direct jets into the boiler flues as the arm is moved past them when the door is in closed posi-

tion, a steam pipe extending through the door and connecting with the bracket, a spindle on the shaft adapted to pass through openings in the doors when the latter are in closed position, a sprocket on the outer end of the spindle, a sprocket pinion mounted on the outer face of the bracket door, a sprocket chain connecting the sprocket wheel and pinion, and a member for turning the sprocket pinion.

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

JOHN MAGEE.

Witnesses:

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