G. H. VAN SCHAICK, P. BURNS & J. REARDON.

FLUE BLOWER.

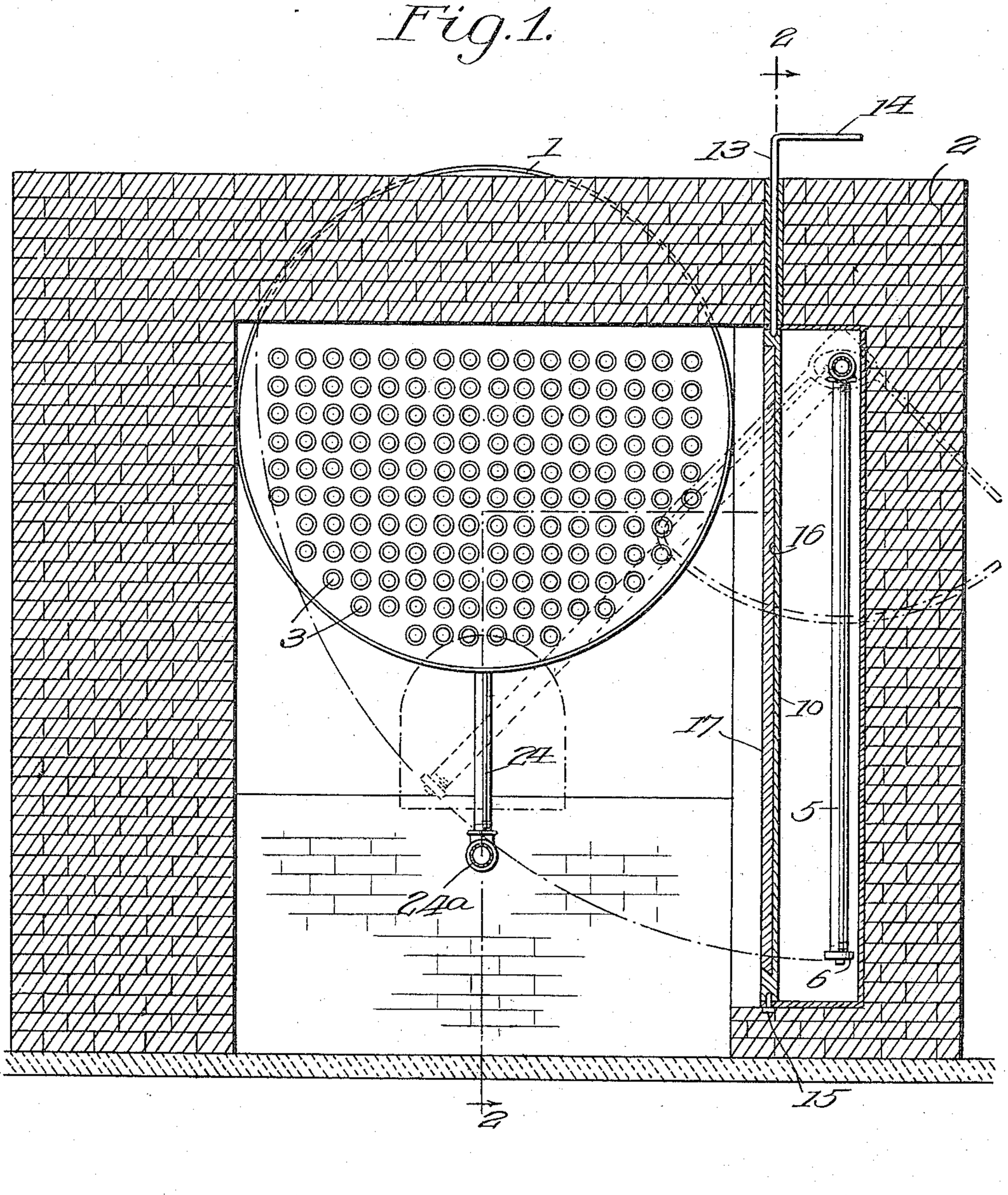
APPLICATION FILED NOV. 24, 1914.

1,155,177.

Patented Sept. 28, 1915.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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C. E. Trainer

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2 SHEETS—SHEET 2.

Fig. 3.

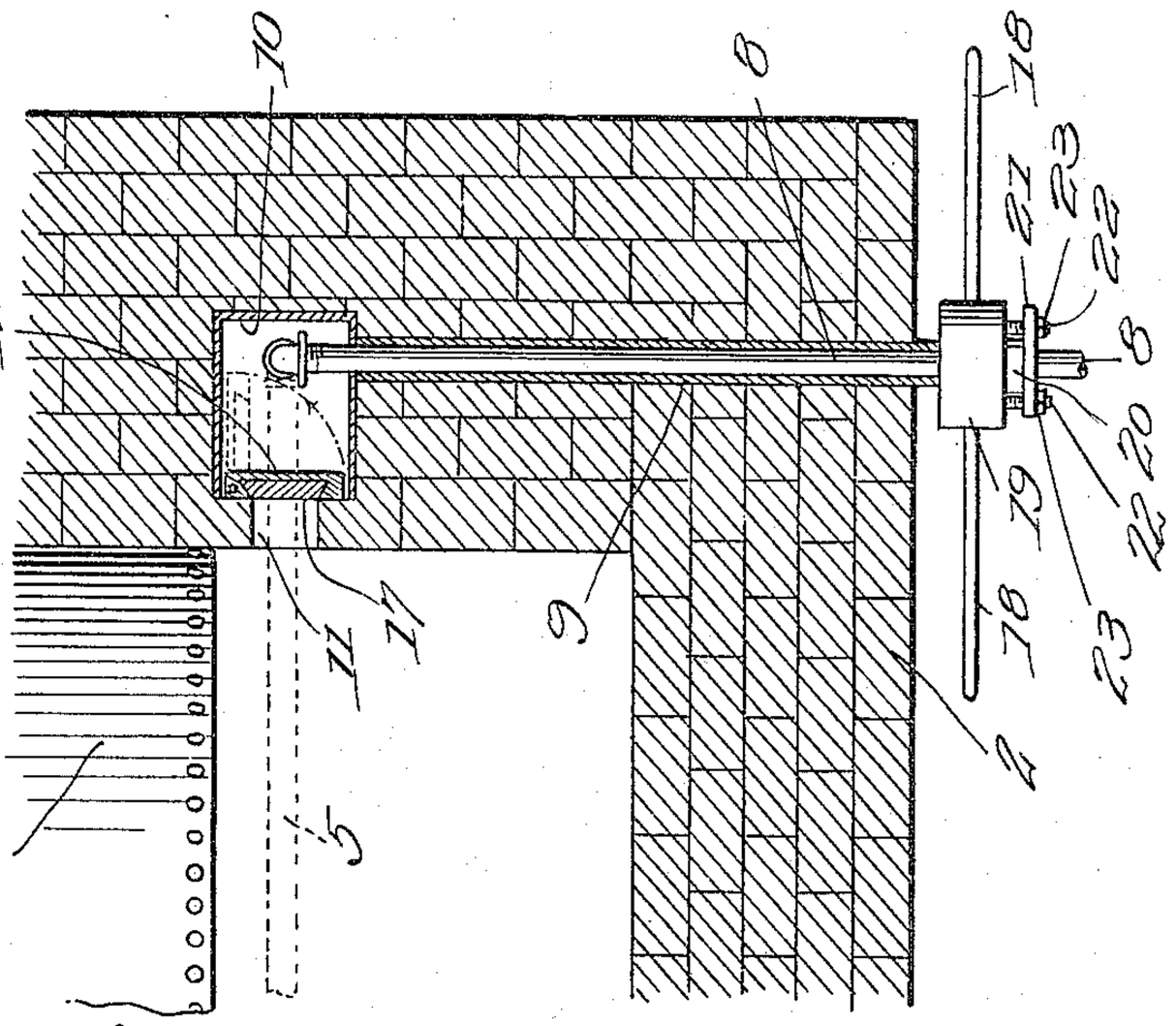
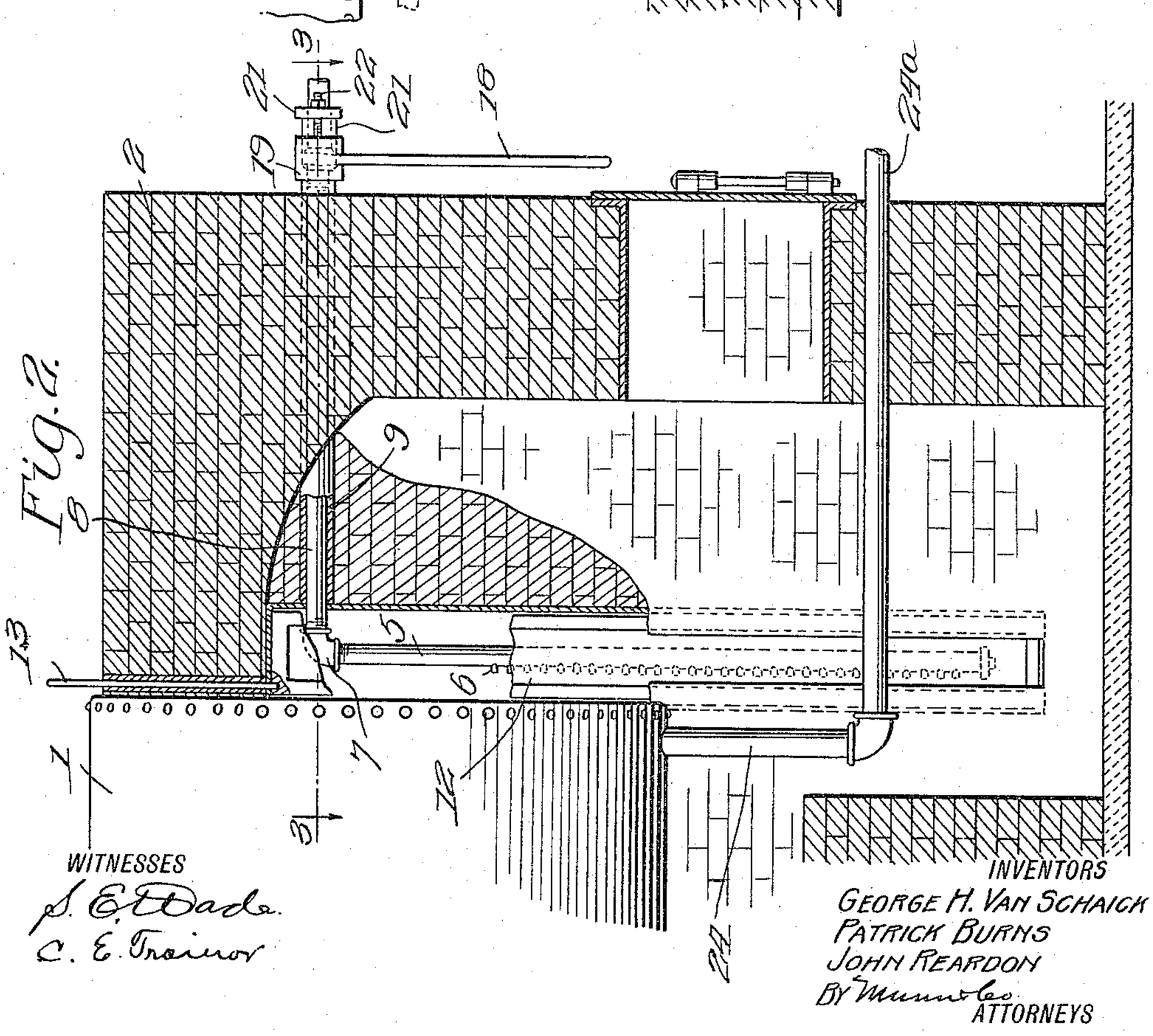


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE H. VAN SCHAICK, OF HUDSON FALLS, AND PATRICK BURNS AND JOHN REARDON, OF FORT EDWARD, NEW YORK.

FLUE-BLOWER.

1,155,177. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed November 24, 1914. Serial No. 873,768.

To all whom it may concern:

Be it known that we, GEORGE H. VAN SCHAICK, a citizen of the United States, and a resident of Hudson Falls, in the county of Washington and State of New York, and PATRICK BURNS and JOHN REARDON, both citizens of the United States, and residents of Fort Edward, in the county of Washington and State of New York, have made certain new and useful Improvements in Flue-Blowers, of which the following is a specification.

Our invention is an improvement in flue blowers, and has for its object to provide a device of the character specified, for use in connection with furnaces of any character, for blowing out boilers, wherein the blower is so arranged that it may be used from the rear to blow in conjunction with the draft, to thus eliminate the retarding effect of the draft, and wherein the blower is so arranged that it will be protected from the heat of the furnace when not in use.

In the drawings: Figure 1 is a transverse vertical section, Fig. 2 is a section on the line 2—2 of Fig. 1 looking in the direction of the arrows adjacent to the line, and, Fig. 3 is a section on the line 3—3 of Fig. 2 looking in the direction of the arrows adjacent to the line.

The present embodiment of the invention is shown in connection with a boiler 1 of ordinary construction, mounted in a casing 2 of brick, which supports the boiler, and provides a furnace for heating the same. The boiler has the usual draft tubes 3 extending longitudinally thereof.

It will be understood that in order to blow out a boiler from the front end, a considerable length of time will be required, and since the blowing is in opposition to the normal draft, this draft will be interrupted during the blowing out of the boiler. From 15 to 20 minutes is required to blow out the boiler in the usual arrangement, and hence no steam is made until the operation is finished. Because of the blowing being in opposition to the normal draft, the soot blown from one tube will be carried back toward the front and will settle in the tubes which have been already blown. Because of this difficulty, the present blower is arranged to blow out the flues from the rear of the boiler, and because of the intense heat at this point, there must be some protection for the blower when not in use, in order that the pipes and the fitting may not become injured or destroyed by the excessive heat.

The present construction is arranged to blow out the boiler from the rear, but means is provided for protecting the blow out mechanism from the excessive heat.

The invention comprises a pipe 5 having one end closed by a cap 6 threaded on to the pipe, and the pipe is provided with a series of nipples 6 extending laterally from the pipe, the members of the series extending longitudinally of the pipe. The pipe is connected at its upper end by means of an elbow 7 with another section 8 of pipe, which is arranged within a tubular casing 9 mounted in the wall of the casing 2, and extending outside of the same, at the rear of the casing, as shown in Fig. 2. The pipe 5 is the blow pipe, and the nipples 6 are designed to register with the tubes 3 of the boiler. The pipe 8 is mounted to rotate in the tubular casing 9, and the inner end of the said pipe extends into a casing 10 which is mounted in a recess at one side of the furnace opening. This casing is rectangular in cross section, being of a length sufficient to receive the pipe 5, and being of a cross section to provide ample room in the pipe, when in the casing. The pipe normally hangs vertically in the casing, as shown in Fig. 1, out of contact with the walls of the casing, so that it will receive no heat directly from the casing 2 of the furnace, or from the casing 10 for the pipe. This casing 10 is arranged at the rear of the boiler, as before stated, and at one side of the furnace opening, and the casing is provided with a door opening.

At the side adjacent to the boiler, the said opening registers with an opening 11 in the casing wall 2 of the furnace. It will be noted from an inspection of Fig. 3 that the casing 10 is set within the inclosing wall 2, and that there is a portion of the inclosing wall between the casing 10 and the interior of the furnace, and that the opening 11 registers with the door opening of the casing. The door opening and the opening 11 are of such length, and so arranged with respect to the pipe 5, that the said pipe will swing out through the door opening and through the opening 11 when the pipe 8 is rotated in the tubular casing 9.

A door 12 is provided for closing the door opening, the said door being hinged to the

casing 10 at one side thereof, and being mounted to swing into the casing, as indicated in dotted lines in Fig. 3. A handle 13 is connected with the door, the said handle extending upwardly from the top of the casing wall 2 and outside of the said wall, and the handle is provided with an angular portion 14 at its upper end for convenience in swinging the door. The door is hinged or pivoted on the handle 13 and on a dowel pin 15, in such manner that when the handle 13 is oscillated by means of the angular portion 14 the door will be swung inwardly into the casing 10. The door is provided on its outer face with a longitudinally extending recess 16, having its side walls and its bottom wall undercut, as shown in Figs. 1 and 3, and a facing 17 of fire brick or the like is arranged in the recess. When the door is closed, the interior of the casing 10 is shut off from the heat of the furnace, and the facing 17 of insulating material is of sufficient width to extend entirely across the opening 11, so that none of the wall of the casing 10 nor of the door 12 is subjected to the direct action of the heat from the furnace.

The pipe 8 is oscillated by means of a handle 18, the said handle being connected to the pipe outside of the casing 2. This handle is provided with a head 19 fitting over the pipe, on one side of a collar 20 that encircles the pipe, and the plate 21 is provided with a central opening for receiving the pipe, and fits over the pipe outside of the collar. The head 19 is provided with threaded stems 22, which pass through openings in the ends of the plate, and nuts 23 are threaded on to the stems for clamping the plate and the head on the collar. It will be understood that the outer end of the pipe 8 is connected with the blowing mechanism.

In operation, when it is desired to blow out the tubes of the boiler, the handle 14 is grasped and moved in a direction to oscillate the handle 13, to swing the door on the handle 13 and on the dowel pin 15. The handle 18 is then grasped and swung in the direction indicated in dotted lines in Fig. 1, that is in a direction to oscillate pipe 8 to cause the pipe 5 to be swung over the open rear ends of the draft tubes 3. The nipples 6 are arranged to register with these tubes, and the pipe is of such length, that it will extend diametrically of the boiler. Enough nipples 6 are provided to extend diametrically of the boiler in order that a number of tubes may be blown at the same time. Since the mechanism is arranged in rear of the boiler, the direction in which the draft tubes are blown is in the same direction as the draft, so that the heat of the boiler is not reduced in any way during the blowing. The boiler is also provided with a down-blowout pipe consisting of a vertical portion 24 and a horizontal portion 24ª. The vertical portion 24 extends downwardly from the boiler in the furnace and the horizontal portion 24ª extends rearwardly outside of the casing 2.

We claim:

1. The combination with the boiler and the casing for the same, of means for blowing out the flues of the boiler, said means being at the rear of the boiler and within the casing of the boiler, and mounted for movement into and out of operative position, said casing having a compartment for the said means within the casing and at one side of the boiler, said compartment having a door opening between the same and the interior of the casing and at the side adjacent to the boiler, a door for closing the opening, said door having a facing of fire proof material on its outer face, and the casing having an opening between the compartment and the interior thereof corresponding in size to the facing, said blowing means comprising a pipe, the casing having a tubular support for the pipe extending into the compartment at one end and extending outside of the casing at the other end and parallel with the axis of the boiler, said pipe being within the support and extending beyond the same at each end, the outer end being adapted for connection with the blowing means, a pipe within the compartment having one end connected to the first-named pipe and having the other end closed, said pipe being provided with a series of nipples on the side adjacent to the boiler, the nipples being adapted to register with the flues, a handle detachably connected with the pipe outside of the casing for oscillating the said pipe to swing the last-named pipe into and out of the compartment, pintles upon which the door is mounted to swing into and out of the compartment, one of the pintles being extended beyond the casing and having an angular portion for swinging the same.

2. The combination with the boiler and the casing for the same, of means for blowing out the flues of the boiler, said means being at the rear of the boiler and within the casing of the boiler, and mounted for movement into and out of operative position, said casing having a compartment for the said means within the casing and at one side of the boiler, said compartment having a door opening between the same and the interior of the casing and at the side adjacent to the boiler, a door for closing the opening, said door having a facing of fire proof material on its outer face, and the casing having an opening between the compartment and the interior thereof corresponding in size to the facing, said blowing means comprising a pipe, the casing having a tubular support for the pipe extending into the compartment at one end and extending outside of

the casing at the other end and parallel with the axis of the boiler, said pipe being within the support and extending beyond the same at each end, the outer end being adapted for connection with the blowing means, a pipe within the compartment having one end connected to the first-named pipe and having the other end closed, said pipe being provided with a series of nipples on the side adjacent to the boiler, the nipples being adapted to register with the flues, a handle detachably connected with the pipe outside of the casing for oscillating the said pipe to swing the last-named pipe into and out of the compartment, and means for opening and closing the door.

3. The combination with the boiler and the casing for the same, of means for blowing out the flues of the boiler, said means being at the rear of the boiler and within the casing of the boiler, and mounted for movement into and out of operative position, said casing having a compartment for the said means within the casing and at one side of the boiler, said compartment having a door opening between the same and the interior of the casing and at the side adjacent to the boiler, a door for closing the opening, said door having a facing of fire proof material at its outer face, and the casing having an opening between the compartment and the interior thereof corresponding in size to the facing, said blowing means comprising a pipe, the casing having a tubular support for the pipe extending into the compartment at one end and extending outside of the casing at the other end and parallel with the axis of the boiler, said pipe being within the support and extending beyond the same at each end, the outer end being adapted for connection with the blowing means, a pipe within the compartment having one end connected to the first-named pipe and having the other end closed, said pipe being provided with a series of nipples on the side adjacent to the boiler, the nipples being adapted to register with the flues, means for oscillating the pipe, and means for opening the door.

4. The combination with the boiler and the casing for the same, said casing having a compartment at one side of the rear of the boiler and having an opening leading from the compartment into the interior of the casing, a door having a facing of non-heat conducting material normally closing the opening and mounted to swing into and out of the compartment, a casing within the compartment, the door closing the casing when in closed position, a tubular support journaled in the casing and extending into the compartment at one end and out of the casing at the other end, a pipe mounted to oscillate on the support and adapted for connection with blowing means, a pipe in the compartment connected with the first-named pipe and having laterally extending nipples for registering with the flues of the boiler, and means for oscillating the pipe.

5. A blowing out means for boiler flues, adapted to be arranged adjacent to the boiler and comprising a pipe adapted to be connected at one end to the blowing means and having at the other end a lateral extension, said lateral extension having laterally extending nipples adapted to register with the flues, a casing for receiving the pipe, said casing having a lateral tubular extension at its upper end in which the first-named pipe is journaled, the extension of the pipe being received within the casing, and a door hinged to the casing for closing the same and having a facing of non-heat conducting material on its outer face, means for opening and closing the door, and means connected with the pipe for oscillating the same.

6. A blowing out means for boiler flues, adapted to be arranged adjacent to the boiler and comprising a pipe adapted for connection at one end to a blowing means, and having at the other end a lateral extension provided with a longitudinal series of laterally extending nipples adapted to register with the flues, a casing for receiving the pipe, the pipe being mounted in the casing to swing out of the casing transversely of the flues to permit the nipples to be brought into register with the flues, and a closure for the casing, said pipe and closure having means outside of the casing for permitting the door to be opened and closed, and for permitting the pipe to be swung.

7. A blowing out means for boiler flues, adapted to be arranged adjacent to the boiler and comprising a pipe adapted for connection at one end to a blowing means, and having at the other end a lateral extension provided with a longitudinal series of laterally extending nipples adapted to register with the flues, a casing for receiving the pipe, the pipe being mounted in the casing to swing out of the casing transversely of the flues to permit the nipples to be brought into register with the flues, a closure for the casing, and means outside of the casing for opening and closing the door.

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Witnesses:
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