

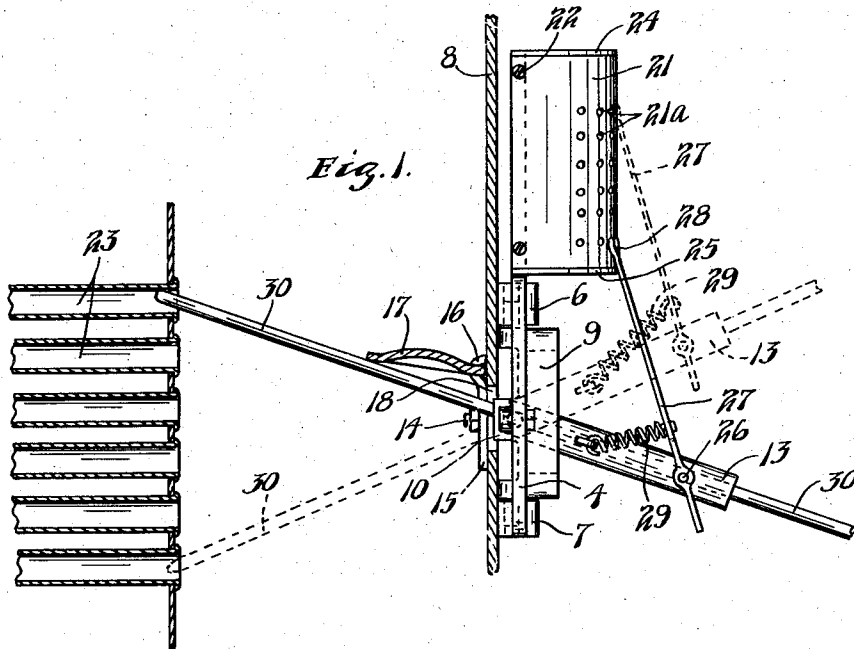
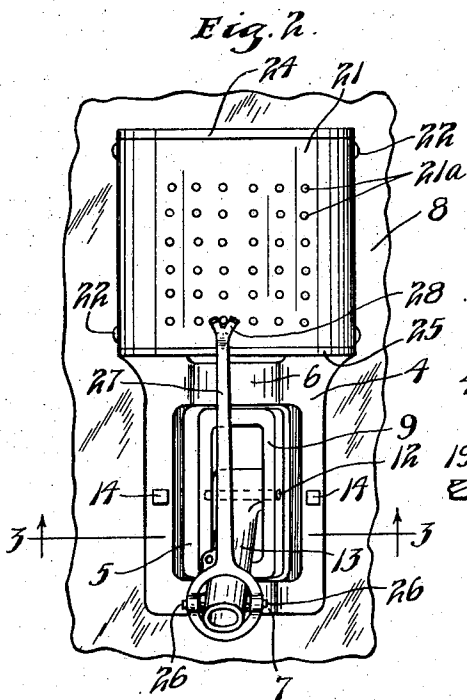
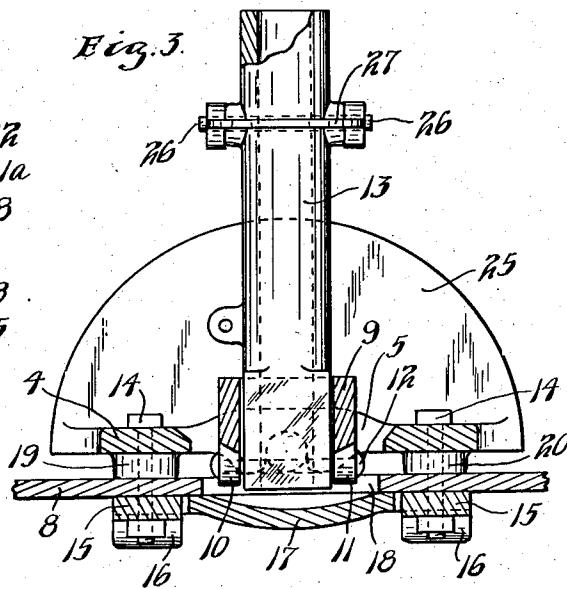
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BOILER FLUE BLOWER

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BOILER FLUE BLOWER

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3 Claims. (Cl. 122—391)

This invention relates to devices for cleaning boiler flues and similar devices with steam.

Generally an object of the invention is to provide means for inserting a steam pipe through an aperture in the door or other part of a boiler casing opposite the open ends of the boiler flues and also providing means whereby the exact position of the steam pipe within the casing can be determined on the outside of the casing.

Another object of the invention is to provide a boiler flue cleaning device which can be arranged so that the exterior indicator can be made to show the positions of the boiler flue ends in each individual boiler to which the device is attached.

A further object of the invention is to provide simply constructed and easily attached means for supporting the main portion of the cleaner exteriorly of the casing and for simultaneously rigidly securing a closure for the aperture in the door so that products of combustion cannot escape through the aperture when the device is not in use.

Still a further object is to provide improved means for providing substantially universal movement of the steam pipe supporting element so that said element may be easily manipulated, but is at the same time strongly built and compactly arranged.

These and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawing, wherein like reference characters refer to the same or similar parts throughout the various views, and in which:—

Fig. 1 is a side elevation of my device showing parts of the boiler flues and a portion of the smoke box door in vertical section;

Fig. 2 is a front elevation with the steam pipe removed and the device mounted on a portion of the boiler casing, and

Fig. 3 is an enlarged section taken on the line 3—3 of Fig. 2.

In the embodiment of my invention shown in the drawing, the device includes a base or body structure 4 having an enlarged aperture 5 in its lower portion. At the upper and lower portions of the opening 5 there are provided substantially U-shaped journal elements 6 and 7 which, as shown in Fig. 1, extend rearwardly of the body 4 and serve to space the body from a portion of any type of boiler casing 8. It is customary in mounting boiler flue cleaners to secure them to the smoke box doors of the boiler. The journals 6 and 7 are adapted to receive pin-like extensions from the top and bottom of the yoke element 9 to

pivotal support said yoke in said journals. The yoke is open through its central portion and, as best shown in Fig. 3, said yoke is provided rearwardly of its horizontal center with a pair of lugs 10 and 11 which accommodate a pivot pin 12 which pivotally supports a substantially cylindrical hollow steam pipe receiving and positioning element 13. Thus it will be seen that the steam pipe supporting element in conjunction with the yoke 9 is mounted for substantially universal pivotal movement.

The body 4 is rigidly secured to the boiler casing 8 by means of a pair of bolts 14 which extend through said body and said casing 8 and also through brackets 15 on the inner side of the casing, said brackets being provided with substantially semi-circular bends 16 at their upper ends to hingedly support a cover member 17 for normally closing the aperture 18 through the boiler casing 8. It will be noted that when the door 17 is in its closed position, as indicated in Fig. 3, the steam pipe support 13 and the yoke element 9 lie substantially exteriorly of said closure 17 so that the casing may be substantially tightly closed. With the above described securing arrangement, it is clear that the entire assembly can be attached to a boiler casing through the use of only two bolts and added rigidity is given to the structure through the medium of rearwardly extending boiler casing contacting journals 6 and 7, and also through the provision of lug elements 10 and 11 through which the retaining bolts 14 extend. These lugs are spaced rearwardly of the body 4 the same distance as the journals 6 and 7.

Mounted on the body 4 and above the yoke and steam pipe support is a sheet of metal 21 whose lateral edges are secured to the sides of the body by means of suitable bolts 22. The metal sheet in the particular embodiment illustrated is curved to present a convex exterior surface which serves as an indicating device for determining the exact position of the steam pipe support 13 with respect to its axial alignment with the open end of one of the boiler flues 23, an arrangement which will be brought forth in more detail below. The indicator may have its upper and lower portions closed by means of suitable end plates 24 and 25.

The outer end of the steam pipe support 13 is provided with laterally projecting oppositely disposed pin elements 26 which pivotally support an indicator arm 27. This arm 27 extends upwardly and terminates in a forked end 28 which is adapted to bear against the convex surface of the indicator plate 21, and a helical tension spring 29

has its ends connected between the steam pipe support 13 and the indicator arm 27, as shown in Fig. 1, to hold said indicator arm in frictional engagement with the plate 21.

- 5 When the assembly is secured to a boiler casing opposite the open ends of a plurality of boiler flues 23, a steam pipe 30 is inserted in the support 13 and pushed inwardly until the end of the pipe registers in the end of one of the boiler flues.
- 10 When a boiler flue end is thus located, an opening 21a is then drilled or punched through the indicator plate 21 between the arms of the forked upper end of the indicator rod 27. This operation is repeated until all of the boiler flue ends
- 15 have been located and their relative position indicated by the openings in the plate 21. Thus, on a single indicating plate, both the vertical and horizontal positions of each flue end is clearly shown. If desired, the upper end of the indicator
- 20 rod 27 may be provided with an eye rather than a fork so that a pin may be inserted through the end of said arm and through one of the openings 21a in the plate 21 so that the steam pipe support and the steam pipe held thereby may be
- 25 retained in position to direct steam into the open end of any one of the boiler flues.

From the foregoing description it will be seen that I have provided a relatively simply constructed, highly efficient and easily installed device for permitting the cleaning of boiler flues by blowing steam through said flues. In conjunction with this device I have provided a steam pipe position indicator which eliminates any guess work in locating the ends of the flues after the device has once been installed and the individual

30 positions of the flues have been marked upon the indicator plate 21. The steam pipe holder 13 is readily movable to any desired position with respect to the ends of the flues and the indicator rod 27 is in constant indicating position so that

40 the user can at any time determine to which boiler flue the steam pipe is directed. Furthermore the only moving part of my device which is inside the casing and subject to the deteriorating action of the gases within the boiler is the

45 door 17 which closes the aperture 18 when the flue blower is not in operation. Otherwise all

moving parts are normally protected against the injurious effect of products of combustion within the smoke box.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the various parts without departing from the scope of my invention.

What is claimed is:—

1. In a boiler flue blower and the like, a body 10 secured exteriorly of said boiler, a freely movable yoke pivotally supported by said body, a freely movable steam pipe support pivotally mounted in said yoke on an axis normal to the pivotal axis of said yoke, an indicator plate mounted on said body adjacent said yoke, a laterally rigid, substantially vertically positioned indicator arm pivotally supported for movement in a plane normal to the face of said plate by said steam pipe support and having an end in frictional contact with the surface of said indicator plate whereby markings may be made upon said indicator plate to show the vertical and horizontal location of said steam pipe support relative to the ends of the flues of a boiler.

2. The structure in claim 1, and said yoke being pivotally supported in journals constituting portions of said body, said journals extending rearwardly of said body to space the body from said casing and permit free oscillation of said yoke.

3. In a boiler flue blower and the like, a substantially cylindrical steam pipe support adapted to slidably receive the end of a steam pipe and being mounted for substantially universal movement, an indicator plate mounted adjacent said steam pipe support and having openings therein corresponding to the vertical and horizontal location of the ends of the flues in said boiler, and an indicator arm pivotally mounted upon said steam pipe support and adapted to contact said indicator plate, and a spring connection between said steam pipe support and said indicator arm whereby said arm will be held in yielding frictional engagement with said indicator plate at its free end.

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