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A. TORRESSON ET AL

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AUXILIARY FURNACE FRONT

Filed March 16, 1923

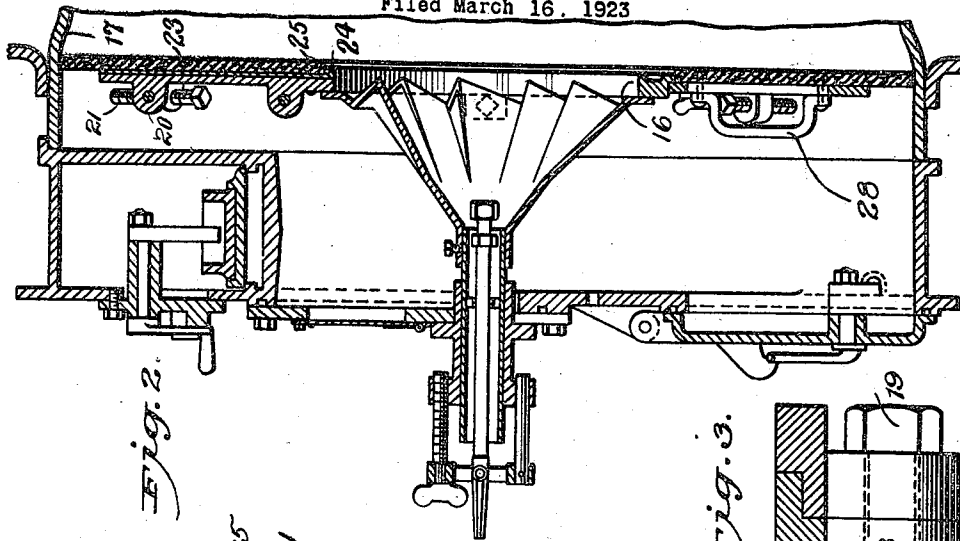


Fig. 2.

Fig. 3.

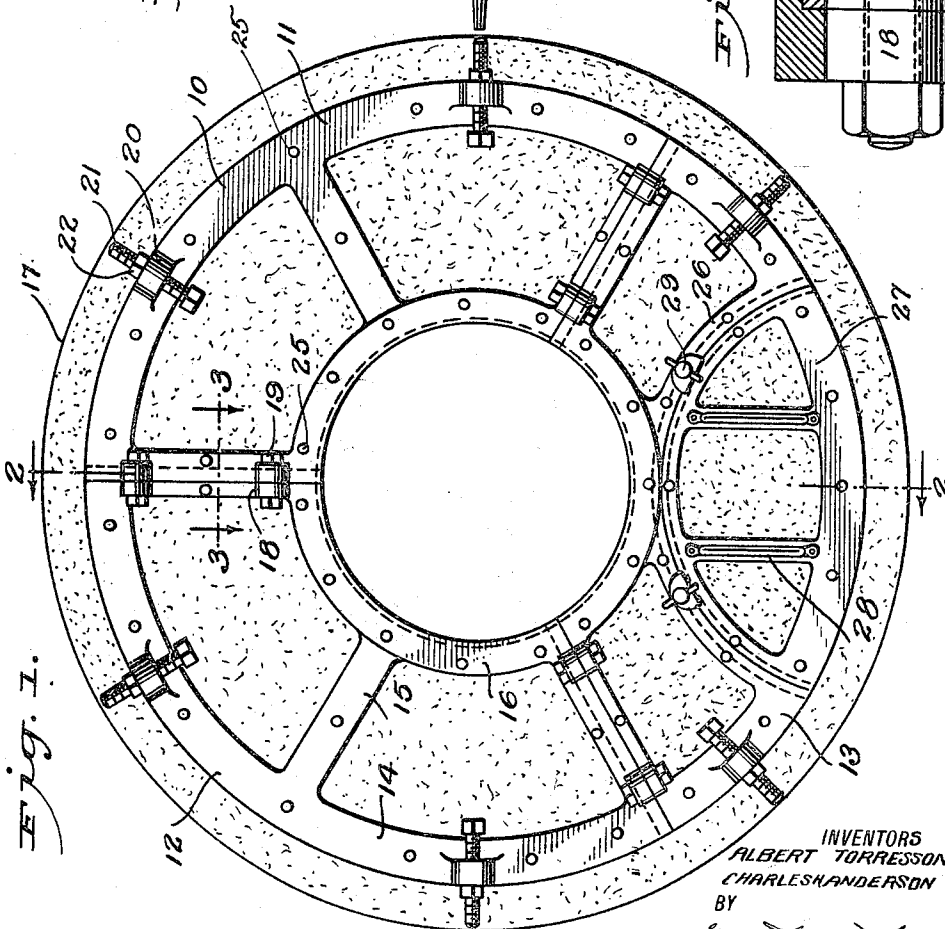
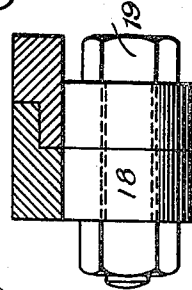


Fig. 1.

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ALBERT TORRESSON, OF WOODHAVEN, AND CHARLES H. ANDERSON, OF PEARL RIVER,
NEW YORK.

AUXILIARY FURNACE FRONT.

Application filed March 16, 1923. Serial No. 625,468.

To all whom it may concern:

Be it known that we, ALBERT TORRESSON, a citizen of the United States, and a resident of Woodhaven, in the county of Queens and State of New York, and CHARLES H. ANDERSON, a citizen of the United States, and a resident of Pearl River, in the county of Rockland and State of New York, have made and invented certain new and useful
10 Improvements in Auxiliary Furnace Fronts, of which the following is a specification.

Our invention relates to an auxiliary front for oil burning boilers and has for its object to provide an auxiliary front, preferably for use with Scotch marine boilers, which may be placed well toward the front of the boiler and so designed as to occupy but a small amount of space therein, so that a maximum heating or combustion area is thus provided.

A further object is to provide an auxiliary front preferably formed of a metallic frame and upon the rear surface of which is placed a heat insulating material or composition
25 such as, for example, asbestos, which not only protects the metal frame against the high heat of the burning fuel but also reflects the heat back into the combustion zone and thus prevents heat losses in the fire room and heat losses by radiation, and this, in connection with the increased space available in the boiler by reason of the small size of the auxiliary front and its position, most materially increases the efficiency of the oil burning boiler.

A further object is to provide a metal auxiliary front which may be adjusted to occupy a most efficient position within the boiler and also may be adjusted to boilers of
40 varying sizes, thus materially simplifying the installation of the auxiliary front within the boiler and decreasing the number of spare auxiliary fronts which it is necessary to carry in stock or the number of spare auxiliary fronts it is advisable for the fireman to keep on hand.

A further object is to provide an auxiliary front which is constructed in sections, adjustably fitted within a boiler, preferably of the Scotch marine type, although adaptable to other types of boilers, and which is so designed and arranged that it may be readily removed from the boiler when it is desired to change from oil to coal, or readily installed when it is desired to change from coal

burning to oil burning. This latter feature is of special importance in marine work, where the vessels must be able to burn either oil or coal, depending upon the kind of fuel available.

A further object is to provide a furnace auxiliary front which is simple in arrangement and design, is composed of but few parts, and is provided with a removable section or door, providing for easy and ready access to the interior of the furnace, the door or removable section being of sufficient size to readily allow the passage of a man there-through.

With the foregoing and other objects in view, our invention consists in the improved furnace auxiliary front illustrated in the accompanying drawing and hereinafter described and claimed, and in such variations and modifications thereof as will be obvious to those skilled in the art to which our invention relates, it being understood that changes may be made within the scope of what is claimed without departing from the spirit thereof.

The preferred embodiment of our invention is disclosed in the accompanying drawing, wherein:

Figure 1 is a view in front elevation of our improved metal auxiliary front applied to a Scotch marine boiler, the burner proper being removed;

Figure 2 is a view in section taken on the line 2—2 of Figure 1 and illustrating the burner in place; and

Figure 3 is a view in section taken on the line 3—3 of Fig. 1.

Referring specifically to the several views, wherein similar reference numerals designate corresponding parts throughout, our improved auxiliary front is composed of a metal frame 10, which in turn is made up of the three segments 11, 12 and 13, each segment being formed with the outer rim 14, the spokes or radial arms 15, and the inner rim 16; the inner and outer rims being so shaped that when the various sections are bolted together as illustrated in Figure 1, the frame will be circular, although the shape of the outer rim may vary, according to the style or type of boiler with which the auxiliary front is to be used. In the present drawing it has been illustrated as being used in connection with a Scotch marine boiler having a circular furnace tube

or flue 17, but our improved arch may be used with other types of boilers, as will be readily appreciated.

The confronting faces of the spokes of adjacent segments are provided with the lugs 18 through which extend the holding bolts 19 whereby the various segments are bolted together to form the complete furnace auxiliary front frame. Formed integrally with the rim 14 are the outstanding lugs or bosses 20 and which receive there-through the set bolts or set screws 21, there being provided suitable lock nuts 22, so that after the bolts or set screws 21 have been screwed into contact with the inner wall of the furnace 17 and thus hold and secure the auxiliary front firmly in place, the lock nuts 22 are screwed home and the auxiliary front accordingly rigidly locked and held in place.

The heat resisting composition or lining 23 is placed upon the inner surface of the frame segments and thus completely protects the metal frame from the heat of the burning fuel. In order to properly locate this heat insulating plate 23, the inner rim 16 is provided with an inwardly projecting flange or lip 24 and upon which the composition material 23 rests. Suitable holding means such as rivets 25 extend through the composition material and securely attach it to the frame.

In order that free access may be had to the interior of the furnace through the metal auxiliary front, we provide the lower segment 13 with an opening defined by the bars 26 and into which fits the removable section or door 27. The construction of the door 27 is along the same lines and of the same characteristics as the segments 11, 12 and 13, and in addition is provided with the handles 28 whereby the door may be conveniently inserted in place or readily removed therefrom. Suitable thumb screw catches 29 serve to secure the door readily in place.

Our improved auxiliary front may be used in connection with any type of burner and the inner rim 16 forms the customary venturi opening through which the liquid fuel is propagated and through which extends the cone of the burning fuel.

The joint between the various segments is preferably of the overlapping type as illustrated in Figure 3, so that the various segments when assembled together will form a rigid frame.

With our improved furnace auxiliary front as thus constructed, various segments may be readily inserted within the furnace and readily assembled together. The set screws 21 are then inserted in place and brought to bear upon the interior wall of the furnace so as to thus properly locate and hold the auxiliary front in the desired position. Further, this method of securing the auxiliary front in place also allows it to be used in connection with different sizes of furnaces as well as providing for its ready adjustment lengthwise of the furnace so as to obtain the most efficient location. The composition material 23 is extended up above the outer rim of the frame so as to confine all of the heat within the furnace and prevent any loss by radiation or convection into the fire room. Further, the very small space occupied by the auxiliary front provides for the greatest area within the combustion portion of the furnace and therefore for a maximum efficiency of the boiler. The composition material 23 fully protects and insulates the metal frame against the excessive heat of the furnace and therefore provides for its long and useful life.

Having thus described and explained our invention, we claim and desire to secure by Letters Patent:

1. An auxiliary front for furnaces comprising a metallic frame, a heat-resisting material carried by the inner face thereof, and adjustable means carried by said frame adapted to removably hold and lock it in position within a furnace.

2. An auxiliary furnace front comprising a metallic frame composed of segments detachably secured together, a heat insulating material carried upon the inner portion of said frame, said frame and heat insulating material provided with an opening therein for the passage of fuel there-through, and radially extending extensible fastening members adapted to engage the wall of the furnace and removably hold said front in position.

Signed at New York, borough of Manhattan, in the county of New York and State of New York, this 1st day of March, A. D. 1923.

ALBERT TORRESSON.

CHARLES H. ANDERSON.

Witnesses:

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