A. H. HAUSLER.

STEAM BOILER FURNACE.

APPLICATION FILED APR. 5, 1909.

971,996.

Patented Oct. 4, 1910.

4 SHEETS—SHEET 1.

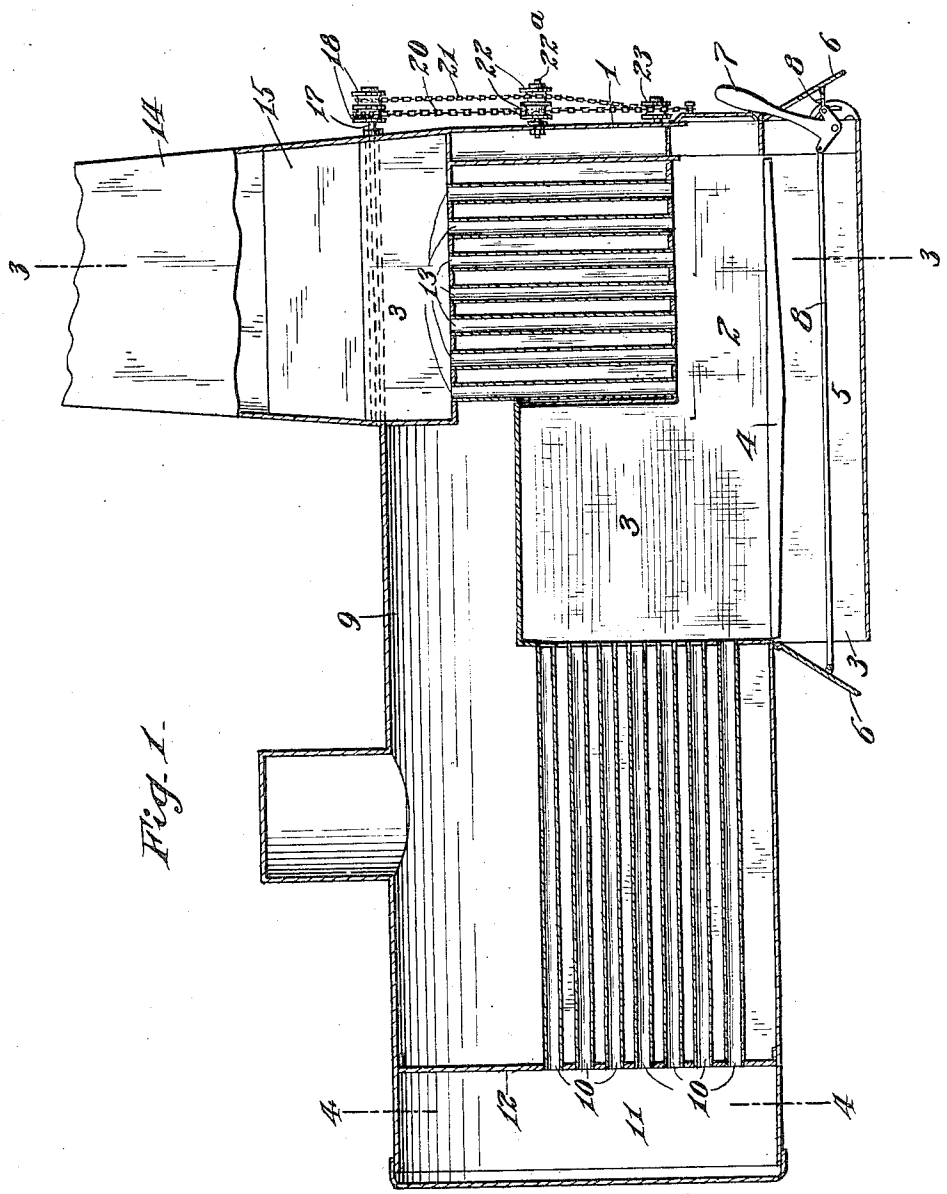

Fig. 1.

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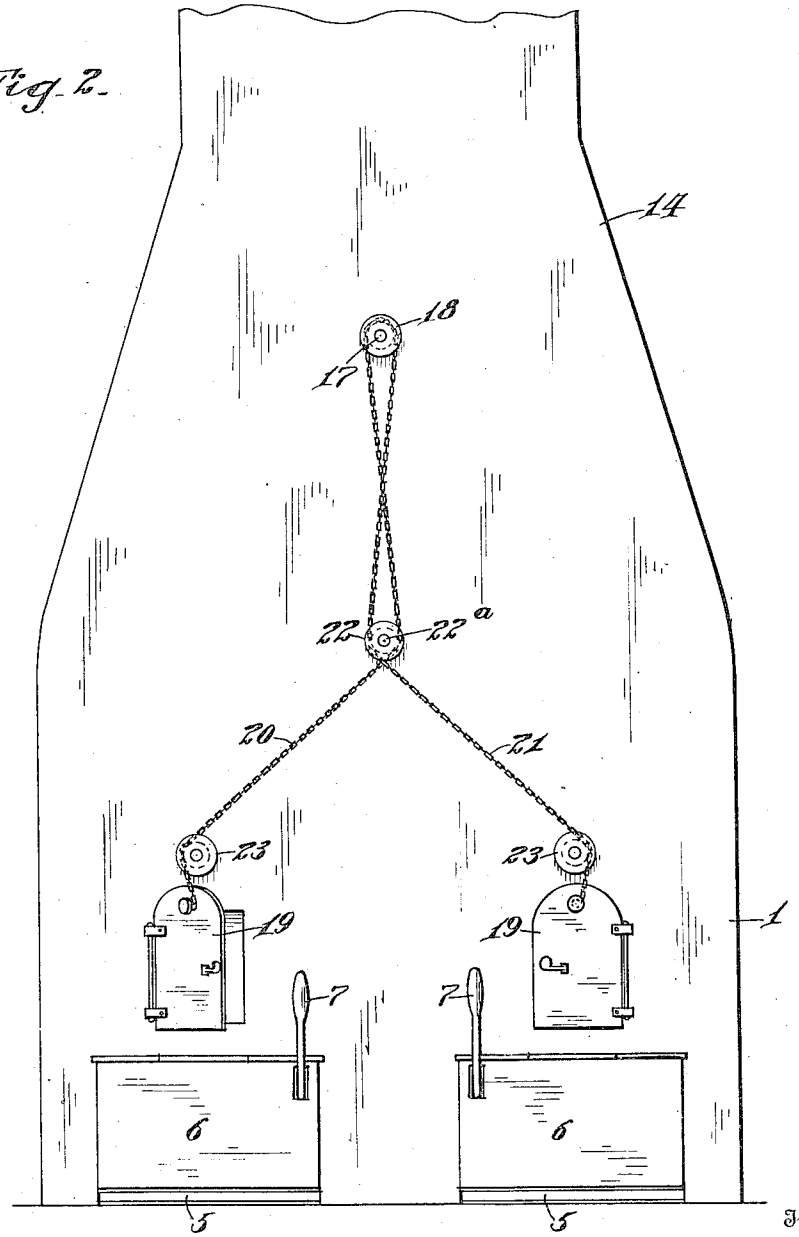
4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

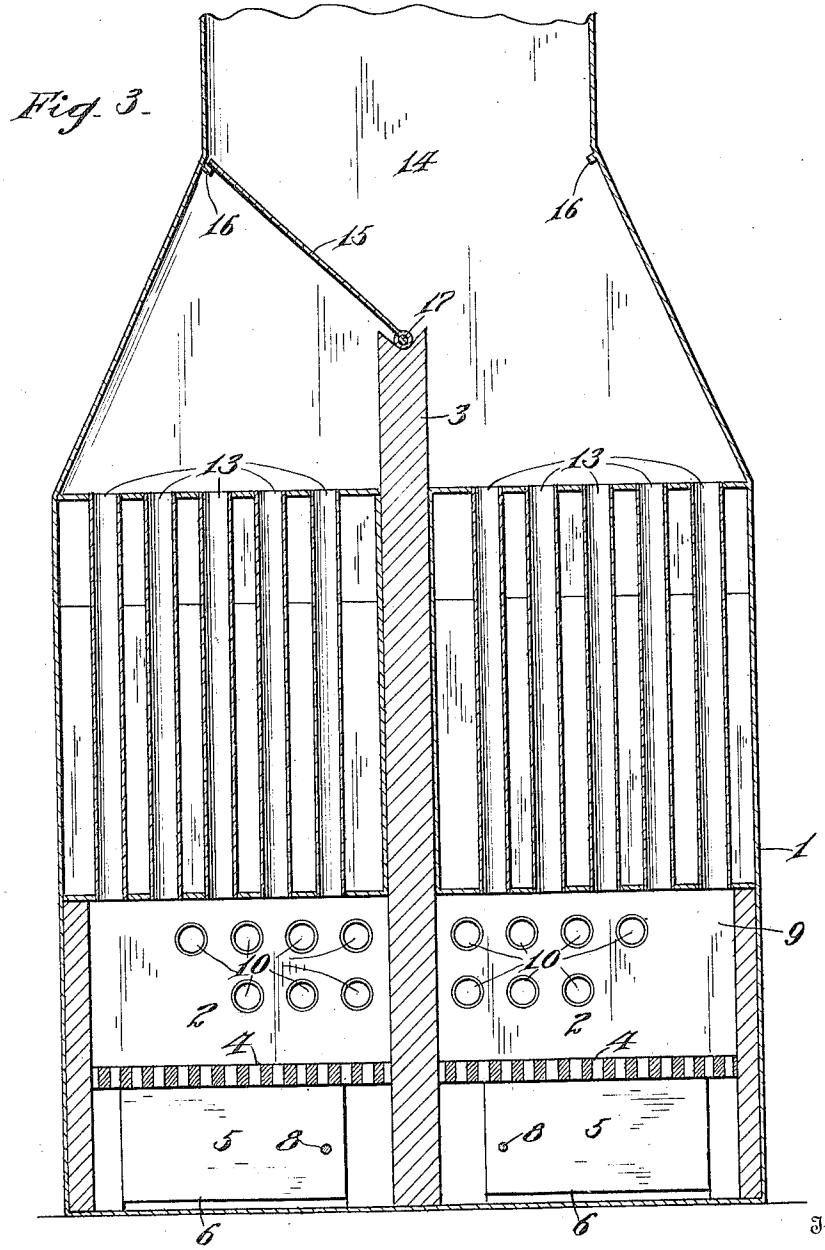

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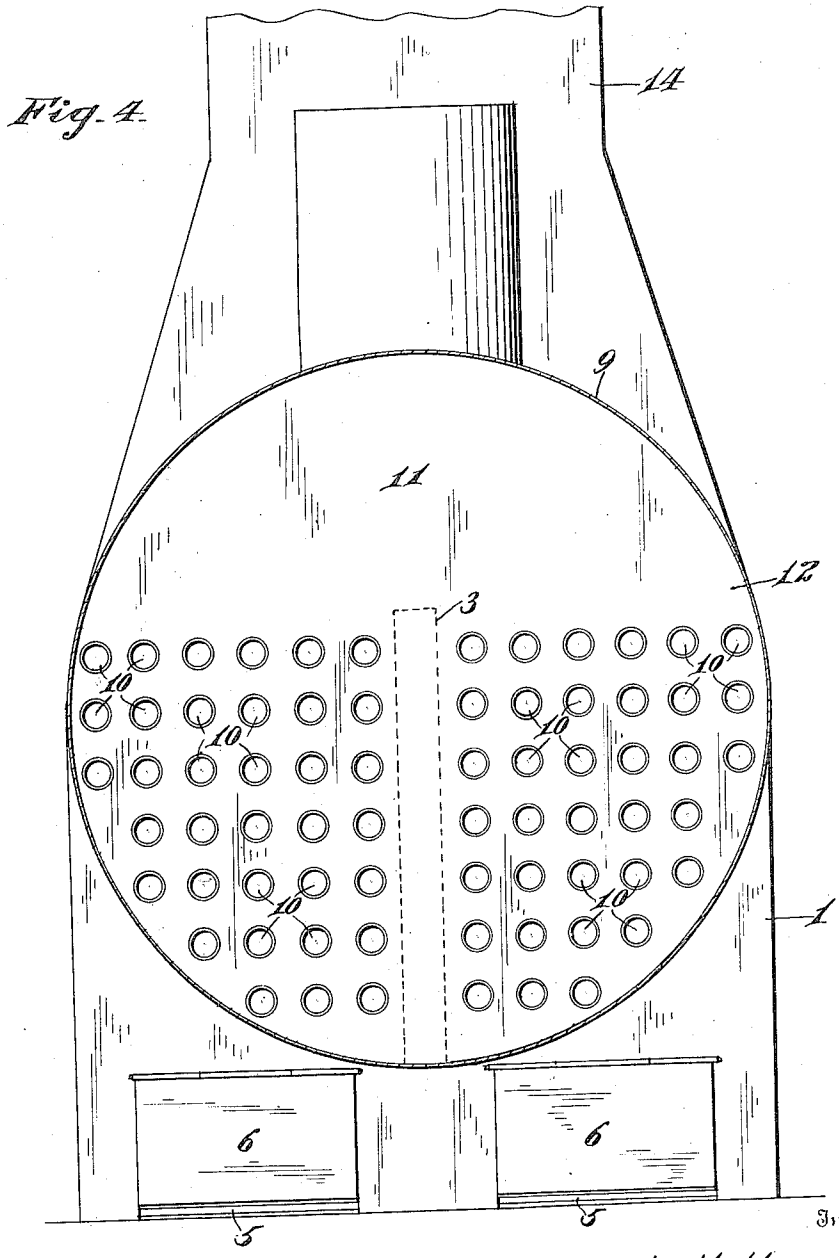
Fig. 4.



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UNITED STATES PATENT OFFICE.

AUGUST H. HAUSLER, OF SOUTH CHICAGO, ILLINOIS.

STEAM-BOILER FURNACE.

971,996. Specification of Letters Patent. Patented Oct. 4, 1910.

Application filed April 5, 1909. Serial No. 487,940.

To all whom it may concern:

Be it known that I, AUGUST H. HAUSLER, a citizen of the United States, residing at South Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Steam-Boiler Furnaces, of which the following is a specification.

My invention relates to improvements in steam boiler furnaces, adapted for use either as a stationary or locomotive boiler furnace, the object of the invention being to provide improvements of this character with two independent fire boxes, and improved mechanism for compelling the passage of smoke and gases from a fire box being charged, through the boiler and back to the other fire box to consume, as far as possible, the smoke and gases before escaping through the stack.

A further object is to provide improved mechanism for permitting but a single fuel charging door to be opened at a time, or in other words, compel one fuel charging door to be closed when another is opened, and at the same time move a damper in the stack, so as to compel the circuit of smoke and gases from the fire box being charged to the previously charged fire box.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations, and arrangements of parts as will be more fully hereinafter described and pointed out in the claim.

In the accompanying drawings, Figure 1, is a view in longitudinal section illustrating my improvements. Fig. 2, is an end view. Fig. 3, is a view in section on the line 3—3 of Fig. 1, and Fig. 4, is a view in section on the line 4—4 of Fig. 1.

1 represents the casing, and 2, 2, are twin fire boxes, separated by a partition wall 3. These fire boxes are provided with ordinary grate bars 4, and with ashpits 5 below, and hinged dampers 6 at opposite ends of the ashpit are simultaneously operated by a pivoted lever 7 connected by rods 8 with the respective dampers 6, so that when said lever is moved, the dampers will be simultaneously opened and closed, as will be readily seen in Fig. 1.

9 represents the boiler, which is provided with horizontal draft flues or tubes 10, on opposite sides of the partition wall 3, connecting the respective fire boxes 2 with a chamber 11 at the forward end of the boiler, which latter is separated from the water compartment of the boiler by a partition 12.

Above the fire boxes, a series of vertical tubular flues 13 are provided, connecting the fire boxes with the stack 14, and a damper 15 pivotally supported at the upper end of partition 3, is adapted to swing against stops 16 in the stack, so as to shut off communication between either of the fire boxes and the stack. This damper 15 is preferably secured upon a shaft 17, the latter projecting out through the end of the furnace, and having pulleys 18 fastened thereon.

19 represents the charging doors to the fire boxes, and chains 20 and 21 respectively connect the pulleys 18 with the respective charging doors 19, as will now be explained. Idle pulleys 22 having rotary mounting on a single stud 22^a and in vertical alinement with the pulleys 18, and idle pulleys 23 are mounted above the doors. The chain 20 is secured to one of the pulleys 18, and is passed around to the right of pulley 22, thence around the pulley 23 and secured to the door 19 at the left. The chain 21 is secured to the other of the pulleys 18 passed around to the left of pulley 22, thence around the pulley 23 and secured to the door 19 at the right. Hence as shown in Fig. 2, when the door 19 at the left is open, the chain 20 will be drawn downward, so as to turn pulleys 18 and shaft 17 and swing the damper to the left above the left hand fire box closing communication between the stack and the latter. This turning of the pulleys 18 and shaft 17 will draw the chain 21 upward and compel the door 19 at the right to close and remain closed, while the door at the left is open for the purpose of charging the fire box at the left.

As is well known, when a fire box is freshly charged, there is more or less generation of gases, which under ordinary circumstances will result in the escape of combustible matter without being burned. With my improved apparatus, such smoke and gases will pass longitudinally through the boiler flues 10 to the chamber 11, thence back through the boiler flues on the other side of partition 3 to the other fire box, which will of course be very hot, and such gases will be consumed before escaping through the stack. It will thus be observed that by constructing an improved boiler furnace as above explained, that it is quite impossible to charge but a single fire box at a

time, as the opening of one door will most effectually close the other, and at the same time shift the damper in the stack, so as to compel the circuit of smoke and gases from the newly charged fire box through the boiler flues and back to the other fire box and up the stack.

Various slight changes might be made in the general form and arrangments of parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claim.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

In an apparatus of the character described, the combination with twin fire boxes, and a stack communicating with both of said fire boxes, a shaft in said stack, a damper secured on said shaft and adapted to close communication between either of said fire boxes and the stack, pulleys on said shaft, charging doors for said fire boxes, pulleys on the outside of said casing, and chains so connecting said first mentioned pulleys with said doors and passed around said other pulleys, whereby when one door is opened the other door will be closed, and the damper will be swung to a position to close communication between the fire boxes having the open door and the stack.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUST H. HAUSLER.

Witnesses:
JOSHUA R. H. POTTS,
HELEN F. LILLIS.