

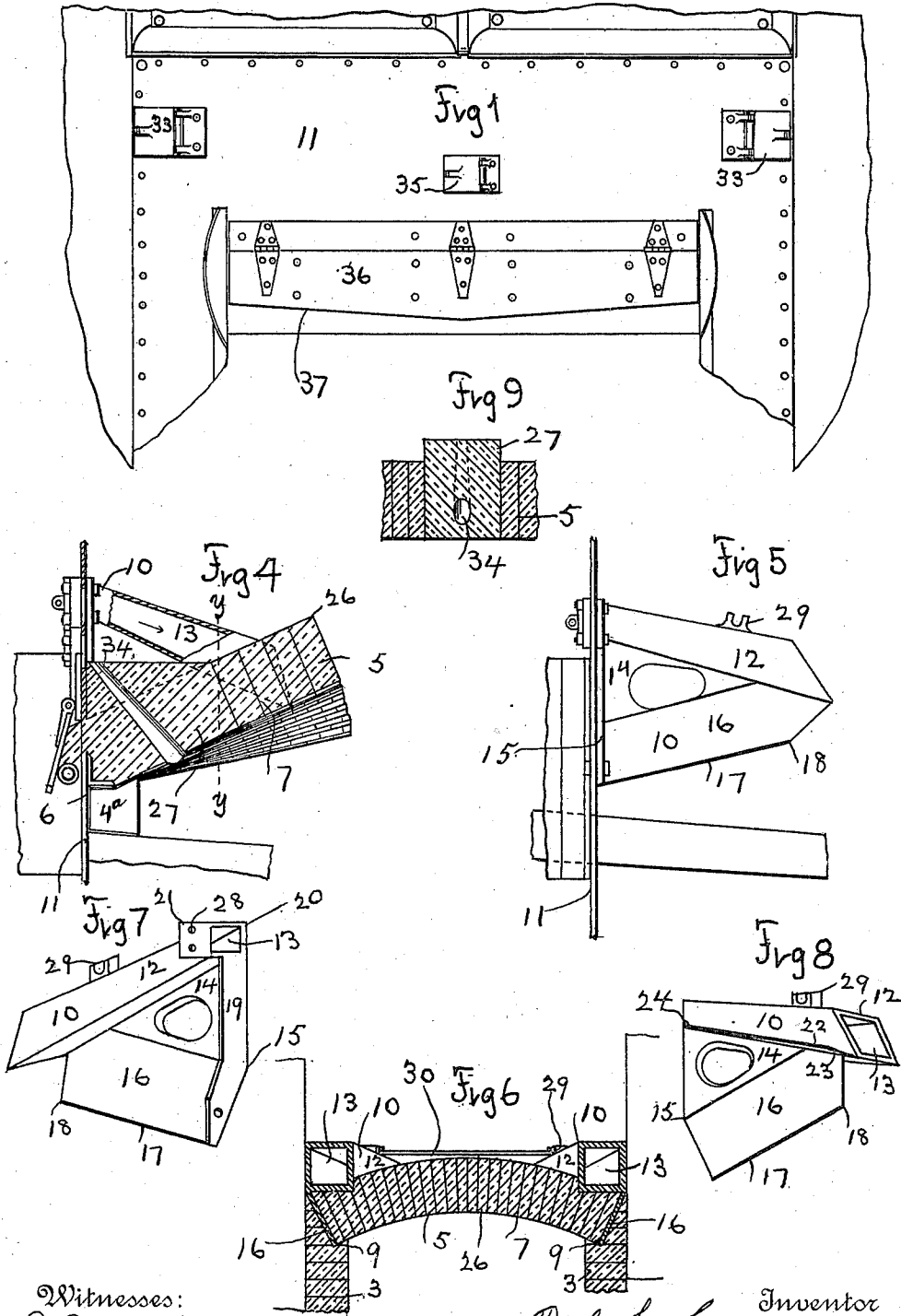
P. L. CROWE.
FURNACE SETTING.

APPLICATION FILED OCT. 9, 1909.

984,078.

Patented Feb. 14, 1911.

2 SHEETS-SHEET 1.



Witnesses:
O. Barnett
et. Hirsch.

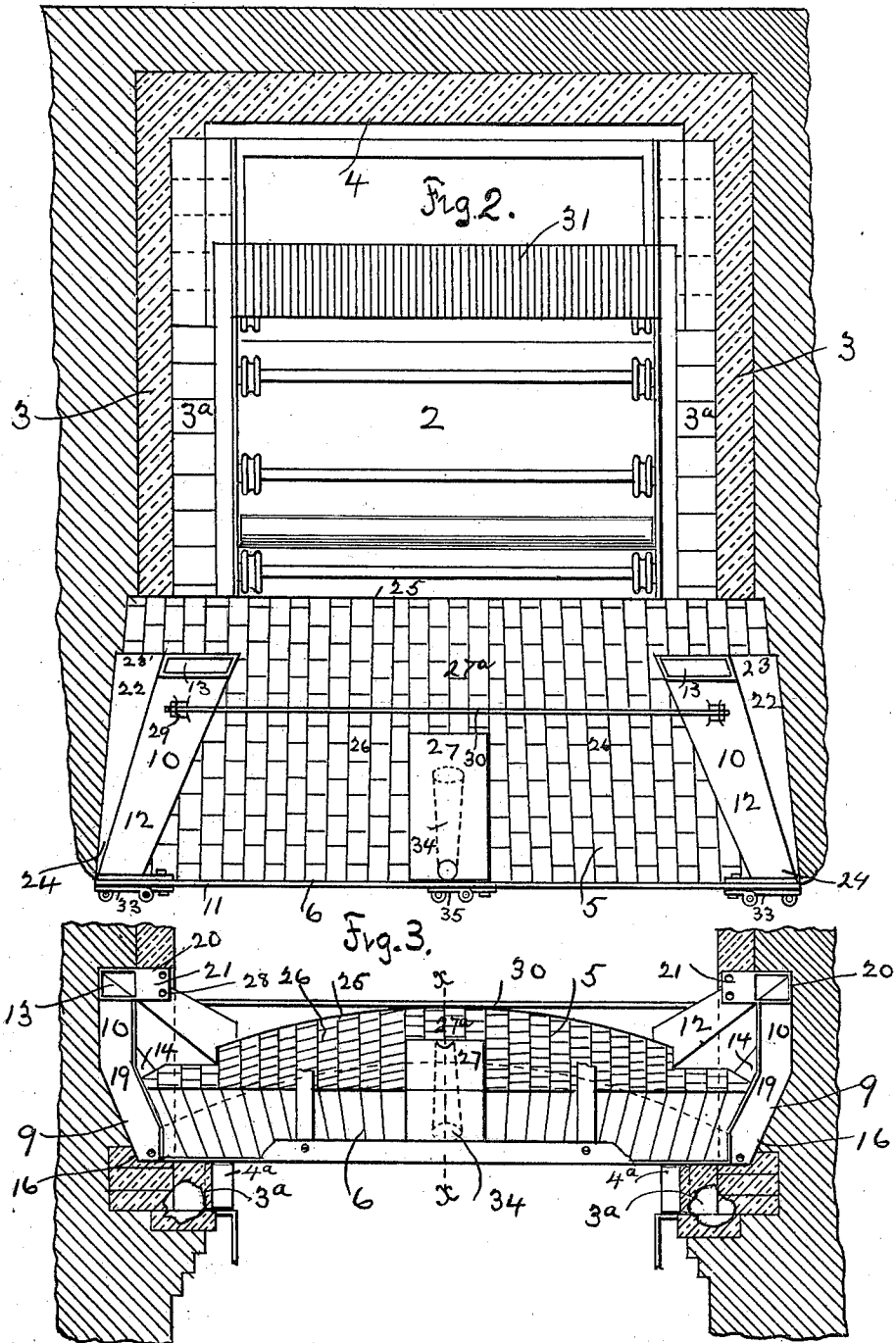
Inventor
Paul L. Crowe

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Witnesses:
G. Barritt
A. Hirsch.

Inventor
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UNITED STATES PATENT OFFICE.

PAUL L. CROWE, OF JERSEY CITY, NEW JERSEY.

FURNACE-SETTING.

984,078.

Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed October 9, 1909. Serial No. 521,958.

To all whom it may concern:

Be it known that I, PAUL L. CROWE, citizen of the United States, and resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Furnace-Settings, of which the following is a specification.

My invention relates to furnace settings for mechanical stokers, and the object is to provide the furnace setting with a combined buckstay-skewback constructed in such a manner that it will serve also as a peep-hole for examining the inside of the furnace, especially the ashes over the lap-bar bridge situated at the rear portion of the said furnace, principally for batteries of more than two boilers facilitating the operation of the stokers in intermediate boiler furnace settings.

Referring to the drawings: Figure 1 is an elevation of part of the front of the furnace and stoker. Fig. 2 is a plan sectional view of the furnace and stoker, viewing them from above the arch, the skewbacks, the lap-bar bridge and dump plate, also showing offsets in side walls. Fig. 3 is a front view of the furnace with the front plate removed showing the front and top of the arch and the walls broken away to show the offsets of the side walls. Fig. 4 is a side elevation of the arch on line X X, Fig. 3, showing the buckstay-skewback partly in section to show the interior passage or peephole running through the same and also the central peep-hole, and clinker block. Fig. 5 is a detached inside view of the buckstay-skewback showing it attached to the front of the furnace, the arch being omitted. Fig. 6 is a section on line Y Y, Fig. 4, taken through the arch and viewed in direction of arrow. Fig. 7 is a perspective view of the front of the buckstay skewback. Fig. 8 is a perspective view of the outside of the buckstay-skewback. Fig. 9 is a fragmentary central sectional view of the key block of the arch showing its position in same.

2 represents the furnace, 3 the side-walls having offsets 3^a formed therein slightly below the grate surface, 4 the bridge wall, 4^a clinker blocks located in side walls at the furnace front within the furnace. At the front portion thereof is placed the arch 5, having its front portion 6 formed longitudinally straight, and its inward portion 7

arched and carried upward on an incline, see Fig. 4.

The abutments 9 of the arch 5 are supported by the combined buckstay-skewbacks 10 mounted in the side-walls 3 and secured by bolts to the front plate 11 of the furnace 2. There are two buckstay-skewbacks to an arch, both of them similar in construction excepting that they are made "rights" and "lefts," therefore only one will be described. The buckstay-skewback comprises first a tubular body portion 12 made of metal and larger at one end than at the other, see Figs. 2, 7 and 8, although in some settings it may be preferably round. Through this body portion 12, is a central sight passage or opening 13, which will be described hereafter.

The body is inclined downward and inward and has integrally connected with it on the under side of the back portion a web 14 which extends therefrom downward to a point 15, a short distance on a perpendicular line, where it is integrally connected to the inwardly and downwardly inclined skewbacks 16, see Figs. 7-8, the lower edge 17 being inclined upwardly to 18 where it is again inclined until it merges into the rear portion of the box 12. The perpendicular edge of the web 14 and the edge of the skewback are provided with integral right angle flanges 19, and the narrow end 20 of the body has also a flange 21 corresponding with flange 19. The rear of the back portion of the buckstay-skewback is provided with an integral extension 22, see Figs. 2 and 8, made wider at 23 and narrower at 24. This extension on the body of the buckstay-skewback is for providing for the proper angle to which the skewback is to be positioned in order to allow for the proper distance between the rear portion of the two buckstays situated at each abutting end of the arch in order to correspond with the distance of the front portion 6 of the said arch. That is to say, that as the front portion 6 of the arch is flat and the rear 25 crown shaped the skewbacks 10 on each side of the arch are at a less distance from each other at the rear to compensate for the crown of the said arch, thereby bringing the courses of brick 26 to such a position to the central keys 27^a of said arch 5 as to permit of the keys being of the same size the full depth of the said arch. This combined buckstay-skewback 10 is positioned in the side walls 3 as shown in Figs. 2, 3 and 6, and the flanges

19 and 21 resting against the inside of the front plate 11, where they are securely fastened thereto by bolts passing through holes 28 in said flanges.

- 5 The inwardly inclined skewback portion 16 of the web 14 of the buckstay body 12 acts as an abutment for the crown of the arch. The top of the body portions 12 of the buckstays has formed upon it forked lugs
10 29, situated at the rear of the body portion, and into which rests the buckstay rod 30, the body portion 12 of the skewback portion 16 with the stay rod 30 forming the buckstay-skewbacks. The body portion 12
15 of the buckstay-skewback is set on an incline downward and on an angle toward the central portion of the furnace so that the lap bar bridge 31 can be seen when looking through the opening 13 in the body portions 12.

I close the small or narrow ends 20 of the buckstay by lids 33, hinged on the outside of the front plate of the furnace.

- 27, one of the key blocks, is positioned in
25 the front part of the arch 5, and through this block on an inward angle from top to bottom is a peep-hole 34, which permits the burning fuel on the grate surface to be seen. This peep-hole 34 is covered by a lid 35,
30 hinged to the front plate.

- 36 is a hinged regulating plate mounted on the outside of the furnace front. The lower edge 37 of this plate is V-shaped or on an obtuse angle, for the purpose of regulat-
35 ing the thickness of the fuel in the central portion of the furnace. The crown of the arch at the central portion being farther away from the grate surface than at its abutments has a tendency to permit the fuel to burn at a lower rate of combustion, the radiation of the side walls having a contrary effect and in compensating for this the regulating plate 36 is formed with its under
40 edge lower at its central portion than at its ends. Thus it will be seen that in regulating the fuel thinner in the central portion of the grate surface than along the side walls, the said fuel will be completely consumed at an even rate across the rear of the grate surface, the coaction of the regulating plate
50 with the crown of the arch compensating for this result at the rear of the furnace.

What I claim is:

1. In a furnace setting, a furnace having
55 side walls and front plate, buckstay skew-

backs mounted in said side walls and abutting against the said front plate, each of said buckstay skewbacks comprising a tubular body portion, made larger at the front portion than at the rear, said body portion provided with an opening, said body portion provided with a web which extends downward on a straight line a certain distance where it is angled outwardly, said web having a flange, a flange on said body portion, said flanges adapted to be secured to the inside of the front plate of said furnace, said front plate having an opening corresponding to the opening in the body of the said skewback means for holding said skewbacks in the furnace walls.

2. In a furnace setting a furnace having side walls, front plate and arch, buckstay skewbacks, said skewbacks mounted in the said side walls, said skewbacks supporting the abutments of the said arch, said skewbacks located within the said furnace in front of the front plate thereof, said skewbacks each having a body portion with central opening, a web, having securing flanges, said web partially straight and partially inwardly inclined, said front plate having openings corresponding to central openings in said skewback body portions, means for securing said skewbacks in position within the said furnace.

3. In a furnace setting a furnace having side walls, skewbacks, mounted in the side walls, an arch supported by said skewbacks, a tubular member having a sight passage therethrough and located adjacent a skewback along the arch, means connecting said member and skewback.

4. In a furnace setting, a furnace having side and front walls skewbacks mounted in the side walls, an arch supported by said skewbacks, a tubular member having a sight passage therethrough and located adjacent a skewback along the arch, means connecting said member and skewback forming a buckstay-skewback, and means securing said buckstay skewback to said front wall.

Signed at Jersey City in the county of Hudson and State of New Jersey this 2nd day of October A. D. 1909.

PAUL L. CROWE.

Witnesses:

A. E. DIETZ,
W. MULLER.