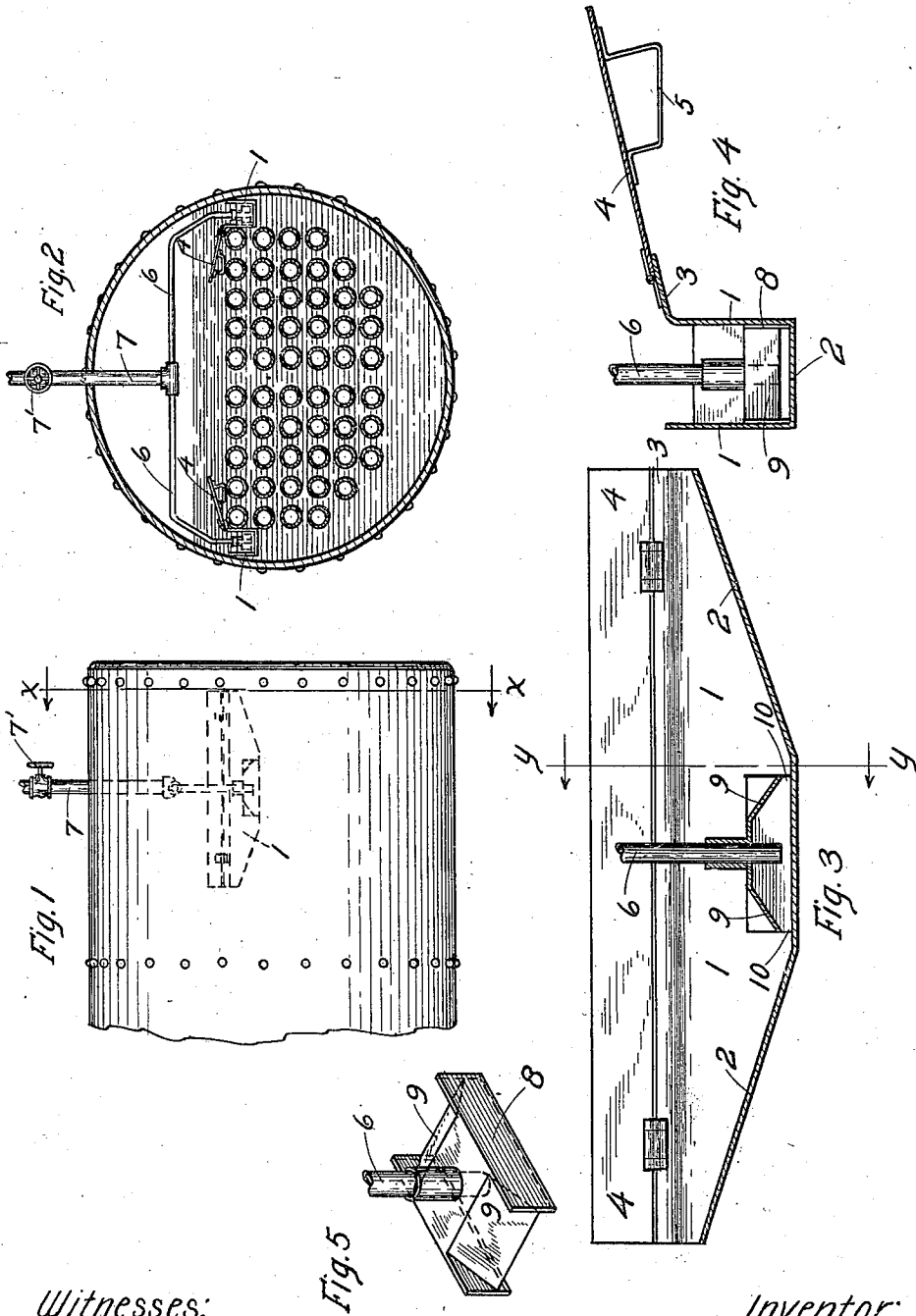


B. E. FOSS.
BOILER SKIMMER.
APPLICATION FILED JUNE 8, 1910.

987,710.

Patented Mar. 28, 1911.



Witnesses:
H. J. Hansen
B. L. Richards

Inventor:
Byron E. Foss,
By Joshua R. Horn
Attorney.

UNITED STATES PATENT OFFICE.

BYRON EPSOM FOSS, OF CHICAGO, ILLINOIS, ASSIGNOR OF FORTY-NINE ONE-HUNDREDTHS TO RICHARD H. MALCOMSON, OF CHICAGO, ILLINOIS.

BOILER-SKIMMER.

987,710.

Specification of Letters Patent.

Patented Mar. 28, 1911.

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To all whom it may concern:

Be it known that I, BYRON E. FOSS, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Boiler-Skimmers, of which the following is a specification.

My invention relates to improvements in boiler skimmers and has for its object the provision of a skimmer for boilers of simple construction and efficient in operation.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which—

Figure 1 is an elevation of the forward end of a return tube boiler provided with a skimmer embodying my invention, Fig. 2, a section on line $x-x$ of Fig. 1, Fig. 3, an enlarged longitudinal section of one of the skimmer troughs, Fig. 4, a section on line $x-x$ of Fig. 3, and Fig. 5, a perspective view of the guard pan employed in the skimmer.

The preferred form of construction as illustrated in the drawings comprises a pair of sheet metal troughs 1 having their bottoms inclined downwardly from either end toward the center, as shown in Fig. 3. These troughs are of a size to fit snugly between the tubes and sides of the boiler and are provided at one side with an upwardly inclined flange 3 adapted to engage over the adjoining boiler tube. Hinged to flange 3 is an apron 4 provided with rests or supports 5 adapted to rest upon the top of one of the boiler tubes and hold said apron in a slightly inclined position as shown. Projecting centrally into each of said troughs is a branch pipe 6 terminating near the bottom of the corresponding trough and leading to a main blow-off pipe 7 which extends outside of the boiler where it is provided with a valve 7'. Slidably mounted on the end of each of the branch pipes 6 is a guard pan 8 open at the bottom and having its top 9 inclined downwardly from the central portion toward either end and leaving a space 10 for entry to said pan at either end.

In operation the troughs 1 are positioned in the forward part of the return tube boiler

as shown with apron 4 resting upon the top of one of the boiler tubes and leading to the corresponding trough. The natural circulation of water in the boiler directs the mud and other sediment in the water into troughs 1, a result which is greatly facilitated by aprons 4. When it is desired to remove this mud and sediment valve 7' is opened whereupon the internal pressure in the boiler forces the mud and sediment through entry spaces 10 and out through branch pipes 6, a result which is greatly facilitated by the inclination of the bottom of the trough and the top of the guard pan.

While I have illustrated and described the preferred form of construction for carrying my invention into effect this is capable of variation or modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the exact details set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. The combination with a tubular boiler of a trough inserted between the tubes and the side of the boiler; an inclined apron resting over said tubes and leading to said trough; a blow-off pipe extending into said trough; and a guard pan on said pipe and having entry spaces adjacent the bottom of said trough, substantially as described.

2. The combination with a tubular boiler of a trough inserted between the tubes and the side of the boiler; an inclined apron resting over said tubes and leading to said trough; a blow-off pipe extending into said trough; and a guard pan for said blow-off pipe slidable thereon and having entry spaces at its forward and rearward ends adjacent the bottom, substantially as described.

3. The combination with a tubular boiler of a trough inserted between the tubes and side of the boiler and having a bottom inclined downwardly from either end toward its center; an inclined apron resting over said tubes and leading to said trough; a blow-off pipe extending into said trough; and a guard pan for said blow-off pipe slidable thereon and having a top inclined downwardly from the central portion toward either end and entry spaces at its forward

ward and rearward ends adjacent the bottom, substantially as described.

4. The combination with a return tube boiler of a trough inserted between the tubes and the sides of the boiler at each side of the forward end of said boiler; an inclined apron resting over said tubes and leading to each of said troughs; a blow-off pipe having branches extending into said troughs; and a guard pan for each of said branch pipes slidable thereon and having entry spaces at its forward and rearward ends adjacent the bottom of said trough, substantially as described.

5. The combination with a return tube boiler of a trough inserted between the tubes and the sides of the boiler at each side of the forward end of said boiler, each of said troughs having a bottom inclined down-

wardly from either end toward the center; an inclined apron resting over said tubes and leading to each of said troughs; a blow-off pipe having branches extending into said troughs; and a guard pan for each of said branch pipes slidable thereon and having a top inclined downwardly from the central portion toward either end and entry spaces at its forward and rearward ends adjacent the bottom of said trough, substantially as described.

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

BYRON EPSOM FOSS.

Witnesses:

HELEN F. LILLIS,
JANET E. HOGAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
