

G. W. LAUGHTON.
MOLD FOR BAFFLE WALL CONSTRUCTION FOR BOILERS.
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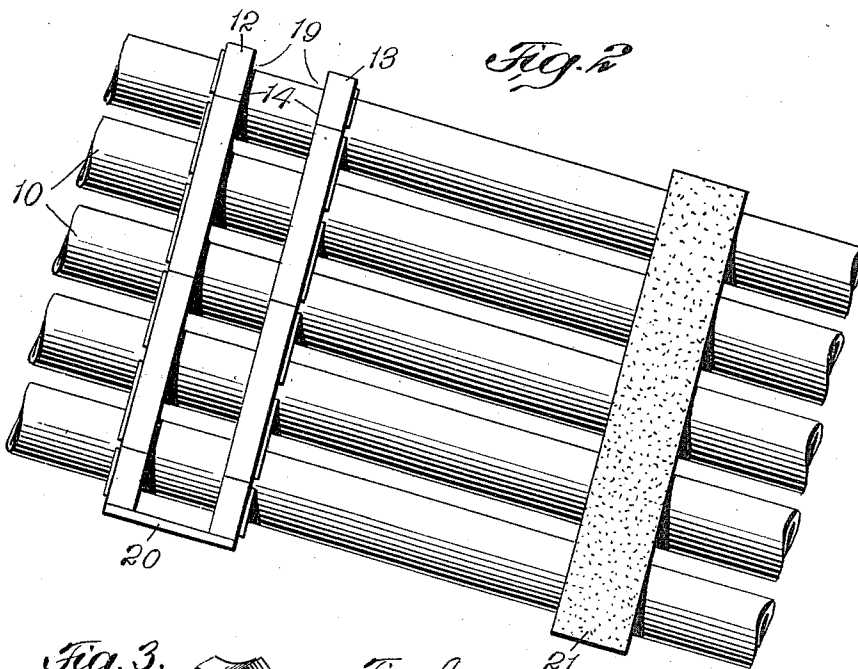
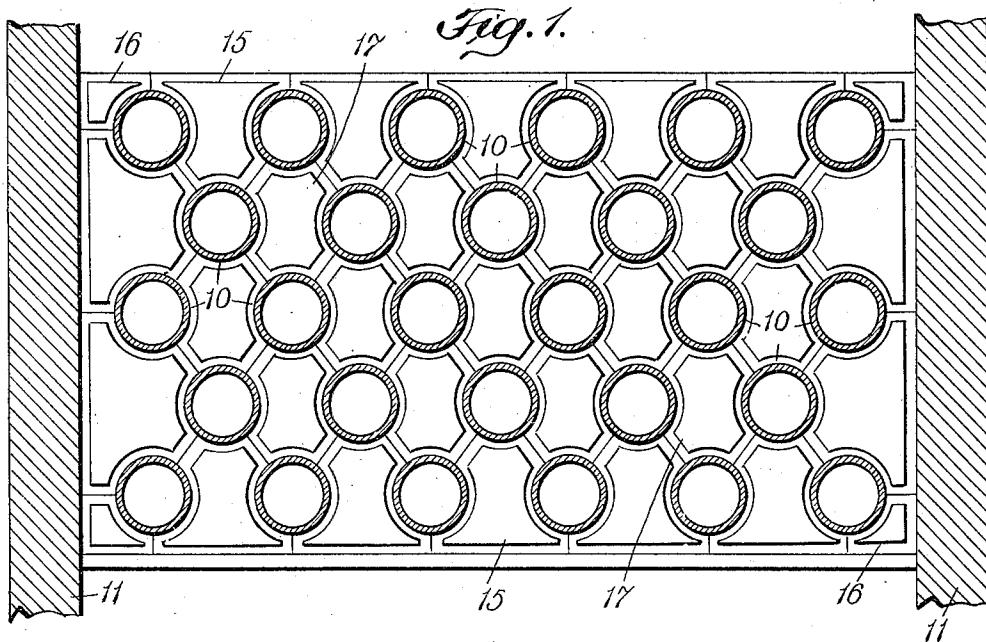


Fig. 3.
WITNESSES
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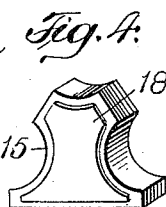
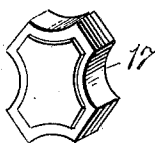
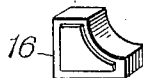


Fig. 5. INVENTOR
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MOLD FOR BAFFLE-WALL CONSTRUCTION FOR BOILERS.

974,894.

Specification of Letters Patent.

Patented Nov. 8, 1910.

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To all whom it may concern:

Be it known that I, GEORGE W. LAUGHTON, a citizen of the United States, and resident of Weehawken, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Molds for Baffle-Wall Construction for Boilers, of which the following is a full, clear, and exact description.

This invention relates more particularly to the method and means for renewing the baffle walls for water tube boilers.

In the construction of many of the well known forms of water tube boilers the tubes are arranged in staggered rows, and by reason of their construction it is a very difficult matter to renew or repair the baffle walls. This often results in a large percentage of the efficiency of the boiler being lost by the hot gases passing direct to the stack or chimney. It has been the practice to form these baffle walls by special shapes of fire brick, and when the baffle walls have to be replaced or repaired as is often the case, it is necessary to spread the tubes apart to remove the old bricks or to insert new ones in their place. The bricks should be tight enough to prevent the gas passing by the same, and this often results in injury to the tubes when inserting the bricks in place, and also often results in leakage around the tubes, particularly where the boiler has been in use for some years.

The primary object of my invention is to overcome the objections referred to and to provide a simple and efficient method and means whereby a baffle wall may be quickly and easily formed about the tubes by providing a mold so as to cast the wall about the tubes, thereby overcoming the objections incident to the use of the ordinary fire brick, and the method of holding the same to form a wall.

Another object of the invention is to provide a simple method and means which obviates all risk of injury to the tubes or side walls, as no spreading of the tubes or change in the alinement occurs, and when the wall is made the same forms a solid mass or one-piece wall which adheres to the tubes and the side walls of the boiler or setting.

A further object of the invention is to provide simple and efficient means whereby a tight mold may be made about the tubes of the boiler so that the material forming the wall may be placed and cast about the

tubes in a plastic or semi-plastic condition and in such a way as to avoid the necessity for employing skilled labor to construct the walls.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a transverse section taken through the tubular portion of one form of boiler showing a front elevation of one side of the mold in position to form a baffle wall. Fig. 2 is a side elevation, showing the mold ready to form the wall, and also a completed wall. Figs. 3 to 5 show the different mold members or sections that may be used.

The drawing represents a part of the well known form of Babcock and Wilcock water tuber boiler, but it will be understood that the invention may be applied to various forms and constructions of boilers.

As shown, the tubes 10 are arranged in staggered rows between the side walls 11, and closing the spaces between the tubes and walls 11 are the sides 12 and 13 of the mold 14. Each of the sides 12 and 13 are made up of a plurality of members or sections differently formed according to the space the same are to occupy. In the construction shown, there are three forms of packing blocks, members or sections, as 15, 16, and 17, the latter being disposed between the tubes, the members 16 at the corners, and the members 15 along the upper, lower, and side edges of the mold so as to entirely fill the space between the side walls 11 and tubes and to extend a sufficient distance above and below the tubes, as shown best in Fig. 1. These members may be each of a compressible or yielding nature, as for example pure rubber, and each of said members may be strengthened somewhat by a stiffening part, as 18, of wood or other material, which may correspond in form to that of the members but somewhat less in size, so as to permit the edges to yield properly in order that the same may be readily positioned between and about the tubes.

When the mold is to be placed in position, the members 15, 16 and 17 may be readily placed in position by means of a forked tool or otherwise, and owing to the compressible

nature will form a tight and compact surface for the mold. The walls 12 and 13 are similarly constructed and are spaced apart, as at 19, Fig. 2, according to the thickness of the baffle wall to be made, and under the walls or sides 12 and 13 may be placed a plate, bar or member 20 of wood or other material to form the lower surface of the mold. The material whether fire brick, cement or other composition adapted for this purpose, is fed or poured in a plastic or semi-plastic condition between the side sections 12 and 13 of the mold and suitably tamped so as to make the mass compact and entirely fill the space between the tubes. The inner surface of the mold members may be coated with plumbago or other material to permit the mold sections to be readily removed when the composition is properly set, leaving the wall ready for use as is shown by the completed wall 21 in Fig. 2.

From the foregoing it will be seen that baffle walls may be quickly and easily made or repaired; that much cost of labor, material, and time is saved and a much more effective and suitable wall provided; that a wall constructed according to this method will avoid the necessity for spreading the tubes or changing their alinement, which often results from the usual method employed, and that when the wall is completed and the mold members removed, a solid one-piece wall is provided which adheres to the tubes and side walls making the same substantially integral so that all joints are avoided.

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

1. A mold for making baffle walls of tubular boilers, comprising two walls each formed of a plurality of flexible members varying in shape, said members being adapted to encircle the tubes as the wall is being formed, and a plate member for closing the lower surface between the sectional walls.

2. A mold for making baffle walls of tubu-

lar boilers, comprising a plurality of members extending transversely of said boiler, each member being composed of sections varying in shape, the periphery of each section being flexible.

3. A mold for making baffle walls of tubular boilers, comprising a plurality of reinforced flexible members adapted to close the space between the boiler tubes.

4. A mold for making baffle walls of tubular boilers, comprising a plurality of flexible members adapted to close the space between the boiler tubes.

5. A mold for making baffle walls of tubular boilers, comprising spaced walls composed of a plurality of members of flexible material adapted to encircle a portion of the boiler tubes.

6. A mold for making baffle walls of tubular boilers comprising spaced walls, each wall being formed of a plurality of members of flexible material, said members varying in shape, and adapted to encircle a portion of one of the boiler tubes.

7. A mold for making baffle walls of tubular boilers comprising two spaced walls, each wall being formed of a plurality of members varying in shape and adapted to encircle a portion of one of the boiler tubes, the portion of the member which is in contact with the said tube and the remaining members being of soft material, and the remaining portion of said members being of relatively hard material.

8. In a mold for making baffle walls of boilers, a section of rubber adapted to close the space between certain of the tubes, and a backing of stiffening material of less size than said section.

This specification signed and witnessed this 26' day of February A. D. 1909.

GEORGE W. LAUGHTON.

Witnesses:

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