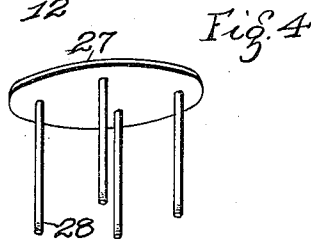
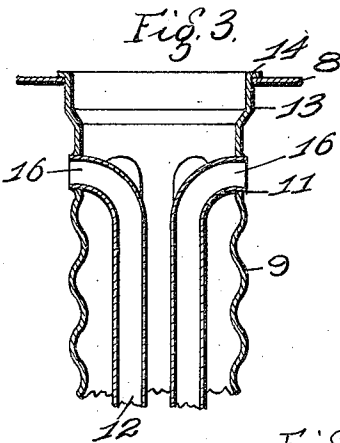
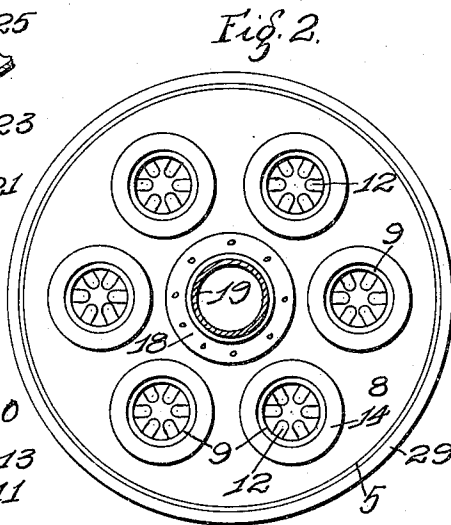
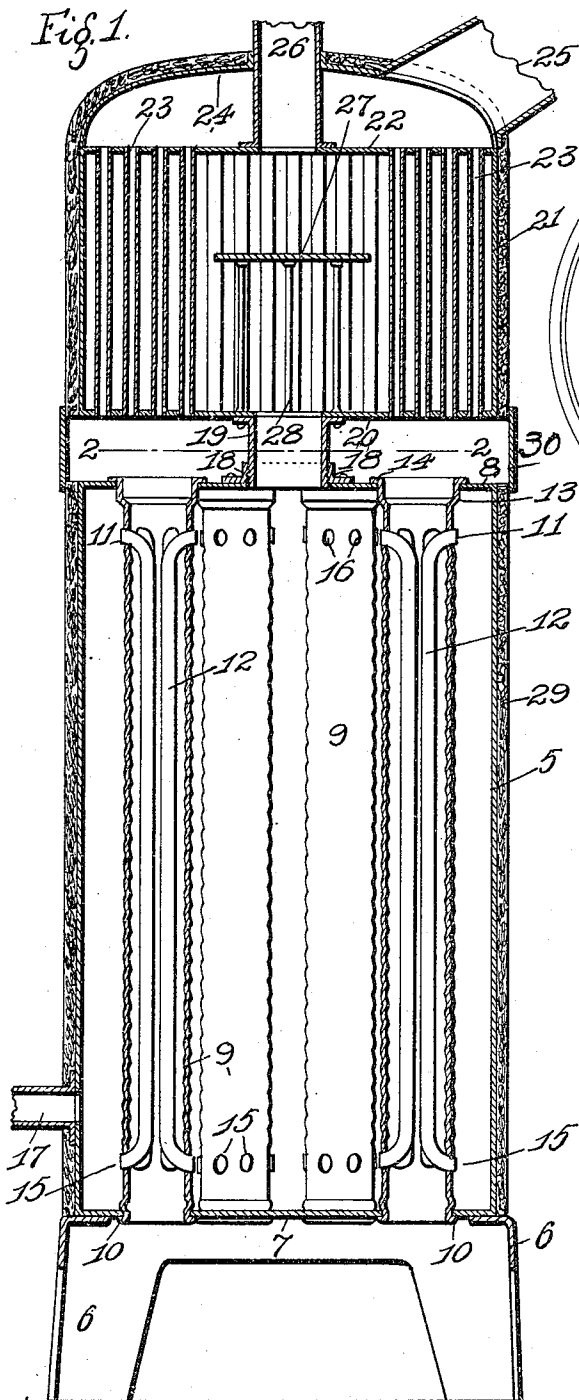


V. LAZINY.  
 BOILER FOR HEATING SYSTEMS.  
 APPLICATION FILED DEC. 7, 1912.

1,150,948.

Patented Aug. 24, 1915.



Witnesses  
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# UNITED STATES PATENT OFFICE.

VICTOR LAZINY, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-THIRD TO FRANK S. BECKER AND ONE-THIRD TO HAROLD T. LA BONTE, BOTH OF ST. LOUIS, MISSOURI.

## BOILER FOR HEATING SYSTEMS.

1,150,948.

Specification of Letters Patent. Patented Aug. 24, 1915.

Application filed December 7, 1912. Serial No. 735,414.

*To all whom it may concern:*

Be it known that I, VICTOR LAZINY, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Boilers for Heating Systems, of which the following is a specification.

This invention relates to improvements in boilers for heating systems and has for its object a boiler equipped with a plurality of corrugated flues and in each flue are mounted a plurality of water tubes which permit the water to circulate and become heated by the heat passing through the flues, and an auxiliary boiler provided with smaller flues located above the corrugated flues, and which serves as a steam drum from which the steam is directed to its proper destination.

Figure 1 is a vertical sectional view of my invention. Fig. 2 is a horizontal sectional view taken on the line 2—2 of Fig. 1 looking downwardly. Fig. 3 is an enlarged detail sectional view of a portion of one of the flues showing the arrangement and connection of the water tubes. Fig. 4 is a detail perspective view of a deflector made use of in the auxiliary boiler for deflecting the steam against the flues. In carrying out my invention I provide a boiler consisting of an ordinary shell 5 mounted upon a suitable base 6; the shell 5 is provided with a bottom 7 and a top 8, the same being connected together in such manner as to provide an absolute leak proof joint. In the shell are located a number of vertical flues 9, the greater portion of the same being corrugated as shown, the bottom end of each flue inserted through openings formed in the bottom 7 of the shell and suitably expanded as indicated by the numeral 10, making a leak-proof joint. The top 8 has an opening of a width slightly larger than the corrugated flue which permits the free insertion of the flues so as not to contact with the projecting ends 11 of the water tubes 12; the upper edge of each of the flues is slightly belled as indicated by the numeral 13 and after each flue has been properly inserted the upper edge is suitably expanded as indicated by the numeral 14 so as to prevent leakage.

The water tubes 12 are located within each flue 9 in such number as found desirable and the same are so arranged as to have

their ends bent sufficiently to project through openings in the flues 9 permitting the water in the boiler to enter at the points indicated by the numeral 15 and pass out through the ends indicated by the numeral 16. The openings in the flues through which the projecting ends of the flues are inserted are suitably calked or otherwise arranged to prevent leakage and by means of the bend in the pipe it will permit the flues to expand and contract.

In the shell 5 is located a return connection 17 through which the water is fed back to the boiler when used in connection with a water heating system, or when used for a steam heating system the water is fed into the boiler from the main through said connection 17.

The top 8 of the shell is provided with a central opening around which is located a suitable flanged casting 18 which is internally screw-threaded and in the same is supported a sleeve 19 which is firmly attached to the bottom 20 of the auxiliary boiler; this sleeve is suitably screw-threaded so as to be properly seated in the flanged casting 18 and through this sleeve is permitted to pass the steam created in the boiler proper. The auxiliary boiler is composed of an ordinary drum having a side 21 and a top 22, all of which is so connected as to be leakproof, and extending from the bottom 20 to the top 22 and arranged as close as found convenient and practical, are small flues 23 through which the heat is permitted to pass from the vertical flues 9 to the dome or cap 24 located above the auxiliary boiler; this dome or cap is provided with a flue connection 25, and from the top 22 of the auxiliary boiler leads a pipe 26 through which the steam or heated water may pass in its circulation through the heating system.

In the auxiliary boiler and directly above the sleeve 19 I provide a shield 27 mounted upon suitable supports or legs 28 attached to the bottom 20, against which the steam passing through the sleeve 19 impinges serving as a deflector directing the steam against the flues 23 distributing the same equally in the auxiliary boiler before the same can enter the pipe 26.

The outer portion of the shell 5 and the auxiliary boiler is covered with asbestos covering 29 and the space between the top of the boiler proper and the bottom of the

auxiliary boiler is provided with a suitable band 30 so as to prevent the heat passing from the flues 9 from escaping.

By arranging the auxiliary boiler in the manner shown and described the same can be readily placed in position by merely screwing the same into the flanged casting and it can be likewise readily removed in the event repairs are necessary so that the corrugated flues can be removed from their position from the boiler proper.

The essential feature of my invention is to construct a boiler with flues of a corrugated nature and place in each of said flues a plurality of water tubes through which the water in the boiler circulates so as to obtain a greater water heating surface.

Having fully described my invention what I claim is:

1. A boiler of the class described comprising a shell, a plurality of corrugated flues extending through the shell and whose one end is of increased size for easy insertion and a plurality of water tubes located in each flue, the ends projecting through said flues near the top and near the bottom for admitting water from the boiler, substantially as specified.

2. A boiler of the class described comprising a boiler proper, an auxiliary boiler located above the same and spaced therefrom, a plurality of corrugated flues located in the boiler proper and a plurality of water tubes located in each of the flues through which the water from the boiler proper is permitted to circulate, substantially as specified.

3. A boiler of the class described comprising a boiler, an auxiliary boiler mounted

thereon and spaced forming a heat chamber, a plurality of flues mounted in the boiler and extending from head to head, said flues being corrugated, a plurality of water tubes located in said flues, the ends projecting through the sides of the flues and opening into the boiler, and a plurality of flues located in the auxiliary boiler through which the heat from the flues in the boiler is permitted to pass through the auxiliary boiler, substantially as specified.

4. A boiler of the class described comprising a shell, an auxiliary boiler detachably mounted on the boiler proper and spaced therefrom, flues located in the shell, said flues having their surface corrugated, water tubes located within the flues, the ends projecting through said tubes and opening into said boiler, a plurality of flues located in the auxiliary boiler and a deflector located in the auxiliary boiler for directing the steam generated against the flues.

5. A boiler for heating systems comprising a shell, a plurality of corrugated flues located in the shell and extending from end to end and water tubes located in the flues and opening into the boiler through which water from the boiler may circulate and become more rapidly heated, an auxiliary boiler mounted above the lower shell and connected thereto by a central sleeve, substantially as specified.

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

VICTOR LAZINY.

Witnesses:

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WALTER C. STEIN.