

G. CONTI.
LIQUID FUEL FURNACE.
APPLICATION FILED DEC. 12, 1910.

1,031,249.

Patented July 2, 1912.

2 SHEETS-SHEET 1.

Fig. 1

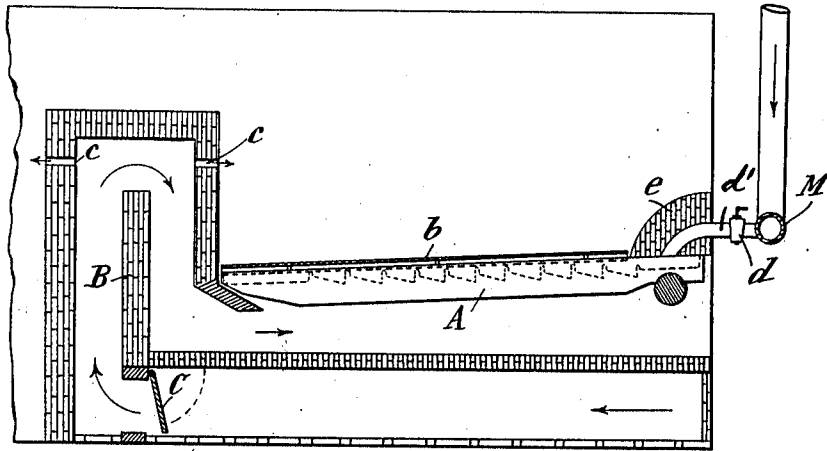
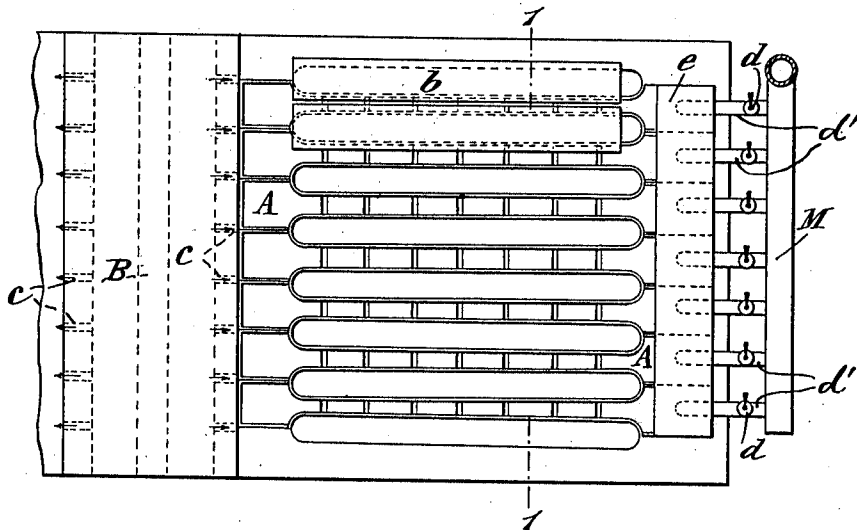


Fig. 2



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Fig. 3

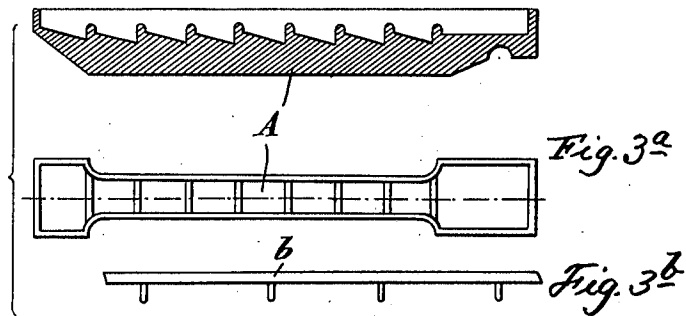
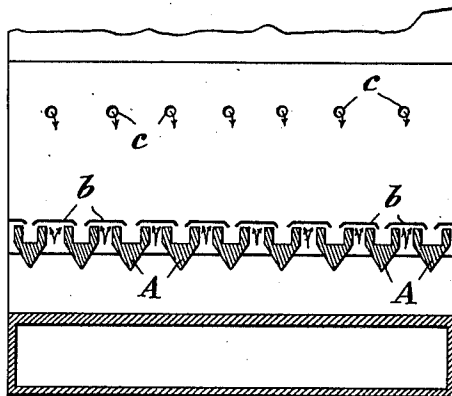


Fig. 4



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UNITED STATES PATENT OFFICE.

GEROLAMO CONTI, OF GENOA, ITALY, ASSIGNOR TO SOCIETÀ ANONIMA ITALIANA PER
LA COMBUSTIONE DEGLI IDROCARBURI, OF GENOA, ITALY.

LIQUID-FUEL FURNACE.

1,031,249.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed December 12, 1910. Serial No. 596,838.

To all whom it may concern:

Be it known that I, GEROLAMO CONTI, major Royal Italian Navy, a subject of the King of Italy, residing at Genoa, Italy, have invented a certain new and useful Liquid-Fuel Furnace, of which the following is a specification.

This invention has for its object an apparatus for the combustion of liquid fuel.

The apparatus is shown by way of example in the accompanying drawings, in which—

Figure 1 is a longitudinal section; Fig. 2, a plan view; Fig. 3 is a vertical sectional view of a grate bar. Fig. 3^a is a plan view of a grate bar. Fig. 3^b is a side view of a deflector. Fig. 4 is a transverse section on the line—1—1 of Fig. 2.

Referring to the drawings:—M is the pipe for distributing the combustible, which pipe is connected with a reservoir (not shown in the drawings), placed at a higher level, and from which all the pipes *d'* branch which convey the combustible into the various grooves in the grate-bars.

The troughs A of the grate have each a plurality of inclined steps in its bottom, which steps are shown in section and plan in Figs. 3 and 3^a. These troughs are arranged so as to incline from the mouth of the furnace toward the fire bridge, with the object of thus preventing the eddying of the liquid toward the said mouth during rolling and pitching movements of the vessel when the apparatus is employed on ships.

The diaphragms —*b*— for guiding the air (deflectors) are reduced so as to have an almost flat form, as seen in Fig. 3^b with the object of causing the air to flow over the liquid without throwing the latter up toward the top of the combustion chamber, a drawback which is common to a large number of similar inventions, and which causes the production of petroleum coke on the walls of the furnace; by means of the present invention this disadvantage is eliminated. The necessary flow of air for the combustion is indicated in the drawings by arrows, and the masonry as it is constructed, has for its object to preheat the air before it is brought into contact with the combustible. According to the exigencies of

space, the diaphragm B serves for causing the air to remain as long as possible between the masonry with the object of increasing the heating. A damper C serves for regulating the admission of air to the masonry. Small holes —*c*— in the masonry directly supply additional hot air to the combustion chamber.

—*d*— are the taps which regulate the introduction of the liquid fuel.

—*e*— are linings or covers of firebrick masonry for protecting the pipes which convey the combustible to the troughs of the grate.

What I claim is:

1. In a liquid fuel furnace the combination with the combustion chamber thereof, of a distributing pipe adapted to connect with a fuel storage reservoir, a grate comprising a plurality of troughs each having a plurality of inclined steps in its bottom, and said troughs being arranged to incline from the mouth of the furnace toward the opposite end thereof, as described, and branch pipes leading from the said distributing pipe and adapted to discharge fuel onto the troughs.

2. In a liquid fuel furnace the combination with the combustion chamber thereof, of a distributing pipe adapted to connect with a fuel storage reservoir, a grate comprising a plurality of troughs each having a plurality of inclined steps in its bottom, and said troughs being arranged to incline from the mouth of the furnace toward the opposite end thereof, as described, branch pipes leading from the said distributing pipe and adapted to discharge fuel onto the troughs, and air deflectors arranged longitudinally of and over the troughs and adapted to cause air to flow over the liquid fuel as set forth.

3. In a liquid fuel furnace the combination with the combustion chamber thereof, of a distributing pipe adapted to connect with a fuel storage reservoir, a grate comprising a plurality of troughs each having a plurality of inclined steps in its bottom, and said troughs being arranged to incline from the mouth of the furnace toward the opposite end thereof, as described, branch pipes leading from the said distributing pipe and adapted to discharge fuel onto

the troughs, air deflectors arranged longitudinally of and over the troughs and adapted to cause air to flow over the liquid fuel, and a fire-bridge for the furnace having
5 air openings to supply additional hot air to the combustion chamber.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

GEROLAMO CONTI.

Witnesses:

ROUV SPISENDE,
ERNEST GARNIER.

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