R. H. & W. A. EASTERLING.

AIR COOLING MACHINE.

APPLICATION FILED AUG. 8, 1910..

989,586. Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

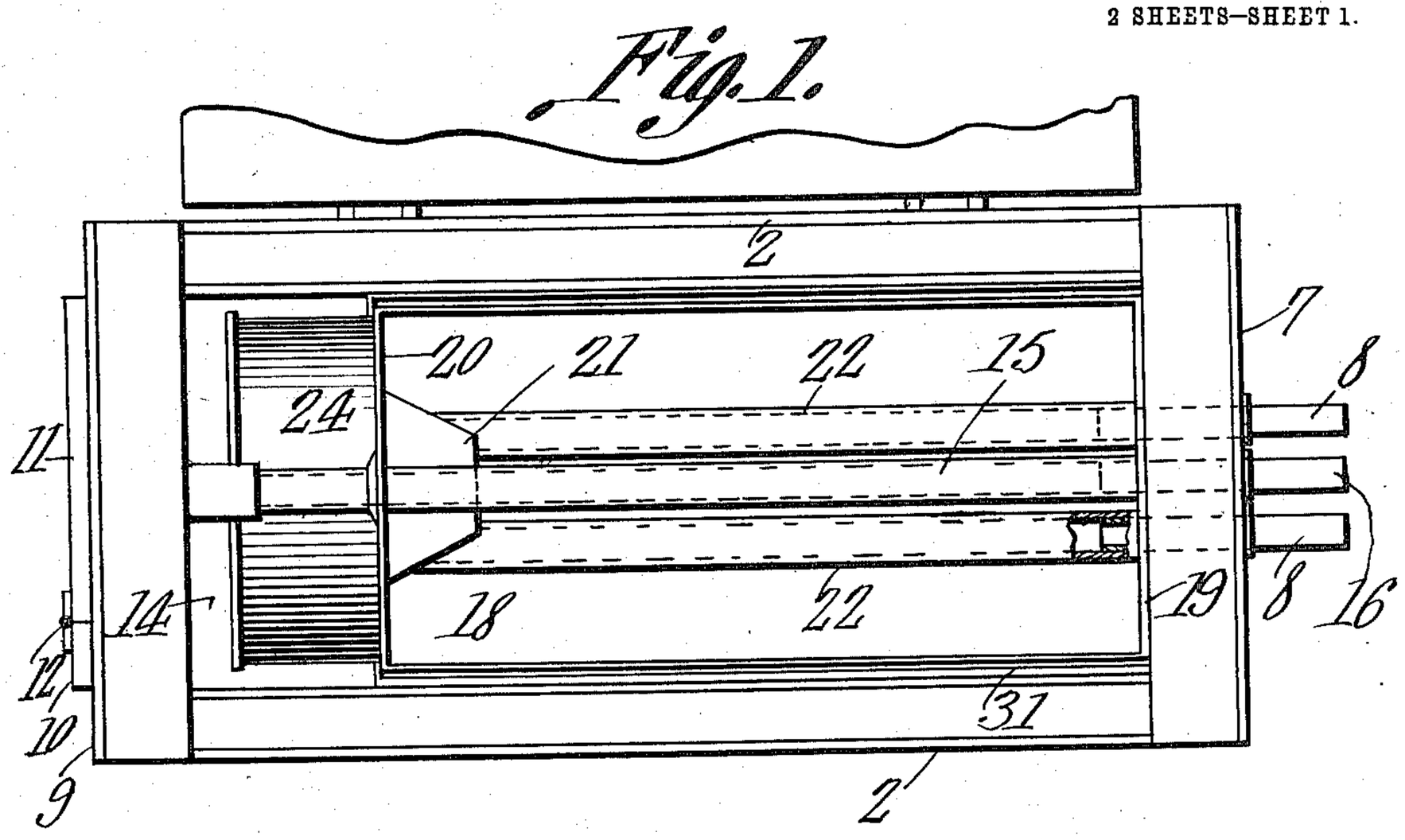
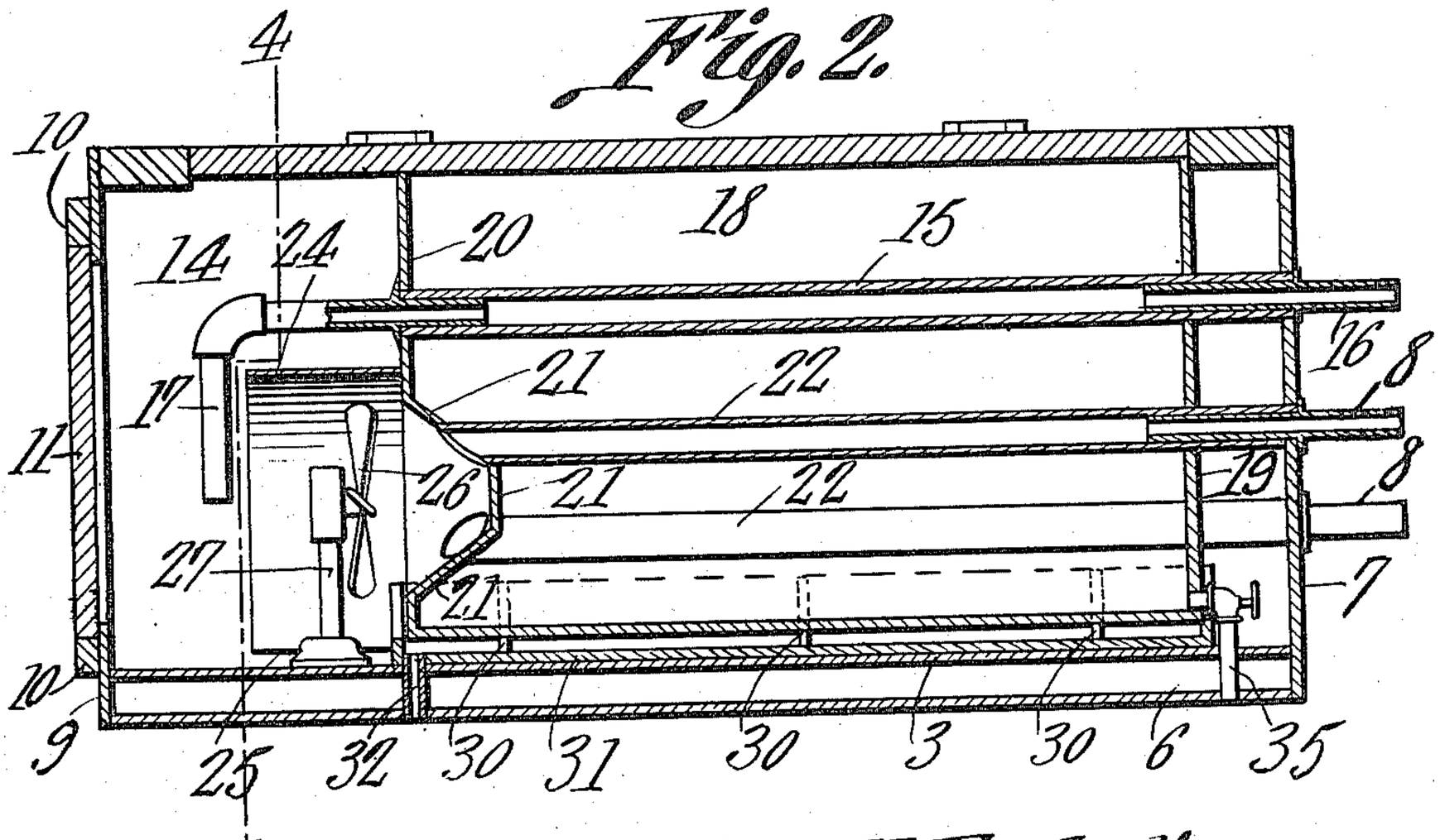


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

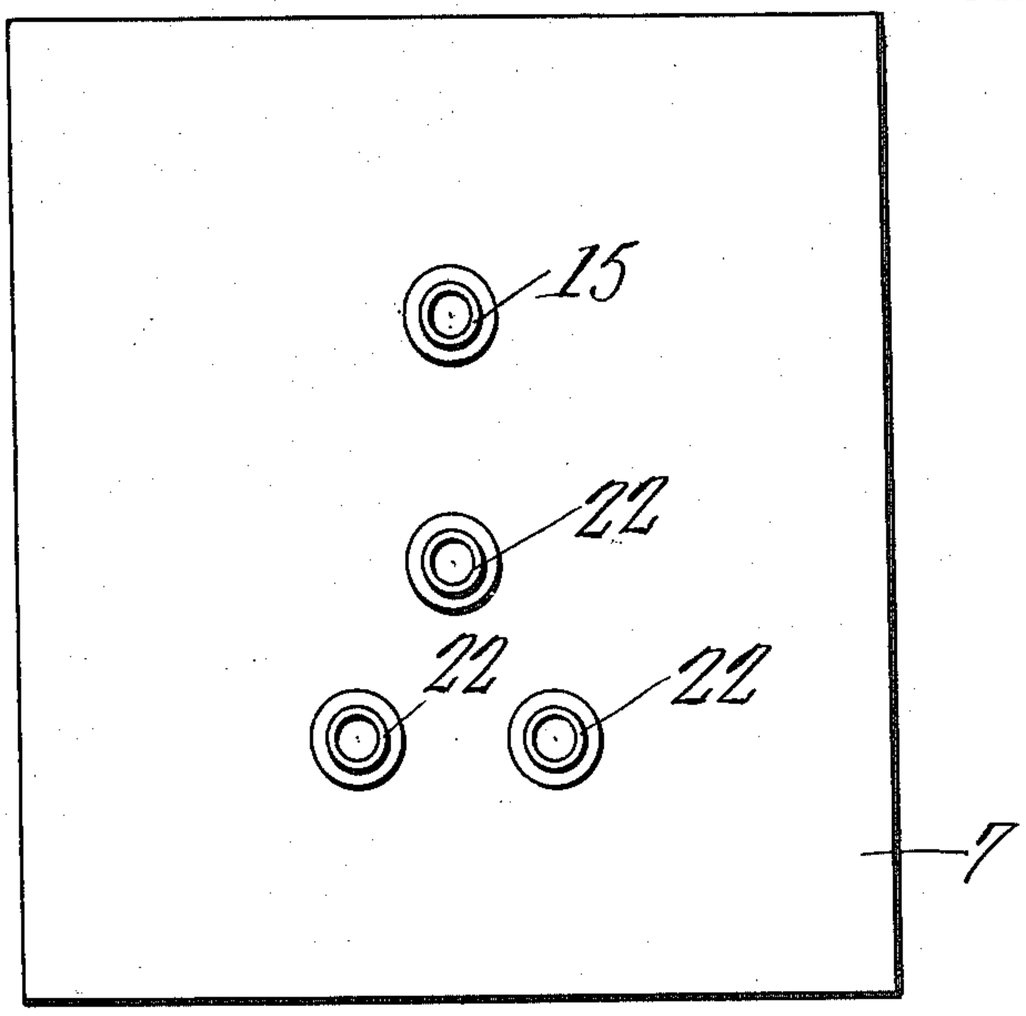
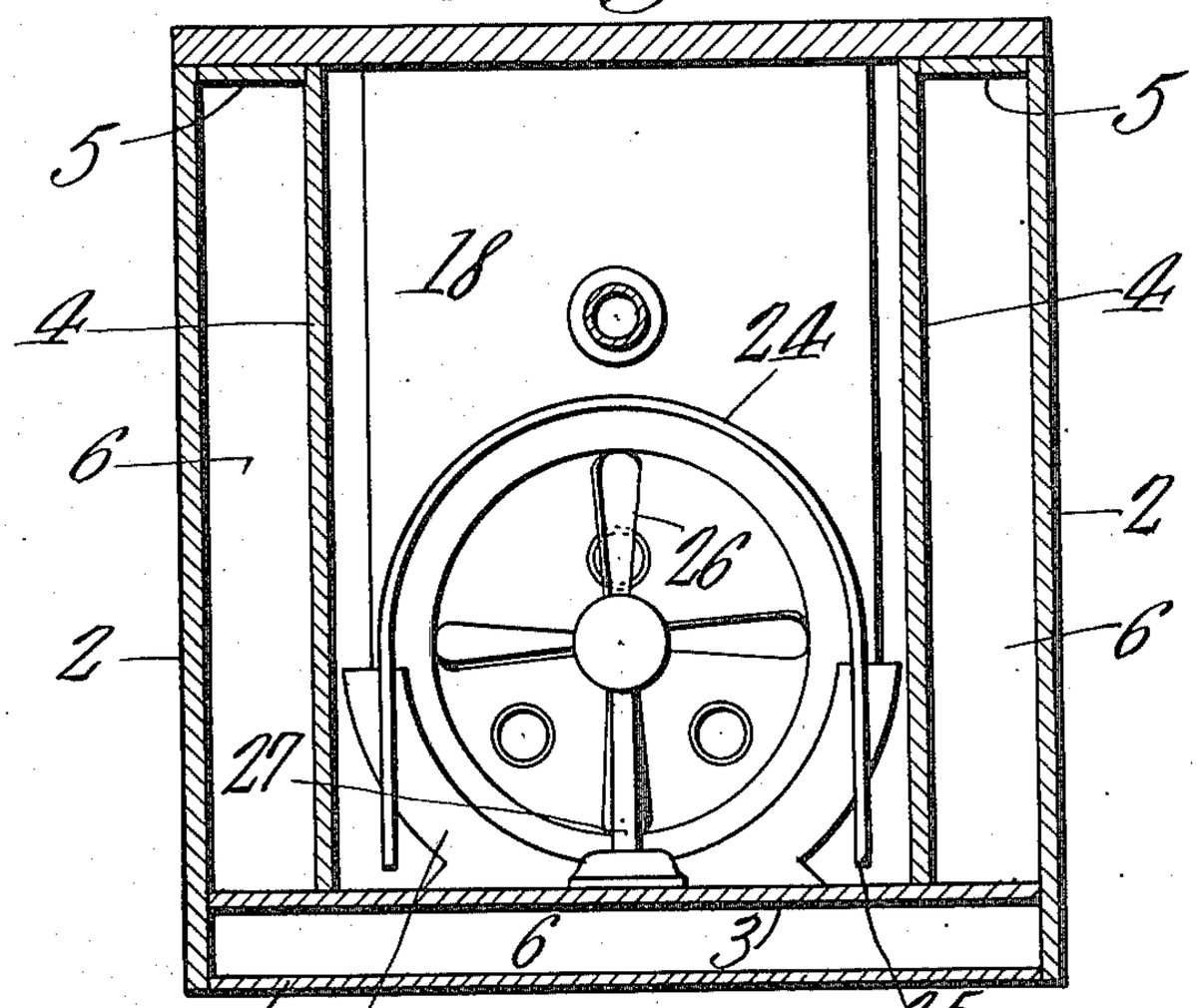


Fig. 4.



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UNITED STATES PATENT OFFICE

ROBERT H. EASTERLING AND WILLIAM A. EASTERLING, OF AUGUSTA, GEORGIA.

AIR-COOLING MACHINE.

989,586. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed August 8, 1910. Serial No. 576,141.

To all whom it may concern:

Be it known that we, ROBERT H. EASTERLING and WILLIAM A. EASTERLING, citizens of the United States, residing at Augusta, in the county of Richmond, State of Georgia, have invented a new and useful Air-Cooling Machine, of which the following is a specification.

This invention relates to cooling machines, and while the device of the present invention is adapted particularly for use in cooling air to reduce the temperature in houses, refrigerators and the like, it can nevertheless be employed for cooling other fluids.

The principal object of the invention is to provide an exceedingly simple and comparatively inexpensive machine for producing a continuous circulation of cooled air.

Further objects of the invention are generally to improve the construction of fluid cooling devices and to increase their efficiency in operation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the claims without departing from the spirit of the invention.

In the accompanying drawings forming part of this specification: Figure 1 is a plan view of a fluid cooling machine constructed in accordance with the present invention, the lid thereof being opened and partly broken away. Fig. 2 is a vertical longitudinal section through the center of the construction illustrated in Fig. 1. Fig. 3 is an end elevation looking at the front of the machine and showing at the upper end the entrance passage for warm air and at the center the discharge passages for the cooled air. Fig. 4 is a transverse vertical section on the line 4—4 of Fig. 2.

Like reference numerals indicate corresponding parts in the different figures of the drawing.

The cooling machine of the present invention preferably is constructed with a casing having a bottom 1, side walls 2—2, a false bottom 3 suitably supported on the side walls 2—2 and inner side walls 4—4 supported upon the false bottom 3 and connected at their upper ends with the outer side walls by means of strips 5—5. The arrangement described, provides spaces or chambers 6—6—6, two on the side and one at the bottom as shown in Fig. 4. These chambers 6 may be used as air chambers or may be filled with asbestos or other heat and cold resisting material. The casing is provided with a front wall 7 through which extend a plurality of outlets 8 for the cooled air, and a rear wall 9 on which is mounted a rectangular door casing or frame 10 within which is located a door 11 hinged to the frame 10 by means of the hinges 12 shown in Fig. 1.

The door 11 gives access to what may be termed a distributing chamber 14 located at the rear end of the cooling device to receive the non-cooled air which is supplied to said distributing chamber by means of a pipe 15 extending longitudinally along the upper end of the apparatus. The pipe 15 will be referred to herein as the feed pipe for the reason that it feeds to the apparatus the fluid which is to be cooled. The feed pipe 15 is provided at its outer end with an entrance pipe 16 which is mounted above the discharge pipes 8 of the apparatus. The pipes 16 may be in direct communication with the atmosphere or may be connected with a pipe leading from the upper end of the room or from any other source of supply. At its rear end the feed pipe 15 is provided with a downward extension or goose neck 17 which terminates within the distributing chamber 14 about midway between the upper and lower ends thereof.

Fitted snugly into the rectangular chamber which is produced by the bottom 3 and the inner walls 4 of the casing is a cooling tank 18, which preferably is formed of sheet metal and is adapted to receive cracked ice and salt or any other suitable cooling medium. The front wall 19 of the cooling tank preferably is disposed a slight distance in rear of the front wall 7 of the outer casing, and the rear wall 20 of said tank is disposed at the forward end of the distributing chamber 14. Said rear wall 20 is formed with an approximately concavo-convex portion in the center thereof, said portion being designated by the reference numeral 21.

Extending longitudinally through the cooling tank from the concavo-convex portion 21 is a plurality of cooling tubes or pipes 22 which, of course, are embedded in the cooling medium located in the cooling tank. Secured to the rear wall 20 of the

cooling tank and partially surrounding the concavo-convex portion 21 is an arched baffle plate 24 the lower end 25 of which preferably terminates a short distance above the bottom of the distributing chamber, the baffle plate 24 projecting rearwardly into the distributing chamber as shown.

Mounted within the confines of the baffle plate 24 is an impeller or fan 26 which is mounted upon a support 27 that stands upon the floor of the distributing chamber 14. The fan or impeller 26 is operated in any suitable manner such for example as by means of electricity.

The feed pipe 15 preferably extends through the upper end of the cooling tank. The cooling tank 18 at its lower end is rounded as shown in Fig. 4 and supported upon cradles 30 projecting upward from the bottom of a drip pan 31 which rests upon the false bottom 3. The drip pan 31 is provided with an outlet pipe 32 which extends to any suitable source and is valved or not as desired. The cooling tank is provided with a valved outlet pipe 35 for drawing water therefrom when necessary.

The operation of the machine is as follows: When the fan or impeller 26 is placed in operation after the tank 18 has been filled with cracked ice and salt or other cooling medium, a suction is created on the feed pipe 15 and the air or other fluid to be cooled is drawn inward through the entrance pipe 16. This fluid passes through the feed pipe 15 to the distributing chamber 14 where it is caught by the impeller 26 and thrown against the concavo-convex wall 21. The air is thus driven through the cooling tubes 22 and discharged through the discharge members 8. During its passage through the feed pipe 15 the air is partially cooled, and during its passage through the cooling tubes 22 it is completely cooled.

The cooling machine of the present invention is strong, simple, durable and comparatively inexpensive in construction as well as efficient and practical in operation.

What is claimed as new is:—

A fluid cooling machine comprising a casing having a false bottom and false side walls, a cooling tank resting on said false bottom between said false side walls, said cooling tank having a feed pipe extending longitudinally through the upper end thereof, said cooling tank also having a concavo-convex rear wall and a plurality of air tubes leading from said concavo-convex rear wall longitudinally through said cooling tank, a distributing chamber in said casing in rear of said cooling tank, an arched baffle plate connected with the rear wall of said cooling tank and projecting into said distributing chamber, a fan mounted in said distributing chamber within the confines of said arched baffle plate, a downward extension connected with said feed pipe and terminating in said distributing chamber, an outlet from said cooling tank, and a drip pan located beneath said cooling tank and having an outlet.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

ROBERT H. EASTERLING.
WILLIAM A. EASTERLING.

Witnesses:
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HENRY N. REID.