C. MYKOLASHEK.

EVAPORATOR.

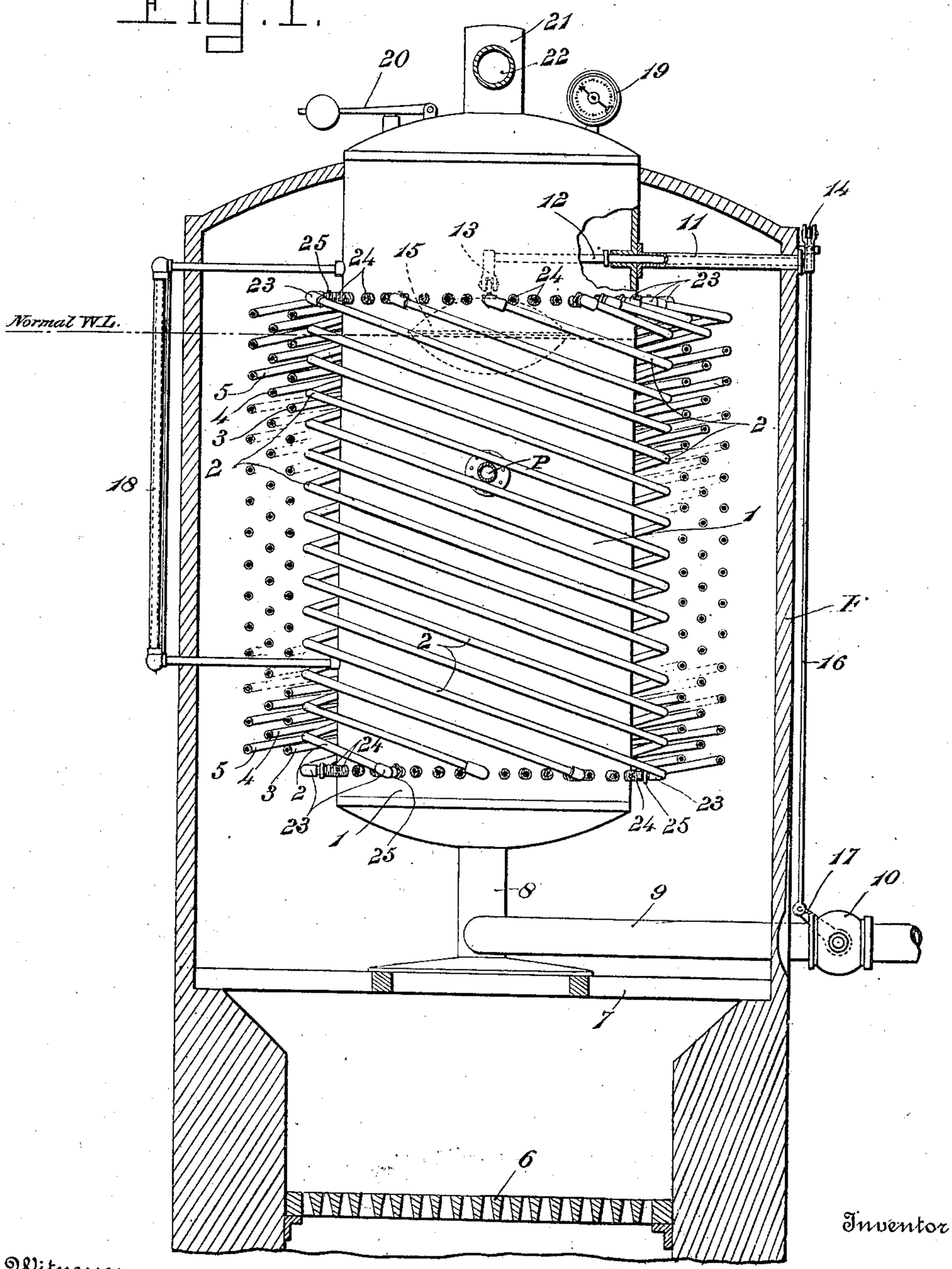
APPLICATION FILED JUNE 11, 1910.

995,629.

Patented June 20, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 2.

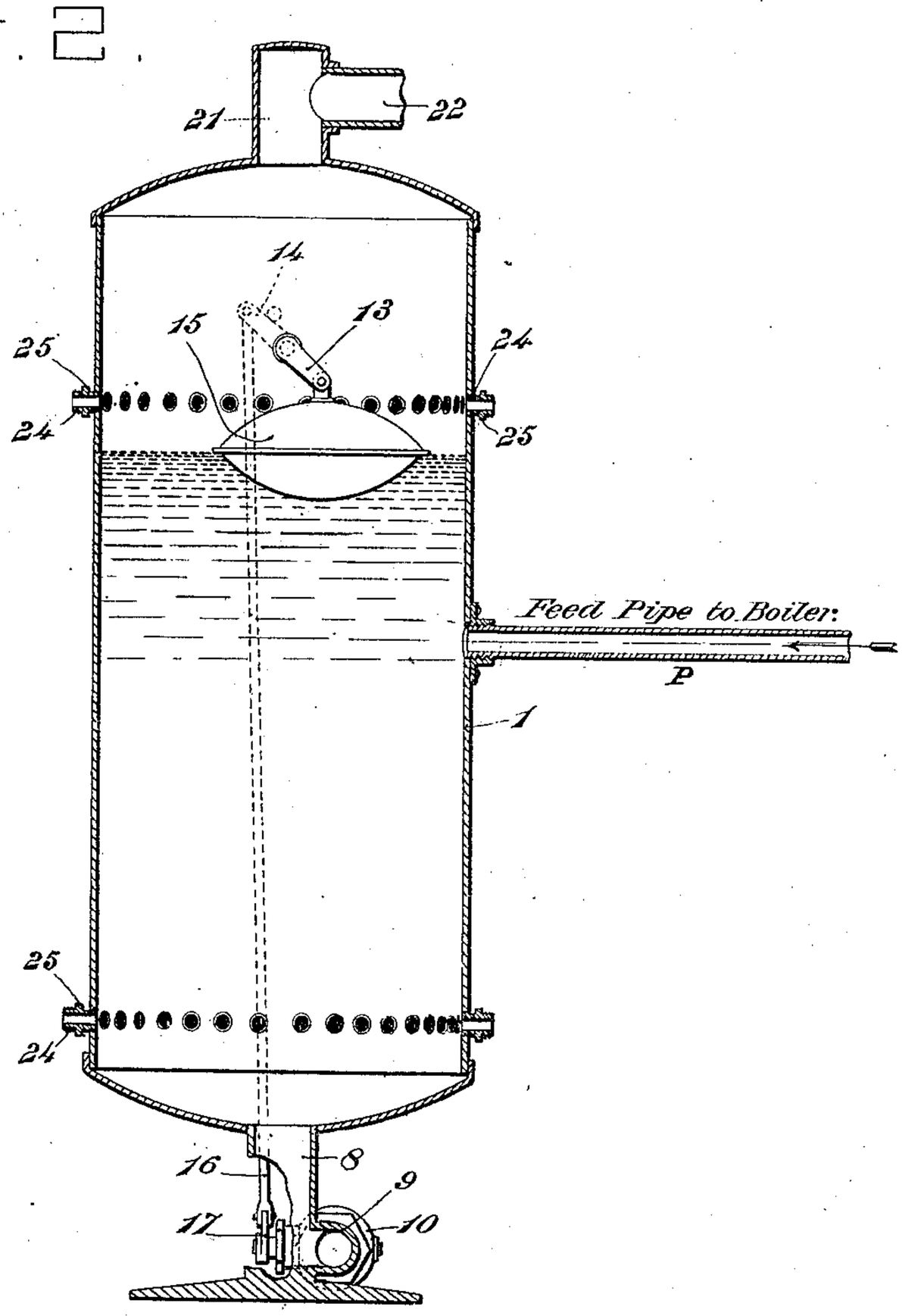
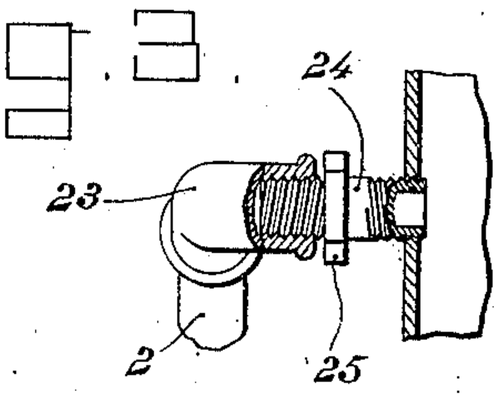


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES MYKOLASHEK, OF RAYMOND, WASHINGTON.

EVAPORATOR.

995,629. Specification of Letters Patent. **Patented June 20, 1911.**

Application filed June 11, 1910. Serial No. 566,350.

To all whom it may concern:

Be it known that I, CHARLES MYKOLASHEK, a citizen of the United States of America, residing at Raymond, in the county of Pacific and State of Washington, have invented new and useful Improvements in Evaporators, of which the following is a specification.

This invention relates to evaporators used on board of sea-going steamers for the purpose of evaporating sea water to provide feed water for the boilers and for other purposes; and it has for its object to provide an evaporator of simple and improved construction whereby a very large surface shall be exposed to the action of the flames, thus causing the process of evaporation to take place rapidly and at small expense.

Further objects of the invention are to simplify and improve the general construction and operation of a device of the character outlined above.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawings,—Figure 1 is a view in vertical section of a furnace containing the improved evaporator, the latter being shown in elevation and with the system of pipes which constitutes a portion thereof partly broken away. Fig. 2 is a vertical sectional view of the boiler or evaporator, the pipe system having been removed and some of the connecting nipples being shown. Fig. 3 is a sectional view enlarged, showing the manner of connecting the circulating pipes with the boiler casing.

Corresponding parts in the several figures are denoted by like characters of reference.

For the purpose of illustration there has been shown a vertical cylindrical boiler 1 enveloped by a system of circulating pipes 2, 3, 4 and 5, said circulating pipes being disposed spirally around the cylindrical boiler casing with which the ends of said pipes are connected adjacent to the lower and upper ends, the upper ends of the pipes being connected with the boiler casing a short distance above the normal water level. It is to be understood that any number of series of pipes may be used. The object of the circulating pipes is to afford an extended surface for the action of the fire in the furnace which has been conventionally shown at F, 6 representing the grate and 7 a spider or supporting device upon which the base of the boiler is mounted. If desired, an oil burner may be used for heating purposes and the construction will then be correspondingly modified.

The boiler casing 1 is provided at its lower end with a mud leg 8 from which a discharge pipe 9 extends laterally, said pipe being equipped with a stop cock or valve 10. The boiler casing has a laterally extending tubular arm 11 which extends through the furnace wall, said tubular arm affording a bearing for a rock shaft 12 provided adjacent to its inner and outer ends with cranks 13 and 14, the former carrying a float 15 which is hingedly connected therewith, as shown. The crank 14 is connected by a link 16 with a lever or handle 17, whereby the stop valve 10 is actuated.

The boiler is equipped with a water gage 18, with a steam gage 19 and with a safety valve 20, all of ordinary construction. A dome or cap 21 at the upper end of the boiler casing has an opening 22 which is an outlet for the steam or vapor to the condenser. A feed pipe P is connected with the boiler casing below the water lever, said pipe being connected with a suitable pump, not shown, whereby sea water may be introduced into the boiler.

In the operation of this device sea water introduced into the boiler will be very rapidly evaporated, owing to the presence of the numerous circulating pipes, the upper and lower ends of which have been shown as being provided with L's 23 which are connected with the boiler casing by right and left threaded nipples having wrench seats 25, thus affording simple and effective means for connecting or disconnecting the said circulating pipes. The circulation in said pipes will prevent the latter from being choked or stopped by accumulations of salt or sediment. The highly saturated brine and other sediment will settle in the mud

leg 8, as will be readily understood. While this operation is taking place, the water level will become gradually lowered, but the float 15 will remain in position to hold the stop valve in obstructing position. When the evaporation has progressed to a certain extent the feed pump is started, thus forcing sea water into the boiler and, the water level gradually rising, the float 15 will become elevated, and the stop valve 10 will be opened, thus causing the salt and sediment to become expelled from the bottom of the evaporator. This will gradually reduce the water level to normal, and the obstructing position of the stop valve will be resumed.

Having thus described the invention, what is claimed as new, is:—

In a device of the character described, a boiler casing, a tubular arm extending from the boiler near the upper end of the latter, a mud leg at the lower end of the boiler having a laterally extending discharge pipe, a stop valve upon said pipe, a rock shaft supported for oscillation in the tubular arm and having cranks at its inner and outer ends, a float connected with the crank at the inner end, a link connecting the crank at the outer end of the rock shaft with the stop valve which is thereby held in obstructing position when the float is in normal or lowered position, and a dome at the upper end of the boiler having an opening.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES MYKOLASHEK.

Witnesses:

LEO. M. WOOD,

CLAUDE HOUSE.