J. P. SINCLAIR.
Salt-Evaporator.

No. 225,080. Patented Mar. 2, 1880.

Fig. 1.

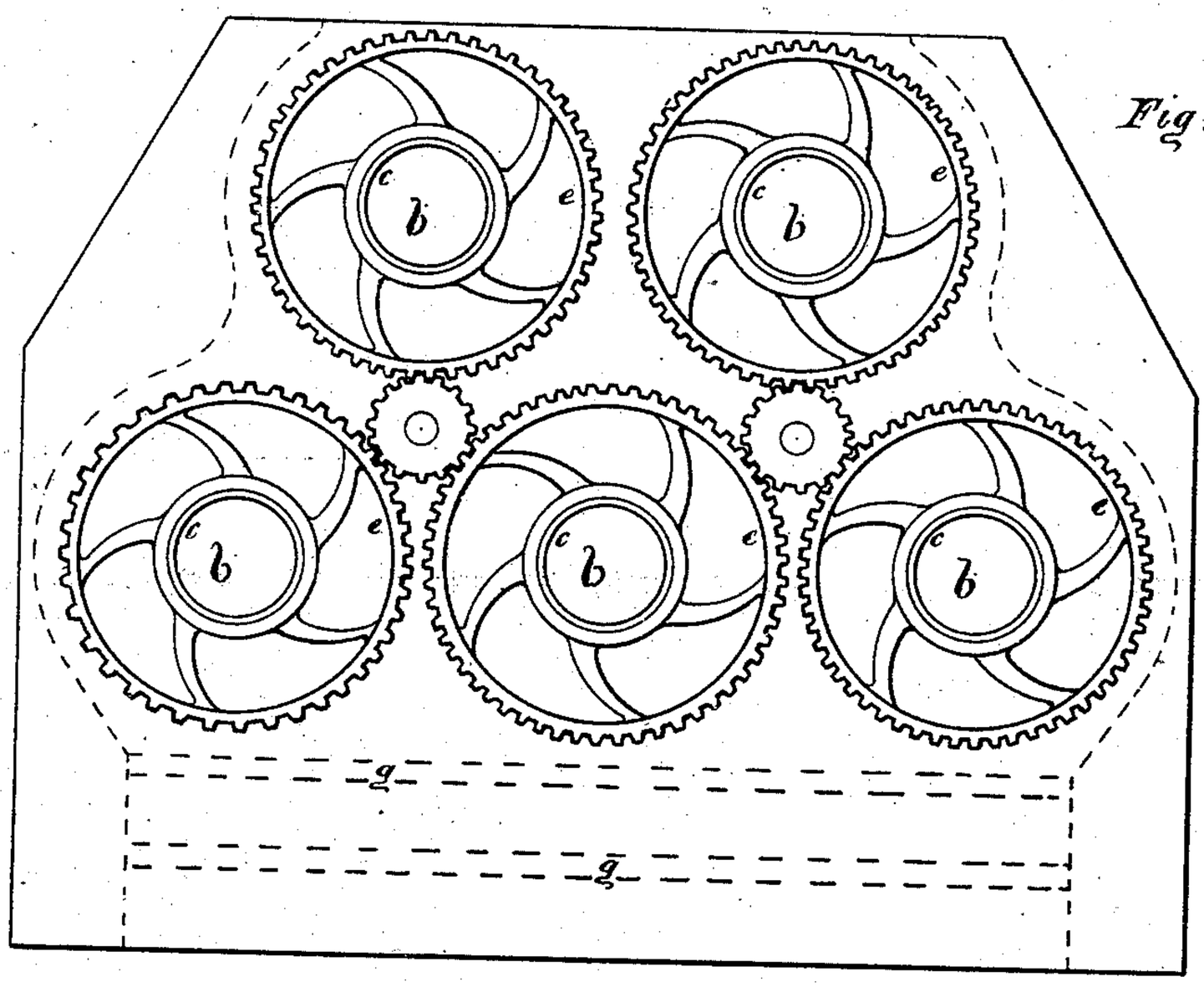
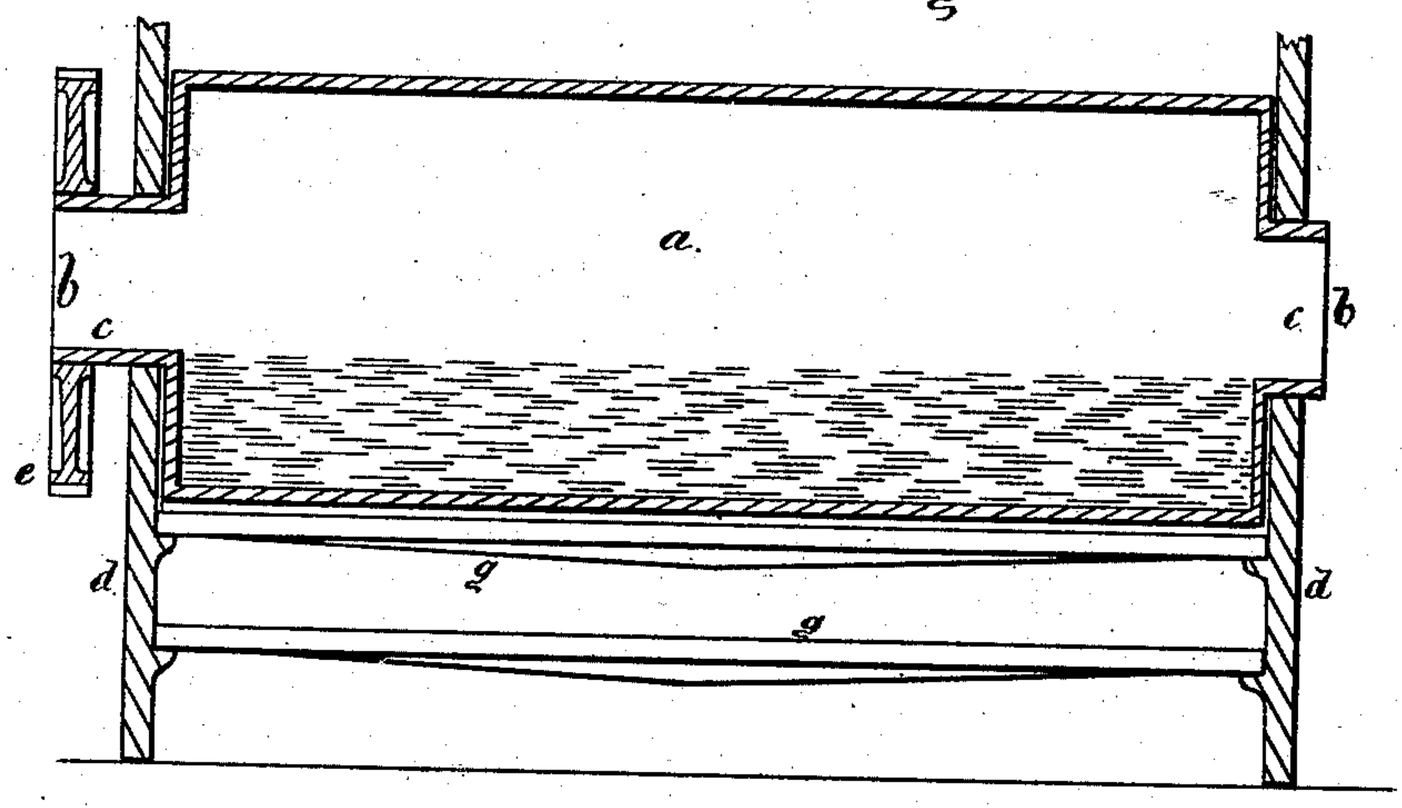


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES P. SINCLAIR, OF ELBRIDGE, NEW YORK.

SALT-EVAPORATOR.

SPECIFICATION forming part of Letters Patent No. 225,080, dated March 2, 1880.

Application filed February 9, 1878.

To all whom it may concern:

Be it known that I, JAMES P. SINCLAIR, of Elbridge, Onondaga county, New York, have invented certain Improvements in Salt-Evaporators, of which the following is a specification.

My improvement consists in the construction and operation of evaporators for the manufacture of salt and for analogous purposes, to cheapen the cost of fuel and facilitate and simplify the manufacture.

Heretofore there have been revolving cylinders for roasting purposes, heated over a fire, and a series of stationary cylinders have been set with revolving interior shafts, and revolving stills have been essayed having tight-packed joints and connecting-pipes leading centrally from its ends. A revolving evaporator has also been essayed, closed at one end and opening at the other, within a surrounding case, with an open feed-tube extending centrally through it; but in this apparatus there is no free escape for the vapors or access to the interior to freely remove its contents, none of which are my invention.

My invention consists of revolving cylindrical evaporators having open ends, as hereinafter described, placed in series in a furnace, with the open ends projecting through the walls so as to have the interior freely accessible, and with a free discharge of the steam evaporated, by which I am enabled to manufacture salt with facility and economy.

The following is a description of the construction and operation, referring to the accompanying drawings, in which Figure 1 is a front elevation of a series of evaporators; Fig. 2, longitudinal sectional elevation of an evaporator.

The same letters of reference are used in both figures.

My evaporator consists of a cylindrical evaporator or boiler, *a*, having a circular opening, *b*, in the center of each end, of about one-third the diameter of the cylinder. These openings are each surrounded by a collar, *c*, on which the cylinder is supported, and turns in proper bearings fixed in the walls *d* of the fire-chamber, through which the collars project. On one of the collars *c*, outside the wall *d*, a spur-wheel, *e*, or other equivalent device, is affixed, by which the cylinder can be turned.

Cylinders thus formed and placed in a horizontal position can be arranged in series in the fire-chamber, as shown in Fig. 1, or otherwise, so that the fire can act upon them with the most advantageous and economical effect on the whole exterior surface.

The series of boilers may be connected at one end by means of the spur-wheels *e* and intermediate pinions, as seen in Fig. 1, or by chains or other well-known devices, and turned by power applied at any convenient point.

Boilers thus constructed and arranged are filled up to the opening at *b* with the liquid to be evaporated, and slowly revolved while being acted on by the fire below on the grate *g*. The boiler is supplied with liquid through one of the openings *c*, and the evaporated steam there makes its exit.

The outside of the boiler is kept clean, by a scraper, of all accumulations of non-conducting matter along its whole surface from end to end.

Having thus fully described my invention, I claim—

1. The revolving cylindrical boilers *a*, constructed as herein described, having a large central opening in either head, surrounded by a collar on which the boiler revolves, combined with a fire-chamber for giving free access to the interior and permitting the vapor to readily pass off and the contents of the cylinder to be removed from the cylinder within the fire-chamber surrounded by the products of combustion, as herein specified.

2. The combination of a series of rotating boilers, as above described, with a fire-chamber having openings in the walls, through which the open collars on the boilers project, giving a free access to the interior, substantially as and for the purposes specified.

J. P. SINCLAIR.

Witnesses:

JAMES S. THORN,

J. J. GREENOUGH.