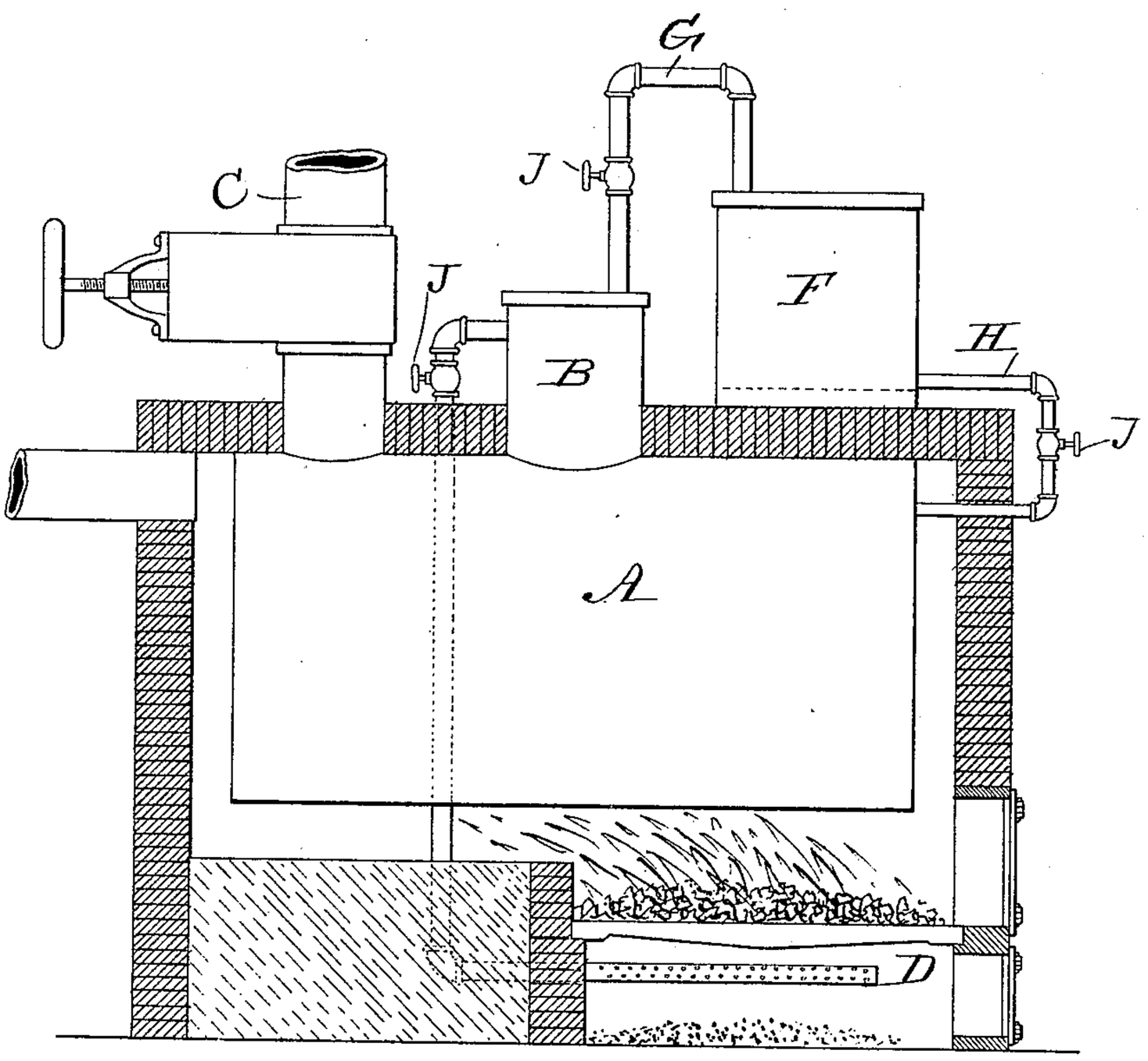
(No Model.)

M. VINCENT.

APPARATUS FOR BURNING SEWAGE.

No. 370,223. Patented Sept. 20, 1887.



Witnesses:
R. H. Orwig.
W. T. Anderson.

Inventor:
Michael Vincent,
By Thomas G. Orwig, Atty.

UNITED STATES PATENT OFFICE.

MICHAEL VINCENT, OF DES MOINES, IOWA.

APPARATUS FOR BURNING SEWAGE.

SPECIFICATION forming part of Letters Patent No. 370,223, dated September 20, 1887.

Application filed December 11, 1885. Serial No. 185,384. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL VINCENT, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Improvement in an Apparatus for Burning Sewage, of which the following is a specification.

My invention relates to means for practicing the method of consuming night-soil, offal, &c., set forth in the United States Letters Patent No. 329,303, issued to Andrew Engle, October 27, 1885. Heretofore the vapor generated in the retort in which the sewage was confined was conveyed direct from the retort or a dome on the retort to a superheater in the combustion-chamber of the furnace, which superheater had communication with the fire, and when the fire was started such vapor could not be confined in the retort or dome long enough to allow the fuel to become thoroughly ignited and the temperature raised to the degree of heat required to burn the vapor, and consequently the vapor was discharged into the combustion-chamber too soon and in too great quantity, and in place of promoting combustion it checked the same.

My object is to overcome this difficulty; and my invention consists in the combination of a condenser, a retort, and a superheater, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which the view represents a side elevation of my apparatus with the casing thereof in section.

A represents a retort in the form of a common horizontal boiler suspended in a furnace in a common way.

B is a dome on the top of the retort.

C represents the induction-tube, through which night-soil, &c., is conveyed into the retort, and which is provided with an air-tight valve that can be closed when the matter in the retort is subjected to furnace-heat. A tube extends from the dome and terminates in a burner, D, under the furnace-grate, and the tube and burner jointly serve as a superheater, because the tube is subjected to the furnace-heat, and the hot vapor is superheated therein before it is discharged from the burner and consumed. By means of a privy-seat and basin, connected with the top of the tube C, night-soil is deposited into the tube, and from thence admitted into the retort A through the valve at the bottom of the tube.

F is a condenser in the form of a steam-tight chamber that is larger than the dome, and located on top of the retort and furnace, where it will be enveloped by the natural atmosphere and not subjected to heat.

G is a tube connecting the retort and dome with the top of the condenser.

H is a tube connecting the bottom of the condenser with the retort. Each of the connecting-tubes is provided with a stop-valve, J.

In the practical operation of a sewage-burning apparatus thus provided with a condenser, I close the valve in the tube that connects the retort with the superheater, and also close the valve that connects the bottom of the retort with the condenser, and open the valve that connects the retort with the top of the condenser before starting a fire in the furnace. I then light the fuel on the grate and allow it to generate heat sufficient to generate vapor in the retort and to press the vapor into the condenser. The vapor that is first generated after the fire in the furnace has been started will be thus prevented from passing through a safety-valve or into the superheater and fire, as heretofore, and will be stored and condensed. When the fire has grown sufficiently in the furnace and raised the temperature to the degree required to superheat and burn the vapor, I close the valve in the tube that connects the retort with the top of the condenser and open the valve in the tube that connects the retort with the superheater and allow the vapor to flow into the superheater, from whence it is discharged into the furnace and burned to aid in the combustion of the fuel on the furnace-grate and to increase the heat required to produce vapor and inflammable gas and charcoal from the sewage confined in the retort. The overflow of surplus vapor that has heretofore occurred in starting the fire is thus transferred to the condenser in place of the superheater, and in a liquid form returned to the retort by opening the valve in the tube that connects the bottom of the condenser with the retort and allowing it to flow by force of gravity, or by opening the valve in the tube that connects

the top of the condenser with the retort and subjecting the liquid to steam-pressure. No vapor is thus allowed to escape prematurely and discharged into the furnace before there is a sufficient degree of heat to superheat and burn the vapor, and the trouble and annoyances incident to starting the furnace-fire and the offensive odors resulting from unconsumed vapor effectually prevented by means of my improvement in the art of destroying and utilizing sewage.

The end of the retort is provided with a hand-hole in a common way, through which the residiuum is removed from the retort after all the volatile matter has been expelled.

I am aware that condensers have been combined with retorts for various purposes; but my combination of a condenser with a retort and a superheater and burner in a furnace for the purpose of regulating the combustion of the vapor in the furnace is novel and greatly advantageous.

I claim as my invention—

1. The combination of the condenser, the air-tight retort having a dome, a tube extending from the top of the condenser to the top of the dome, a valve in said tube, a tube extending from the bottom of the condenser to the retort, a tube extending from the dome and terminating in a burner, and a valve in said tubes, for the purposes stated.

2. The combination of the condenser F, the retort A, having a dome, B, tubes G and H, valves J in said tubes, a superheater and burner, D, connected with the dome by means of a tube, a valve in said connecting-tube, and a furnace-grate, to operate in the manner set forth.

MICHAEL VINCENT.

Witnesses:
R. H. ORWIG,
THOMAS G. ORWIG.