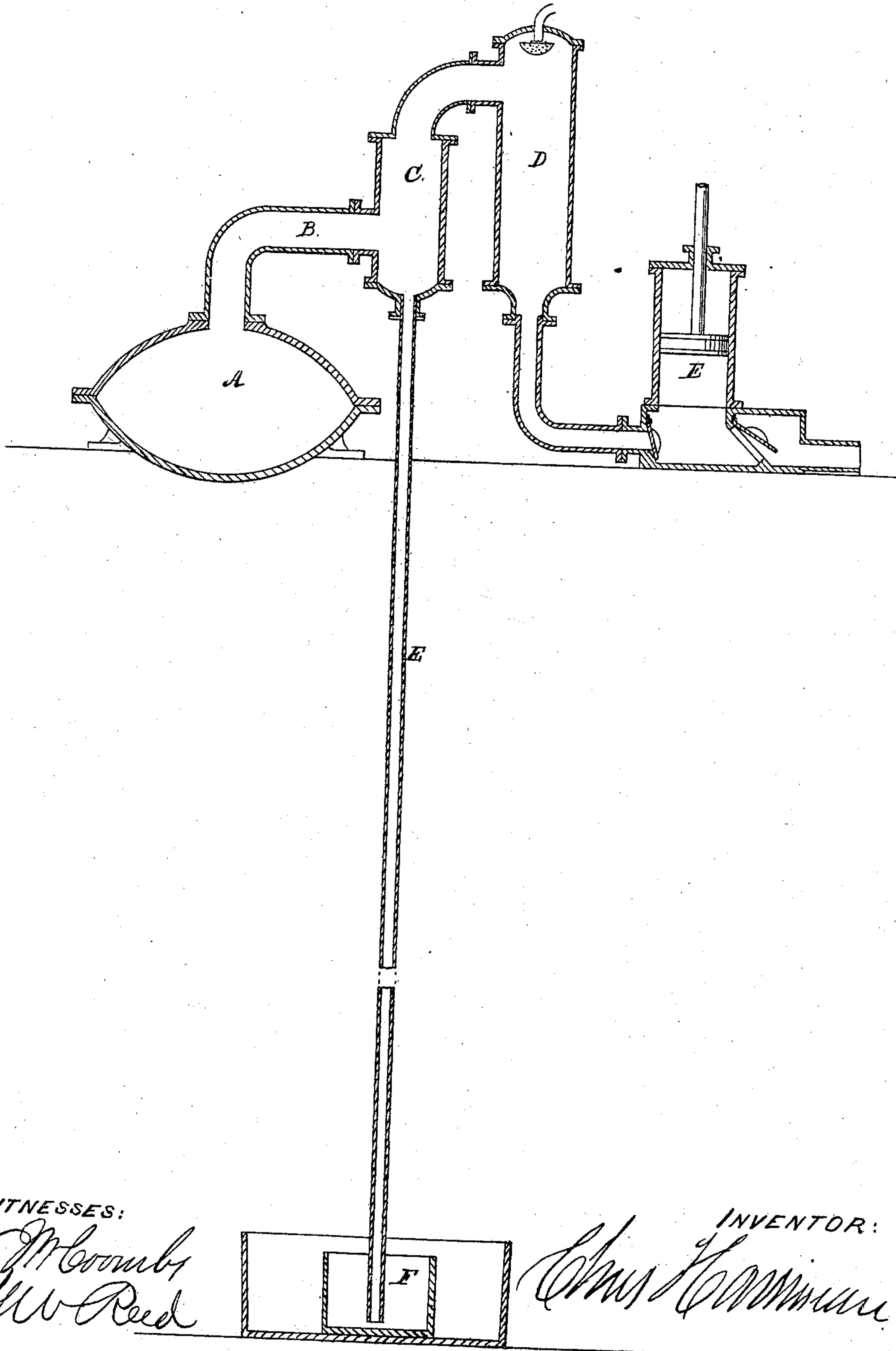


C. HARRIMAN.
VACUUM PAN SUGAR BOILING APPARATUS.

No. 66,080.

Patented June 25, 1867.



WITNESSES:

McCombs
W Reed

INVENTOR:

Chas Harriman

United States Patent Office.

CHARLES HARRIMAN, OF NEW YORK, N. Y.

Letters Patent No. 66,080, dated June 25, 1867.

IMPROVED VACUUM-PAN SUGAR-BOILING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES HARRIMAN, of the city, county, and State of New York, have invented a certain new and useful improvement in Vacuum-Pan Sugar-Boiling Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms part of this specification, and which represents a sectional elevation of a vacuum-pan sugar-boiling apparatus constructed according to this improvement.

The nature of my invention consists in the application to the receiving-chamber for the aqueous vapor from the vacuum-pan, of a pipe or tube containing liquid extending to a depth exceeding the height to which a column of water would be raised by atmospheric pressure as opposed to the vacuum of the pan, and constituting what may be termed a Torricellian tube for the purpose of catching saccharine matter carried up by the vapor without destroying or interfering with the vacuum.

Referring to the accompanying drawing, A is the ordinary or any other suitable vacuum-pan in which the sugar to be treated is placed, and which may be heated in the usual manner. B is the pipe which serves to establish communication between the vacuum-pan and air-pump, and also to pass off the aqueous vapor into the ordinary vertical receiver or chamber C, from whence it passes and is drawn by the pump into a condenser, D, receiving a spray supply of water at its top, and connecting at its bottom with a pump, E, that in addition to effecting the vacuum in the pan A expels the condensed vapor into the sewer or waste. This, so far, is an ordinary construction or combination of parts. As it is well known, however, that in spite of all preventives to the contrary much saccharine matter or sugar is by such an apparatus passed over with the vapor, and in the condensation which takes place expelled by the pump into the sewer or waste, I apply, in remedy of this defect, an attachment which shall not merely catch or concentrate the saccharine matter escaping from the vacuum-pan but give the overseer, or those having charge of the apparatus, an opportunity of detecting such overflow from the vacuum-pan, and correcting, so far as practicable, the escape of sugar therefrom. This is or may be accomplished by attaching to the bottom of the receiver C a Torricellian tube or pipe, E, of say somewhat over thirty-three feet in height, and supplied with water or liquid by any suitable means from a vessel, F, below, which may, if desired, stand in an outer vessel or tub. These vessels may be arranged on a lower story of the building, while the vacuum-pan is situated on an upper one. From this description it will be apparent that saccharine matter carried up by the aqueous vapor into the receiver C will, by its gravity, be restrained from passing over into the condenser D, and, falling, be received by the pipe E, and settle in the tub or vessel F, and from thence it may be passed over into the surrounding tub or vessel. Not only, however, does such an attachment serve to intercept or collect saccharine matter which otherwise would be passed off to the waste with the condensed vapor, but it also affords a ready means for the overseer, or those having charge of the apparatus, to detect, by taste of the liquid in the vessel F, or its outer tub, the extent of sugar escape from the vacuum-pan, and in case of the same being excessive, and arising from defect in the apparatus, to call attention to the fact, and give directions for removal of the cause. By this means may much sugar be saved that is now wasted or passed off into the sewer.

What I here claim as my invention, and desire to secure by Letters Patent, is—

The combination with an apparatus, substantially of the character specified, of a Torricellian pipe or tube, E, connecting the receiver C with a vessel or vessels below, essentially as and for the purpose herein set forth.

CHAS. HARRIMAN.

Witnesses:

J. W. COOMBS,

G. W. REED.