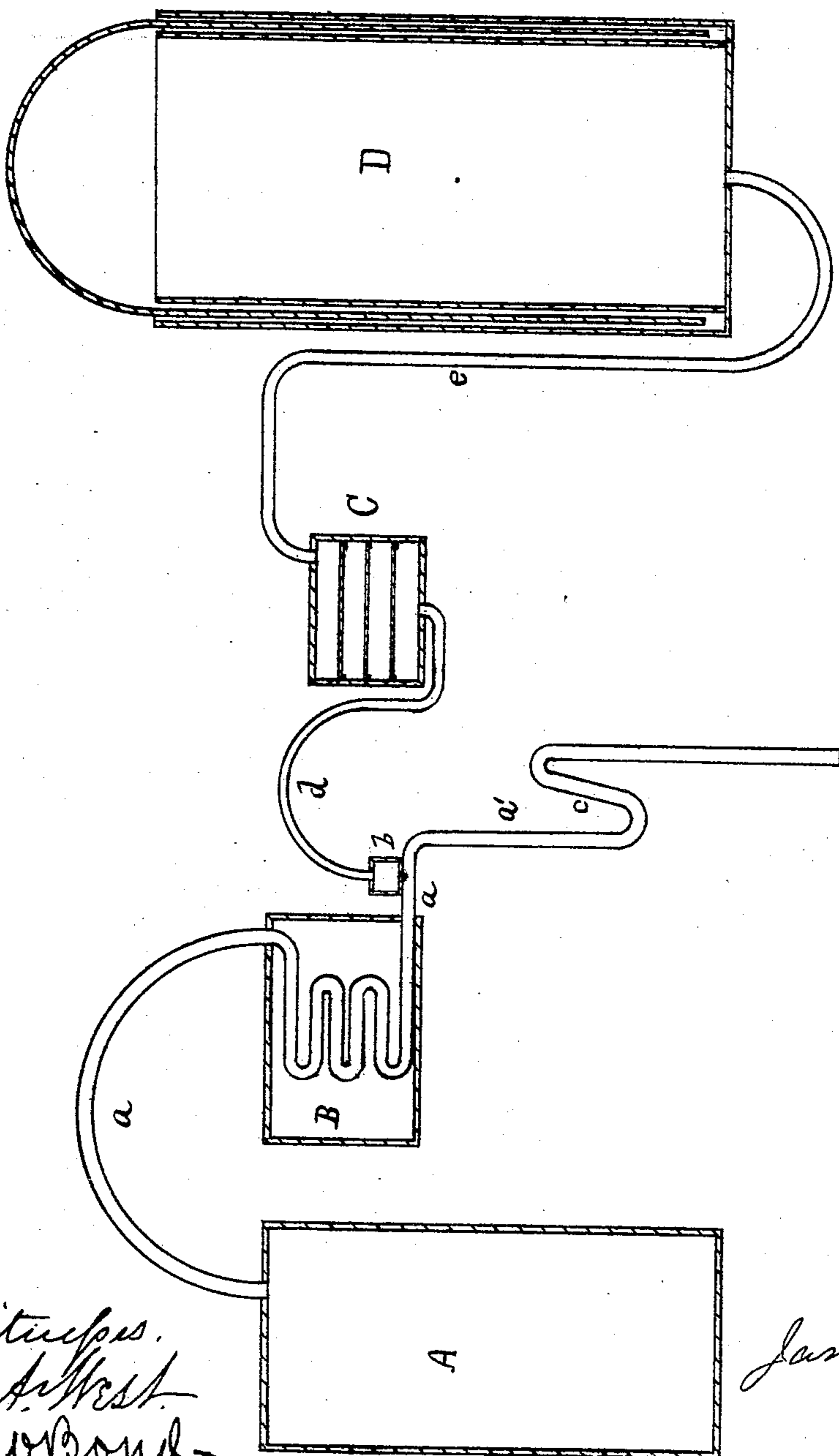


J. TURNER.

Treating Offal and Manufacturing Gas.

No. 140,391.

Patented July 1, 1873.



Witnesses.
E. A. West.
Geo. Bond-

James Turner

Inventor

UNITED STATES PATENT OFFICE.

JAMES TURNER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN TREATING OFFAL AND MANUFACTURING GAS.

Specification forming part of Letters Patent No. **140,391**, dated July 1, 1873; application filed December 27, 1872.

To all whom it may concern:

Be it known that I, JAMES TURNER, of Chicago, Illinois, have invented or discovered a new and useful mode of disposing of or suppressing the offensive odors which arise from rendering animal substances, at the same time utilizing the gases which are formed by the rendering process; and the following is a full, clear, and exact description of my improvement or discovery, reference being had to the accompanying drawing, which represents one form of devices which may be used in accomplishing the desired result in connection with an ordinary steam-rendering tank.

I accomplish the objects of my invention by separating the gases formed during the process of rendering animal substances by steam or otherwise, from the moisture and other matters; by purifying such gases; and by carbureting them, so that they will be suitable for illuminating purposes.

In the drawings, the several parts, except the tubes, are shown in section.

A represents a steam-rendering tank, about twelve feet deep and six feet in diameter, constructed in the usual manner. B is a condenser containing water, and may be about four feet deep and six feet square. C is a purifier which may be about three feet deep and four feet square. D is a gasometer, which is to be of any suitable size, depending on the quantity of gas to be stored therein.

In the construction of these parts there is nothing novel.

From the top of the tank A a tube, *a*, passes through the condenser B, being coiled therein. After leaving the condenser this tube *a* may be carried down to a sewer, and may be provided with a trap, *c*.

The moisture, gases, and other volatile matters which are formed while the substances in A are being rendered, pass into the tube *a*, and by the pressure in the tank are forced through or into the coil in the condenser, and there the moisture is condensed and passes off through the tube *a'*; but the gas, the moisture having been separated therefrom, will pass into the tube *d*, and be conducted into the purifier C, and from this purifier, through the pipe or tube *d*, will be conveyed into the gasometer, in which should be constantly stored a quantity of gasoline or other suitable carbureting material; and the gas passing up through the gasoline becomes carbu-

reted and suitable for illuminating purposes; and if not wanted for this purpose it can be conveyed to the furnace and consumed.

Lime or other suitable material is to be used in the purifier.

For the purpose of preventing moisture from being forced into and through the tube *d*, I use a small close chamber, *b*, into which the gas first passes from *a*, the tube *d* entering at the top of *b*. If the tube *d* were large this would not be necessary.

For ordinary uses the tube *a* may be an inch and a half or two inches in diameter; and *d* may be from one inch to one inch and a half in diameter, but larger sizes may be used. The condenser may be open at the top.

The gas should be thoroughly distributed through the gasoline; and to effect this may be introduced through a number of small perforations.

The gases having been separated from the moisture can be burned without being carbureted; but this requires a high temperature, and in this condition they are valueless for illuminating purposes; hence it is far better to complete the process as described, and utilize the gases more perfectly.

The water of condensation is not entirely odorless, but nearly so, and having been cooled, will not be offensive.

Nearly all of the odors are stored up in the gases, and when these escape into the air they are carried great distances and the odors are very offensive.

Heretofore no practicable method has been devised for suppressing these odors, and how to do this has been a problem of great importance.

By my process these odors are suppressed and destroyed, no odor arising from the combustion; at the same time the gases which have heretofore been wasted, and are large in quantity, are rendered valuable.

What I claim as new is as follows:

The mode herein described of suppressing the offensive odors arising from rendering animal substances and utilizing the gases therefrom, by separating the gases from the moisture and carbureting the same, substantially as specified.

Witnesses:

JAMES TURNER.

E. A. WEST,
O. W. BOND.