

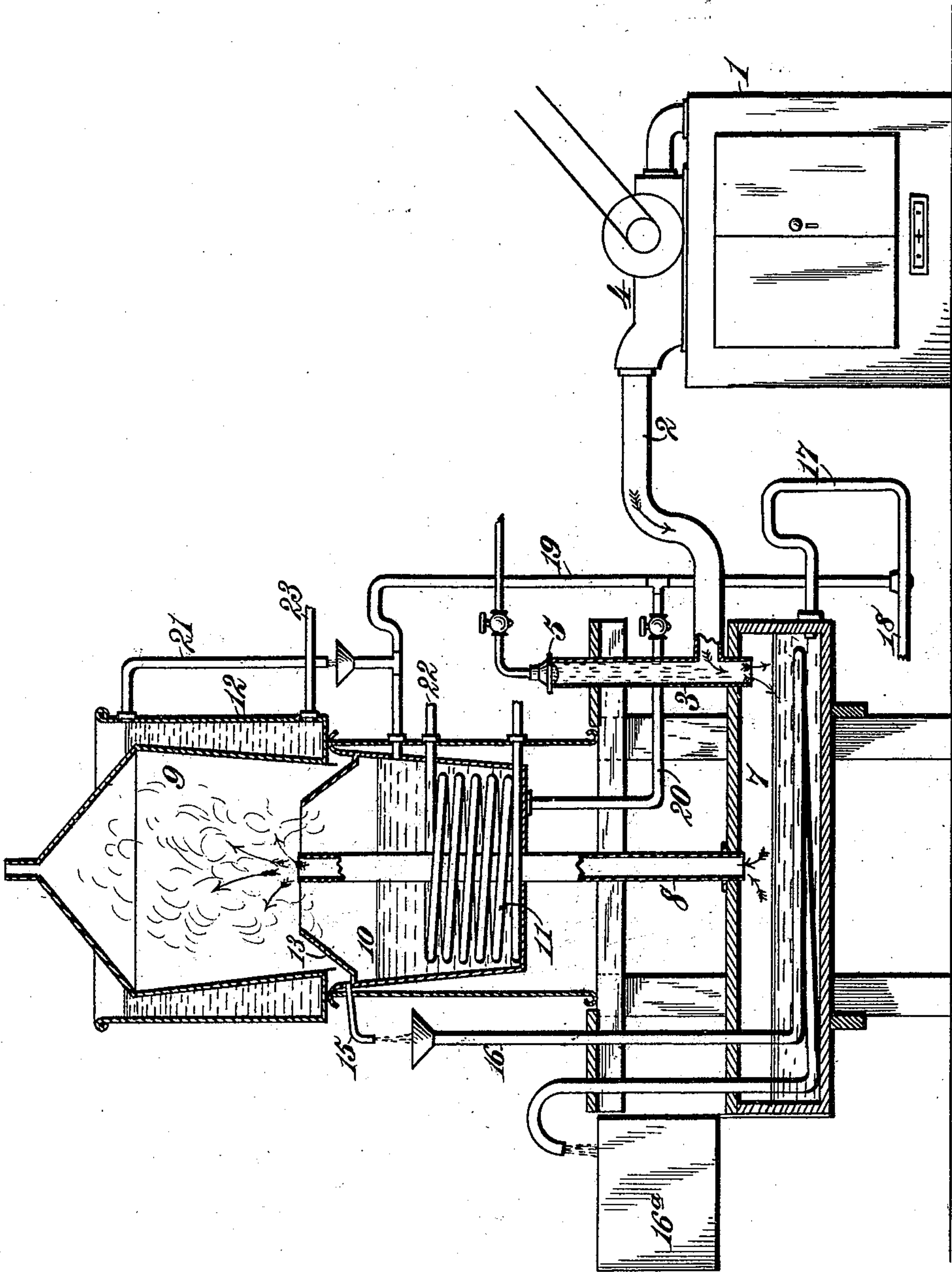
(No Model.)

A. J. CHASE.

APPARATUS FOR PRODUCING A LIQUID PRODUCT OF SMOKE.

No. 511,288.

Patented Dec. 19, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

ANDREW J. CHASE, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR PRODUCING A LIQUID PRODUCT OF SMOKE.

SPECIFICATION forming part of Letters Patent No. 511,288, dated December 19, 1893.

Application filed November 11, 1892. Serial No. 451,634. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. CHASE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Apparatus for Producing a Liquid Product of Smoke, of which the following is a specification.

My invention relates to apparatus for producing a liquid product of smoke, adapted for use in preserving and medicinal purposes and has for its object to provide a novel and useful apparatus of the character described, in which the operation is continuous and which will produce a pure liquid product free from all solid particles.

To this end my said invention consists in the novel construction and combination of parts hereinafter described and claimed, reference being made to the accompanying drawing, in which the figure is a vertical sectional view of an apparatus constructed in accordance with my invention.

In the said drawing, 1 indicates a smoke chamber or reservoir in which the smoke to be used in the production of the liquid product is generated by the slow combustion of sugar maple wood, or bark, herbs, or other suitable combustible material. Communicating at one end with said chamber 1, is a conduit or pipe 2, the other end of which enters a water-spray pipe 3, near the lower end thereof. The smoke to be treated is conveyed to the water-spray pipe 3, by means of a fan or blower or other force 4, located in operative relation to the conduit 2, and when it enters said pipe 3, it is thoroughly sprayed with cold water issuing through a spray-nozzle 5, located at the upper extremity of the pipe 3, and which is supplied by a cold water pipe communicating therewith, and any solid particles or impurities which may be contained in the smoke are precipitated into a body of water in a box-like tank 7, into which the lower end of the spray-pipe 3, enters. The pure smoke, freed from all impurities, rises above the surface of the said body of water, passes up through a pipe or conduit 8, and issues into the vapor dome or chamber 9, of a vaporizing kettle 10. Within this kettle 10, is arranged a steam coil 11, supplied from a source of steam outside the kettle. Within

this kettle is contained a body of warm water in which the steam coil is submerged. Surrounding the vapor dome or chamber 9, is a cold water containing receptacle or jacket 12. The pure smoke, freed from all impurities, issuing from the conduit or pipe 8, is thoroughly mixed with the vapor generated in the dome or chamber 9, and the vapor now impregnated with smoke is liquefied by the cold water in the jacket 12, and deposited upon inclined wings or ledges 13 extending interiorly from the kettle 10. The heat and volatile gases escape through an outlet 14 in the top of the dome.

The liquid product of the smoke and the vapor of water, is conveyed from the wings or ledges 13, by means of a spout 15 to a pipe 16, which descends to and is coiled in the cold water tank 7, whereby the product is cooled, and it is then delivered by said pipe into a receiving tank 16^a, from whence it may be taken and stored in bottles or other portable receivers, or may be stored in any other suitable or desirable manner.

The numeral 17 designates a waste-pipe leading from the water-tank 7, to a drainage pipe 18, and 19 represents an overflow pipe from the vaporizing kettle 10, conducting surplus water to said drainage pipe 18. A sediment pipe 20 is provided leading from the bottom of the kettle 10, to the overflow pipe 19, whence the sediment is conducted to the aforesaid drainage pipe 18. An overflow pipe 21 is also provided from the cold-water jacket 12, and this pipe may lead to the overflow pipe 19 or to the drainage pipe 18, as may be desired. Warm water is fed to the vaporizing kettle 10 through a feed pipe 21 and cold water is fed to the jacket 12 by a feed pipe 23, as shown in the drawing.

The resultant of the operation of my improved apparatus as herein described is a liquid product of smoke, free from all solid particles and impurities. This product with a little added salt is most efficacious for preserving meats for a long time, while it adds a delicious flavor to such meats, making them more valuable than ordinary pickled meats. Meats immersed for a few days in this liquid product become thoroughly impregnated with a delicate smoke flavor, similar to that of the best sugar-cured hams. Beef and mutton,

also, when immersed in the liquid product have imparted to them this delicate smoke flavor and rendered more palatable as a food.

The product described is free from all microbic life or diseased germs, and is valuable as a preservative because thereof.

As a medicinal agent the product aids digestion and is healing and cleansing. When applied to a wound it has a cleansing and healing effect like unto powdered charcoal.

Having thus described my invention, what I claim is—

1. In an apparatus for producing a distillate of smoke, the combination with a chamber for the smoke, a conduit leading from said chamber, a device for washing said smoke, a vaporizing kettle provided with a vapor dome, a conduit for conducting the material from the washing device to the vapor dome, and a condenser surrounding said vapor dome, substantially as described.

2. In an apparatus for producing a distillate of smoke, the combination with a chamber for the smoke, a conduit leading from said chamber, a device for washing said smoke, a vaporizing kettle having inwardly extending wings and provided with a vapor dome, a conduit for conducting the washed smoke to the vapor dome, a condenser surrounding said vapor dome, a receptacle for receiving the precipitate of the smoke and vapor, and means for conducting the same from the inwardly extending wings of the vaporizing kettle to said receiver, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ANDREW J. CHASE.

Witnesses:

JOSEPH GODDARD,
EBENEZER STORRS.