(No Model.)

G. W. AUSTIN.

STEAMER.

No. 452,901. Patented May 26, 1891.

Fig. 1

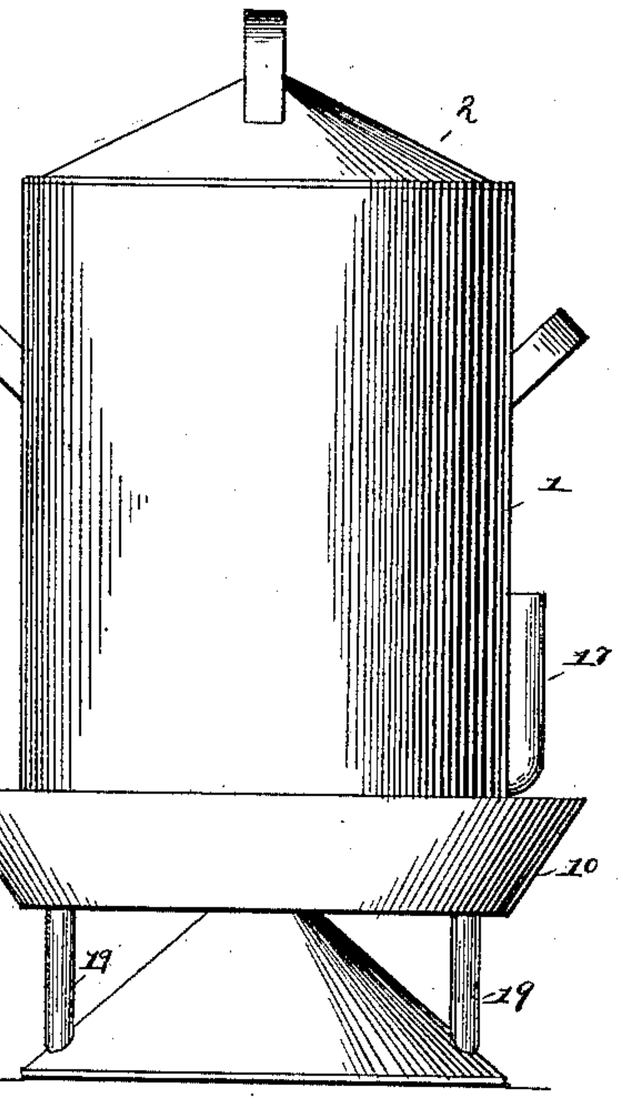


Fig. 2

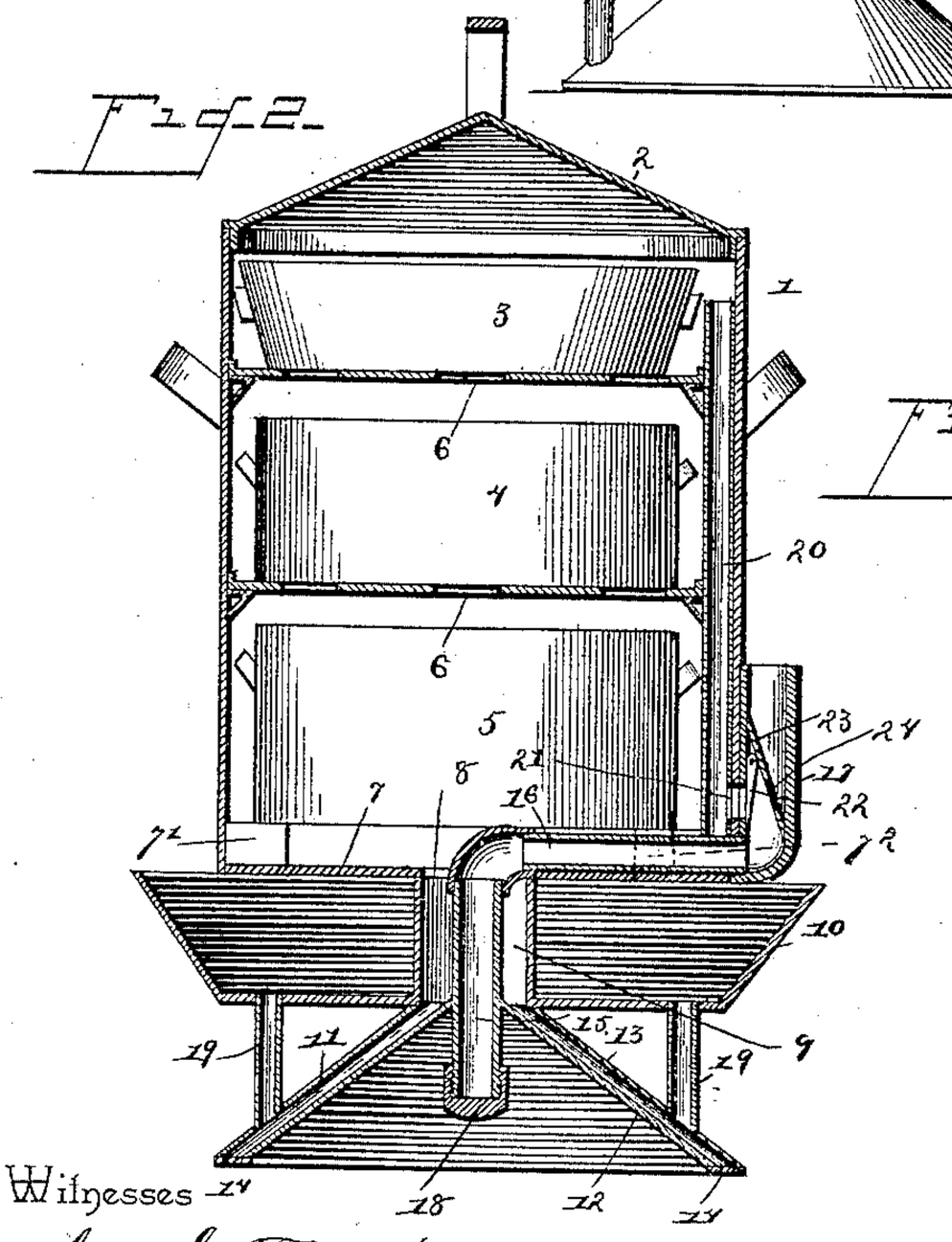
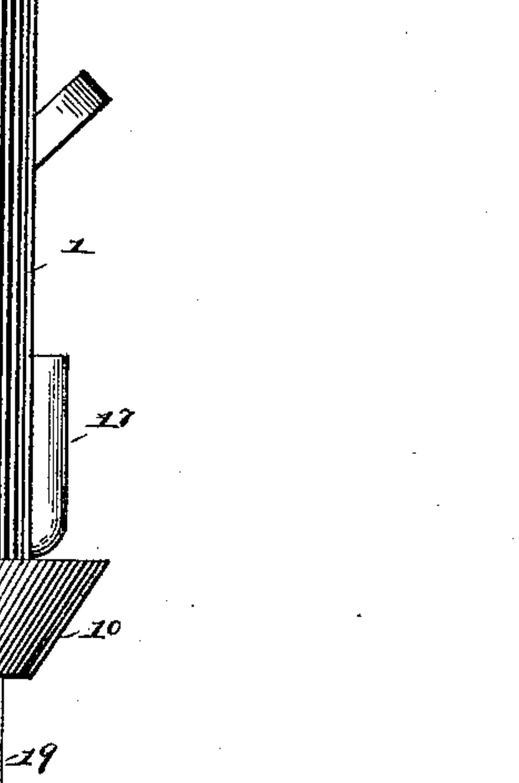


Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE W. AUSTIN, OF MITCHELL, SOUTH DAKOTA.

STEAMER.

SPECIFICATION forming part of Letters Patent No. 452,901, dated May 26, 1891.

Application filed August 4, 1890. Serial No. 360,979. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. AUSTIN, a citizen of the United States, residing at Mitchell, in the county of Davison and State of South Dakota, have invented a new and useful Steamer, of which the following is a specification.

The invention relates to improvements in steamers.

The object of the present invention is to provide a simple and convenient steamer adapted to be used in connection with an ordinary cooking-stove or gasoline or gas burners.

The invention consists of the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a side elevation of a steamer constructed in accordance with this invention. Fig. 2 is a central vertical sectional view. Fig. 3 is a detail sectional view of the valve.

Referring to the accompanying drawings, 1 designates a cylindrical boiler provided at its upper end with a cover 2 and adapted to contain cooking-vessels 3, 4 and 5, which are supported within the boiler by removable foraminous partitions 6, and the bottom 7 of the boiler is provided with a central opening 8, which registers with the central vertical opening 9 of a circular water-pan 10, arranged beneath the boiler to supply the latter with steam. The lowermost vessel 5 is placed upon suitable supports $7'$ and 7^2, arranged on the bottom at opposite sides of the boiler. The central cylindrical wall of the circular water-pan 10 forms a depending-tube, which has its upper end communicating with the boiler and its lower end communicating with a narrow conical space or water-chamber 11, formed by two conical sheet-metal walls 12 and 13, having their lower ends connected by a ring 14, which closes the water-chamber 11, and the conical walls 12 and 13 form the bottom of the steamer.

Passing through the apex of the conical bottom is a flue consisting of a vertical portion 15 and a horizontal portion 16, and the vertical portion extends from within a short distance of the conical body up through the tubular opening 9 to the boiler, and the horizontal portion 16 extends along the bottom of the boiler and through one side thereof and communicates with the lower end of an escape-pipe 17. The lower end of the flue is threaded and is closed by a cap 18 when the steamer is used in connection with an ordinary cooking-stove, but when a gas or gasoline burner is employed is removed and the lower end of the flue is open and the products of combustion and gases pass up through the flue and out through the escape-pipe 17.

By employing a conical bottom and forming a narrow water chamber 11 the water is subjected to a large amount of heating-surface and is rapidly converted into steam which passes up the central vertical opening into the boiler, and the gases given off by the flame will accumulate at the upper portion of the conical bottom and will prevent to a great extent the bottom being burned by the flame, and the water in the chamber will prevent any serious injury to the bottom.

The water from the open pan passes to the water-chamber 11 through vertical tubes 19, and as the pan is open its contents can be easily examined and the pan can be refilled from time to time, as required, and there is no danger of there not being sufficient water for the boiler. The steam enters the boiler through the central opening 8, and should too great an amount accumulate in the boiler a vertical tube 20 will provide an outlet, which tube is arranged adjacent to one side of the boiler and has its upper end open and its lower end provided with an opening 21, communicating with the escape-pipe 17, and the opening 21 is normally closed by a hinged valve 22, which operates automatically. The escape-pipe 17 is provided with an inclined partition 23, which has an opening 24 arranged opposite the opening 21 of the overflow tube or pipe, and when the pressure of the steam in the boiler becomes excessive the hinged valve will be swung aside and will close the opening 24 of the inclined partition and prevent the steam escaping through the upper end of the pipe 17, but will provide a passage through the flue 16, and the steam will pass down the vertical portion 15 and deflect the flame and decrease the heat on the conical bottom. After the pressure has been

decreased within the boiler the valve 22 will drop and leave the flue and escape-pipe open for the passage of the products of combustion. It will thus be seen that the steam acts automatically to regulate the heat and maintain a uniform pressure within the boiler.

What I claim is—

1. A steamer comprising the boiler having its bottom provided with an opening, the water-pan arranged beneath the boiler, the conical bottom provided with a conical water-chamber communicating with the opening of the boiler and with the water-pan, and the flue passing through the conical bottom and the water-pan and communicating with the outside, substantially as described.

2. A steamer comprising the boiler provided with a central opening in its bottom, the circular water-pan arranged beneath the boiler and provided with a central tubular wall arranged beneath the central opening of the boiler, the conical bottom provided with a conical water-chamber communicating with the tubular portion of the water-pan, the water-tubes 19, extending from the water-pan to the water-chamber, and the flue passing the conical bottom and the water-pan and communicating with the outside, substantially as described.

3. A steamer comprising the boiler having its bottom provided with an opening, the water-pan arranged beneath the boiler, the conical bottom having the conical water-chamber communicating with the boiler and the water-tank, and the flue having its lower end open and passing through the apex of the conical bottom and extending through the vertical opening of the water-pan into the boiler and through one side thereof, substantially as described.

4. A steamer comprising the boiler, the water-pan, the bottom provided with a water-chamber, the escape-pipe, the overflow-pipe arranged within the boiler and communicating at its lower end with the escape-pipe, the flue having its lower end open and comprising the vertical portion extending through the conical portion and the vertical opening of the water-pan and the horizontal portion having its outer end communicating with the escape-pipe, and the hinged valve adapted to close the escape-pipe and provide a communication between the overflow-pipe and the flue, substantially as described.

5. In a steamer, the combination of the boiler, the conical bottom, the escape-pipe provided with the inclined partition 23, having the opening 24, the overflow-pipe arranged withinthe boiler and provided at its lower end with an outlet-opening communicating with the escape-pipe, the flue provided with an open lower end and opening into the lower end of the escape-pipe, and the hinged valve arranged between the inclined partition and the overflow-pipe and operating substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE W. AUSTIN.

Witnesses:
J. F. KIMBALL,
J. A. BROWN.