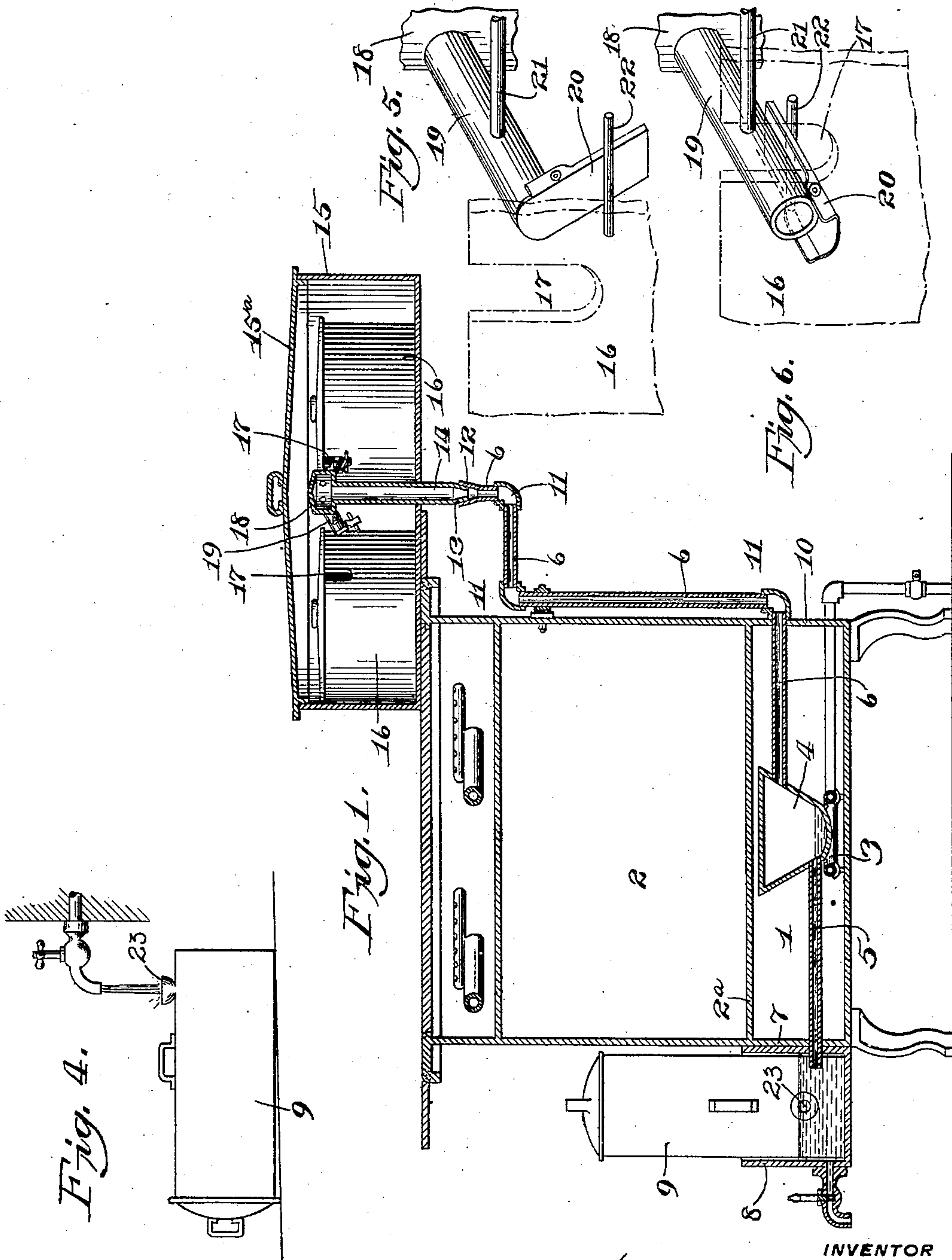


H. A. WINTERKNIGHT.  
COOKING APPARATUS.  
APPLICATION FILED DEC. 8, 1908.

936,262.

Patented Oct. 5, 1909.  
2 SHEETS—SHEET 1.



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Fig. 3.

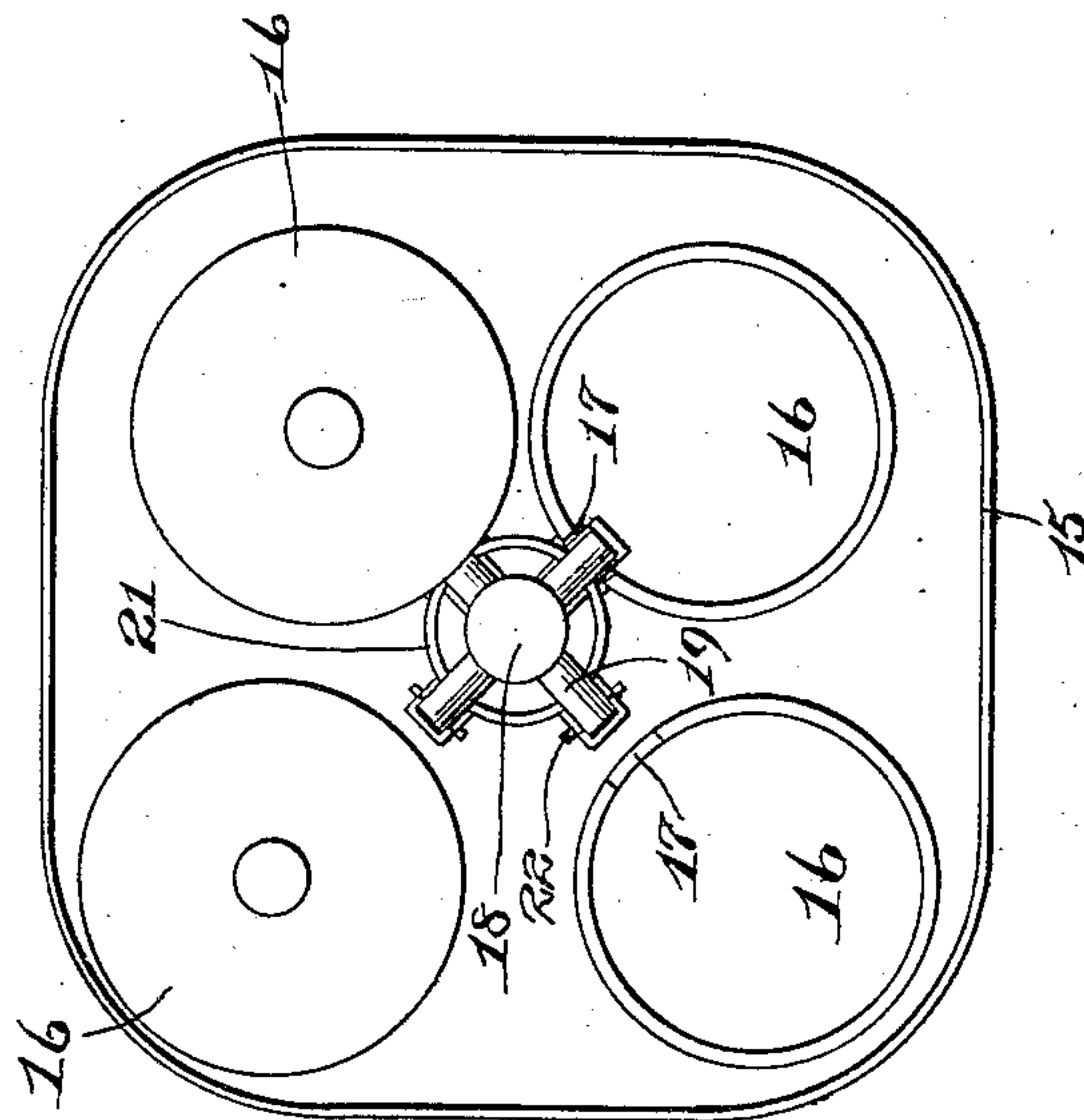
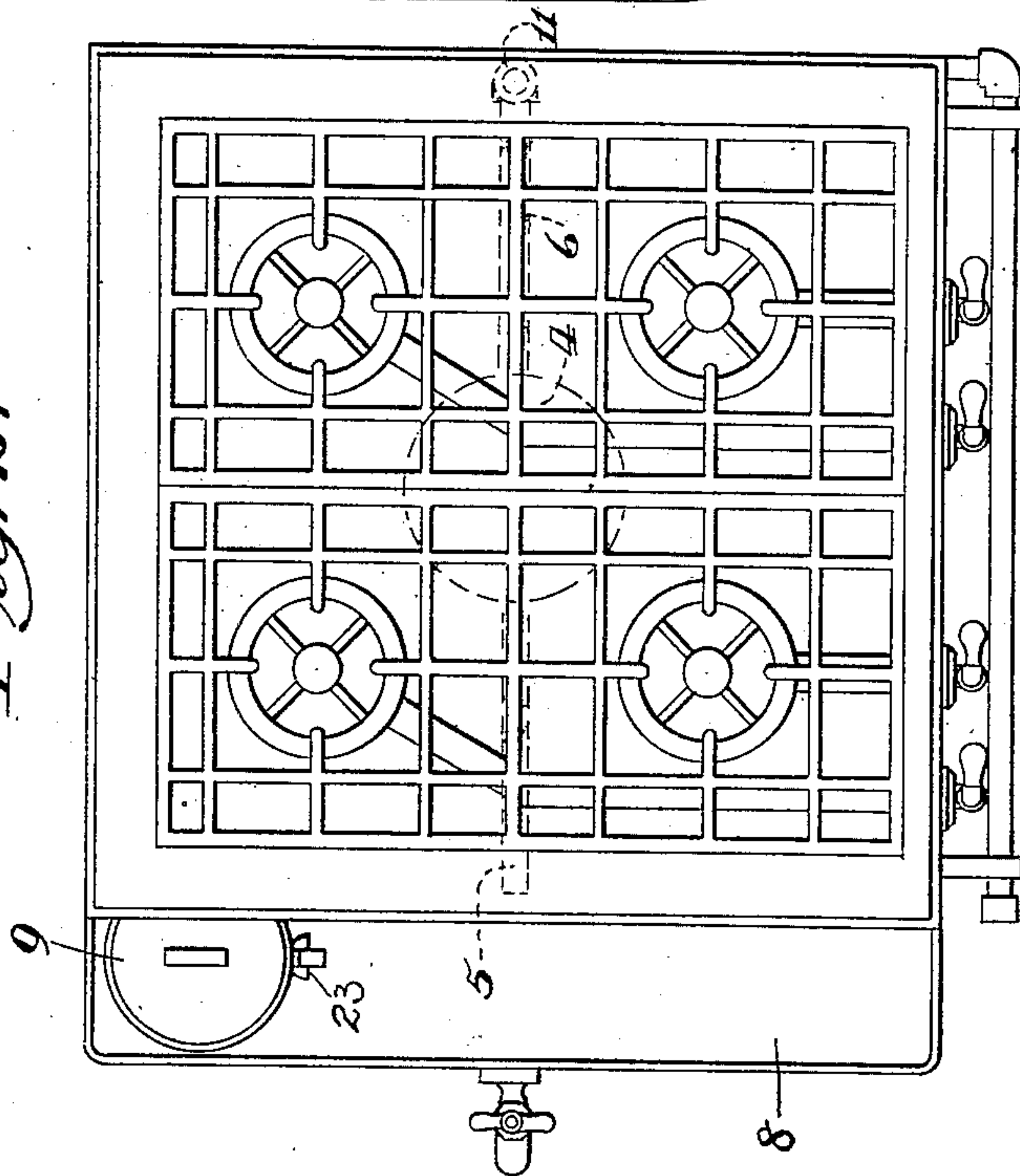


Fig. 2.



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# UNITED STATES PATENT OFFICE.

HENRY A. WINTERKNIGHT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JAMES M. CORNYN, OF PHILADELPHIA, PENNSYLVANIA.

## COOKING APPARATUS.

936,262.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed December 8, 1908. Serial No. 466,449.

*To all whom it may concern:*

Be it known that I, HENRY A. WINTERKNIGHT, a citizen of the United States, residing at Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Cooking Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates generally to cooking apparatus and specifically to gas and oil ranges, and has for its object to supplement such devices with means to cook by steam simultaneous with or at least supplementary to the usual flame heating means in such ranges.

To this end my improvements in such cook stoves comprise two elements added thereto, and operatively combined therewith, namely means forming a fixed part of the range, to supply steam, and a steaming chamber removably and replaceably mounted on the range, containing cooking pans, into which steam is discharged, and having automatically operating steam valves governing the same, as hereinafter described, the feature of novelty being pointed out in the appended claims.

In the accompanying drawings illustrating my invention, Figure 1 is a central vertical sectional view of a gas range embodying my invention showing all the elements in the complete combination. Figs. 2 and 3 are plan views, of the range proper and the steaming chamber, detached from each other. Fig. 4 is an elevation of the detachable part of the water supplying means; and Figs. 5 and 6 are views, detached, of the automatic steam valve governing the steam ports in the steaming chamber.

Referring now to said drawings, the gas range shown in plan view in Fig. 2, and in section in the lefthand portion of Fig. 1, is a well known type of such ranges providing a heating chamber and oven 2; though in some examples of this type a plate 2<sup>a</sup> is interposed to partition the oven proper from the direct action of the gas flame. In any example of such type of range I mount above the basal burners 3 a boiler 4 with communicating water tube 5 and steam tube 6. The former leads, through the side wall 7 of the range to an open-topped water-reservoir 8. The latter is shown in Fig. 2 as a trough

extending along and about the length of one side wall of the range, and mounted fixedly thereon. The trough, and through it the boiler, is kept supplied with water as fast as consumed, and in a novel way in such devices, by means of a removable water can 9 (see also Fig. 1) as will be hereinafter described.

Proceeding from the boiler 4 on the opposite side to the water supply pipe 5, is the steam tube 6, which extends through the opposite side wall 10 of the range and thence by means of a coupling 11, extends upward in line with said side wall of the range to near the top thereof, terminating in a flaring conical coupling piece 12, adapted to receive an opposite coupling member 13 on the lower end of a short pipe 14, fixedly mounted in and projecting through the basal wall of a steaming chamber 15. This steaming chamber is shown in plan view in Fig. 3, and in vertical section in Fig. 1 wherein it is illustrated in operative position, partly on the top surface of the range and partly extending over the edge thereof, and with the inlet end of its steam pipe 14 connected, by the coinciding coupling members 13 and 12, with the fixed upright steam pipe 6. It is thereby not only removably supported on the range, but is adequately supported in operative communication with the boiler 4.

The steaming chamber is provided with a removable lid 15<sup>a</sup> and is shaped to contain a plurality of removable pans 16 adapted to cook by steam. The drawing shows 4 of these pans, provided with lids, and they are of common construction save for the narrow slot 17 in the periphery, proceeding from the top edge thereof. The steam pipe 14 terminates at its upper end in an enlarged head 18 operating as a central discharging reservoir, from which proceeds a plurality (shown 4 in number) of short discharge pipes 19 inclined downward for ready insertion in the pans 16 through the slotted openings 17 therein. The discharge end of each of these steam pipes 19 is provided with a novel form of valve 20 shown in Fig. 1 and in detached elevation in Fig. 5 wherein the valve is closed, and in Fig. 6 wherein it is open. The relation of the valve, in the two positions, and relatively to the pans 16 is shown in Fig. 3; and it is to be observed that the valve is operated by the peripheral wall of the pan, in moving



the latter to and from the discharge end of the valved pipe 19.

It will be observed that a ring 21 formed in arch-like sections, is mounted between 5 and soldered to the several pipes 19. It will further be seen that the valve is composed of a swinging plate 20, adapted to cover the mouth of the pipe 19 and is pivotally mounted near its upper end thereon, the 10 lower end being extended to operate as a weight and hence imparting a tendency, by gravity for the valve to assume a perpendicular portion relatively to the mouth of the pipe and close the latter. Cross-bar 15 22 may be added to the valve to increase its gravity weight. The result of such construction is that when a pan 16 is moved toward the steam reservoir 18 to bring the pipe 19 through the slotted opening 17 in the 20 pan, the periphery of the latter, on either side of the slot, will abut against the ring 21 and the lower end of the valve abut against the pan below the slot, and the ends of the cross-bar 22 will abut against the pan 25 on either side of the slot 17, to insure tipping the valve, opening the port, and holding it open, while the said parts are in that relative position; the valve resuming its closed position when the pan is removed; 30 and it will also be observed that if any unusual pressure of steam accumulates in the pipe, while the pan is removed and the valve closed, the latter is of such character that it will swing open to discharge such 35 pressure harmlessly into the body of the steaming pan.

Returning now to the construction of the water supply to the boiler. It is obvious that it is desirable to keep the boiler quite 40 nearly full of water at all times during the operation of the range, but as the water is consumed the level will fall to that of the water supply in the reservoir; and to prevent any undue fall, I provide the removable supply can (see Fig. 4) which has an 45 open port (see Fig. 1) indicated at 23 near its base and discharges at all times into the reservoir, automatically stopping and resuming its discharge when the water in the reservoir is above or below the level of 50 said open port in the can; and hence said port in the supply can is provided at such height from the base of the can that, when the latter is operatively placed in the reservoir 8, the said port will be slightly below 55 the plane of the top of the reservoir, which in turn is slightly below the plane of the top of the boiler, and therefore the level of the water in the boiler and in the reservoir will 60 always be the same so long as there is any water in the supply can above its said discharge port.

The operation of the device is apparent from the description already given, to which 65 may be added that the steaming pan is read-

ily removable, to be out of the way, when not in use, and at no time interferes with the usual use of the range for cooking purposes other than steam cooking.

Having thus described my invention, I 70 claim as new and desire to secure by Letters Patent:—

1. In a range of the class recited, comprising a heating chamber within a suitable casing, of a boiler centrally supported in 75 said chamber near the base thereof, with means to supply heat thereto, a water reservoir on the exterior wall of the casing, tubular means between the boiler and the reservoir, tubular means leading from the boiler 80 through the heating chamber and extending upward in substantial parallelism with the side wall thereof, and having a conical coupling member on its end, a steaming pan provided with a depending steam supply pipe 85 mounted in an aperture in its base, and having a detachable coupling member adapted to coincide with the coupling member on the steam supply pipe when the parts are operatively assembled. 90

2. The combination, in cooking apparatus, comprising a heating chamber within a suitable casing, of means therein to supply a heating flame, means to boil water and supply a volume of steam, vertically disposed tubular means leading therefrom, and a steaming 95 pan adapted to be operatively superposed thereon, said pan having a centrally disposed aperture in its base, and a steam distributing tubular reservoir mounted therein 100 and having a plurality of valved outlets, with a pivoted valve governing each outlet adapted to open by excess of steam pressure and to close by gravity when such pressure is withdrawn. 105

3. The combination, in cooking apparatus, comprising a heating chamber within a suitable casing, of means within said chamber to supply a flame, means to boil water, tubular means to convey steam therefrom, and a 110 steaming pan superposed thereon over said casing, a tubular steam reservoir mounted in a central aperture in the base of the steaming pan and having a depending end operatively communicating with said steam- 115 supply tube, a series of laterally disposed discharge pipes leading therefrom, a contacting ring between the same, a flap-valve pivoted on each of said pipes operating to normally close the mouth thereof, and a plu- 120 rality of cooking vessels in said steaming pan, each having a peripherally slotted opening.

4. In a range of the class recited, comprising a heating chamber within a suitable casing, of a boiler centrally supported in 125 said chamber, a water reservoir on the exterior wall of the casing, tubular means between the boiler and the reservoir, tubular means leading from the boiler through the 130



heating chamber and extending upward in substantial parallelism with the side wall thereof, and having a detachable coupling member on its end, a steaming pan provided  
5 with a depending steam supply pipe mounted in an aperture in its base, and having a detachable coupling member adapted to coincide with the coupling member on the steam supply pipe when the parts are opera-  
10 tively assembled.

5. The combination, in cooking apparatus, of means to supply a heating flame, means to boil water and supply a volume of steam, vertically disposed tubular means leading  
15 therefrom, and a steaming pan adapted to be operatively superposed thereon, said pan having a centrally disposed aperture in its base, and a steam distributing reservoir mounted therein and having a plurality of  
20 valved outlets, with a pivoted valve normally closed and adapted to be opened by contact therewith below its pivotal bearing.

6. The combination, in cooking apparatus, of means to supply a flame, means to boil water, means to convey steam therefrom, 25 and a steaming pan superposed thereon, a plurality of removable cooking vessels in said pan each having a peripherally slotted opening, a tubular steam reservoir mounted in a central aperture in the base of the  
30 steaming pan, a series of laterally disposed discharge pipes leading therefrom, a flap-valve pivoted on each of said pipes operating to normally close the mouth thereof, and contacting devices thereon below its pivotal  
35 bearing.

In testimony whereof, I have hereunto affixed my signature this fifth day of December A. D. 1908.

HENRY A. WINTERKNIGHT.

Witnesses:

A. M. BIDDLE,  
R. A. DUNLAP.