

(No Model.)

C. R. LONG & C. H. KLINE.
STEAM COOKER.

No. 501,952.

Patented July 25, 1893.

Fig. 1.

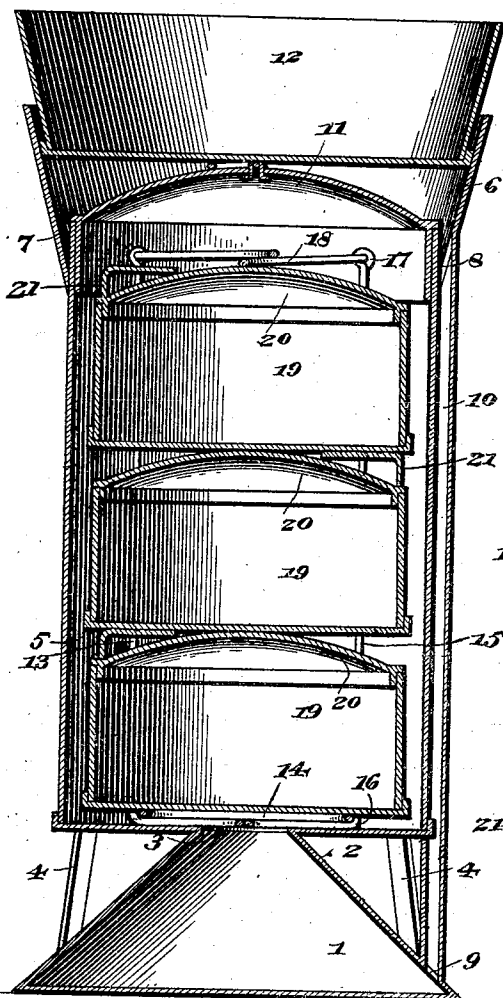


Fig. 2.

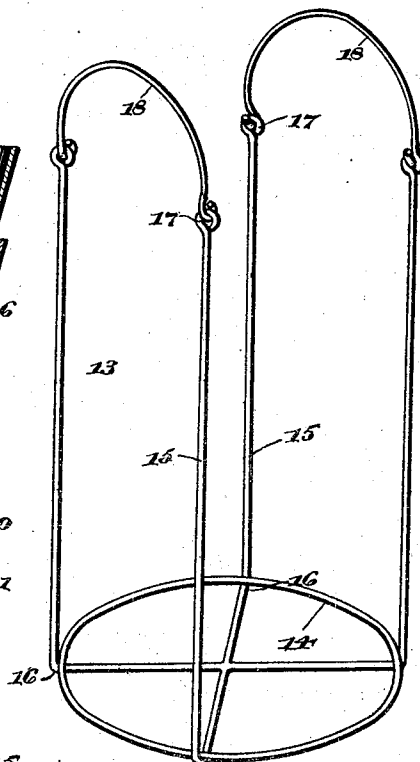
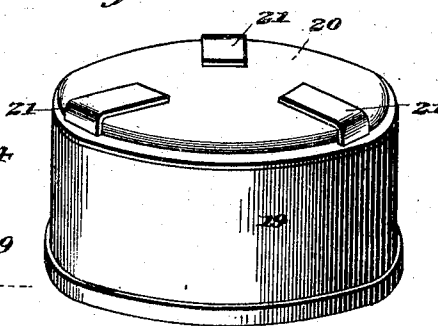


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

CLARK R. LONG AND CHARLES H. KLINE, OF HALSEY, OREGON.

STEAM-COOKER.

SPECIFICATION forming part of Letters Patent No. 501,952, dated July 25, 1893.

Application filed February 23, 1893. Serial No. 463,459. (No model.)

To all whom it may concern:

Be it known that we, CLARK R. LONG and CHARLES H. KLINE, citizens of the United States, residing at Halsey, in the county of Linn and State of Oregon, have invented a new and useful Steam-Cooker, of which the following is a specification.

Our invention relates to improvements in steam-cookers; the objects in view being the production of a cooker which shall be capable of operating with a minimum amount of water and steam whereby but a small boiler or part for generating the steam is required; which shall utilize the same water over and over again by a subsequent condensation of the steam after it has ascended and circulated through the cooker, the said device being of cheap and simple construction and adapted to be conveniently operated.

With these and other objects in view the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a vertical longitudinal sectional view of a steam-cooker constructed in accordance with our invention, the same being in position as when cooking. Fig. 2 is a detail in perspective of the removable frame for supporting the cooking-trays. Fig. 3 is a detail in perspective of one of said trays.

Like numerals of reference indicate like parts in all the figures of the drawings.

In practice we employ a water-chamber 1, the same being provided with a conical dome 2 whose base is secured direct to the bottom of said chamber and at its apex is provided with an escape-opening 3.

Rising from the outer edge of the water-chamber 1 is a series of short vertical standards 4 whose upper ends are slightly above the openings 3 in said water-chamber. Supported by and secured to the upper ends of the standards 4 is the cylindrical steam-chamber 5 which may be of other shape in cross-section if desired. The bottom of the steam-chamber is provided with an opening which corresponds with the opening 3 in the water-chamber, so that communication is established between the water-chamber and the steam-chamber.

Secured to and encircling the steam-cham-

ber 5, a short distance below the upper end of the same, is a flared, and in this instance annular, collar or flange 6 whose upper end extends beyond that of the steam-chamber, and inasmuch as said collar or flange 6 is flared it combines with the wall of the steam-chamber 5 to produce an intermediate annular-gutter 7. This annular gutter 7 is provided at one side with an opening 8, and vertically below the same an opening 9 is formed in the conical dome 2 of the water-chamber, the said openings 8 and 9 being connected by means of a return-pipe 10 secured to the exterior of the steam-chamber 5.

The steam-chamber is provided with an ordinary removable cover 11, which when in position serves to close the upper end of the steam-chamber somewhat snugly, though of course it is not steam-tight, and hence while it retards the escape of steam said steam will in time as it passes up through the steam-chamber wholly escape therefrom.

Within the flared flange or collar 6 there is seated a removable water-containing condensing-pan 12, the same being removable and being designed to receive cold water, the object of which will hereinafter appear.

In order to support the pans or trays hereinafter described and enable them to be placed within and removed from the steam-chamber as an entirety we provide a removable frame 13 adapted to be seated in said steam-chamber and to contain the pans or trays whereby the entire series may be lifted for the purpose of placing them within the cooker or withdrawing them from the same after the food has been cooked. This frame consists of a lower base-ring 14 preferably formed of galvanized-wire, and crossing the base-ring at right angles to each other and secured thereto is a pair of galvanized-wires 15 whose terminals beyond the base-ring are bent upward, as at 16, and are provided with eyes 17 at their upper ends. Each pair of eyes accommodates the bent ends of a pair of curved bails 18 by which the frame may be lifted as will be obvious.

19 designates the pans or trays for containing the articles to be cooked and of these there is a series, in this instance three, which number will increase or decrease as may be desired and in conformity with the relative

dimensions of the steam-chamber and pans or trays. Each pan or tray is provided with a removable cover 20 designed to tightly fit the same and the latter upon its upper side is provided with a series of lugs 21 so that the pan or tray thereabove will not rest flatly thereon but will be slightly arranged thereabove producing an intermediate space through which the steam may circulate.

This completes the construction of the cooker whose operation we will now proceed to describe: The pans or trays have placed therein the different articles to be cooked such as meats, puddings, vegetables, &c., after which their covers are placed in position and they are mounted one upon the other in the frame. The water-chamber 1 is filled with water and the frame lifted and lowered into position in the steam-chamber, after which the bails of the frame are turned down, the cover 11 placed in position upon the steam-chamber, and the cold water pan or tray 12 seated in position in the collar or flange 6. The device being placed upon a stove steam is generated in the chamber 1 and ascends from thence into the steam-chamber 5 where it is caused to circulate around, over and under each of the trays or pans 19, thus thoroughly cooking the articles therein without contact therewith. As the steam ascends it escapes from the steam-chamber 5 and contacts with the bottom of the cold water tray 12, which has previously been filled with cold water. This causes a condensation of the steam and it falls back upon the removable cover 11 of the steam-chamber, which cover being convexed sheds the same to the annular gutter 7 from which it runs through the return pipe 10 back into the water-chamber 1 to be again converted into steam. In this manner it will be seen that the water is utilized over and over again being first turned into steam, then condensed and returned to the starting point so that a minimum amount of water will be sufficient to operate the device.

It will furthermore be seen that the peculiar shape given to the water-chamber 1, that is the large area or bottom surface, exposes to the greatest advantage the water contained therein to the action of the heat so that steam is quickly produced and a hot fire to produce the same is unnecessary. The conical dome quickly brings the steam to the center or escape-opening thereof whereby it is discharged in volume directly into the steam-chamber, and by reason of the pans or trays 19 being spaced apart all parts of the same are exposed to the action of the steam.

The cover 11 serves to retain the steam in the steam chamber a sufficient length of time to extract all of its virtues, after which it is permitted to escape and is immediately brought into contact with the cold surface of the cold water pan by which it is condensed,

falls back upon the cover 11, is gathered, and returned to the starting point.

When the edibles are cooked it is simply necessary to remove the cold water pan and cover 11 and by means of the bails lift the frame from the steam-chamber. No bad effect will result from leaving the edibles in the cooker longer than necessary, in that they cannot become burned or injured, and therefore should one become cooked before the others it may remain until all are cooked.

Having described our invention, what we claim is—

1. In a steam-cooker, the combination with a water or boiler-chamber having an opening in its top, a steam-chamber arranged thereover and communicating therewith and adapted to receive the cooking-pans, an annular collar encircling the upper end of the steam-chamber and combining therewith to form an annular gutter, and a return pipe leading from said gutter to the water-chamber, of a series of removable trays or pans arranged in the steam-chamber, a cover for said steam-chamber, and a cold water pan or tray arranged in the collar above the steam-chamber, substantially as specified.

2. In a steam-cooker, the combination with a conical water chamber or boiler, standards rising therefrom, a cylindrical steam-chamber surmounting the same and the boiler and provided with an opening in its bottom communicating with that in the apex of the dome of the boiler, a flared collar encircling the steam-chamber and extending from a point below the upper end thereof and combining with said steam-chamber to form an annular gutter, a return pipe leading from said annular gutter to the boiler, of a cover for the steam-chamber the same being located below the upper edge of the collar, a cold water pan arranged in the upper end of the collar, and the series of cooking trays arranged in the steam-chamber, substantially as specified.

3. In a steam-cooker, the combination with a lower boiler chamber, an upper steam-chamber, and a cover for the same, of a removable frame adapted to fit the steam-chamber, the same consisting of the lower base-ring, and a series of strips crossing the ring, secured thereto and projecting thereabove, loose bails connected with the strips and the series of cooking-pans or trays removably fitting the frame and having their upper sides provided with spacing-lugs, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

CLARK R. LONG.
CHARLES H. KLINE.

Witnesses:

GEO. WATERS,
N. CANADAY.