

No. 636,528.

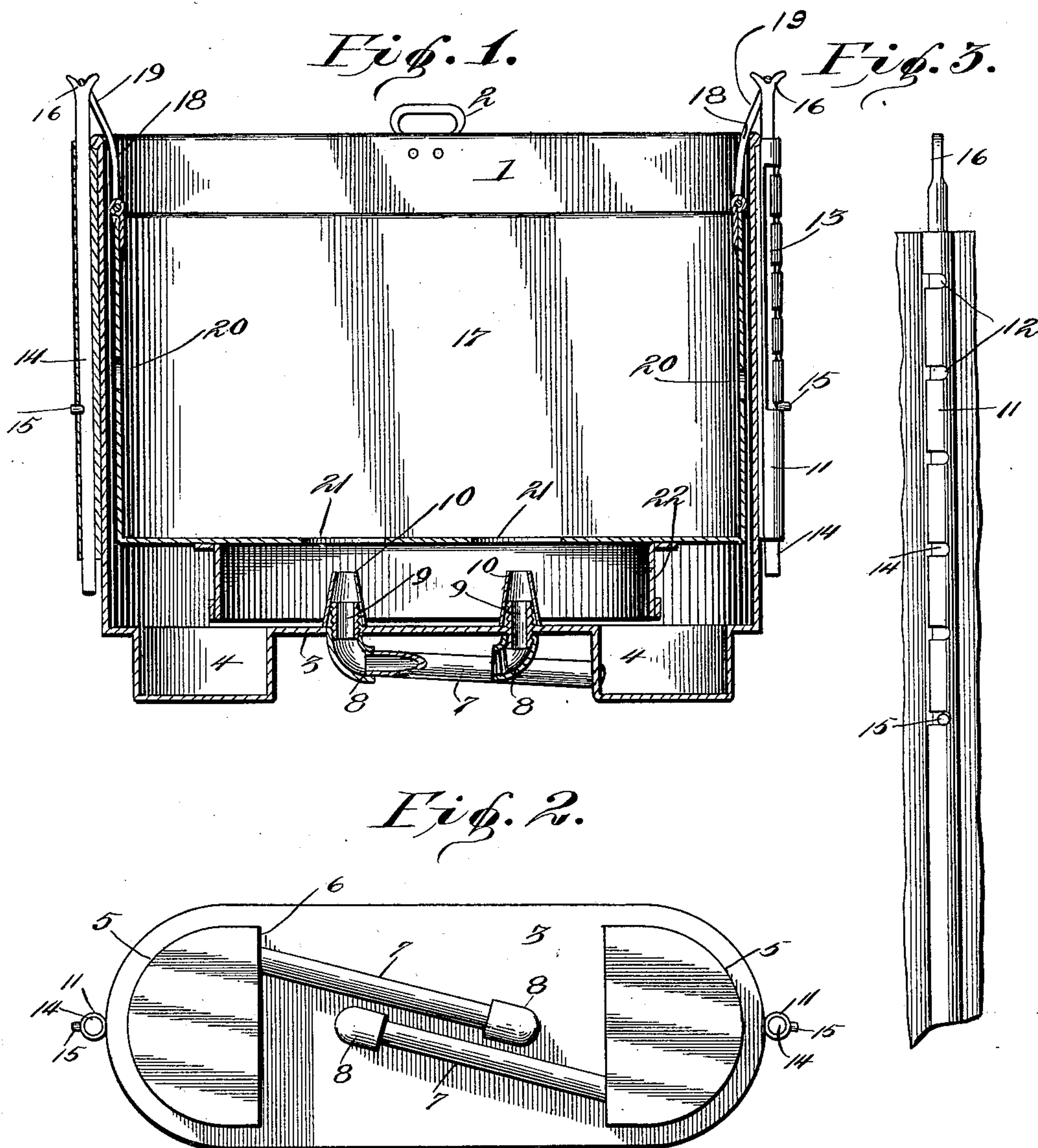
Patented Nov. 7, 1899.

A. J. HENDERSON.

FRUIT STEAMER.

(Application filed June 20, 1899.)

(No Model.)



Witnesses
Charles W. Walker, by his Attorneys,
Chas. S. Hoyer.

A. J. Henderson, Inventor

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ALFRED JASPER HENDERSON, OF DALLAS, TEXAS.

FRUIT-STEAMER.

SPECIFICATION forming part of Letters Patent No. 636,528, dated November 7, 1899.

Application filed June 20, 1899. Serial No. 721,257. (No model.)

To all whom it may concern:

Be it known that I, ALFRED JASPER HENDERSON, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented a new and useful Fruit-Steamer, of which the following is a specification.

This invention relates to steamers for canning fruits, vegetables, &c.; and the intent and purpose of the same is to increase the general efficiency of such devices and to include the features of construction that permit an adjustment of the cans containing the fruits or vegetables to and from the greatest heat and at the same time enlarge the steam-space and proportionately govern the rise of the same, and also to provide for a more thorough steaming of the fruits or vegetables with a steady degree of heat and, further, to facilitate the rapid ebullition of water and formation of steam by a special circulatory system from the particular arrangement of devices confined within a limited area.

The invention consists of the construction and arrangement of the several parts hereinafter more fully described.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a steaming device embodying the features of the invention. Fig. 2 is a bottom plan view of a part of the improved device. Fig. 3 is an enlarged broken detail showing a particular feature of adjustment.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates an outer receptacle of any form or size, but, as shown, simulates an ordinary washboiler in external appearance at least, and is provided at the upper portion of the opposite sides with handles or grips 2 for conveniently transporting it from one place to another. The bottom 3 of this receptacle 1 has opposite depressed chambers 4, having outer walls 5, which follow the contour of the opposite ends of said receptacle, and inner transversely-straight walls 6. Between the walls 6 an open space is formed under the bottom 3, and the lower portions of the depressed chambers 4 are in parallel planes and may serve as base-rests for the receptacle 1 or be projected through an open-

ing in a stove or other heater. The top portions of the chambers 4 open completely into the lower part of the receptacle 1, and to the inner walls 6 pipes or conduits 7 are connected and projected inwardly under the plane of the bottom 3 in reverse directions. The said pipes 7 are attached to the chambers 4 nearer the bottom portions of the latter and in opposite positions—that is, one pipe leads out from a point adjacent one side of a chamber and the other pipe from a point in the opposite chamber in a diagonal line to the point of attachment of the first-mentioned pipe. Each of the pipes has a gradual upward incline from the inner walls 6 of the chambers and both have secured to the inner ends coupling-elbows 8, which extend through the bottom 3 and receive nipples 9. The nipples 9 have smaller bores than the pipes and their couplings and are extended up within the lower portion of the receptacle 1. Over the nipples 9 truncated conical injectors 10 are removably fitted, and their outlet ends are of less cross-sectional extent than the bore of the nipples, thereby providing means for projecting steam with greater force upwardly into the receptacle 1.

On the opposite ends of the receptacle 1 tubular guides 11 are fixed and have at regular intervals in the length of the same transverse slots 12, communicating with the vertical guiding-slot 13. Within these guides 11 rods 14 are detachably mounted, and each rod has a stud or pin 15 projecting therefrom, which is adapted to be turned into either one of the slots 12, and thereby support the rod at varying elevations. The rods 14 are rotatable within the guides, and in changing the adjustment of the same they are turned around to bring the studs or pins 15 in line with or into the slots 13, and thereby allow freedom in the elevation of said rods. The upper ends of the rods are formed with forks 16, and the purpose of said forks will be presently set forth.

Within the receptacle a can-holder 17 is removably mounted and has bails 18 removably attached to the upper portions of the opposite ends, said bails being formed with outward bends or deflections 19 nearer their upper termination to clear the upper edge of the receptacle 1 and establish convenient means

for connecting said bails within the forks 16 at the upper ends of the rods 14, particularly when the holder 17 is lowered to a considerable distance within the said receptacle. The holder 17, like the receptacle 1, is preferably constructed of sheet metal and completely closed around its side wall and bottom, except opposite end openings 20 and bottom openings 21. The top of the holder is clear, and to the bottom is secured a depending flange 22, within the confines of which the openings 21 are formed, and said flange may at times serve as a bottom rest or support for the holder; but its special purpose is to institute a steam-chamber or means of directing the steam through the said openings 21. The openings 21 are at an interval apart equal to the interval between the injectors 10 or the nipples 9, and when the holder 17 is lowered the flange 22 stands over the said injectors and the openings 21 are at all times in line with the mouths or upper ends of said injectors. It will be observed from this arrangement that the steam dispensed or delivered by the injectors will be thrown up into the holder and that the depending flange 22 will materially assist in carrying out the desired concentration of the steam within the central portion of the said holder by preventing a lateral spread or deflection. Entrance of steam to the holder 17 may also take place through the openings 20, and by this means the cans of vegetables or fruits will be influenced in this direction and the heat more uniformly distributed without chilling or injurious variation at any point. It is preferred, however, that the steam circulate in the holder and around the cans that may be contained therein and then exit in part through the openings 20, as well as pass out from the clear open top portion of said holder. It will be understood, therefore, that the thorough envelopment of the canned materials that may be located in the holder by the steam will depend upon the degree of heat to which the entire device is subjected.

In operation water is placed in the receptacle 1 and flows into the depressed chambers 4 as well as the pipes 7. To make the pipes 7 effective in the operation sought, the water should not rise up to the level of the mouths of the injectors 10. The cans containing the fruits or vegetables are placed within the holder 17, and the latter is suspended through the medium of the bails 18 and adjustable rods 19 within the receptacle 1. The elevation of the bottom 17 relatively to the bottom of the receptacle 1 will depend upon the requirement for a quick or slow operation and in accordance with the treatment of the particular kind of fruit or vegetable. In some instances it may be necessary to rapidly carry on the heating operation and in others to retard the rapid heating of the contents of the cans, and this variation will be compensated for by means of raising or lowering the holder 17. It is also desirable at times to first sub-

ject some fruits or vegetables to a certain medium degree of heat and then gradually increase such heat, and to carry this operation into effect the holder will be primarily elevated within the receptacle at a certain distance and then gradually lowered. The cans containing the fruits or vegetables are arranged within the holder 17, so as to clear the openings 21, and as the steam is formed it is injected through the said openings and permeates the space between the several cans and the holder. The pipes 7 assist in the rapid formation of steam in that they present a limited quantity of water to the most intense heat-point, and the upward inclination of said pipes has a tendency to forcefully apply the steam through the injectors and thoroughly drive it up into the holder. The said arrangement of the pipes also sets up a thorough separation of the water and heats it more rapidly and particularly as the pipes connect with the chambers at diagonally opposite points.

After the cans of fruits or vegetables have been sufficiently steamed and heated the holder 17 is removed and successive charges can be placed in the holder and subjected to similar operations. It is important in these steaming operations that chilling of the cans be avoided as much as possible, or, in other words, that the heat may be equally distributed over the cans and completely affect the contents of the same.

The proportions and size, as well as the minor details of construction of the several parts of the improved device, may be changed without departing from the spirit of the invention or sacrificing any of the advantages of the same.

Having thus described the invention, what is claimed as new is—

1. In a device of the character set forth, the combination of an outer receptacle having a bottom with depressed chambers, pipes connected to said chambers at diagonally opposite points and extending inwardly and up through said bottom, and a holder removably and adjustably supported within the said receptacle having feed-openings in the bottom thereof, coöperating with the said pipes.

2. In a device of the character set forth, the combination of a receptacle having a bottom with depressed chambers, pipes connected to said chambers and extending inwardly in a horizontal plane and in reverse directions and upwardly through the bottom, a holder for containing cans adjustably and removably suspended within the receptacle and provided with openings in the bottom thereof, said pipes coöperating with the openings in the holder and a depending flange on the bottom of the holder.

3. In a device of the character set forth, the combination of a receptacle having tubular guides at opposite ends provided with vertical slots and transverse seat-slots communicating with the same, rods movably mounted in the

5 said guides and having studs or pins thereon to engage the seats and also provided with forks at their upper ends, a holder adapted to be removably mounted in the said receptacle, and bails movably attached to the upper opposite end portions of the holder and formed with outer deflections, the upper fork ends of the rods forming seats for the said bails.

10 4. In a device of the character set forth, the combination of a receptacle having a bottom with depressed chambers adjacent opposite ends, pipes connected to the inner walls of said chambers at diagonally opposite points
15 and extending inwardly and upwardly through the said bottom, a holder having a

substantially closed side wall and bottom and provided with openings in the said bottom and in the end portions of the side wall, a flange secured to the bottom of the holder around the openings therein, means for adjusting the said holder, and injectors on the upper inner ends of the pipes in alinement with the openings in the bottom of the holder.

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

ALFRED JASPER HENDERSON.

Witnesses:

H. M. SKELTON,
H. M. ELLISTON.