

(No Model.)

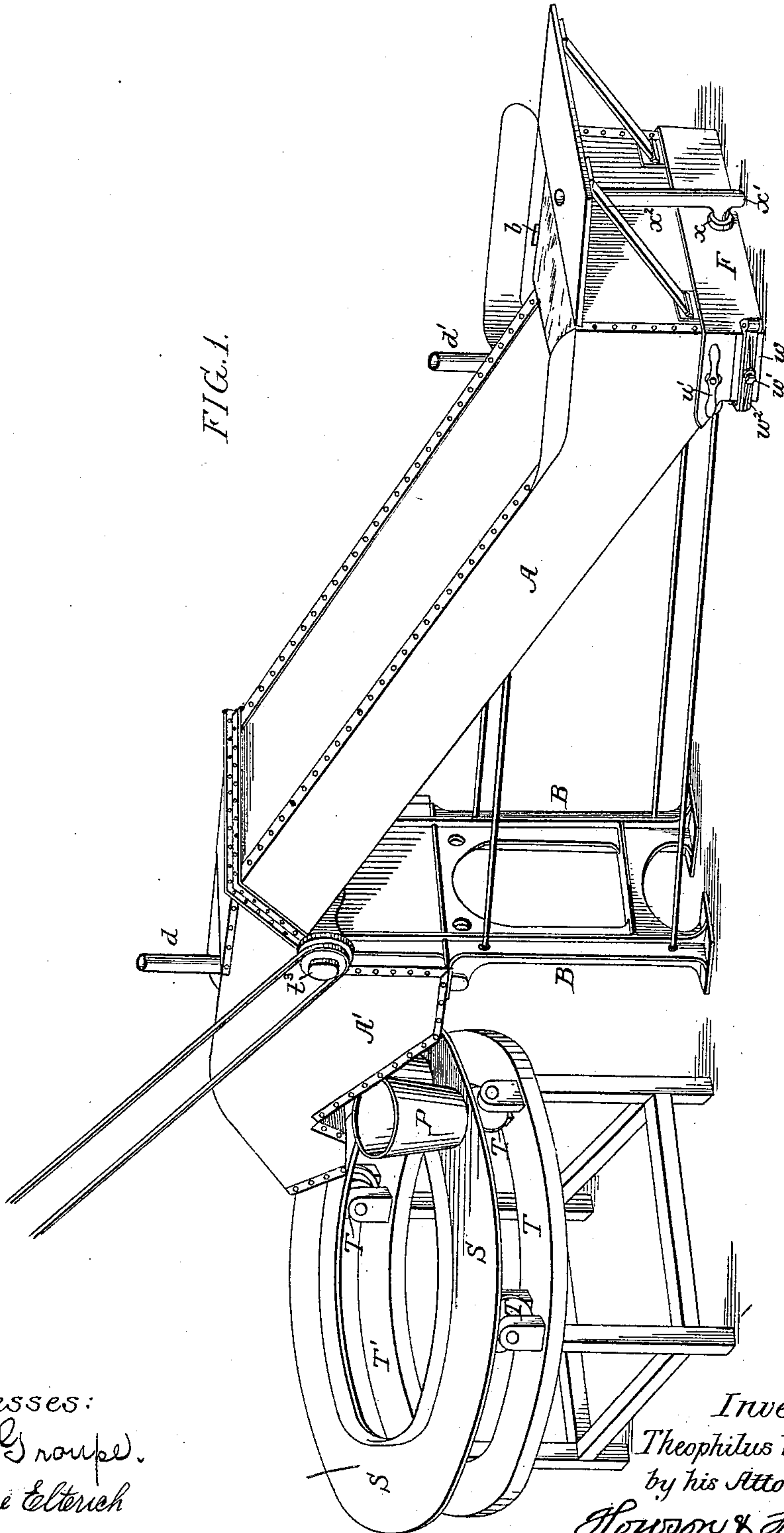
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T. VAN KANNEL.

APPARATUS FOR SCALDING VEGETABLES OR FRUIT.

No. 448,895.

Patented Mar. 24, 1891.



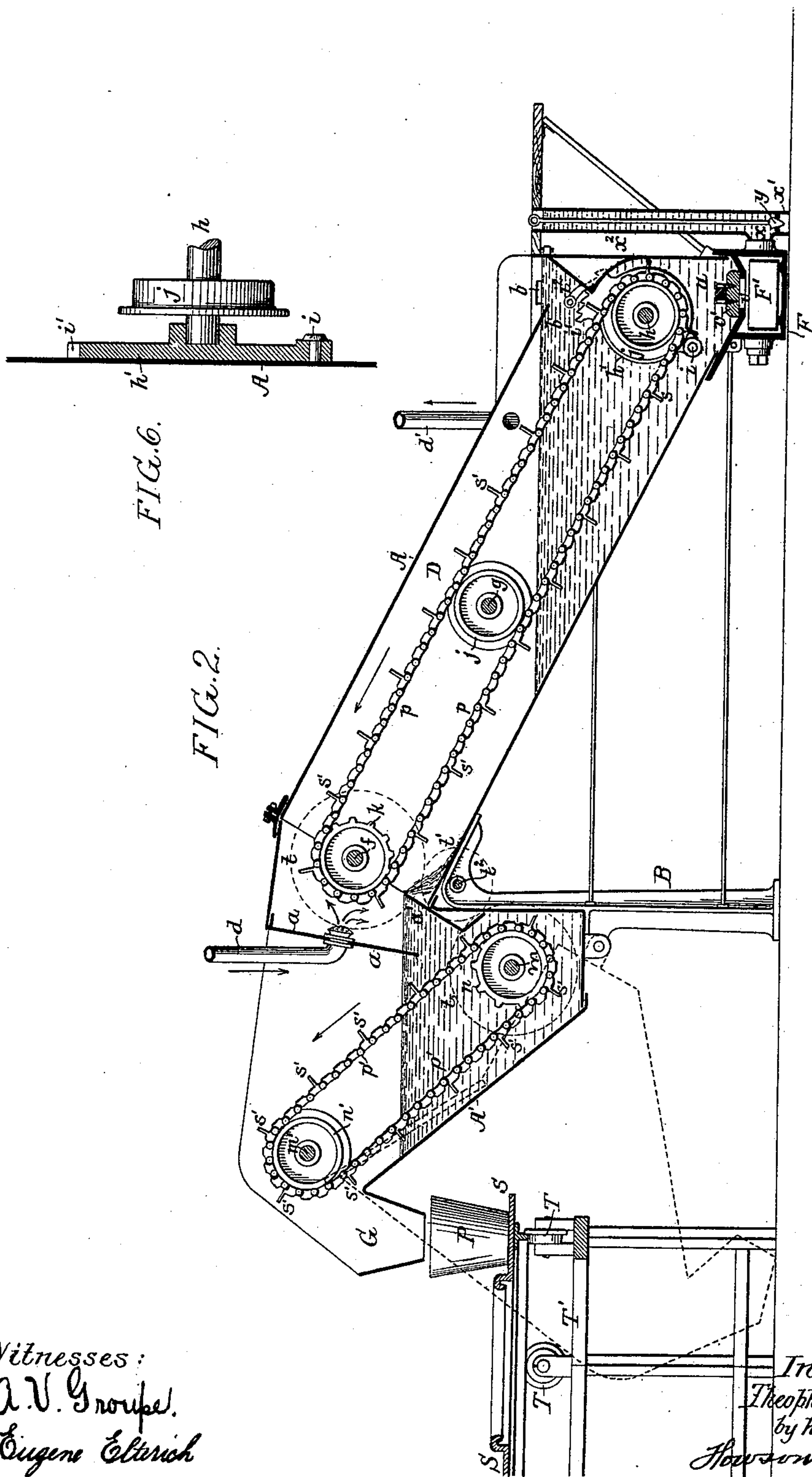
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FIG. 4.

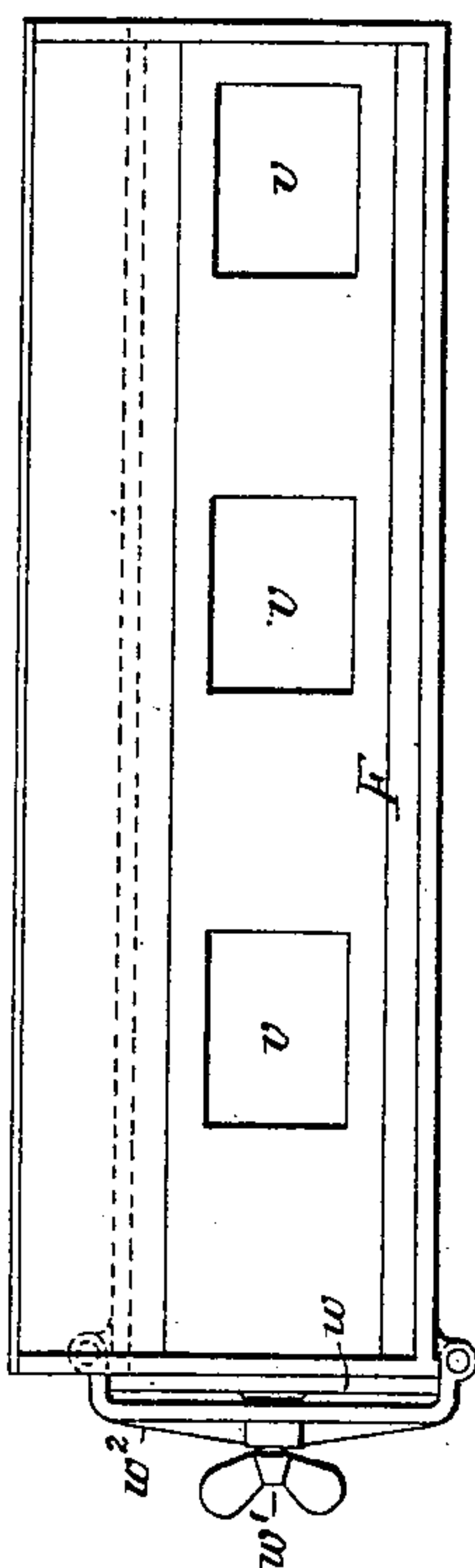


FIG. 3.

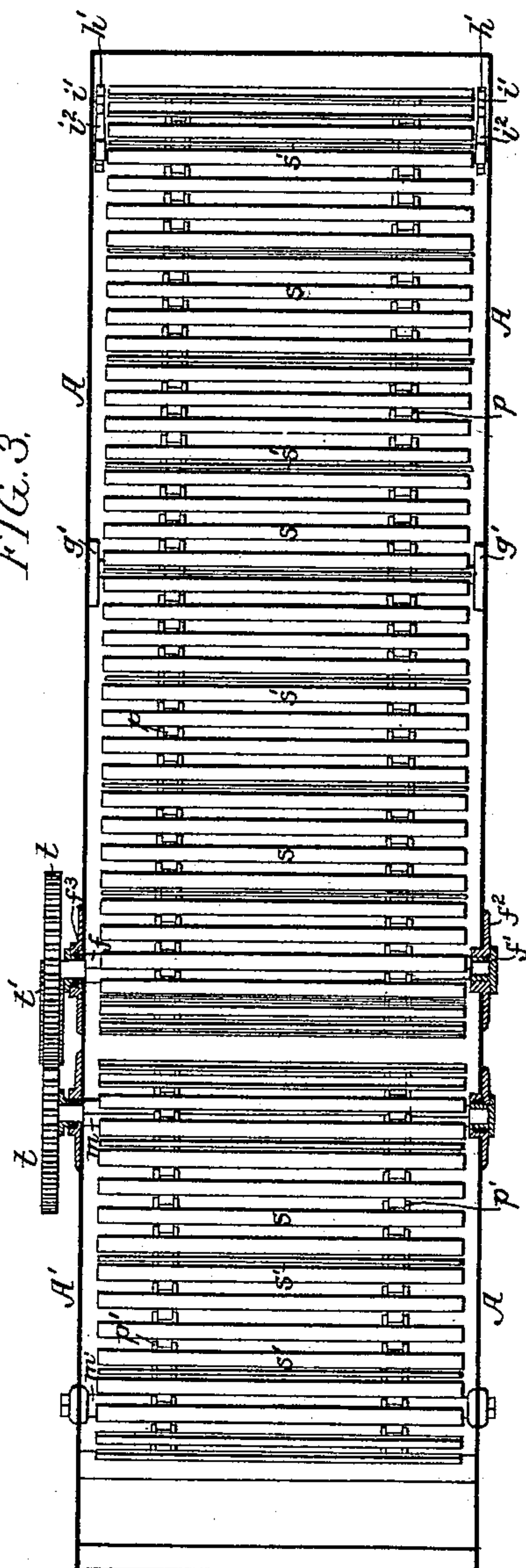
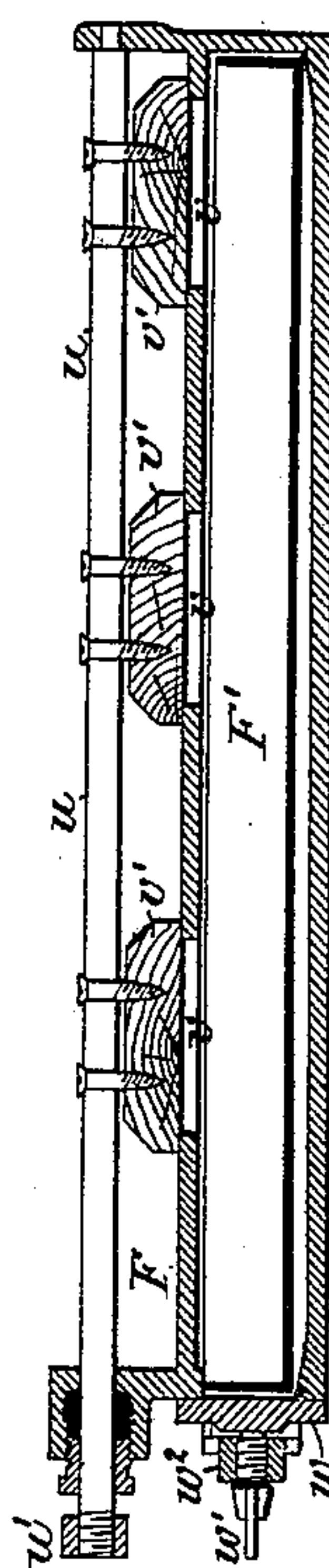


FIG. 5.



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UNITED STATES PATENT OFFICE.

THEOPHILUS VAN KANNEL, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR SCALDING VEGETABLES OR FRUIT.

SPECIFICATION forming part of Letters Patent No. 448,895, dated March 24, 1891.

Application filed May 1, 1890. Renewed January 28, 1891. Serial No. 379,381. (No model.)

To all whom it may concern:

Be it known that I, THEOPHILUS VAN KANNEL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Apparatus for Scalding Vegetables and Fruits, of which the following is a specification.

My invention consists of a device for scalding vegetables or fruit (hereinafter for convenience denominated "stock") prior to the canning or preserving of the same, the object of my invention being to so construct the device that the scalding operation will be performed more rapidly and effectively than usual, special features of the device being that the scalding operation is effected by the action of steam instead of hot water; that no handling of the stock is required during the scalding operation; that the stock is washed as well as scalded; that the operation is performed without bruising or mashing the stock, and that sand or other sediment which accumulates in the device can be removed from time to time without stopping the operation, which is continuous—that is to say, the stock is dumped into the receiving end of the device and delivered continuously from the discharge end of the same.

In the accompanying drawings, Figure 1 is a perspective view of a scalding device constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a sectional plan view; and Figs. 4, 5, and 6 are detached views, on an enlarged scale, of parts of the machine, illustrating features of the invention.

The casing of the device is made in two parts A A', the part A being fixed, and consisting of a rectangular box mounted in an inclined position upon a supporting-frame B, to which is pivoted the movable portion A' of the casing, the latter consisting of a tank open at the top and having a hood *a*, which incloses the open upper end of the portion A of the casing, the top of which is discontinued some distance from the lower end to form an inlet-opening for the reception of the stock to be treated.

Forming part of the casing of the tank A' is a plate *a'*, which partly closes the upper end of the casing A, the top of this plate being above the bottom of the hood *a*, so that

water before overflowing from the tank A' into the casing A will rise to the level of the top of the said plate *a'*, thereby covering the lower edge of the hood *a* and providing a seal for the upper end of the casing A.

The casing A has at the lower end an outlet-opening *b* at a higher level than the lower edge *b'* of the top of the casing, so that a volume of water is caused to accumulate in the lower end of said casing and form a like seal therefor. A chamber D, sealed at both top and bottom, is thus formed in the casing A, and steam is admitted to this chamber at the top through a pipe *d* and discharged at or near the bottom through a pipe *d'*.

At the upper end of the casing A is a shaft *f*, which is adapted at one end to a closed bearing *f'*, screwed into a socket-plate *f''*, secured to one side of the casing, the other end of the shaft passing through a stuffing-box *f'''*, secured to the opposite side of the casing. About midway of the casing is a transverse shaft *g*, adapted to bearings in plates *g'*, secured to the opposite sides of the casing, and at the lower end of the casing is a shaft *h*, carried by opposite plates *h'*, which are pivoted at *i* to the sides of the casing and have teeth *i'* for engagement with pawls *i''*, hung to said opposite sides of the casing. The shaft *f* has sprocket-wheels *k* for driving endless chains *p*, and the shafts *g* and *h* are provided with carrier-wheels *j* for said chains, the adjustability of the plates *h'*, which carry the lower shaft *h*, providing for the maintenance of these chains constantly under tension.

In the lower portion of the tank A' is a shaft *m*, mounted in bearings similar to those of the shaft *f*, and in the upper portion of the tank is a shaft *m'*, mounted in bearings similar to those of the shaft *g*, the shaft *m* having a sprocket-wheel *n* and the shaft *m'* having a carrier-wheel *n'*, to which are adapted endless chains *p'*. Both sets of chains *p* *p'* are furnished with transverse bars or blades *s*, so as to constitute elevators or conveyers for lifting the stock from the lower to the upper ends of their respective casings. The shafts *f* and *m* are provided with spur-wheels *t*, which mesh with a pinion *t'* on a driving-shaft *t''*, having a pulley *t'''*, which receives a belt from any available counter-

shaft, so that the respective conveyers can be driven in the direction of the arrows shown in Fig. 2.

At the lower end of the casing A is a box F, in the top of which are openings v , which can be closed by means of valves v' , carried by a rod u , which extends through a stuffing-box on the casing and has a handle u' , by which the rod may be readily manipulated so as to cause the valves v' to cover or uncover the openings v . The box F has at one end a detachable cover w , held in place by a set-screw w' , carried by a pivoted yoke or clamp w'' , and in the bottom of the box is a tray F', which can be withdrawn on first removing the cover-plate w . On the outer side of the box is an outlet-pipe x , which has a discharge branch x' and an upwardly-extending branch x'' , the branch x' being closed by a valve y , the stem of which rises almost to the top of said branch x'' , the latter extending above the level of the water in the lower portion of the casing A, so that the valve can be readily manipulated.

The stock to be scalded is dumped into the water in the lower portion of the casing A and is caught and carried up by the blades of the elevator in said casing, being passed first through the water in the lower portion of the casing and then through the steam in the upper portion of the same and being then dumped into the water in the upper casing or tank A' and carried through the water and up to the discharge-hopper G by the elevator in said tank. The stock is thus subjected to a preliminary washing operation in the water in the lower portion of the casing A, is then scalded by being carried through the steam-chamber in said casing, and is then subjected to a secondary washing operation in its passage through the water in the tank A'. Both supplies of water are being constantly changed and replenished by reason of the condensation of steam in the casing A and the water of condensation supplied by the pipe d , and both bodies of water are hot, although of a temperature somewhat below the boiling-point, as the steam in the chamber D is relied upon for scalding the stock. The greater portion of the sand or other dirt upon the stock is washed from the same in its passage through the water in the lower portion of the casing A, the final cleansing of the stock being effected by the water in the tank A'.

The valves v' are normally open, so that the foreign matter accumulates in the tray F' in the lower portion of the box F, and on closing the valves v' and draining the water from the box F the cap w at the end of the same may be removed and the tray F' withdrawn, emptied, and reinserted prior to the reapplication of the cap and the reopening of the valves v' , so that the accumulations of sand and dirt can be removed at intervals without stopping or affecting the operation of the scalding. The draining of the lower portion of the casing A may also be effected, when

desired, by opening the valve y , so as to permit the water to escape from the casing through the box F.

As the stock has a tendency to float upon the water in the lower portion of the casing A, it is lifted gently therefrom by the blades of the elevator, and the same is true of the action of the elevator in the upper portion or tank A' of the casing, while the scalding of the stock by carrying it through a chamber filled with steam effects the desired heating of the skin without so softening the body of the stock as to cause the latter to be mashed or broken by the action of the conveyers.

The pivoted upper portion or tank A' of the casing may be disconnected from the casing A and turned down, as shown by dotted lines in Fig. 2, when it is desired to gain access to the upper portion of said casing A, but one joint having to be separated for this purpose.

The stock is discharged through the hopper G into buckets or other receptacles P, which are passed in succession beneath the hopper, and in order to provide for the convenient presentation of these receptacles in succession to the hopper I mount adjacent to the latter an endless-platform conveyer S of any suitable construction, preferably in the form of an annular table, suitably mounted upon carrier pulleys or sheaves T on a frame T', the empty buckets being applied to this annular table on one side of the hopper and the full buckets being removed from the table on the other side of the hopper.

It will be observed that the above-described device is completely automatic in its action so far as regards the scalding of the stock, the latter being simply dumped into the water in the lower end of the casing A, and being discharged in proper condition from the hopper G without further manipulation, the device being continuous in its action and capable of being run at any desired rate of speed commensurate with the capacity of the factory. The conveyer in the upper tank A' may, however, be dispensed with in some cases and the stock removed therefrom by hand, or the stock may be discharged directly from the upper end of the casing A, and although it is preferable to seal said casing both at the lower end and at the upper end, the latter seal may be dispensed with in some cases, the steam being permitted to escape from the top of the casing.

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

1. A scalding device consisting of a box or casing projecting into a water-chamber, which forms a trap or seal at the lower end of said casing, in combination with an elevator located within the casing and extending down into the water in said chamber, and means for admitting steam to the casing, substantially as specified.

2. A scalding device consisting of a box or casing having a steam-tight closure at the up-

per or discharge end and projecting into a water-chamber at the lower end, in combination with an elevator located within the casing and extending down into the water in said chamber, and means for admitting steam to the casing, substantially as specified.

3. A scalding device consisting of a casing containing a conveyer and having at top and bottom water-chambers sealing the upper and lower ends of said casing, and pipes for causing a circulation of steam through the chamber between the two seals, substantially as specified.

4. A scalding device consisting of upper and lower casings, each containing a conveyer and each having a water-chamber at the lower end, that of the upper casing forming a seal for the upper end of the lower casing, in combination with a pipe for admitting steam to the space between the upper and lower seals, substantially as specified.

5. The combination of the upper and lower casings and their water-chambers forming seals with the endless-chain conveyers in each casing, a driving-shaft, and gearing whereby each conveyer is driven from said shaft, substantially as specified.

6. The combination of the fixed casing and its conveyer and a water-chamber forming a lower seal with the upper casing, likewise having a conveyer, and a water-chamber forming an upper seal, said upper casing being pivoted, so as to be separated from the fixed casing to permit access thereto, substantially as specified.

7. The combination of the fixed casing and its conveyer with the upper movable casing having a hood which incloses the upper end

of the fixed casing and provides for the sealing of the same by the water contained in said upper section of the casing, substantially as specified.

8. The combination of the casing, the endless-chain conveyer therein, and pivoted plates carrying the bearings for one of the sets of carrying-wheels of said conveyer and having ratcheted edges, with pawls for engaging said ratchets, so as to provide for the tightening of the chains, substantially as specified.

9. The combination of the casing, the sediment-box below the casing, valves for closing communication between the casing and said sediment-box, a sediment-tray in said box, and a detachable cap for closing the end of the sediment-box, substantially as specified.

10. The combination of the casing with the double-branched discharge-pipe and a valve closing the outlet branch and having an operating-stem extending through the other branch to a point above the water-level of the casing, substantially as specified.

11. The combination of the casing, the endless-chain conveyer therein, and the sprocket-wheel shaft having a bearing at one end in a socket-plate on one side of the casing and passing at the other end through a stuffing-box at the other side of the casing, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THEOPHILUS VAN KANNEL.

Witnesses:

EUGENE ELTERICH,
HARRY SMITH.