No. 886,097. PATENTED APR. 28, 1908.

E. J. VAUDREUIL.

BLANCHING APPARATUS.

APPLICATION FILED MAR. 15, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

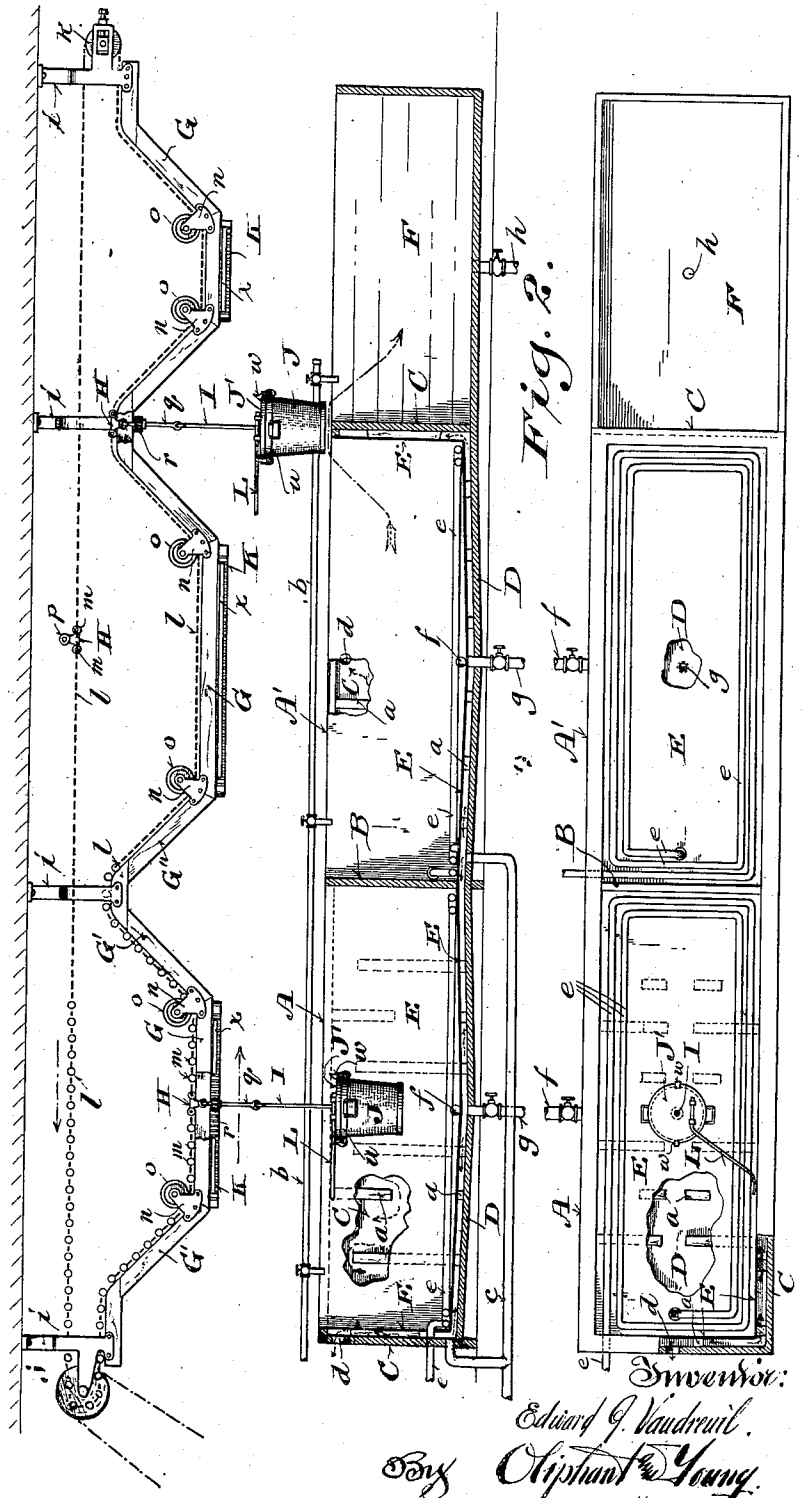


Fig. 2.

Witnesses:
Fred Palm
George Fellner

Inventor:
Edward J. Vaudreuil.
By Oliphant & Young.
Attorneys.

No. 886,097. PATENTED APR. 28, 1908.

E. J. VAUDREUIL.

BLANCHING APPARATUS.

APPLICATION FILED MAR. 15, 1907.

2 SHEETS—SHEET 2.

Fig. 1.

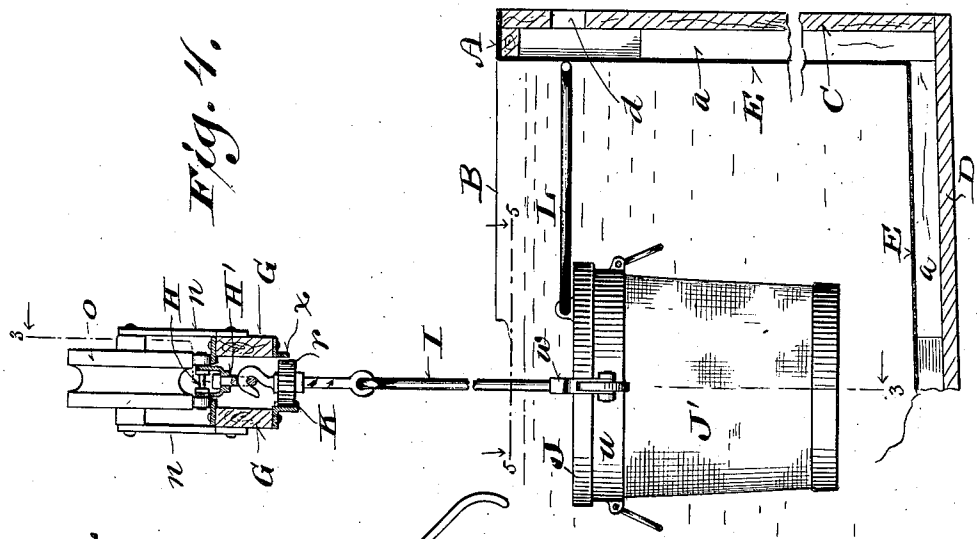
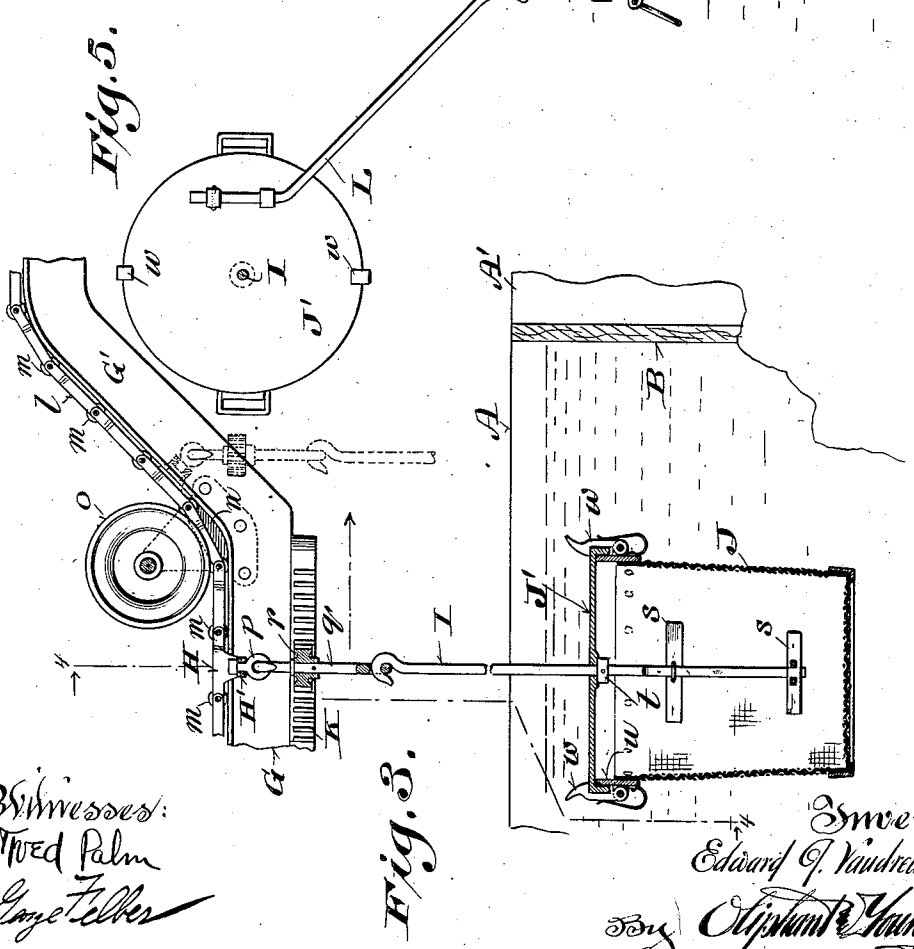


Fig. 2.



Witnesses:
Fred Palm
Geo. Telber

Inventor
Edward J. Vaudreuil.
By Wishart & Young.
Attorneys.

UNITED STATES PATENT OFFICE.

EDWARD J. VAUDREUIL, OF TWO RIVERS, WISCONSIN.

BLANCHING APPARATUS.

No. 886,097. Specification of Letters Patent. Patented April 28, 1908.

Application filed March 15, 1907. Serial No. 362,469.

To all whom it may concern:

Be it known that I, EDWARD J. VAUDREUIL, a citizen of the United States, and resident of Two Rivers, in the county of Manitowoc and State of Wisconsin, have invented certain new and useful Improvements in Blanching Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide a simple, economical and effective apparatus especially designed for blanching vegetables, such as peas, beans or the like, preparatory to canning; said invention consisting in certain peculiarities of construction and combination of parts as hereinafter fully set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a longitudinal section of a complete apparatus embodying the features of my invention, said apparatus comprising a series of blanching and rinsing tanks, together with an overhead track and trolley system, to which are attached buckets or receptacles containing the vegetables to be treated by a series of progressive baths in the different tanks; Fig. 2, a plan view of the tanks, showing a bucket in position in the first of said tanks, the view being partly broken away and in section to better illustrate the details of construction; Fig. 3, an enlarged detail sectional elevation illustrating a bucket submerged in a fragment of a tank, and suspended from a portion of the overhead track and trolley system, the section being indicated by line 3—3 of Fig. 4; Fig. 4, a cross-section of the same, as indicated by line 4—4 of Fig. 3, and Fig. 5, a plan view of a bucket-top with the hanger-shaft in section, as indicated by line 5—5 of Fig. 4.

Referring by letter to the drawings, A, A′ indicate compartments of a tank having a division-wall B, the outer walls C of the tank are preferably constructed of non-conductive material such as wood, as is also the bottom D, there being a metal lining E secured to said walls and bottom by cleats *a*, which cleats serve as spacing-blocks to form a steam-space or jacketed compartment between the tank-walls proper and inner lining, said cleats being staggered to permit free passage of steam through the jacketed inclosure.

In operation, the compartments of the tanks are filled with water from a supply-pipe *b*, and the water is thereafter heated to the desired degree for par-boiling. In my apparatus the heat supply for this purpose is primarily attained by utilizing the exhaust steam from the power plant necessary in a canning-factory, the exhaust steam being fed to the tank jacket, by branches of a pipe *c*, through which jacket the steam has free circulation and is permitted to escape through vent-holes *d* in the outer tank-walls C to avoid back-pressure. To further increase the heating capacity of the tanks, live steam is fed thereto through pipe-coils *e* that rest upon the bottom lining E of each of the tank compartments, the ends of the coils being connected to the jacketed spaces of the bottoms thereof to permit the live steam to mingle with the exhaust after circulating through the coils.

Both the bottom proper and the metal lining thereof, in each compartment is slightly inclined towards the center to permit drainage of water through valve-controlled pipes *f*, while the jacketed steam-space is drained of condensed steam through valve-controlled pipes *g*, which pipes are located at the intersecting points of the oppositely inclined metal tank linings of each compartment thereof, the pipes *f* being similarly located with relation to the bottom proper of said tank compartments.

A cold water-tank F is provided at the rear end of the heated tank for rinsing purposes, the water being supplied to the tank by pipe *b*, and is drained therefrom through a valve-controlled pipe *h*, as shown.

In the operation of blanching with my apparatus, the vegetables are placed in a closed colander-bucket and immersed in the first compartment of hot water, through which the bucket slowly travels, the contents being stirred; this slightly par boils the vegetables and frees the same from the coarser foreign matter, after which said bucket is lifted over the partition to the next tank-compartment and immersed therein, the same process being repeated. The contents of the bucket are now thoroughly blanched, and it is again elevated and dropped into a rinsing-tank of cold water, which completes the process.

The above described operation of blanching is obtained by the following mechanisms: A track is suspended or otherwise secured over the tank longitudinally thereof, in this instance the track is shown as supported by a series of brackets *i* fast to a ceiling, the respective end-brackets being provided with bearings for shafts carrying a driving sprocket-

wheel *j* and an idler-wheel *k* over which wheel travels an endless carrier-chain *l* that is driven by suitable power from a pulley secured to the driving sprocket wheel shaft as shown. The lower loop of the carrier-chain travels upon metal-faced parallel rails G, G, of the track, the links of the carrier-chain being provided with rollers *m* that serve to relieve the friction of the travel of the chain upon the rails. The track-rails G, G, throughout the greater part of their length are approximately horizontal with abrupt inclined sections G′ rising therefrom at either end, and similar intermediate oppositely inclined sections G″ intersecting each other over the tank-partitions. The several sections G″ at their junction with the horizontal rails are provided with supporting brackets *n* for idler sheaves *o*, which sheaves serve to guide and hold the carrier-chain upon the track, as it rises and falls with the various inclinations thereof.

One or more of the chain-links in the carrier form trolleys H having depending saddles H′ for the support of swivel-eyes *p*, which eyes are adapted for the reception of the hooked ends of spindles *q*. Each of the spindles is provided with a pinion *r*, its spindle terminating in an eye, into which is linked the hooked end of a hanger-shaft I serving as a support for a colander bucket J, as best shown in Figs. 3 and 4 of the drawings. Each hanger-shaft I, at its lower end is provided with blades *s* secured thereto, and a collar *t* above these blades serves as a rest for a closed lid J′, which lid is loosely mounted on said hanger-shaft. The lid is detachably locked to an upper reinforce band *u* of the bucket by a pair of spring-controlled snap-hooks *w*, which hooks are pivoted to the band and serve to support the colander bucket, the blades *s* of the shaft-hanger being centrally located therein. As best shown in Fig. 3, the sides and bottom of the bucket are preferably formed of metal screening with upper and lower reinforce bands, but any vented material may be used which will permit free access of water to the vegetables when submerged and can be drained thereafter, without the escape of the contents under treatment.

As previously stated, while the buckets are passing through the several baths, the contents therein are subjected to continuous agitation, the drive for this motion is accomplished by means of segments of a toothed rack K secured to the bottom edges of one of the rails G between each of the inclined sections G′ thereof. These racks engage the pinion *r* of the spindles *q* and through their connection with the hanger-shafts, when said spindles are drawn forward by the carrier-chain, impart rotation to the stirring-blades. By the above arrangement the said hanger-shafts are rotated while the colander-buckets together with their covers are held against revolving in the tanks by trailer-rods L that are fast in clips on the top of the covers, the free ends of the rods being adapted to contact with and slide upon the inner lining or walls of the several tanks, as best shown in Fig. 2, of the drawings.

It will be seen that when a trolley H has made the turn over the driving sprocket wheel J, it will rest upon the upper end of the first incline G′ of the track. At this place the spindle portion *q* of a hanger-shaft is adjusted to the trolley, and the lid having been snapped over a bucket, the said bucket with its contents to be blanched will start downward and be entirely submerged in the tank by the time the trolley has run upon a horizontal section of said track. The pinion on the spindle will now engage a rack segment K and put the stirring-blades in motion, which motion continues until the pinion has run off the rack segment, at which time the bucket has reached the opposite end of the tank and will now be raised by the adjacent incline G′ of the track over the tank-partition and dropped into the next tank, and so on until the operation is completed. The bucket and its hanger-shaft connections are then uncoupled from the trolley and the operation repeated, it being understood one or more buckets may be traveling through the tank at the same time in advance of each other or I may, without departure from the spirit of my invention use two or more parallel carrier and track mechanisms, attaching the buckets to the same so that they will travel through the several baths in pairs.

In order to prevent the pinions *r* from becoming disengaged from the racks K, the rail G opposite that of the rack carrying-rail is provided with an angle-iron guard *x* adapted to contact with the pinion and hold the same in mesh with the rack.

I claim:

1. In an apparatus for blanching vegetables or the like, a series of fluid containing tanks, an endless traveling carrier above the tanks, a colander receptacle connected to the carrier, means for raising and lowering the receptacle in each tank, a rotary agitator in said colander receptacle, and driving means for the agitator above the tanks.

2. In an apparatus for blanching vegetables or the like, a series of fluid containing tanks, an endless traveling carrier above the same, a colander receptacle, means for raising and lowering the receptacle in each tank, an agitator in the receptacle, a trolley in connection with the carrier and agitator, a gear in connection with the agitator, and a rack for the gear extending longitudinally of the path of travel of the carrier.

3. In an apparatus for blanching vegetables or the like, a series of fluid containing tanks, an endless traveling carrier chain

above the tanks, a horizontal supporting-rail for the lower loop of the carrier-chain, upwardly V-shaped inclined sections in the rail, horizontal rack-sections secured to the horizontal section of said rail, a bucket, an agitator for the bucket, driving means connecting the agitator and traveling carrier-chain, and a pinion carried by the driving means, the pinion being adapted to engage the rack-sections.

4. A blanching apparatus comprising one or more jacketed wall fluid tanks, steam inlets in the jacketed walls of the tanks, a rinsing-tank in line with the fluid-tanks aforesaid, the combination of an endless traveling carrier, a detachable bucket in connection with the carrier, an agitator in the bucket, means for imparting intermittent motion to the agitator in connection with the carrier, and means for raising and lowering the bucket into the several tanks.

In testimony that I claim the foregoing I have hereunto set my hand at Two Rivers in the county of Manitowoc and State of Wisconsin in the presence of two witnesses.

EDWARD J. VAUDREUIL.

Witnesses:
LYDIA MATTHIES,
FRED W. DICKE.