Oct. 16, 1934. V. CARPENTIERI 1,976,710

TOMATO PEELING MACHINE

Filed Dec. 31, 1931

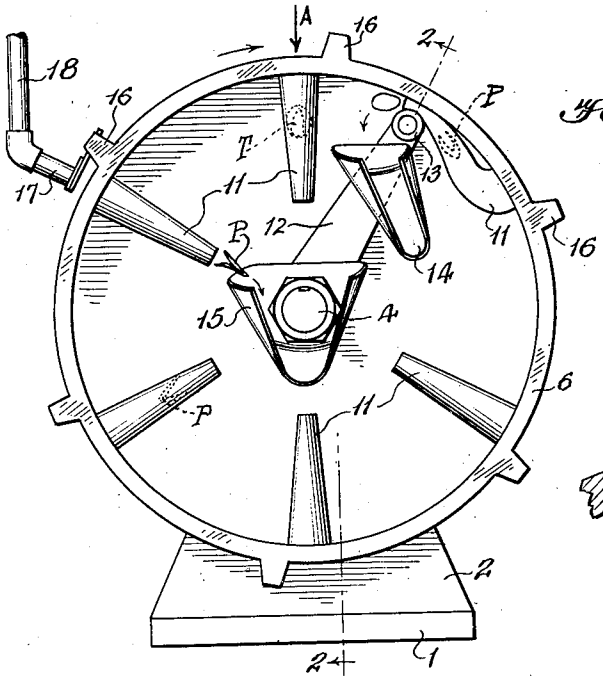


Fig. 1.

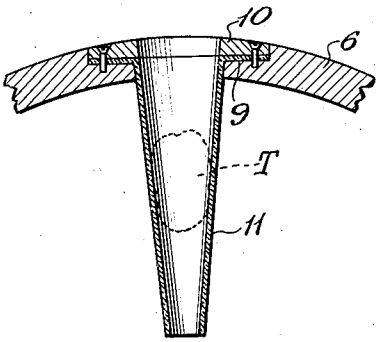


Fig. 3.

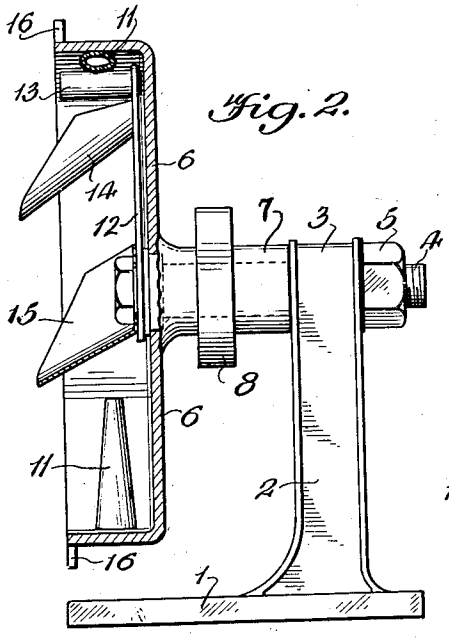


Fig. 2.

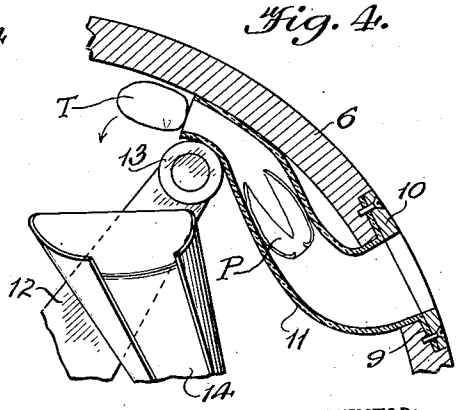


Fig. 4.

INVENTOR:
Vincenzo Carpentieri,
BY William C. Linton.
ATTORNEY

Patented Oct. 16, 1934

1,976,710

UNITED STATES PATENT OFFICE

1,976,710

TOMATO PEELING MACHINE

Vincenzo Carpentieri, Mercato St. Severino, Italy

Application December 31, 1931, Serial No. 584,255
In Italy January 14, 1931

5 Claims. (Cl. 146—48)

The present invention relates to peeling machines, more particularly to a machine for removing the skin off tomatoes or the like, and has for one of its main objects to provide means whereby the peeling operation may be done rapidly and economically.

Another important object of the invention resides in the provision of a machine of the character mentioned wherein are embodied a series of frusto-conical tubes made of elastic material, such as rubber, adapted to receive the tomatoes to be peeled, and associated with progressive pressure applying means capable of extruding the tomato from said tube to which the peelings would adhere.

It is also among the desired features of the invention to provide means capable of adequately receiving and discharging the peeled tomatoes from the machine, and means for thoroughly cleaning the machine of the peelings after they have been removed from the tomatoes.

Other important objects and advantages of the invention will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by those persons skilled in the art, I have in the accompanying drawing and in the detailed description based thereupon, set out a possible embodiment of the same.

In the drawing:

Figure 1 is a face elevation of the machine;

Figure 2 is a section taken on line 2—2 of Figure 1 shown in section;

Figure 3 is an enlarged cross sectional detail showing the manner of mounting the tubes upon the drum, and

Figure 4 is a similar view showing the device in operation.

Having more particular reference to the drawing wherein like characters of reference designate corresponding parts throughout, my improved device may be stated to comprise a base 1 provided with an integral standard 2 formed at its upper end portion with a supporting bearing 3 receiving a horizontally disposed stub shaft 4 stationarily locked onto said standard 2 by means of a nut 5 or the like in screw threaded engagement with one end of said shaft.

Rotatably mounted upon the shaft 4, is a drum 6 having an open front and preferably provided with a sleeve 7 extending centrally from the rear wall and slidable over said shaft. It is to be noted that the length of the shaft 4 is such that its free end slightly projects within the drum 6. The drum 6 may be rotated by means of a pulley 8 rigid with the sleeve 7 and driven by any suitable well known power device such as an electric motor.

Formed at relatively spaced points on the peripheral portion of the drum 6, is a plurality of shouldered openings 9, within each of which is fixed by means of an apertured clamping plate 10, a frusto-conical tube 11 made of elastic material, preferably of stout rubber. The tubes 11 normally extend radially from the inner peripheral surface of the drum 6 but terminate short of the axis of the latter.

Secured to the free extremity of the shaft 4, that is, that extremity slightly projecting within the drum 6, is an arm 12. This arm is affixed to the shaft 4 in an angular position, as clearly shown in Figure 1 of the drawing, and extends upwardly in close proximity to the inner peripheral surface of the drum 6. The upwardly extended end of the arm 12 carries a roller 13 disposed to parallel the peripheral surface of the drum 6 and positioned to engage each tube 11 for applying a continuous progressive pressure thereto, as they move with the drum, in the manner and for the purpose to be later described.

Below said roller, are supported at different points of the fixed arm 12, a pair of trough-like members 14 and 15, respectively, each projecting outwardly of the drum 6 for the purpose to be hereinafter specified.

Provided upon the outer peripheral surface of the drum 6, near the tube receiving openings 9 thereof, are outstanding lugs 16 adapted, with movement of the drum, to successively come in contact and open a spring actuated valve 17 of a water discharge conduit 18 arranged adjacent the drum and positioned to register with each opening 9 of the latter when its corresponding lug 16 opens the valve.

In using my improved device, a tomato T or the like, which, preferably, has been previously soaked in boiling water as is customary, is dropped into the frusto-conical tube 11 when the same assumes a substantially vertical position as is represented at A in Figure 1 of the drawing. With continued rotation of the drum 6 in the direction indicated by the arrow in the drawing, the tube into which the tomato has been introduced, comes in contact with the roller 13 carried by the fixed arm 12, and the tube, being made of elastic material, lies over said roller. Thus, the roller causes deformation of the tube, which is forced against the adjacent surface of the drum and assumes the position more clearly shown in Figure 4 of the draw-

ing. In so doing, the roller applies a progressive pressure to the tube, which pressure is transmitted to the tomato causing the same to slide within the tube.

It will be understood that since the frictional engagement between the inner surface of the tube and the tomato skin is greater than the adherence of the skin to the tomato, the latter will burst the skin and slide out of the tube in a peeled condition, whereupon it will fall into the trough-like member 14 and be delivered thereby out of the drum 6.

It will be noted that the diameter of the conical tube at its larger end, is of a size sufficient to permit the tomato to fall some distance within said tube before it frictionally engages the latter, whereby the roller 13 will engage the tube at a point above the tomato introduced therein, thus assuring the forcing of the tomato out of the restricted end of the tube without detrimental crushing or bruising.

The skins or peelings P, because of their extreme thinness, remain within the tube until the drum, through continued rotation, brings said tube opposite the water discharge conduit 18, whereupon the lug 16 will open the valve 17 permitting a stream of water to flow into the tube cleaning the same and forcing the peelings out into the trough-like member 15 which will collect the latter and convey the same out of the machine.

Manifestly, the construction herein shown is capable of considerable modification and such modifications as come within the scope of my claims, I consider within the spirit of my invention.

I claim:—

1. A device of the character described comprising a movable body portion, a fruit receiving and retaining deformable tube of elastic material carried by said body portion and movable therewith, means fixedly mounted in relation to said body portion and disposed in the path of said tube moving with the body portion thereby deforming the tube and applying pressure thereto for forcing the fruit through the tube whereby the fruit will be forced out and conveyed away from the peelings adhering by friction to the surface of said tube.

2. A device of the character described comprising a movable body portion, a fruit receiving and retaining deformable tube of elastic material carried by said body portion and movable therewith, means fixedly mounted in relation to said body portion thereby deforming the tube and applying pressure thereto, whereby the fruit will be forced out and conveyed away from the peelings adhering by friction to the surface of said tube, and means discharging a fluid in said tube for removing the peelings therefrom.

3. A device of the character described comprising a drum mounted for rotation and having a plurality of relatively spaced openings formed upon its peripheral portion, a deformable elastic tube secured to the drum within each of the openings thereof for receiving and retaining the fruit to be peeled, means mounted in fixed relation with said drum and disposed in the path of said tube thereby deforming the same and applying pressure thereto, whereby to force the fruit through said tube and convey the fruit away from the peelings adhering by friction to the surface of said tube.

4. A device of the character described comprising a drum mounted for rotation and having a plurality of spaced openings formed at its peripheral surface, a deformable elastic tube secured to the drum within each of the openings thereof for receiving and retaining the fruit to be peeled, means mounted in fixed relation to said drum and disposed in the path of the tubes, whereby to deform the same and apply pressure thereto to force the fruit through said tube and convey the fruit away from the peelings adhering by friction to the surface of said tube, fluid discharging means mounted adjacent said drum and adapted to register successively with each opening in the latter, valve means normally closing said discharging means, and lugs outstanding from said drum and opening said valve means when the fluid discharging means registers with said openings in the drum.

5. A device of the character described comprising a supporting base, a shaft rigid with said base, a drum rotatably mounted on said shaft and provided at its peripheral surface with a plurality of relatively spaced openings, a deformable elastic tube having frusto-conical formation and secured to the drum within each of the openings thereof for receiving and retaining the fruit to be peeled therein, an arm stationarily secured to said shaft and disposed within the drum, a roller carried by said arm in close proximity to the inner peripheral surface of the drum and positioned in the path of the tubes moving with the drum, whereby to apply a progressive pressure to the tube causing the removal of the skin from the tomato and the exclusion of the latter, a trough-like member for receiving the peeled tomato extruded from the tubes, means discharging a fluid in said tube for removing the skins therefrom, and a trough-like member conveying the peelings removed from the tubes away from the drum.

VINCENZO CARPENTIERI.