No. 849,463. PATENTED APR. 9, 1907.

H. A. CROSBY.

MACHINE FOR PEELING AND CORING TOMATOES.

APPLICATION FILED NOV. 8, 1905.

2 SHEETS—SHEET 1.

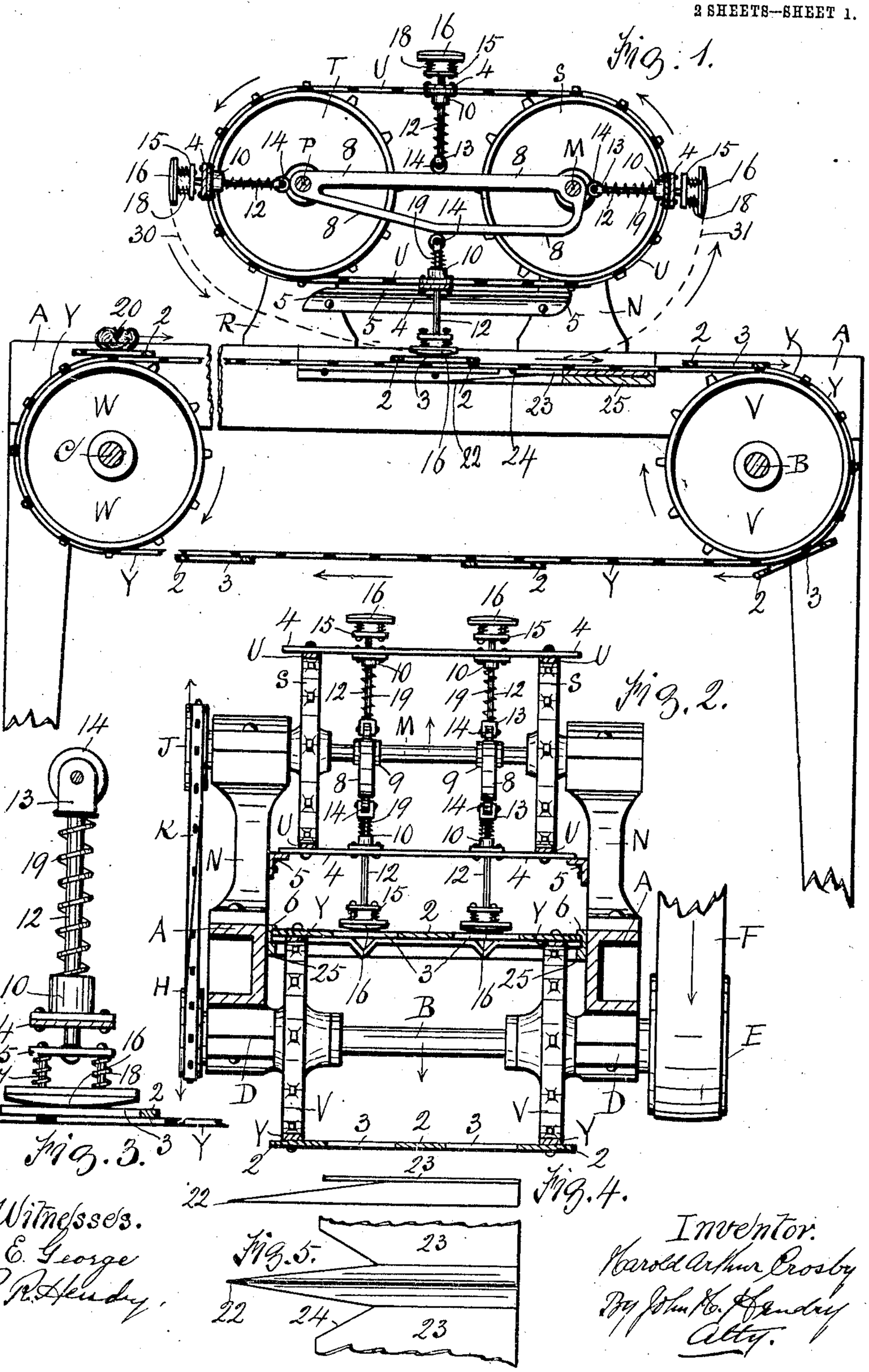

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Witnesses.
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2 SHEETS—SHEET 2.

Fig. 6.

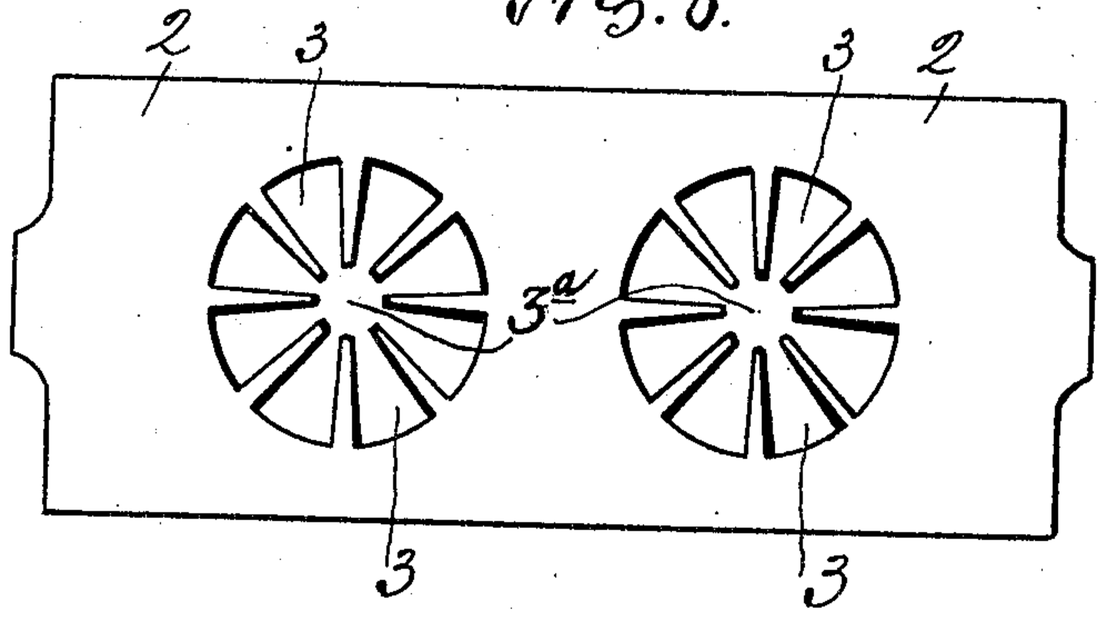


Fig. 7.

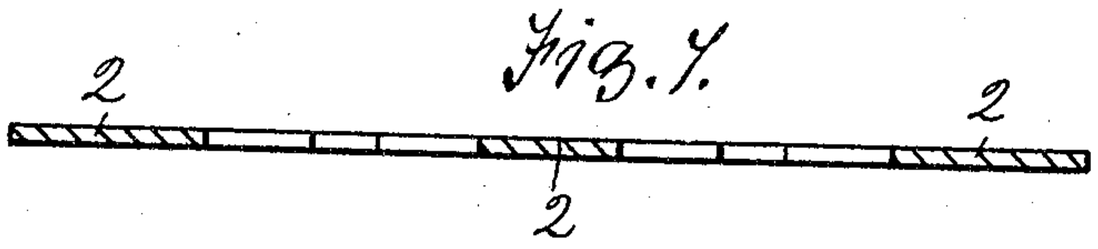
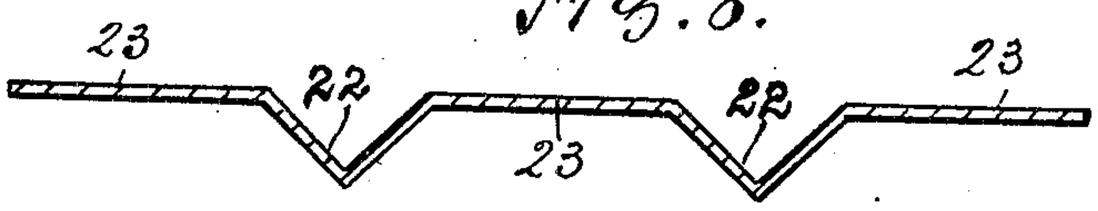


Fig. 8.



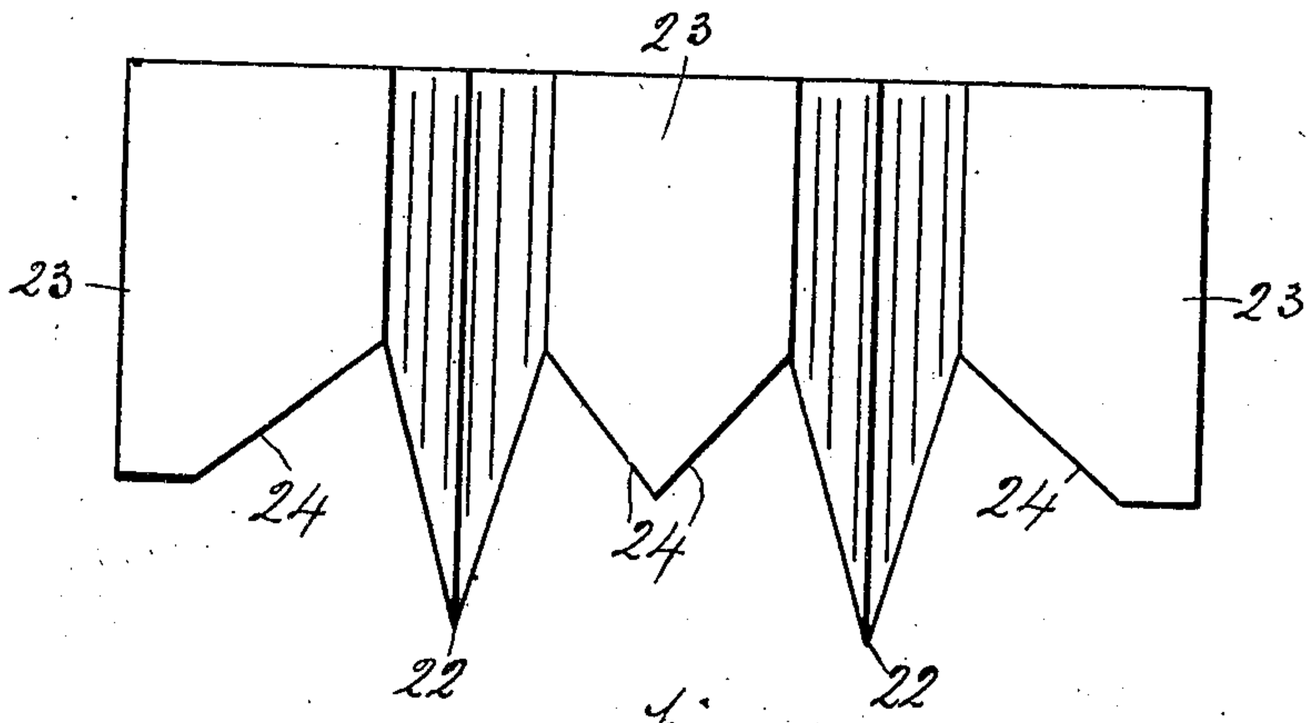


Fig. 9.

Witnesses.
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UNITED STATES PATENT OFFICE.

HAROLD ARTHUR CROSBY, OF HAMILTON, ONTARIO, CANADA, ASSIGNOR TO WILLIAM GODFREY LUMSDEN, OF HAMILTON, CANADA.

MACHINE FOR PEELING AND CORING TOMATOES.

No. 849,463. Specification of Letters Patent. Patented April 9, 1907.

Application filed November 8, 1905. Serial No. 286,320.

To all whom it may concern:

Be it known that I, HAROLD ARTHUR CROSBY, a subject of the King of Great Britain, and a resident of Hamilton, in the county of Wentworth and Province of Ontario, Canada, have invented new and useful Improvements in Machines for Peeling and Coring Tomatoes, of which the following is a specification.

My invention relates to improvements in machines for peeling and coring tomatoes, in which a number of plungers or pressers are arranged to travel on endless sprocket-wheel chains and between the same, and when in lower position the plungers are consecutively and automatically adapted to vertically press upon tomatoes, which are placed upon suitable openings in horizontal plates, which are consecutively carried by separate endless sprocket-wheel chains and at the same time.

The objects of my invention are, first, to provide vertically-operating plungers to automatically press upon tomatoes in consecutive order; second, to provide automatic means for carrying said plungers a distance while gradually pressing the tomato and also in horizontal order while the plungers are fully pressed upon the tomatoes and at the proper time to gradually release the plungers from the tomatoes; third, to provide means for automatically severing the skin and core from the tomatoes while the same are under pressure of the plungers, and, fourth, to afford facilities for the proper adjustment of the core-cutting knives and the removing of the same. I attain these objects by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a central sectional side elevation of the machine, the feeding end of which is shown broken, also the legs of the frame or table. Fig. 2 is an end elevation and partly in section as viewed from the right-hand end of the machine, the sprocket-wheel belt-chains being in section. Fig. 3 is an enlarged detail side elevation of one of the many plungers and detached and which travels around the upper sprocket-wheels. All the plungers are identical with each other. Fig. 4 is an enlarged side elevation of the detached core-cutting knife. Fig. 5 is a plan of the same. Fig. 6 is an enlarged plan of one of the tomato-holders; Fig. 7, a longitudinal section thereof; Fig. 8, an enlarged section of the stationary knives, and Fig. 9 a plan of the same.

Similar letters refer to similar parts throughout the several views.

In the drawings the rigid frame of the machine is indicated by A, and which may be extended to desirable length, especially so at the left-hand end or feeding end of the machine, in order to have many traveling horizontal transverse plates on hand on which to place the tomatoes. Below the top of the frame A are the two transverse shafts B and C, both of which are similar and are adapted to revolve in the rigid bearings D and D, which are similar and which extend downward from the frame A. On the rear end of the right-hand shaft B is a drive-pulley E with belt F, and on the opposite end of the shaft is a fast sprocket-wheel H, which drives the upper and similar sprocket-wheel J by means of the cross-belt K to revolve the sprocket J in an opposite direction, as indicated by arrows in Fig. 1 of the drawings, and at the same number of revolutions. The sprocket J is secured on the upper transverse shaft M, which revolves in bearings N of the frame A. An opposite and similar shaft P in similar bearings R of the frame A revolves in the same direction as the shaft M and parallel therewith. Sprocket-wheels S are secured on the transverse shaft M, and similar sprocket-wheels T are secured on the transverse shaft P and in line with the sprockets S. The endless-chain belts U around the sprockets S revolves the sprockets T in the same direction. The lower shaft B referred to has sprocket-wheels V secured thereto, and the opposite shaft C has similar sprocket-wheels W secured thereto. The endless-chain belts Y connect the sprockets V and W, and the said sprockets V and W and the sprockets S and T are all of the same size and number of teeth and revolve together at the same time and make the same number of revolutions per minute. The sprocket-belts Y carry the transverse plates 2, which travel with said belts. Said plates have suitable pronged openings 3 (having central openings 3^a) through the same. The upper endless-belts chains U carry transverse plates 4, the ends of which extend beyond the sprocket-wheels S and T and when in lower position and traveling horizontally rest upon side brackets 5, which

are secured to the inner sides of the bearings N and R. The lower transverse plates 2 also extend endwise beyond the sprockets V and W, and when in their upper horizontal position said extended ends rest on or slide in said brackets 6, which are secured to the inner sides of the frame A. In vertical line with the openings 3 of the transverse plates 2 are inclined and horizontal planes or cams 8, the ends of which are loosely journaled on the transverse shafts M and P and are stationary between the retaining-collars 9 on said shafts, and which revolve with the shafts and loosely against the cams 8. Secured to the inner sides of the plates 4 are flanged hubs 10 in vertical line with the cams 8 and the openings 3 in the plates 2. Rods 12 are adapted to slide through the plates 4 and their flanged hubs 10.

To more fully understand the plungers of which the rods 12 form a significant part, I will here describe one plunger, as all are identical and operate identically the same. The upper end of the rod 12 has a roller-bearing bracket 13 secured thereto, and in this bracket 13 is journaled a roller 14, which travels around and engages with the cam 8. The lower end of the rod 12 is secured to a plate 15, which is connected to the plunger 16 by means of rods 17, the lower ends of which are secured to the plunger 16. The rods 17 are adapted to slide through the plate 15, and spiral springs 18 are around the rods 17, and said springs 18 press against and control the plunger 16. The lower and slightly convex part of the plunger is preferably made of flexible material, such as rubber. This flexible end part of the plunger engages with the tomato 20 when in operation. Between the flanged hub 10 and the bracket 13 and around the rod 12 is a controlling spiral spring 19, which presses against said flanged hub 10 and the bracket 13. Eight plungers 16 are shown in the drawings. It is my intention to employ twenty-four plungers, more or less, when building a machine for practical use. Providing there are twenty-four plungers in a machine and in double line, as shown in Fig. 2 of the drawings, then it would be necessary to employ only twelve plates 2 on the belts Y.

The stationary knife-point 22 is V-shaped and has side flanges 23, with angle cutting edges 24. The flanges 23 extend from side to side of the frame A and are held rigid in side guides and stops 25, which are secured to the inner sides of the frame A and similar to the brackets 6, which support the ends of the plates 2. The flanges 23 of the stationary and removable knife are adapted to slide into the guides 25 from the forward end part of the machine and to slide in a certain distance, then stop in permanent position until removed from its resting-place for grinding purposes. The end stop of the knife is shown in Fig. 1 of the drawings. The upper blade or flange part of the knife is in proximity with the under side of the plate 2. The V-pointed part 22 of the knife severs the flesh of the pressed tomato from the core, and the angle cutting parts 24 sever the flesh from the skin and leaves the skin and core part of the tomato adhering and on the plate 2.

The plates 2 are carried over the stationary knives in close proximity to the upper surfaces 23, and the cores of the tomatoes are pressed through the central openings 3^a and severed by the V-shaped and pointed knives 22. The flesh of the tomato drops into any kind of a receptacle which may be placed under the openings 3 and the knives, and this receptacle will extend the desired distance in each direction—from right to left in Fig. 1.

The operation of the machine is as follows: When the double belt *y* is traveling horizontally, the tomatoes are placed on the openings 3 of the traveling plates 2 by one or more operators. At the same time the double endless belt U, together with the transverse plate 4, carry the plunger downward to engage the top of the tomato to gradually press the same on and partially through the plate 2. The roller 14 of the plunger engages the cam 8, and the downward course of the plunger is indicated by a broken curved line in Fig. 1 of the drawings, and noted 30. The upward course of the plunger 16, and after its horizontal course, is noted in broken curved lines 31. The knife 22 is positioned to engage the tomato at a suitable place previous to the releasing of the plunger from its pressure on the tomato. The plungers may be in single line and in double line, as shown, or there may be more than two in line, according to the size and power of the machine required. The spring 19 of the plunger 16 is to allow proper tension and pressure of the plunger upon the tomato, and the springs 18 assist the spring 19 in the same object—namely, of proper and suitable pressure on the tomato to accomplish the object of peeling and coring the same.

The gradual pressure on the tomato by the plunger while they are both traveling is important; so is the pressure on the tomato by the plunger while both are traveling horizontally to accomplish the objects of the machine.

I am aware that a frame or table A, with endless-chain belts carrying transverse plates with certain pronged openings for the placement of tomatoes, is not new, nor do I claim the same; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for peeling and coring tomatoes, a frame, wheels mounted on the frame, belts on the wheels, a transverse plate carried by the belts, a hub on the plate,

a plunger adapted to operate through the hub and plate, a stationary cam, a roller on one end of the plunger to engage the cam; a flexible bearing-surface on the opposite end of the plunger, a tension-spring on the plunger between the roller and the hub, and springs interposed between said plunger and flexible bearing.

2. In a machine for peeling and coring tomatoes, a frame, wheels suitably mounted on the frame, and adapted to revolve in the same direction, belts connecting the wheels, a transverse plate carried by the belts, a hub on the plate, a spring-plunger adapted to operate through the plate and hub, a stationary cam, a roller on the plunger to engage the cam, in combination with endless and horizontally-traveling belts, a transverse tomato-carrying plate carried by the last-named belts having an opening for the placement of a tomato, and adapted to travel horizontally with and below the plunger to hold the tomato between said plunger and said plate, and means for severing the tomato.

3. In a machine of the class set forth, the combination with an open movable support for the tomatoes, of a plunger movable in unison with the tomato-support and having means to engage the tomatoes, and means to cause the plunger to coact with the tomatoes and press them against their support.

4. In a machine of the class set forth, the combination with a movable tomato-support, of a spring-actuated plunger movable in unison with the tomato-support, and a cam for gradually and continuously applying the plunger to the tomato.

5. In a machine of the class set forth, the combination with a movable tomato-support, of a pressure device movable in unison with the tomato-support for acting on the tomatoes comprising a plunger, a plunger-stem, and a connection between the plunger and stem permitting movement of the plunger in relation to the stem.

6. In a machine of the class set forth, the combination with a movable tomato-support, of a pressure device movable in unison with the tomato-support for acting on the tomatoes comprising a plunger-stem, a convexed head or member secured thereto, a plunger having rods which pass loosely through the head, and coil-springs encircling the said rods.

7. In a machine of the class set forth, the combination with a tomato-support, of a knife having a forwardly-projecting part substantially V-shaped in cross-section and flanked by laterally-extending supplemental cutting-knives disposed in the rear of the point of the V-shaped part, and means for effecting the relative movement of the tomato-support and knife.

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