Dec. 26, 1939. L. H. MILLEN 2,185,090

PEACH PITTING MACHINE

Filed March 23, 1938 3 Sheets-Sheet 1

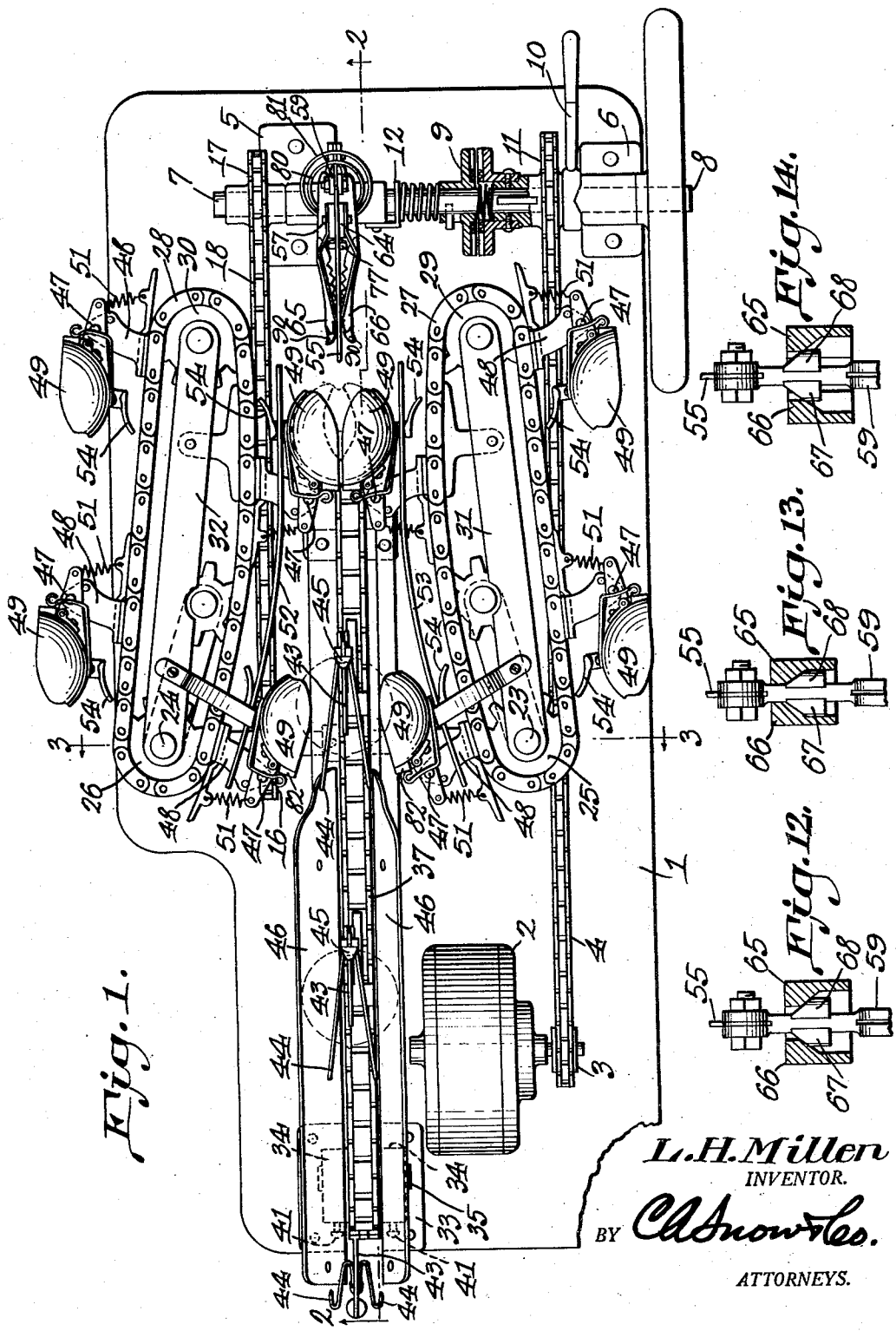


Fig. 1.

Fig. 14.

Fig. 13.

Fig. 12.

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PEACH PITTING MACHINE

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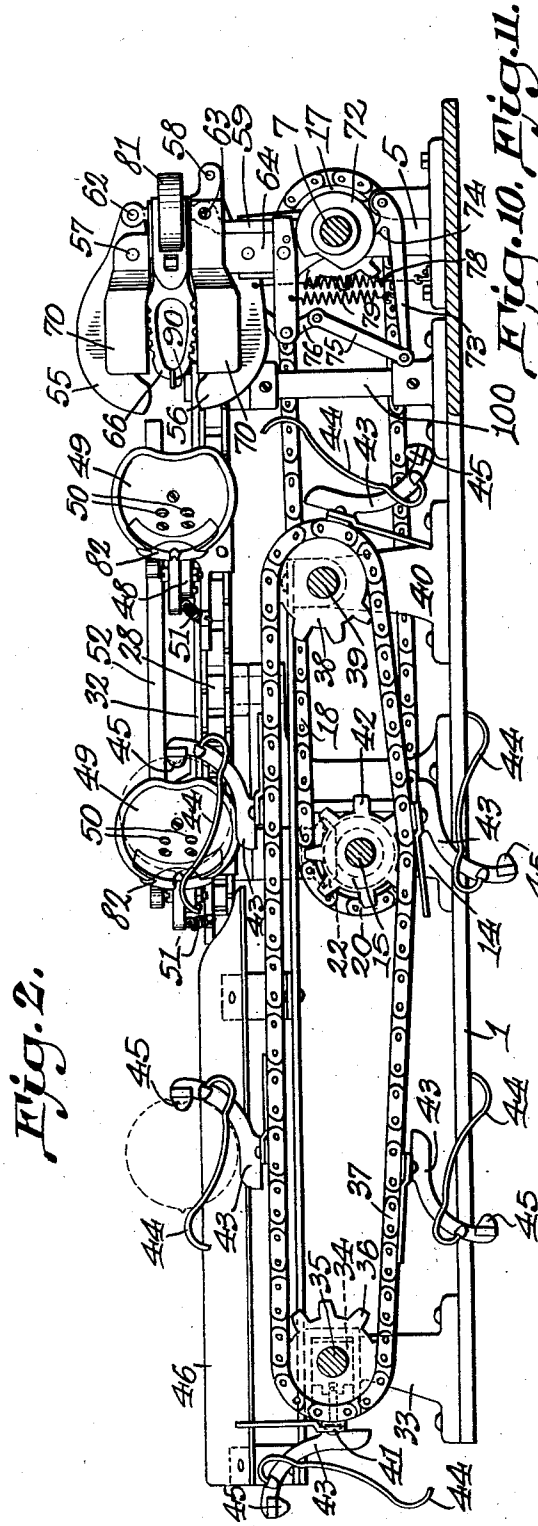


Fig. 2.

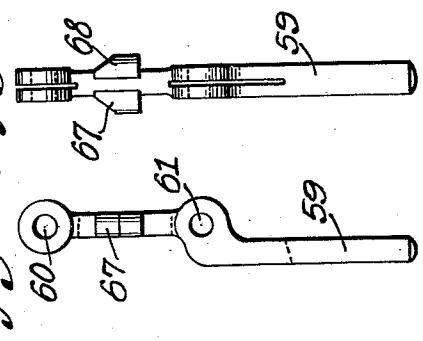


Fig. 10, Fig. 11.

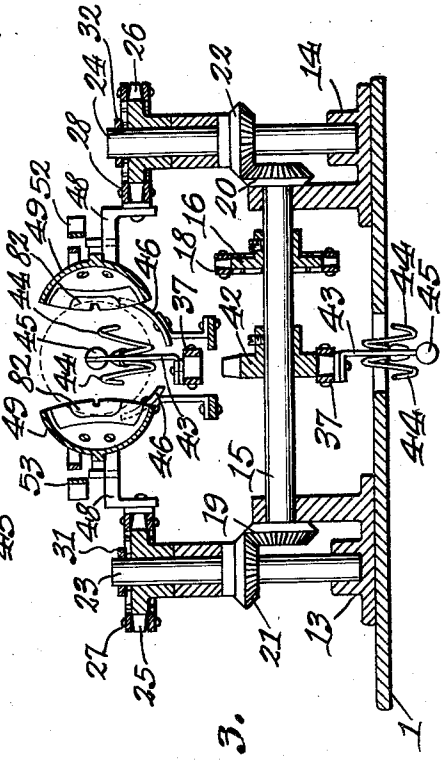


Fig. 3.

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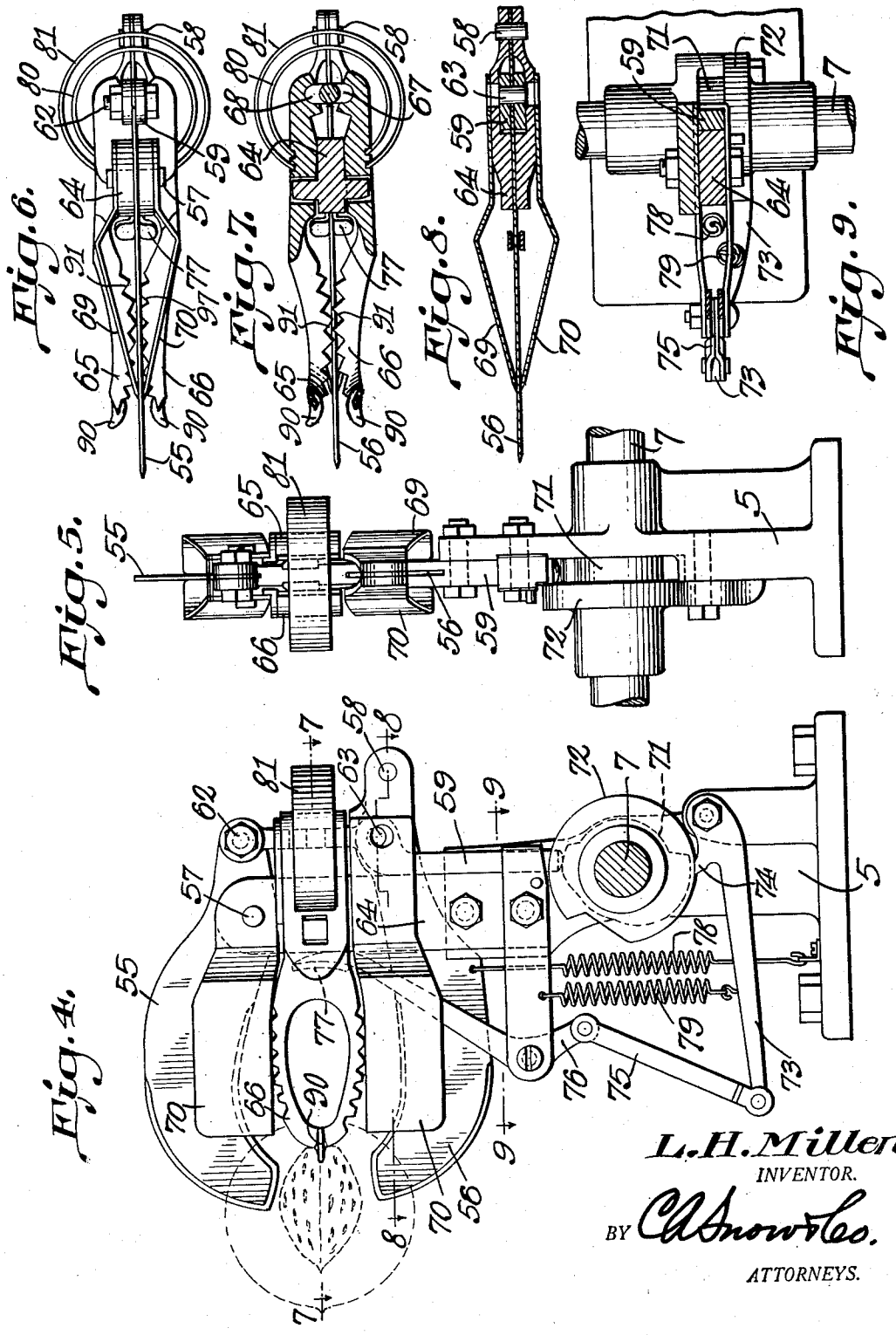


Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE

2,185,090

PEACH PITTING MACHINE

Lincoln H. Millen, Modesto, Calif.

Application March 23, 1938, Serial No. 197,712

3 Claims. (Cl. 146—28)

The device forming the subject-matter of this application is a peach-pitting machine. One object of the invention is to provide novel means for mounting and operating the peach-holding cups, and another object of the invention is to supply novel means for dividing a peach and removing the pit.

In the accompanying drawings,

Figure 1 is a plan view of the improved peach pitting machine;

Figure 2 is a vertical sectional view of the improved peach pitting machine taken on the line 2—2 of Figure 1;

Figure 3 is a transverse sectional view of the improved peach pitting machine taken on the line 3—3 of Figure 1;

Figure 4 is a side elevation of the knives and associated parts;

Figure 5 is a front elevation of the knives and associated parts;

Figure 6 is a top plan of the knives and associated parts;

Figure 7 is a sectional view taken on the line 7—7 of Figure 4;

Figure 8 is a sectional view taken on the line 8—8 of Figure 4;

Figure 9 is a partial sectional view taken on the line 9—9 of Figure 4;

Figure 10 is a side elevation of the cam operated plunger which operates the knives;

Figure 11 is an end view of the cam operated plunger which operates the knives;

Figure 12 is a detailed view showing the relative position of the cams on the cam operated plunger when the extractor elements are approximately one-quarter inch open;

Figure 13 is a detailed view showing the cams on the cam operated plunger in their position when the extractor elements are wide open;

Figure 14 is a detailed view showing the relative position of the cams on the cam operated plunger when the extractor elements are closed.

In carrying out the invention, there is provided a supporting base 1, adjacent one end of which is positioned a driving motor 2 having a sprocket 3 which operates a sprocket chain 4, which furnishes the motive power for actuating the several portions of the machine.

Adjacent the opposite end of the base 1 are a pair of standards 5 and 6 in which are mounted alined stub shafts 7 and 8 which are interconnected by clutch elements 9, which in turn are operable by a lever 10, whereby the apparatus may be started and stopped at the will of the operator. A sprocket 11 is fixed to the stub shaft 8 and receives the sprocket chain 4 which is driven by the motor 2. A clutch adjusting mechanism 12 is mounted upon the stub shaft 7 whereby the tension on the clutch elements may be changed as desired.

Intermediate the ends of the base 1 and disposed thereon, is a pair of standards 13 and 14 between which are mounted a cross shaft 15 on which is disposed a sprocket 16 which cooperates with a sprocket 17 on the stub shaft 7, said sprockets being inter-connected by a sprocket chain 18. Beveled gears 19 and 20 are secured at the opposite end of the cross shaft 15, and mesh with beveled gears 21 and 22, respectively, which are mounted upon vertically disposed rotatably mounted shafts 23 and 24, which have their bearings in the standards 13 and 14 respectively. Sprocket wheels 25 and 26 are secured, respectively, to the shafts 23 and 24. Vertical shafts 100 (Fig. 2) are mounted on the base 1 and carry sprocket wheels 29 and 30. Sprocket chains 27 and 28 are engaged, respectively, with the sprocket wheels 29 and 25, and 30 and 26. The ends of carrier arms 31 and 32 are mounted, respectively, on the upper ends of the shafts 100—23 and 100—24.

Disposed on the base 1 adjacent the driving motor 2, is a standard 33 provided with a bearing 34 for a stub shaft 35, upon which a sprocket 36 is mounted. A sprocket chain 37 is driven by the sprocket 36, and the chain engages a sprocket 38 mounted on a stub shaft 39 carried by a standard 40, as clearly illustrated in Figure 2 of the drawings. A chain tightener 41 is provided for tightening the sprocket chain 37. A sprocket wheel 42 secured to the cross shaft 15 is engaged with the sprocket chain 37, to drive the shaft 15.

Disposed at intervals along the sprocket chain 37 and carried thereby are a plurality of peach carrier arms 43 comprising diverging supporting fingers 44, and a peach centering stud 45 at the outer end of each of said carrier arms. A peach receiving trough 46 is mounted above the sprocket chain 37 and is formed with spaced inclined sides, between the carrier arms 43 move forward progressively toward the point where the divided peach supporting cups 49 grasp the peaches and progressively move them forward to the knives 55 and 56, the extractor elements 65 and 66, and the spreader blades 69 and 70, all more fully described hereinafter.

Carried by the endless sprocket chains 27 and 28, are a plurality of divided peach gripping cups 49 which are pivotally mounted as at 47 on the outer ends of arms 48 carried by the said sprocket

chains. The cups 49 are substantially semi-elliptical in shape, and are provided with apertures 50 through which the juice from the peaches may pass, and the apertures will prevent any suction on the halves of the peaches. Suitable springs 51 are secured to the cup supporting means, and serve to hold the cups 49 away from the sprocket chains 27 and 28. Guide rails 52 and 53 are mounted adjacent to the sprocket chains 27 and 28, and cooperate with guide fingers 54 carried by each of the peach gripping cups 49 so that the cooperating cup sections will be moved toward each other to grasp the peaches as they are fed from the carrier arms 43 in their travel toward the peach pitting and slicing apparatus shown in Fig. 4.

The structure and operation of the peach pitting and splitting apparatus will now be fully set forth. Disposed at the end of the supporting base 1 upon the standard 5, is a frame 64 upon which cooperating peach splitting knives 55 and 56 are pivoted at 57 and 58, respectively. It will be apparent from Fig. 4 that the pivot elements 57 and 58 are so placed that a single cam operated plunger or rod 59 formed with openings 60 and 61, is thereby connected to the pivot pins 62 and 63 on the knives 55 and 56, in such a manner that when the cam operated plunger or rod is moved upwardly the knives will move simultaneously toward each other to effect the splitting of the peach which has been positioned between the knives. Mounted upon the frame 64 is a pair of extractor elements 65 and 66, which cooperate with cam shoulders 67 and 68 on the cam operated plunger or rod 59, the extractor elements serving to cut into the ends of the peaches and to follow around the pit and grip it. Suitable oppositely extending guards 90 are formed on the extreme forward ends of the extractor elements 65 and 66, and serve to enter the peach and to cause teeth 91 on the extractor elements to cut through the meat of the peach leaving a small portion of the meat next to the pit, and on the pit. The reason for this is that the meat of the peach immediately next to the pit is very dark in color and it is not desired to have that portion of the fruit in with the perfect fruit required in a fancy pack. Rearwardly-diverging spreader blades 69 and 70, sharpened on their forward ends, are supported on the frame 64 to direct and guide the sections of the peaches as they are being split, to the sides of the apparatus, where they will fall upon suitable conveyors (not shown) to be carried away for packing. The spreader blades 69 and 70 help to split the peach, and to open up the same after being split, thereby relieving the pressure on the extractor elements 65 and 66, and finally deflect the two halves of the peach outwardly as they are advanced.

Cams 71 and 72 are mounted side by side on the shaft 1, the cam 71 cooperating with the plunger or rod 59 for intermittently raising and lowering the cutting blades 55 and 56. The cam 72 cooperates with the lever 73 of a pit-ejector, the lever having a finger 74 engaging the cam surface. The lever 73 is mounted upon the standard 5, and is connected at its outer end to a link 75, which in turn is connected to a bell crank lever 76, which carries an ejecting cup 77 at its upper extremity. A spring 78 is connected between the standard 5 and the cutting blade 56 to exert a pressure upon the same to open the blade. A spring 79 is connected to the lever 73 and serves to keep the finger 74 of the lever in contact with the cam 72.

Spring members 80 and 81 constitute yieldable means for exerting pressure upon the extractor elements 65 and 66, to urge them into their normally closed position.

The electric motor 2 is started and the clutch 9 is engaged so that the apparatus will begin running, after which the operator takes peaches as fast as he can handle them and places them in the peach carrier arms 43 where they will be fed along by the endless conveyer 37 to the peach grasping cups 49 on the adjacent endless conveyer. As the peach grasping cups 49 move toward the cutting and pitting apparatus of Fig. 4, the pressure upon the sections of the cup will increase to grasp the peaches more tightly. As soon as the peach gets to a point adjacent the pitting and cutting apparatus of Fig. 4, the cutting knives 55 and 56 will have opened to their fullest extent through the medium of the cam 71 and the slide rod 59, and the knives will then close down to split the peach, at which time the extractor elements 65 and 66 will force themselves into the end of the peach and follow around the pit, cutting the same free. The pit is clamped between the pit extractor elements 65 and 66, and as the peach is cut in half the two portions thereof will follow the spreader blades 69 and 70 where they will be dropped upon a suitable conveyer (not shown).

Thereafter, the cutting blades 55 and 56 will again be opened to their fullest position due to the action of the cam 71 and the plunger or rod 59, and the cam 72 will cause the operation of the pit ejector 73—75—76—77, as the extractor elements 65—66 are opened, and the pit will be forcefully pushed out of the extractor elements. This operation continues as fast as the peaches reach the cutting and pitting apparatus of Fig. 4, and it is possible to extract the pits rapidly. Spring pressed gates 82 are mounted at the rear of the peach gripping cups 49 and are brought into play and opened only in the event that an extra large pit is found in a peach and if the extractor elements 65—66 should move further than the back end of the peach gripping cups 49. This is a safety measure and very seldom is utilized, as the peach pits are of practically uniform size.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a peach pitting machine, a base, a peach splitting mechanism mounted on the base, upright driven shafts journaled on the base, second upright shafts carried by the base, first sprocket wheels secured to the driven shafts, second sprocket wheels carried by the second shafts, sprocket chains engaged with the first and second sprocket wheels, carrier arms mounted terminally on the driven and second shafts and disposed, each, within one of the sprocket chains, guide rails disposed between the inner runs of the sprocket chains and converging toward the peach splitting mechanism, cooperating peach holding cups pivoted to the chains and provided with fingers which ride along the outer surfaces of the rails and contrain the cups to grip a peach and move it toward the peach splitting mechanism, and spring means connected with the cups to maintain the fingers engaged with the outer surfaces of the rails.

2. In a peach pitting machine, a frame, upper and lower knives pivotally mounted on the frame for opening and closing movement, power driven means for opening and closing the knives to

cause them to follow around the pit of a peach and divide the peach into halves, extractor elements pivotally mounted on the frame for opening and closing movement in a direction at right angles to the direction in which the knives open and close, the working ends of the extractor elements being set back from the working ends of the knives, whereby, after the knives have begun the severing operation, the extractor elements follow the pit of a peach, yieldable means for closing the extractor elements, to cause them to follow and grip the pit of a peach, pairs of spreader blades secured to the frame and comprising rearwardly-diverging, peach-spreading parts located on opposite sides of the respective knives, one pair of spreader blades extending above the extractor elements, and the other pair of spreader blades extending below the extractor elements, to separate the halves of a peach in the vicinity of the periphery of the peach and to lessen the strain on the extractor elements, and means for feeding a peach upon the knives, the extractor elements and the spreader blades.

3. A peach pitting machine constructed as set forth in claim 2, and wherein the power driven means embodies a plunger mounted for reciprocation on the frame and pivoted to the knives, the plunger having cam parts operating the extractor elements, a pit ejector movably mounted on the frame and operating between the extractor elements, a shaft journaled on the frame, and means for operating the plunger and the ejector from the shaft.

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