(No Model.)

4 Sheets—Sheet 1.

R. P. SCOTT.

FRUIT PITTING MACHINE.

No. 501,608. Patented July 18, 1893.

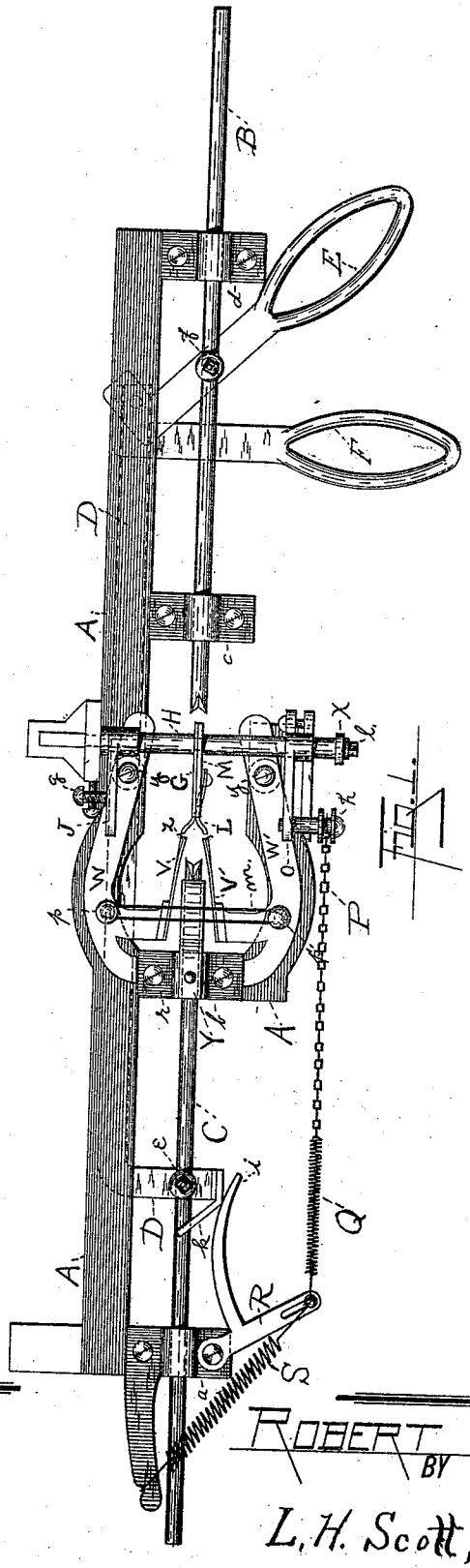


FIG. 1.

WITNESS:

Oscar A. Michel.

Chas. K. Michel.

INVENTOR

ROBERT P. SCOTT,

BY

L. H. Scott, ATTORNEY

(No Model.)

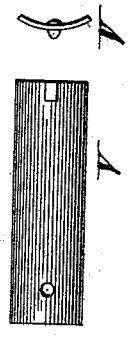
4 Sheets—Sheet 2.

R. P. SCOTT.

FRUIT PITTING MACHINE.

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Fig. 8.



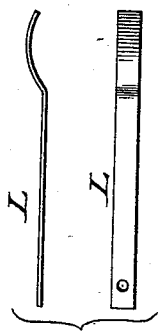


Fig. 7.

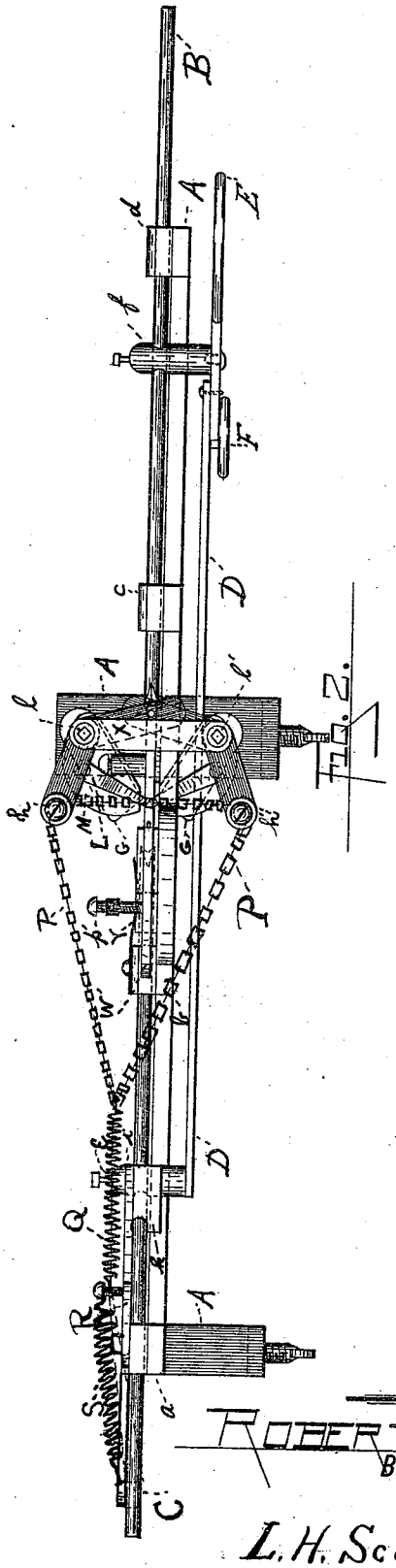


FIG. 2.

WITNESS:

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(No Model.)

4 Sheets—Sheet 3.

R. P. SCOTT.

FRUIT PITTING MACHINE.

No. 501,608. Patented July 18, 1893.

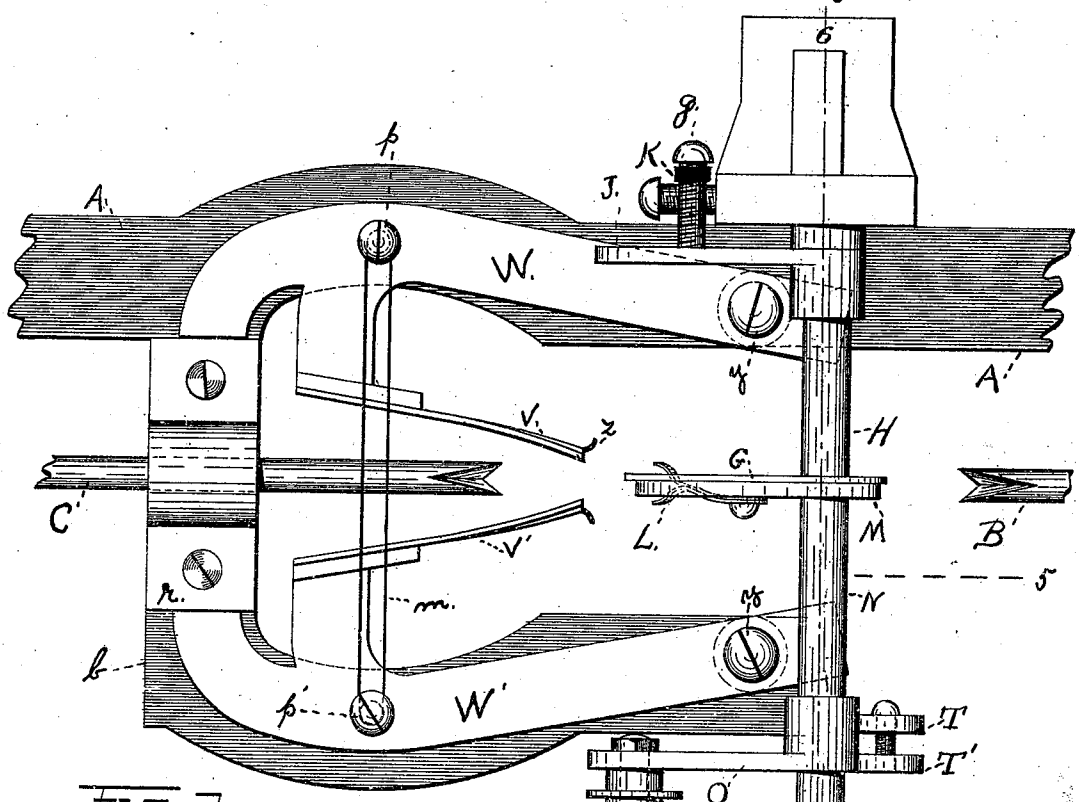


FIG. 3.

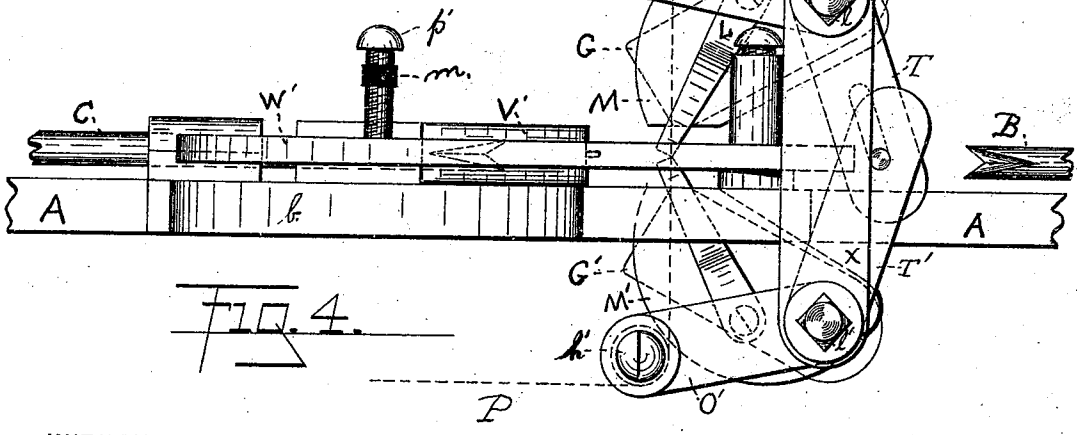


FIG. 4.

WITNESS:

Oscar A. Michel.

Chas. R. Michel

INVENTOR

ROBERT P. SCOTT,

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ATTORNEY

(No Model.)

4 Sheets—Sheet 4.

R. P. SCOTT.

FRUIT PITTING MACHINE.

No. 501,608. Patented July 18, 1893.

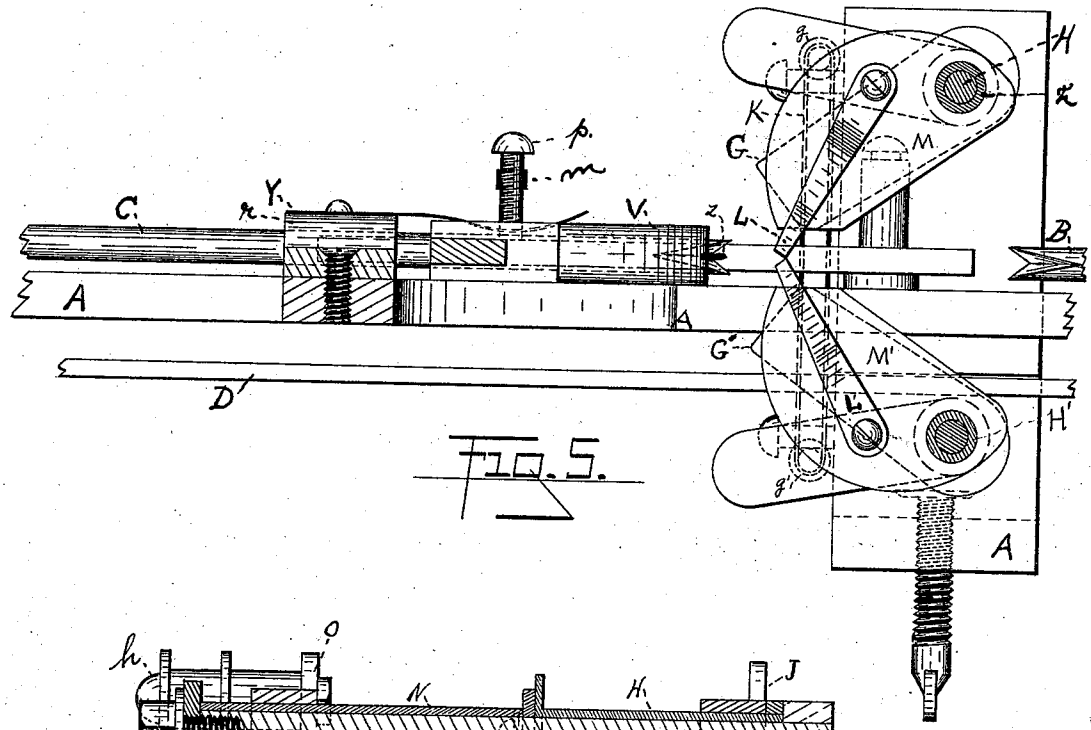


FIG. 5.

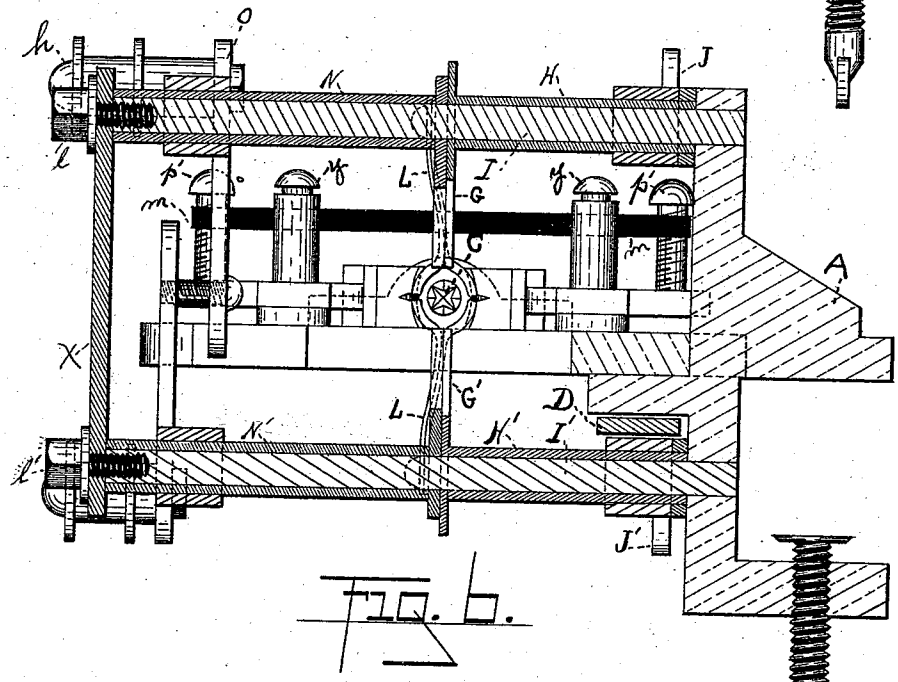


FIG. 6.

WITNESS:

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Chas. P. Michel.

INVENTOR

ROBERT P. SCOTT,

BY

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UNITED STATES PATENT OFFICE.

ROBERT P. SCOTT, OF BALTIMORE, MARYLAND.

FRUIT-PITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 501,608, dated July 18, 1893.

Application filed October 19, 1891. Serial No. 409,229. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. SCOTT, a citizen of the United States, and a resident of the city of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Fruit-Pitting Machines, of which the following is a specification.

My invention relates to improvements in machines for removing the pits or stones from peaches or other analogous fruits of the drupaceous family and consists in the novel mechanism hereinafter pointed out in the claims.

In the accompanying drawings forming a part of this specification Figure 1 is a top or plan view of the complete machine. Fig. 2 is a side elevation thereof. Figs. 3 and 4 respectively are enlarged plan and side elevation views in detail of the middle portion of the machine. Fig. 5 is a longitudinal sectional view of Fig. 3 taken on the line 5. Fig. 6 is a cross sectional view taken on the line 6 of Fig. 3; Figs. 7 side edge views of pit scraping knives; Figs. 8 side and end views of auxiliary cutters.

Similar letters of reference indicate corresponding parts throughout the several views.

In the said drawings A represents the general supporting frame of suitable form for attaching the various working parts of the machine thereto, and adapted to be secured to the edge of a bench or table by means of the ordinary clamp and thumb screw. Two rods B and C are slidingly mounted, in alignment with each other and substantially parallel with the body of the frame A, on the arm extensions therefrom *a*, *b*, and *c*, *d*. These are the peach gripping rods, which are furcated on their inner or approaching ends in order to grasp the pit of the peach and retain the same properly and securely when it is placed therebetween and clutched as will be hereinafter seen. The rods B and C are connected with each other by means of a bar D, which at its rear end is bent at an angle or arm and pivoted to a post *e* fixed on the rear rod C by a set screw. The forward end of the said bar D is connected to the rod B by a handle lever E pivoted thereon and also pivoted on a post *f* fixed to the said rod B by a set screw. A second handle F is rigidly attached to the bar D, extending laterally therefrom. By means of this connection between the gripping rods, they are reciprocable as a unit and the forward rod B is capable of an additional and independently reciprocable movement to a limited degree by the oscillation of the upper or pivotally attached lever handle E which produces a rectilinear movement of the rod B as will be understood. The unitary movement of the gripping rods as a whole is for the purpose of impelling the peach toward and through the cutters and returning the same to the starting point. The object of the independent movement of the forward rod B or plunger is to obtain the adjustment required in placing and gripping each individual peach.

The blocks or posts *e* and *f* are permanently adjustable on their rods by set screws, to regulate the distance between the approaching ends thereof, by means of which they can be set correspondingly for large or small sizes of peaches when they run so in quantities, thus reducing the adjustability required on each peach to a minimum.

As the rapidity with which the machine can be worked is of the highest importance to its commercial success it will be evident any means tending to increase its efficiency in this respect will add materially to its value and consequent acceptance by the canning trade.

In gripping a peach preparatory to pitting the same, the entire gripping mechanism proper, that is the two rods and blocks thereon, their connecting bar and both handles are all drawn as a whole, to the right as far as they will go. The handle lever E is then thrown to its full opening limit, the peach is placed against the rear rod, which is steadied by gripping the rigid handle F, the forward rod B is brought into holding position therewith and the peach thus securely held between the rods is ready for propulsion toward the pitting knives. It is intended and preferable that the peach be held by the gripping rods with its edges or ridges lying or nearly lying, in a vertical plane, the pitting knives being best adapted to receive it in that position.

Having thus described the holding mech-

anism I will now pass to the consideration of the cutters or pitting knives proper, the function of each and their general and relative arrangement. The first pair, that is those which make the initial cut on the peach, are the halving knives, G, G'. These are virtually plain flat blades mounted or hinged to swing in a vertical plane, one on each side, above and below the axial line of the gripping rods, equidistant therefrom and converging toward the rear or discharge end of the machine. These cutters in common with the others hereinafter described are pivoted in advance of their cutting edges. This prevents any tendency of the same to wedge themselves on the peach pit. They are rigidly attached radially to the tubes or sleeves H, H', which rock on the rods I, I', extending laterally from the frame A of the machine, connected and braced at their outer ends by a cross bar X attached thereto by the set screws *l* and *l'*. At the end of each sleeve opposite to that which holds the knife is a rigidly attached radial arm J or J'. Best seen in Figs. 3 and 6. These arms are connected by a contractible spring K, seen best in Fig. 5, of any desired form, as for instance an ordinary spiral spring or an elastic band of rubber, as shown. A pintle or screw *g* or *g'* on each arm coming in contact with similar ones on the frame A serve as stops to limit the inward swing of the knives G, G' and also as a convenient attaching point for the connecting spring K. It will thus be seen that the halving knives have a spring actuated radially yielding movement toward and from each other.

The second set of cutters, or those which come in play in immediate sequence to the halving knives, comprise four individual knives L arranged in two pairs and operating as a whole. The form of one of these single or individual cutters L is a slightly curved blade terminating in a half-bow or arc, and each pair consists of two of these placed closely together flatwise and with the bow parts thereof diverging, forming a bifurcated cutter which in form approximates the contour of the longitudinal half of a peach pit taken on a plane transverse to its edges. In company with its similarly formed and oppositely placed complementary pair, the set of cutters thus formed is adapted to cut or scrape closely the meat of the peach from its pit. These knives L are rigidly attached to the plates M, M', (in this instance of semi-circular form though not necessarily so) a pair to each plate and the said plates are hung or mounted by means of tubes or sleeves N, N', in a similar manner to the flat knives heretofore explained, and on the same rods I, I'. These semi-circular plates are placed in close but free lateral or endwise contact with the halving knives G, G', and the forward or straight edges thereof are almost in line with the cutting edges of the said halving knives. In order that the said plates may follow freely in the path previously cut in the peach by the halving knives, the edges thereof are sharply beveled.

The bifurcated cutters are rigidly attached to the semi-circular plates in a more upright position than the edges of the said plates and slightly in the rear thereof. In addition to the radially yielding movement similar to the halving knives these bifurcated cutters have a sidewise or laterally flexible movement due to the inherent nature of the cutter itself, which is usually of steel. Each bifurcated cutter may be made, if desired, of one single solid piece, in which case the curved portion thereof would have but very slight flexibility. By setting one pair of the bifurcated cutters slightly in advance of its complementary pair the apex of each bifurcation may approach very closely to the central line of travel of the gripping rods, without the cutters interfering with each other. I do not claim independently this specific form of bifurcated cutter *per se*, as it is shown in the United States patent issued to me on June 7, 1881, numbered 242,701.

I now come to a highly important feature of my invention in connection with the use of these bifurcated cutters and the means whereby the same are made fully practicable and brought to a degree of efficiency hitherto unattained. I will therefore digress from the main subject for a moment in order to show to a certain extent wherein the difficulty sought to be overcome by the present invention rested. In the use of this form of cutter heretofore, if the springs actuating them toward the pit of the peach were of sufficient strength to cause the knives to hug the pit and cut closely thereto on the downward path, that is after the knives had passed the meridian thereof, then the impelling force required to overcome the resistance on the upwardly inclined path of the knives over the pit was such as to make the machine employing them quite difficult of manual operation, in addition to causing the frequent breakage of the cutters themselves. On the other hand if the springs were sufficiently weak to permit the easy ascent of the cutters on the first half of the pit there was insufficient tensile force to cause them to hug the pit and cut closely thereto on the descent or second half thereof, thereby leaving more or less of the meat adhering to the pit on the latter half. In the present invention the desired result is attained of easy or gentle pressure of the cutters during the ascent or upward travel of the same, and of hard, strong and increased pressure just as these cutters reach the summit or meridian of the pit and continuing on the entire downward course thereof. This is due to the use of springs differentiated as to their respective tractive power in accordance to the unequal resistance offered by the pit.

I will now point out the special mechanism employed in reaching this result. Each of the sleeves N, N' holding the knife carriage

or plate M, M′, has at its outer end a radial arm *o*, *o*′, rigidly attached thereto and extending in a slightly divergent relation from each other toward the rear of the machine. On each of the said arms *o*, *o*′, is a laterally projecting stud or roller *h*, *h*′, over which passes an endless belt or chain P, seen best in Figs. 1 and 2, which in turn is connected by a strong spring Q, of any desired form, to a horizontally extending two-armed cam lever R, pivoted near its apex to the frame A. This lever is connected by a second, relatively weak contractile spring S to the extreme rear end of the frame A. The endless belt or chain P thus assumes a triangular form, in a vertical plane, its base being over and between the rollers *h*, *h*′, and its apex being the point of connection with the strong or reinforcing spring Q. The curved arm *i* of the lever R extends forwardly and is adapted to come in contact with an incline or cam *k* on the arm portion of the connecting rod D, when it reaches this point on its line of travel. This contact or engagement with the cam *k* takes place just at the moment when the bifurcated cutters have reached the summit of the pit. The cam lever R is thereby thrown outward and backward and the strong spring Q, hitherto inactive, is now brought into active operation transmitting its tension through the intermediate mechanism to the cutters while in the downward path of the pit. This feature of the machine is seen best in Figs. 1 and 2. The two springs Q and S of differential tensional strengths are thus brought into play so that the weaker, S, is operative on the ascent of the cutter over the pit and the stronger, Q, on the downward course thereof.

In order to have the cutters work in accurate unison with each other the sleeves N, N′ are further provided with a second pair of radiating arms T, T′, (more clearly shown in Figs. 3 and 4,) extending toward each other. One of the arms is provided with a longitudinal slot in which a stud projecting from the other plays. This assures unison of action and also regulates and limits the radial sweeps of the bifurcated cutters.

The final cutters *v*, *v*′ are substantially of oblong shape curving transversely and gradually toward their cutting edges where they are arc shaped in cross-section and have a small curved teat *z* thereon, best seen in Fig. 3. These are rigidly attached to arms W, W′, pivoted to posts *y* on the frame A, to swing horizontally on opposite sides of the gripping rods, the chords of the cutters standing vertical, converging toward the forward end of the machine and set slightly in the rear of the previously described cutters. These arms W, W′, are pivoted in advance of the cutting edges and are spring actuated toward each other by means of a rubber band *m* as shown or by any other suitable form of spring, attached to an upwardly projecting stud or screw *p*, *p*′ on each arm. The rearward ends of the arms W, W′, strike in the rod cap *r* and thus define the limit of the inward sweep of the knives. A slightly curved flat spring Y is secured to the rod cap *r* and extends forwardly with a downward pressure on the rear gripping rod *c*, which assures the instant ejection of the pit from the gripping rods when it reaches this point and the hand pressure in the handle lever is relieved. This pair of oblong knives *v*, *v*′ can be dispensed with entirely and still leave the machine practical, but not so efficient in completely removing the meat from the pit. For general purposes however it is usually preferable to use the entire group of knives, although I do not restrict myself to their use as a whole.

The manner of gripping the peach has already been described as has also the operation of the knives on the peach where it has not been manifest and self-evident by reference to the drawings and it simply remains to be said that the peach being gripped is impelled through the group of cutters and thereby halved and pitted.

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 fruit-pitting machine the gripping device comprising two rods, a longitudinally adjustable block on each rod, a connecting bar pivoted to the rear block, and a hand lever pivoted to the forward block, and also to the said bar substantially as described and for the purpose set forth.

2. In a fruit-pitting machine the gripping device comprising two rods, a connecting bar, a lever handle and a rigid handle extending from the said bar, the said lever and rigid handles being graspable as a whole by one hand of the operator substantially as described and for the purpose set forth.

3. In a fruit-pitting machine the gripping device comprising two rods, a longitudinally adjustable block on each rod, a connecting bar pivoted to the rear block, and a handle lever pivoted to the forward block and also to the said bar, the said lever and rigid handles being graspable as a whole by one hand of the operator, substantially as described and for the purpose set forth.

4. In a fruit-pitting machine of the class described, two springs of differential tractive power, a pivoted cutter actuated by the said springs, a traveling gripping rod, a cam therein and a pivoted spring holding arm, the said cam and arm adapted to engage with each other and thereby bring the stronger spring into active operation, substantially as described and for the purpose set forth.

5. In a fruit-pitting machine, in combination, two radially yielding cutters, an arm on each, an endless chain passing over the said arms, a spring attached to the said chain, an arm pivoted on the frame of the machine, the said spring being attached thereto and a second spring also attached thereto and connected to the said frame, a traveling gripping rod, a cam on the same, the said cam be-

ing adapted to strike the pivoted arm and thereby throw the first mentioned spring into operative action, substantially as described and for the purpose set forth.

6. In a fruit-pitting machine a halving knife, a bifurcated cutter following the same and an arc shaped cutter following the second, all the said cutters being spring actuated toward the common axial line of the gripping rod, substantially as described and for the purpose set forth.

7. In a fruit-pitting machine a halving knife, a cutter holding plate, a bifurcated cutter mounted thereon, two tubes to which the said halving knife and cutter plate are respectively rigidly attached, and a common supporting rod on which the said tubes rock, the said halving knife and cutter holding plate abutting in close but free contact with each other, substantially as described and for the purpose set forth.

8. In a fruit-pitting machine a halving knife, a cutter holding plate, a bifurcated cutter mounted thereon, two tubes to which the said halving knife and cutter plate are respectively rigidly attached, a common supporting rod on which the said tubes rock, the said halving knife and cutter holding plate abutting in close but free contact with each other, and a cutter arc shaped in cross-section, all the said cutters swinging and being spring actuated toward the line of travel of the peach, substantially as described and for the purpose set forth.

9. A fruit-pitting machine comprising the frame work A, the longitudinally reciprocable gripping rods B and C, the connecting bar D pivoted to the rear rod C, the handle lever E pivoted on the said connecting bar and also on the forward rod B, the spring actuated swinging knives G, G′, the spring-actuated swinging cutters L, L′, substantially as described and for the purpose set forth.

10. A fruit-pitting machine comprising the frame work A the longitudinally reciprocable rods B and C, the connecting bar D pivoted to the rear rod C, the handle lever E pivoted on the said connecting bar and also on the forward rod B, the spring-actuated swinging knives G, G′, the spring-actuated swinging cutters L, L′, the spring-actuated hook-shaped arms W, W′, pivoted to the frame A and the cutters V, V′, arc-shaped in cross-section, rigidly attached thereto, substantially as described and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 17th day of September, 1891.

ROBERT P. SCOTT.

Witnesses:
J. A. CHISHOLM,
OSCAR A. MICHEL.