(No Model.)

J. T. ISH.

FRUIT PITTING MACHINE.

No. 436,629. Patented Sept. 16, 1890.

Fig. 1.

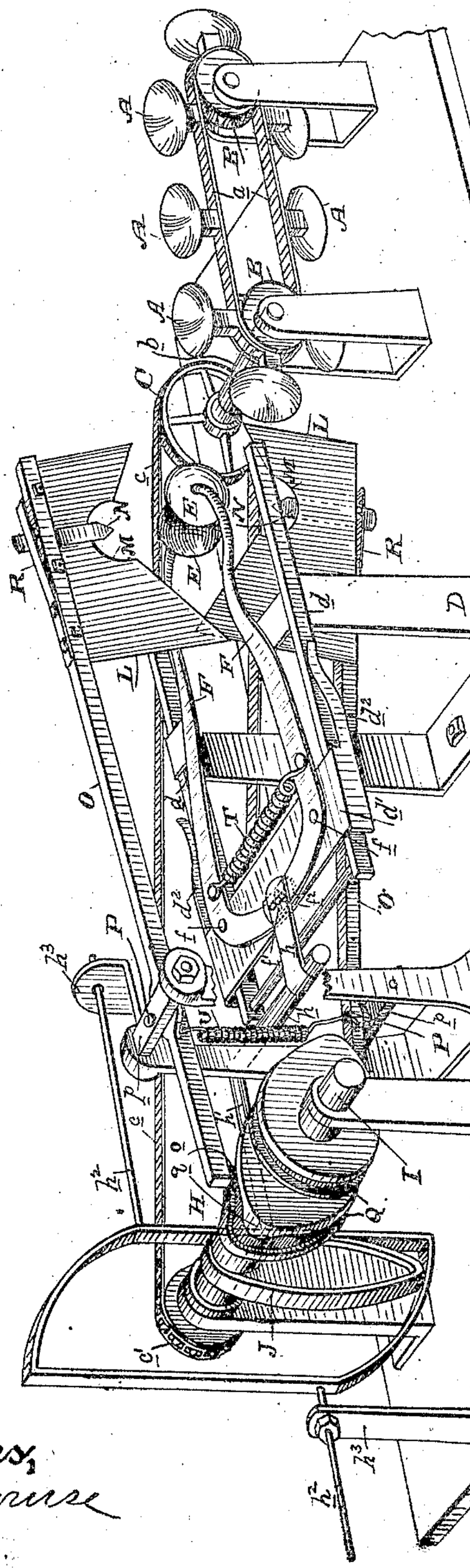
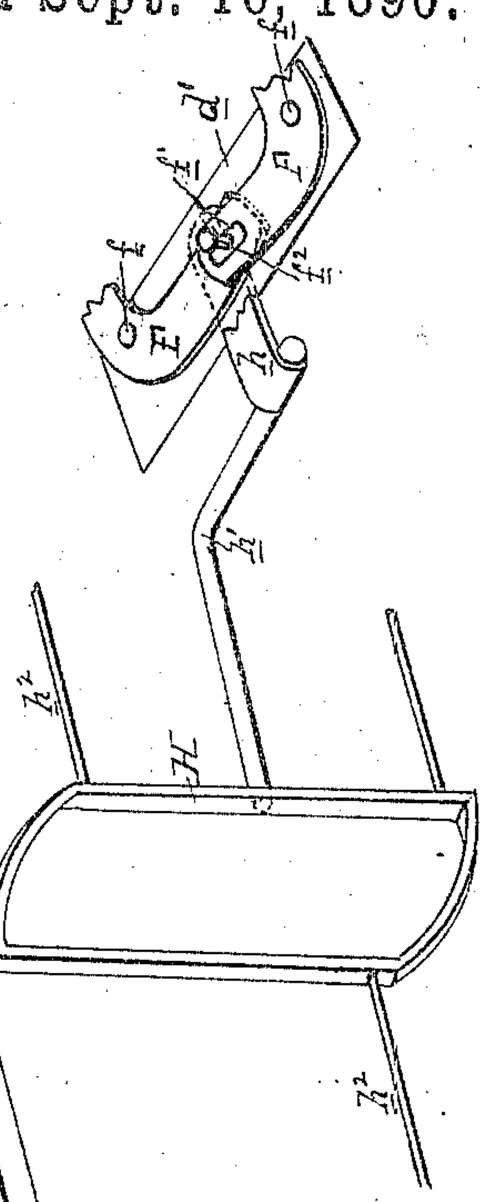


Fig. 2.



Witnesses,
J. L. Morse
H. C. Lee.

Inventor,
James T. Ish
By Dewey & Co
Attys

UNITED STATES PATENT OFFICE.

JAMES T. ISH, OF SAN FRANCISCO, CALIFORNIA.

FRUIT-PITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 436,629, dated September 16, 1890.

Application filed November 12, 1889. Serial No. 330,085. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. ISH, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Fruit-Pitting Machines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of machines for pitting fruit; and it consists in the novel constructions, combinations, and arrangements hereinafter fully described, and specifically pointed out in the claims.

The object of my invention is to provide a simple and effective fruit-pitting machine.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my fruit-pitting machine. Fig. 2 is a detail showing the connection of the cam frame or strap with the arms of the holders.

A A are a series of cups, which are mounted upon a traveling carrier *a* at one end of the machine, said carrier being mounted upon sprocket-wheels B B. A traveling motion is imparted to this carrier by means of a sprocket-wheel C, mounted upon the shaft *b* of one of the wheels B, an endless chain *c*, and a sprocket-wheel *c'* on the end of the drive-shaft I at the other end of the machine.

Supported by a frame D, about the center of the machine, are horizontal side guides *d*, and upon these guides is fitted and adapted to slide back and forth across plate *d'*, from which extend forwardly the friction-springs d^2, which bear against the sides of the horizontal guides *d*.

Pivoted upon the plate *d'* at the points *f* are the two independent arms F, which extend forwardly and carry in their forward ends the cup-shaped holders E. The rear ends of the arms F overlap, and are provided with an elongated slot *f'*, through which passes a pin f^2, from which extends backwardly an arm *h*, having at its rear end a bent connecting-rod *h'*, the rear end of which is connected with the cam frame or strap H. This strap consists of an elongated frame having its sides straight and parallel and its ends curved, as shown, and said strap is guided in its movement by the rods h^2, extending forwardly and backwardly from it and guided suitably by fixed socket-plates h^3 on the main frame of the machine.

On the power-shaft I is secured the cam J, of the shape shown and adapted to operate within the frame or strap H.

From this construction it will be seen that by rotating the shaft I the cam J, operating in the frame or strap H, will move it forward and back, and this movement effects, through the connecting-rod *h'* and arm *h*, the operation of the cup-shaped holders E, as follows: The forward movement of the arm *h* has the immediate effect of spreading the arms F on their pivotal centers to open the holders E, and this movement of the arms does not affect at first their forward projection, for the pin or bolt f^2, moving in the slot *f'*, opens the arms before it moves the sliding plate *d'*, which plate is held temporarily by the springs d^2 acting on the sides of the horizontal guides *d'*. It is not until the holders E are fully opened that said holders are projected forwardly by the sliding plate *d'*. The shaft I also imparts a traveling movement to the carrier *a*, so that the cups A are successively brought into juxtaposition with the projected holders E, which, passing on each side of the fruit in one of the cups A, are ready to take hold of said fruit and carry it backwardly. The holders close on the fruit by the backward movement of the arms, which thereby force together the arms F and their holders, the latter being held in this position by a spring T, extending between the arms F.

L L are opposing knives—one above and one below. These knives are carried by stems or shanks O, which extend backwardly and are supported upon rock-shafts *p*, to which they are pivoted at the points P, whereby they may have not only an up-and-down movement, but may also have a lateral movement about their pivots P. The rear ends of the shanks or stems O have studs or pins *o*, which are adapted to be engaged and operated by means of the cams Q on the main shaft I, in the grooves of which the studs rest. These cams Q are of such a nature as to effect the oppositely-reciprocating movement in the vertical planes of the two shanks or stems O, whereby their knives L are worked up and down, and also by means of suitable lateral projections, one of which is shown at *q*, said

cams are adapted to swing the shanks or stems O laterally, thereby separating the knives in a lateral plane after they have been brought together on the fruit. A spring U connects the two shanks O and serves to hold them together.

The knives L L have concave centers, (shown at M,) and projecting from these centers are the separate independent points N, which extend up past the face of each knife and freely through the shank or stem thereof, and have their upper ends connected with springs R, whereby they are held projected, and yet yield when necessary.

The operation of the entire machine is as follows: The fruit is placed in the cups A from any suitable source, as from a table, (not here shown,) located conveniently to the series of cups. As each cup of the series moves onwardly, the holders E are opened and projected toward it, passing on each side. Then they come together on the fruit and carry it backwardly into position between the knives L L, which at this time have separated, as shown in Fig. 1. Then the knives come together so that their cutting-edges divide the fruit, while the points N engage the pit of the fruit. When the knives have closed down on the fruit and cut its flesh from the pit, they then separate laterally, so that the points N give the pit a kind of twist, while the knives themselves separate the flesh from the pit, and as the knives open again and the holders separate the fruit is released, which falls into a suitable receptacle below.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a fruit-pitting machine and in combination with knives or cutters and means for advancing the fruit thereto, the reciprocating holders for receiving and holding the fruit while the knives or cutters operate upon it, substantially as described.

2. In a fruit-pitting machine, the combination of the series of traveling cups A for the fruit, the reciprocating holders E, for taking the fruit from the cups and carrying it to position, and suitable knives for cutting the fruit while in the holders, substantially as herein described.

3. In a fruit-pitting machine, the combination of the series of traveling cups A for the fruit, the reciprocating holders E, for taking the fruit from the cups and carrying it to position, and the oppositely-moving knives L above and below said holders and adapted to cut the fruit while in them, substantially as herein described.

4. In a fruit-pitting machine, the combination of the holders E and the oppositely-moving knives L, operating above and below the holders, for cutting the fruit, said knives having a laterally-swinging movement when closed on the fruit for separating the flesh from the pit, substantially as herein described.

5. In a fruit-pitting machine, the combination of the holders E, the oppositely-reciprocating and laterally-swinging knives L, for cutting the fruit and separating the flesh from the pit, and the independent points N on said knives for engaging the pit, substantially as herein described.

6. In a fruit-pitting machine, the holders E, for holding the fruit, the oppositely-reciprocating and laterally-swinging knives L, for cutting it and disengaging its flesh from the pit, said knives having concave faces, and the spring-controlled sliding holding-points N, in connection with the knives, for engaging the pit, substantially as herein described.

7. In a fruit-pitting machine, the combination of the traveling series of cups A, for holding the fruit, the separable reciprocating holders E, for taking the fruit from the cups and carrying it to position, and the oppositely-reciprocating and laterally-swinging knives L, for cutting the fruit while in the holders and separating its flesh from the pit, substantially as herein described.

8. The combination of the traveling series of cups A, for holding the fruit, the separable reciprocating holders E, for taking the fruit from the cups and carrying it to position, the oppositely-reciprocating and laterally-swinging knives L, for cutting the fruit and separating the flesh from the pit, and the sliding spring-controlled points N, in connection with the knives, for engaging the pit, substantially as herein described.

9. In a fruit-pitting machine, the holders E and the pivoted arms F by which they are carried, in combination with the sliding plate to which the arms are pivoted, and the means for opening and closing the holders, consisting of the arm *h*, connected with the rear ends of the arms F, the connecting-rod *h'*, the cam frame or strap H, and the cam J on the main shaft of the machine and operating in the frame or strap, substantially as herein described.

10. In a fruit-pitting machine, the holders E and the pivoted arms F by which they are carried, in combination with the means for opening and closing said holders and moving them forward and back, consisting of the sliding plate *d'*, to which the arms F are pivoted, the arm *h*, connected with the rear ends of the arms F, the connecting-rod *h'*, the cam frame or strap H, and the cam on the main shaft, substantially as herein described.

11. In a fruit-pitting machine, the holders E and the arms F by which they are carried, in combination with the sliding plate *d'*, to which the arms F are pivoted, the horizontal fixed guides *d*, on which the plate is mounted, and the frictional spring-strap d^2, carried by the sliding plate and bearing on the fixed guides, by which the movement of said sliding plate is temporarily delayed, the arm *h*, having a sliding connection with the rear ends of the arms F, the connecting-rod *h'*, the cam frame or strap H, and the cam J on the main shaft, substantially as herein described.

12. In a fruit-pitting-machine, the endless carrier *a*, having the series of cups A secured to it, and the means for driving said carrier, consisting of the endless chain *c*, the main shaft I, and intervening sprocket-wheels by which the power of said shaft is transmitted to the carrier, in combination with the holders E, the pivoted arms F, carrying said holders, the sliding plate *d'*, carrying the arms, the cam J on the shaft I, and intervening connections between said cam and the sliding plate, whereby the holders are reciprocated and opened and closed, substantially as herein described.

13. In a fruit-pitting machine, the opposing knives L and the shanks or stems O carrying them, in combination with the rock-shafts *p*, to which the stems or shanks are pivotally connected, the main shaft I, and the cam Q on said shaft, with which the stems or shanks of the knives engage, whereby said knives are oppositely reciprocated and are swung in lateral planes to separate them, substantially as herein described.

14. A fruit-pitting machine consisting of the combination of the traveling series of cups A, the separable reciprocating holders E, having pivoted arms F, by which they are carried, the oppositely-reciprocating and laterally-swinging knives L, having shanks O, the spring-controlled sliding points N, operating in connection with said knives, the main shaft I, the cam J thereon, intervening connections between said cam and the arms of the holders for opening and closing them and moving them forward and back, the cams Q on the shaft engaging the shanks of the knives for operating them, the sprocket-wheel *c'* on said shaft, and power-connections by which its motion is transmitted to the traveling series of cups, all arranged and adapted to operate substantially as herein described.

In witness whereof I have hereunto set my hand.

JAMES T. ISH.

Witnesses:
S. H. NOURSE,
H. C. LEE.