

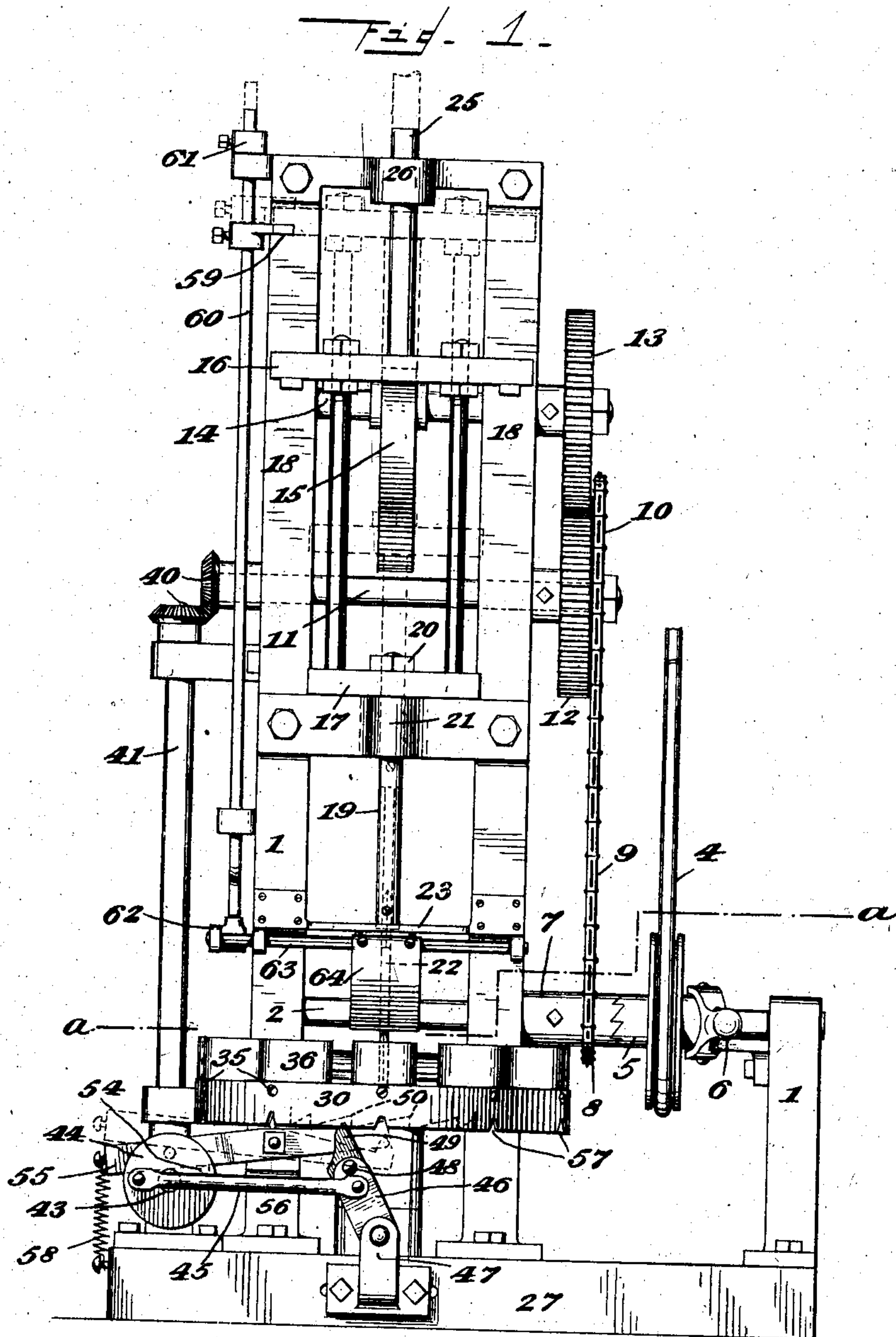
No. 834,064.

PATENTED OCT. 23, 1906.

G. W. KIEFER.
MACHINE FOR PITTING CHERRIES OR THE LIKE.

APPLICATION FILED SEPT. 17, 1904.

4 SHEETS—SHEET 1.



Witnesses

William Schuchardt
Arthur Kline

Inventor

George W. Kiefer,
by John Chas Jones,
his attorney.

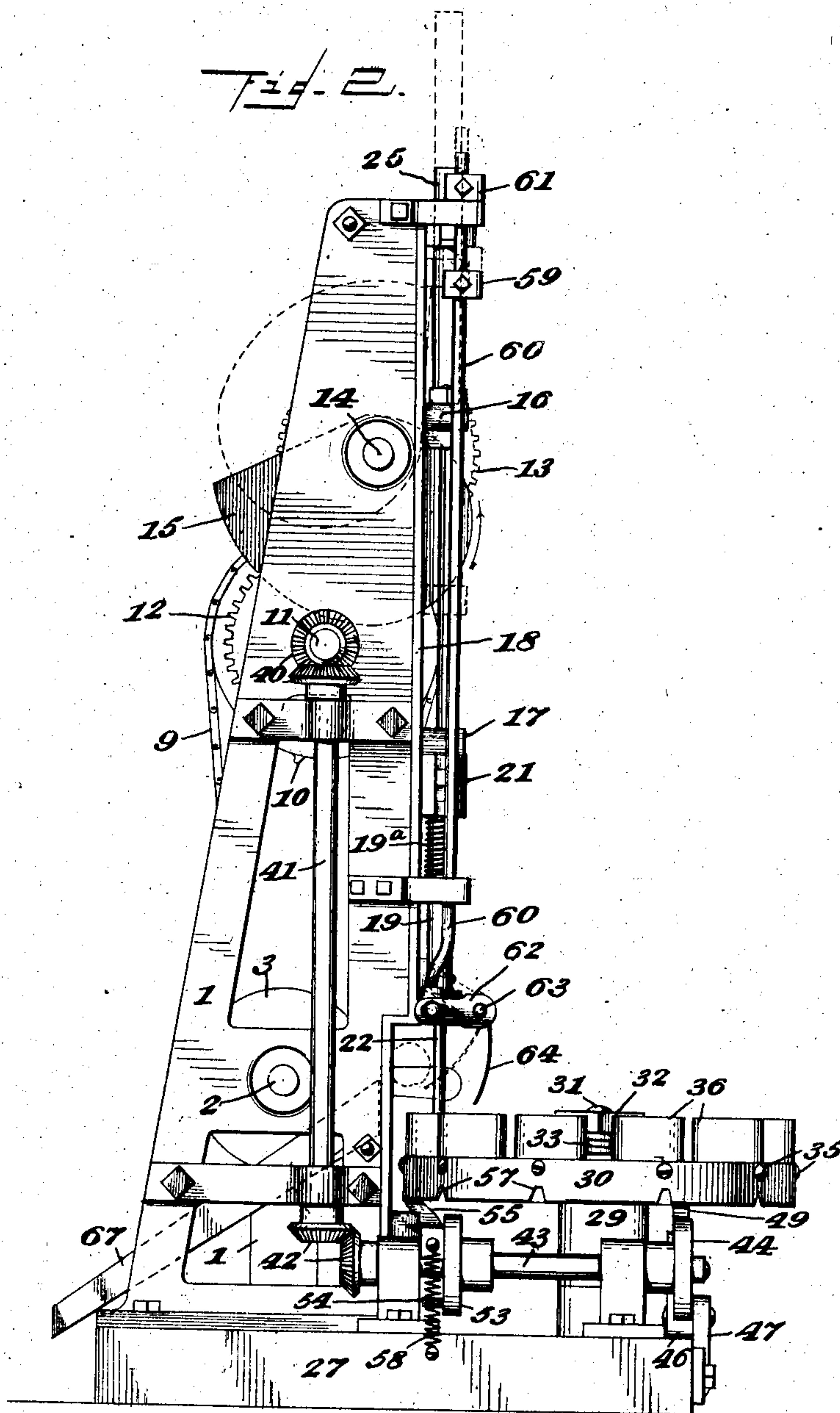
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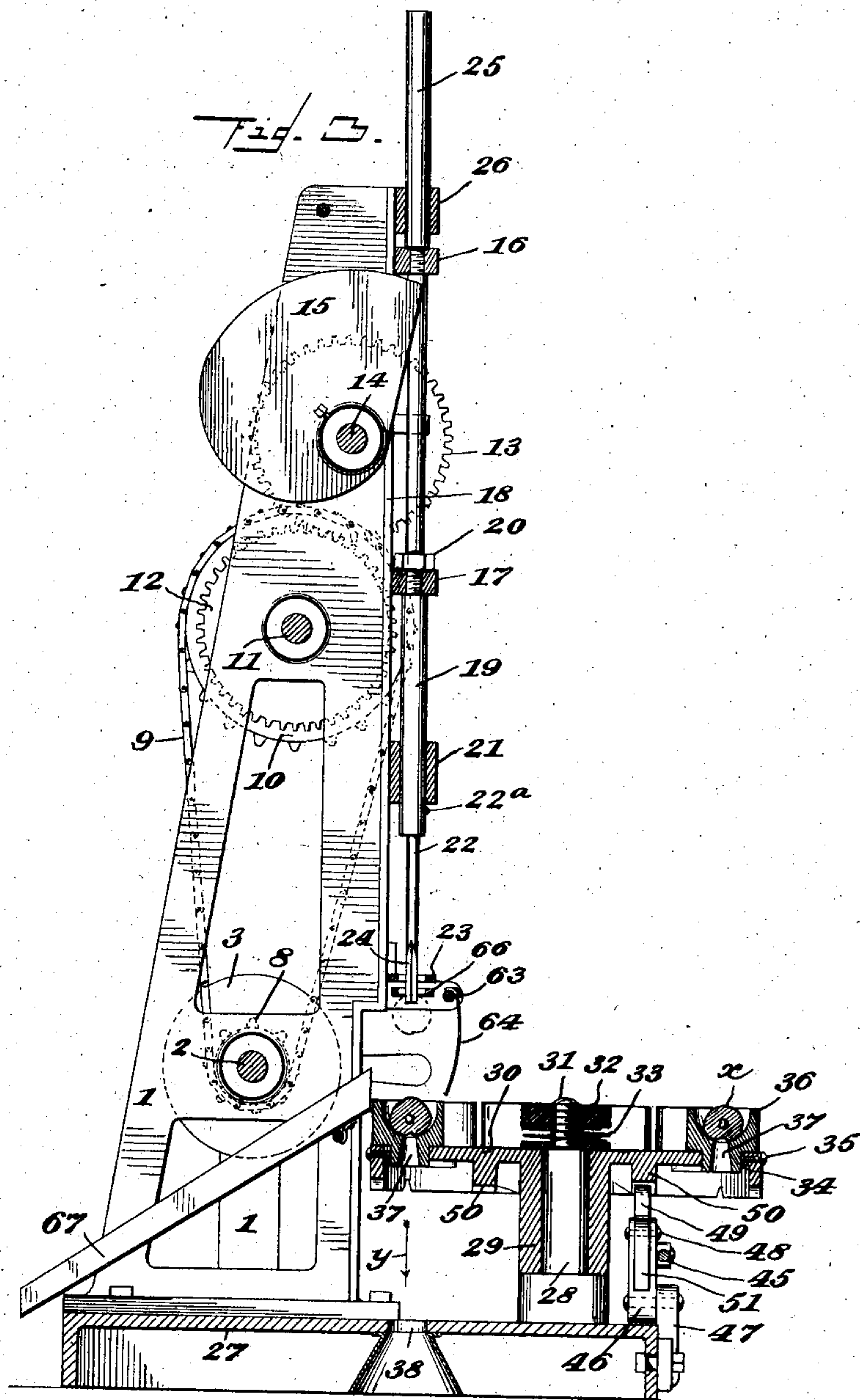
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4 SHEETS—SHEET 3.



Witnesses

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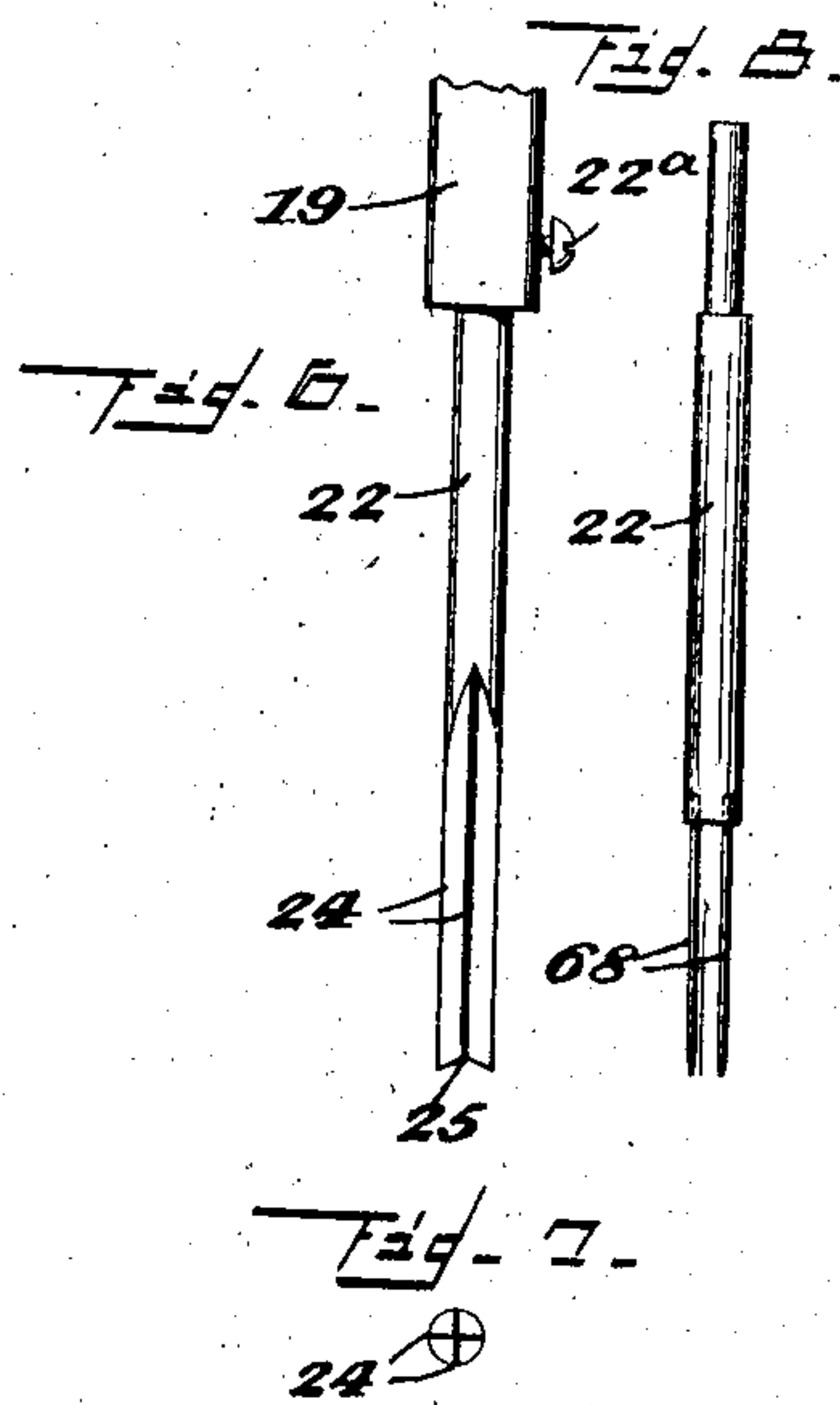
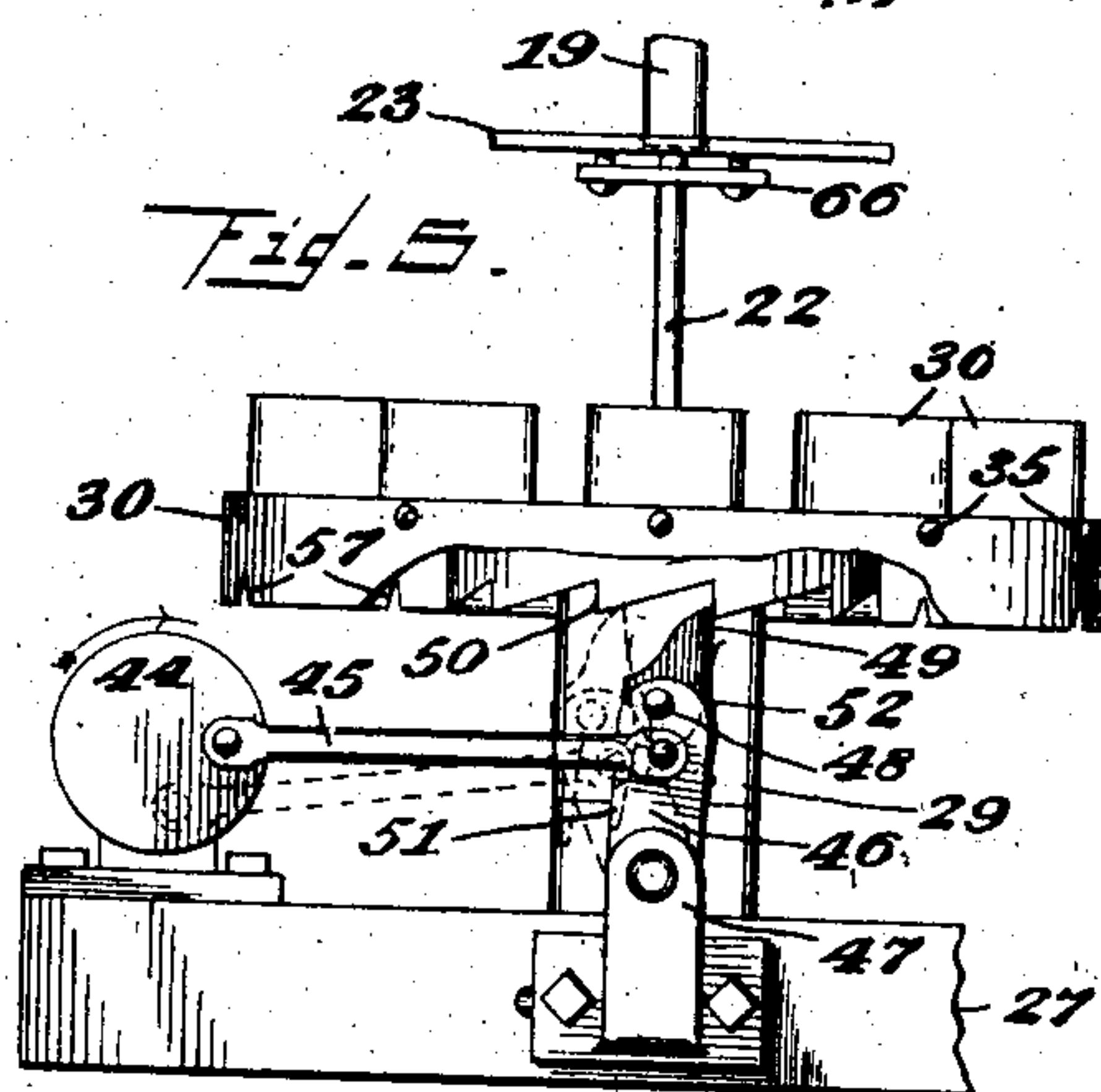
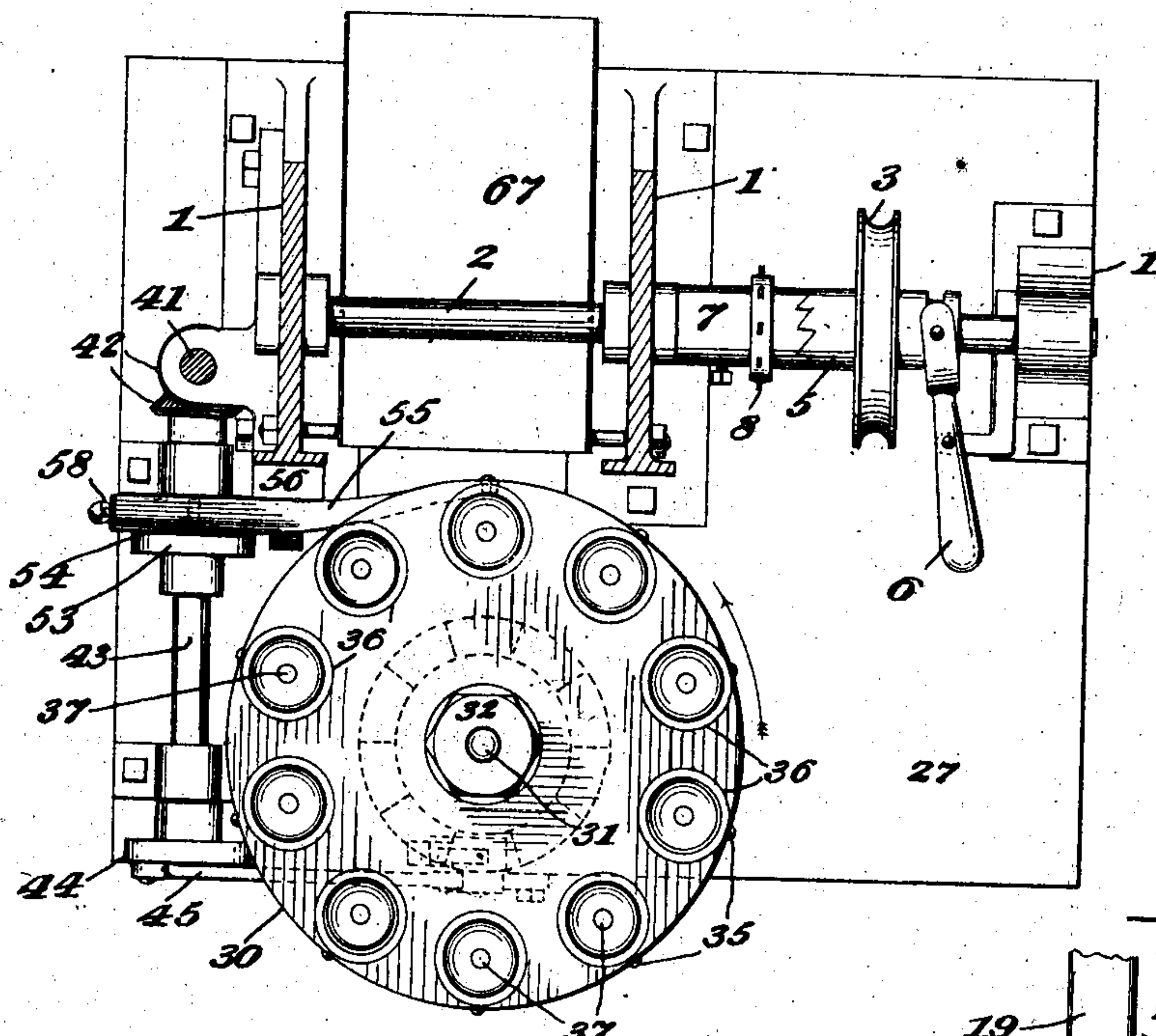
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4 SHEETS—SHEET 4.

Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. KIEFER, OF NEWPORT, KENTUCKY.

MACHINE FOR PITTING CHERRIES OR THE LIKE.

No. 834,064.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed September 17, 1904. Serial No. 224,829.

To all whom it may concern:

Be it known that I, GEORGE W. KIEFER, a citizen of the United States of America, and a resident of Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Machines for Pitting Cherries or the Like, of which the following is a specification.

This invention relates to certain improvements in devices for coring or stoning fruit, and has for its object to provide a device of this character of a simple and inexpensive nature and of a strong and compact construction which shall be adapted for convenient and rapid operation in coring or pitting fruit of various kinds—as, for example, cherries, apples, &c.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved fruit coring or stoning device whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, I have illustrated my improvements embodied in a machine especially designed for pitting cherries or similar small fruits, in which—

Figure 1 is a front elevation of the machine, and Fig. 2 is a side elevation of the same. Fig. 3 is a vertical mid-section taken through the improved machine and showing various features of construction of the operative parts thereof. Fig. 4 is a horizontal section taken through the machine in the plane indicated by line *a a* in Fig. 1. Fig. 5 is a fragmentary view, partly in section, and showing certain features of the feed mechanism for the machine. Fig. 6 is an enlarged front view showing certain details of the construction of the pitter-rod, and Fig. 7 is a view showing the under side thereof. Fig. 8 is a view similar to Fig. 6, but showing in elevation a modified form of pitter adapted for use in the improved machine.

As shown in the views, the machine is constructed with a frame comprising a bed-plate 27, whereon are erected uprights or standards 1 1, in which is journaled a horizontal shaft 2, carrying near one end a loosely mounted pulley or wheel 3, over which is adapted to be passed a belt or band 4, where-

by the wheel may be driven from a suitable source of power. The wheel or pulley 3 has a clutch member 5 upon its hub, and said wheel, together with clutch member 5, is adapted for movement lengthwise along shaft 2, a lever 6, pivoted on the frame, being connected for operating the wheel and clutch member in a well-known way.

7 indicates a clutch member held to turn with the shaft 2 and adapted for engagement with the clutch member 5 when the lever 6 is moved in one direction in such a way as to cause the shaft 2 to be driven in unison with the wheel or pulley 3, and on the clutch member 7 is secured a sprocket-wheel 8, around which is passed the lower bight of an endless chain or link belt 9, the upper bight of which, as shown in Figs. 2 and 3, is passed around the sprocket-wheel 10, held upon a machine-shaft 11, journaled in two of the uprights or standards 1 1, which are extended above the shaft 2 to receive certain operative parts of the machine, as will be hereinafter explained. On the shaft 11 is a spur-wheel 12, the teeth of which are in mesh with those of another spur-wheel 13, held upon a cam-shaft 14, journaled in the upwardly-extended frame uprights or standards 1 1, above referred to, over the shaft 11, and driven, as will be readily understood, from the shaft 2 through the medium of the spur and sprocket gearing above described.

The cam-shaft 14 carries between the upwardly-extended standards 1 1 a cam 15, adapted in the rotation of the shaft to engage beneath a cross-bar or yoke 16, the ends of which are connected by parallel vertical rods with the ends of a cross-head 17, the extremities of which are held for vertical movement between parallel guides 18 18, formed upon the respective upwardly-extended frame-uprights 1. The cross-head 17 has at its central part connection with a downwardly-extended pitter rod or shaft 19, the upper end of which is removably held thereto by means of a nut 20, said pitter-rod being adapted in the reciprocating vertical movement of the cross-head imparted by the rotation of the cam 15 to play vertically through a bearing 21, produced on the frame below the cross-head guides 18.

The lower end of the pitter-rod 19 is provided with a socket wherein is held, by means of a set-screw 22^a, as shown in Fig. 6, a pitter 22 in the form of a rod or shaft the lower end of which is formed with four vertically-ex-

tended blades 24 24, set at right angles to each other and having lower reversely-beveled parts or edges adapted in the reciprocating movement of the pitter to penetrate the cherry or other fruit held in the path of the pitter, as will be hereinafter explained, for expelling the seed or pit therefrom, the diameter of the shaft 22 and dimensions of the blades 24 being such as to accomplish this result with the least possible injury or mutilation of the fruit.

23 indicates a guide carried on the frame and having an opening through which plays the pitter 22, carried on the lower end of the pitter-rod, as shown in Fig. 3 of the drawings.

Above the cross-bar or yoke 16 is extended a centrally-arranged stem 25, alined with the pitter-rod 19 and adapted to play vertically in a bearing 26 at the upper part of the frame, and the formation of the cam 15, as shown in Fig. 3, is such as to cause said cam in the rotation of shaft 14 to gradually raise the cross-head and pitter-rod to the elevated position shown in Fig. 3, after which the cam-surface is withdrawn from engagement beneath the cross bar or yoke 16, so that the pitter-rod is permitted to fall for the removal of the seed or pit of the fruit held in its path. Ordinarily the weight of the pitter-rod, cross-head, and connected parts will be sufficient to depress the pitter with force enough to remove the seed or pit from the fruit; but, if desired, the weight of the parts may be reinforced by a spring the tension of which is exerted to force the pitter-rod downwardly, as indicated at 19^a in Fig. 2.

On the base-plate 27 in front of the path of the pitter-rod 19 is held a vertical stud or shaft 28, whereon is received the hub 29 of a feed wheel or disk 30, the upper end of stud 28 being reduced and threaded, as indicated at 31, to receive a nut 32, beneath which is held a spring 33, coiled on the reduced upper end of stud 28 and adapted to exert its tension to hold the feed wheel or disk 30 pressed downwardly. This arrangement serves to insure a steady and uniform movement of the feed wheel or disk and also affords means for taking up wear or looseness during the operation of the machine.

The feed disk or member 30 is, as herein shown, of circular form and has a plurality of sockets 34 produced at intervals around its perimeter, in which sockets are removably held, by means of set-screws 35, individual cups or receptacles 36, wherein are adapted to be held the cherries or other fruit, as indicated at *x*, said fruit being fed by hand or otherwise into the cups or receptacles (during the operation of the machine) with the stemmed depressed sides downward.

The arrangement and proportion of the parts is such that in the rotation of the disk or member 30 the cups or receptacles 36,

which are, as shown in Fig. 4, arranged in annular series around the edge of said disk or member 30, are successively brought in alinement beneath the lower end of the uplifted pitter 22, so that in the downward movement of the pitter-rod the lower ends of the knives or blades 24 of the pitter may penetrate the fruit and expel the pit or seed therefrom, the bottom of each cup or receptacle 36 being formed with an opening 37 for the passage downward of the expelled seed or pit in the direction indicated by arrow *y*.

38 indicates an opening in the bed-plate 27, through which the expelled seeds or pits may fall into a receptacle or chute suitably arranged beneath the machine.

Along the side of the frame opposite to the chain or link belt 9 is journaled a vertical shaft 41, the upper end of which carries a bevel-gear 40, meshing with a similar gear on the extended end of the machine-shaft 11, whereby said vertical shaft 41 may be driven in unison with the machine-shaft, and, as shown in Figs. 2 and 4, the lower end of said vertically-extended shaft 41 is arranged to communicate its movement by a similar arrangement of bevel-gears 42 to a horizontally-extended feed-shaft 43, journaled above the bed-plate 27, at one side thereof, in a plane below and at right angles to the direction of the driving-shaft 2. On the forward end of the feed-shaft 43 is a disk or wheel 44, having a wrist-pin with which is connected one end of a link or connecting-rod 45, the opposite end of which has connection with a lever or part 46, the lower end of which is pivotally held on a bracket 47, extended from the bed-plate, the location and arrangement of the parts being such that said part or lever 46 is caused to swing back and forth in a position beneath the feed disk or member 30 and in front of the hub or boss 29 thereof. On the upper end of the part or lever 46 is pivotally held, as indicated at 48 in Figs. 1 and 5, a dog or finger 49, the upper end of which is adapted, when the lever 46 is swung in one direction for operative engagement against ratchet-teeth 50, produced upon the under side of the feed disk or member 30 in annular arrangement around the hub or boss thereof, the said dog or finger 49 having a downwardly-extended portion 51 beneath its pivotal point 48 and adapted, when the arm or part 46 is swung toward the right, as it will be in the operation of impelling the disk or member 30 forward, to successively present the cups or receptacles 36 beneath the pitter-rod to impinge against the said arm or part 46 and lock the dog 49 against pivotal movement. When the arm or part 46 is reversely swung, the upper end of dog 49 will ride freely over the inclined ratchet-surfaces, the projection 51 being withdrawn from engagement with the arm or lever 46 to permit the dog to swing pivotally, as indicated in dotted

lines in Fig. 5, so that its upper end may be engaged with the next ratchet-tooth 50 on the feed disk or member.

52 indicates a spring on lever 46, with an end engaged on the dog or finger 49 to hold the same with its projection 51 normally engaged upon the lever in the position shown in in Figs. 1 and 5.

The central portion of feed-shaft 43 carries a wheel or disk 53, similar to disk 44, and has a projecting eccentrically-arranged pin or stud 54, adapted in the rotation of the disk for engagement beneath the end of a detent 55, centrally pivoted on a bracket 56 on the bed-plate 27 and having at one end an upwardly-extended tooth or projection adapted on upward movement of that end of the detent to be engaged in one of a series of notches 57, produced around the lower edge surface of the feed disk or member and of a number corresponding with the number of the fruit cups or receptacles 36. The opposite end of the detent 55, which is engaged by pin or stud 54, is connected with a spring which acts to hold said end of the detent normally drawn so that its toothed end will be in position for engagement in the overlying notch 57 of the disk or member 30; but when said spring-actuated end of the detent is forced upward by engagement of pin or stud 54 beneath it the said toothed end of the detent will be withdrawn from the notch 57 wherewith it had been engaged, so as to permit the rotation of the feed-disk by means of the dog 49, as above described. The spring is indicated at 58 on the drawings.

In the operation of the improved machine as the shaft 2 is rotated its movement is communicated through the gearing to the machine and cam-shafts 11 and 14, whereby reciprocatory movement is imparted to the pitter-rod to cause the same to be raised and dropped to penetrate the fruit held in cups or receptacles 36, whereby the pits or seeds of said fruit are forced through the openings 37 in the cups or receptacles, the seeded or pitted fruit adhering to the pitter 22 upon the upward movement thereof under the influence of cam 15. Simultaneously the movement of shaft 11 is communicated to the feed-shaft 43 through shaft 41 and the intermediate gearing, and by the reciprocatory movement of dog 49 the feed disk or member 30 is intermittently fed forward to bring the successive cups or receptacles containing the fruit to be pitted beneath the pitter 22, the detent 55 acting after each forward or feeding impulse of member 30 to stop the same and hold it against further movement until after the descent of the pitter-rod.

In connection with the means above described I provide a stripping device for stripping the pitted or seeded fruit from the pitter to which it adheres, as above stated, on the upward movement of the pitter, such

stripping device consisting, as shown in Figs. 3 and 5, of a stripping-plate 66, attached to the under side of the guide 23, through which the pitter plays vertically. On contact with plate 66 in the upward movement of pitter 22 the fruit is stripped from the pitter, and to prevent the same falling down into the path of the pitter on its subsequent descent, whereby the pitted fruit would be mutilated and injured, I provide an ejecting device for deflecting the fruit when stripped from the pitter out of the path of the latter and through a chute into a suitably-arranged receptacle.

67 indicates the chute, which is downwardly and rearwardly inclined from behind the path of the pitter 22, and 64 indicates a curved ejector plate or member held on a transverse rock-shaft 63 and adapted to swing forward and back in a vertical plane toward and away from the receiving end of chute 67, said plate or member 64 being arranged in position to strike the fruit stripped from the pitter as it descends and throw the said fruit rearward into the receiving end of chute 67. The shaft 63 is journaled in bearings in the frame-uprights 11 and has at one end a crank connection 62 with the lower end of a slide rod or connection 60, guided for vertical reciprocatory movement along one of the frame-uprights 11 and having at its upper part a collar or enlargement 59, adapted to be engaged by one end of the yoke 16 when the latter moves upward in unison with the pitter-rod. The collar 59 is adjustably held on rod 60, and to prevent excessive downward movement of said rod (since its descent is dependent on gravity) I provide the upper end of the rod with a stop-collar 61, adapted by engagement with the frame to limit such downward movement. By this construction it will be evident that as the pitter is elevated, carrying with it the pitted fruit, the yoke 16 will, at the instant the fruit is stripped from the pitter, come in contact with collar 59 and move rod 60 upward, whereby shaft 63 is rocked and a sharp rearward movement is imparted to the ejector 64 to cause the detached fruit to be struck and thrown rearward of the machine into the receiving end of chute 67, down which it passes into a receptacle arranged to receive the pitted fruit.

The machine constructed as above described is of an extremely simple and inexpensive nature and is especially well adapted for use by reason of the speed and convenience with which cherries and other fruit may be pitted, seeded, or cored, and to adapt the device to use in connection with fruit of different kinds the cups or receptacles 36 may be removed and replaced by others of greater or less size, the pitter 22 being also removable so that it may be replaced by a corresponding device of modified form, such as

that which is shown in Fig. 8, and comprises a shaft 22, having two parallel pins 68 at its lower end to penetrate the fruit and expel the seed or pit therefrom. The cups or receptacles and pitter being removable are also adapted to be readily detached for cleansing, when desired. It will also be obvious from the above description that the device is capable of considerable modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and arrangement of the several parts of the device herein set forth in carrying out my invention in practice.

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

1. A device of the character described comprising a pitter having a support mounted to reciprocate, feed mechanism comprising fruit-receptacles and movable to present said receptacles successively in the path of the pitter, an ejecting device pivotally movable for discharging the pitted fruit, a rod mounted for endwise movement and having crank connection with said ejecting device to move the same and having a projection in the path of the pitter-support to be engaged thereby when the pitter is moved in one direction, and means for actuating the parts in their proper order and relation.

2. A device of the character described comprising a pitter having a support mounted to reciprocate, feed mechanism comprising fruit-receptacles and movable to successively present said receptacles in the path of the pitter, an ejecting device pivotally movable for discharging the pitted fruit, a rod mounted for endwise movement and having crank connection with said ejecting device to move the same, a collar adjustable on said rod and projecting in the path of the pitter-support for engagement therewith when the pitter is moved in one direction, and means for actuating the parts in their proper order and relation.

3. A device of the character described com-

prising a frame having parallel spaced guides, a cross-head movable along said guides, a pitter connected with and movable longitudinally in unison with said cross-head, a shaft mounted to rock and extended at right angles to the length of the pitter and provided with a crank-arm, an ejector-plate carried by said shaft and adapted, when the same is rocked, to be moved to engage and eject the pitted fruit, a rod mounted for endwise movement and having connection with the crank-arm of said shaft, a collar adjustably held on said rod and projecting in the path of the cross-head for engagement therewith when the cross-head is moved in one direction, feed mechanism comprising a carrier having a plurality of fruit-receptacles and movable in a plane at right angles with the movement of the pitter to successively present said fruit-receptacles in the path of the pitter and means for actuating the parts in their proper order and relation.

4. A device of the character described comprising a reciprocating pitter, a carrier having fruit-receptacles and mounted to turn to present said receptacles successively in the path of the pitter, ratchet-teeth in annular series around the rotative axis of the carrier, a flange on the carrier concentric with said ratchet-teeth and provided with a series of ratchets, a driving-shaft having actuating means and provided with wrist-pins, a dog having a reciprocatory support and adapted when moved in one direction to slide over the ratchet-teeth of the carrier and when reversely moved to engage said teeth to rotate the carrier, a connection between the support of said dog and one wrist-pin of the shaft and a detent pivotally mounted and engageable with the other wrist-pin of the shaft and having a part engageable with the notches in the flange of the carrier.

Signed at Cincinnati, Ohio, this 6th day of September, 1904.

GEORGE W. KIEFER.

Witnesses:

JOHN ELIAS JONES,
WILLIAM SCHUCHARDT.