(No Model.)

5 Sheets—Sheet 1.

H. B. STEVENS.

MACHINE FOR WRAPPING FRUIT.

No. 443,550. Patented Dec. 30, 1890.

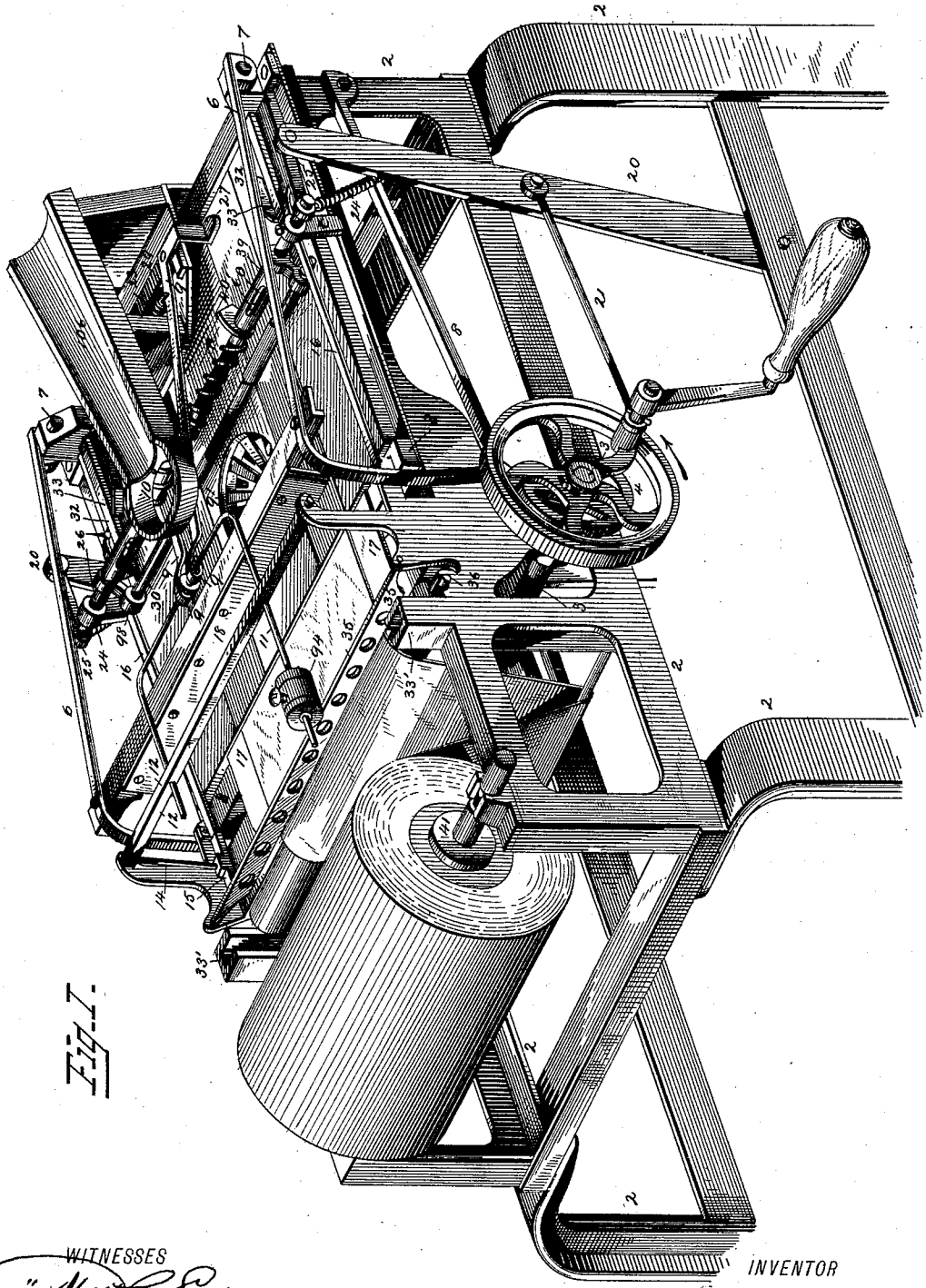


Fig. 1.

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H. B. STEVENS.

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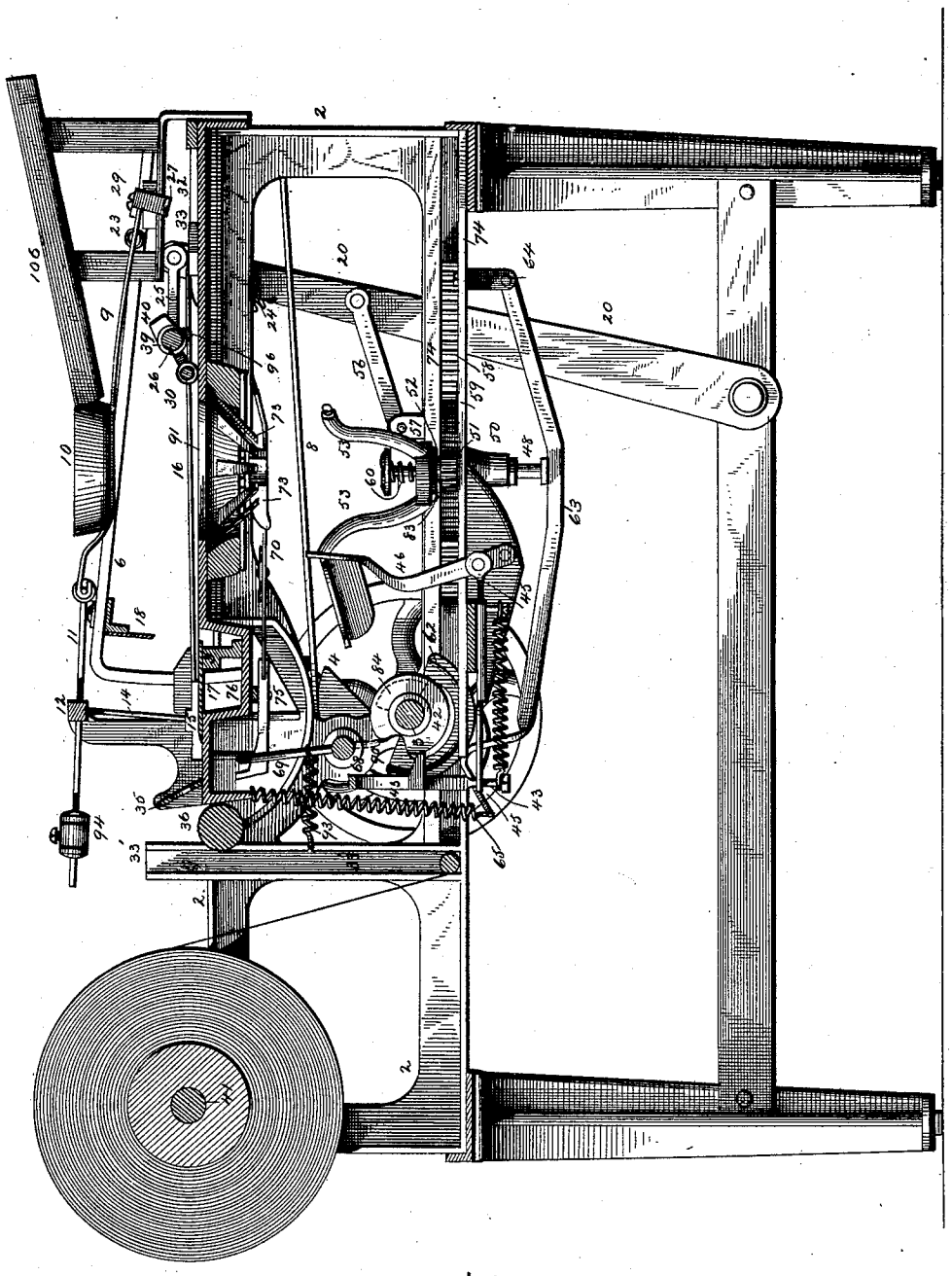


Fig. II.

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H. B. STEVENS.

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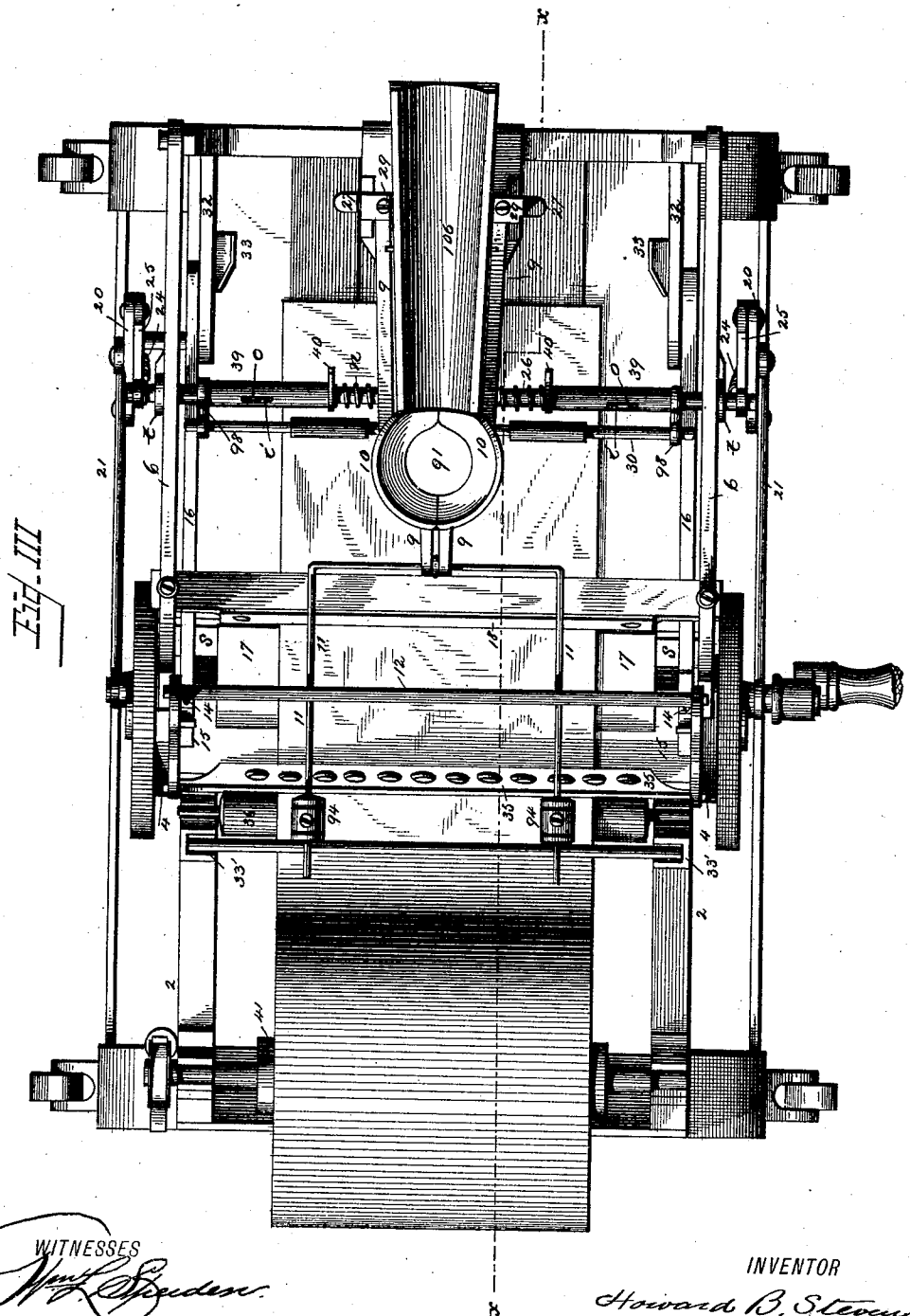


Fig. III.

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Fig. IV.

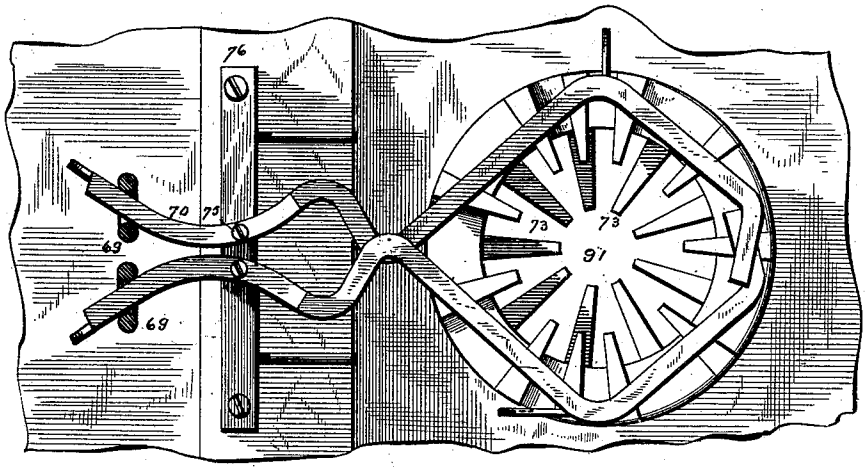


Fig. V.

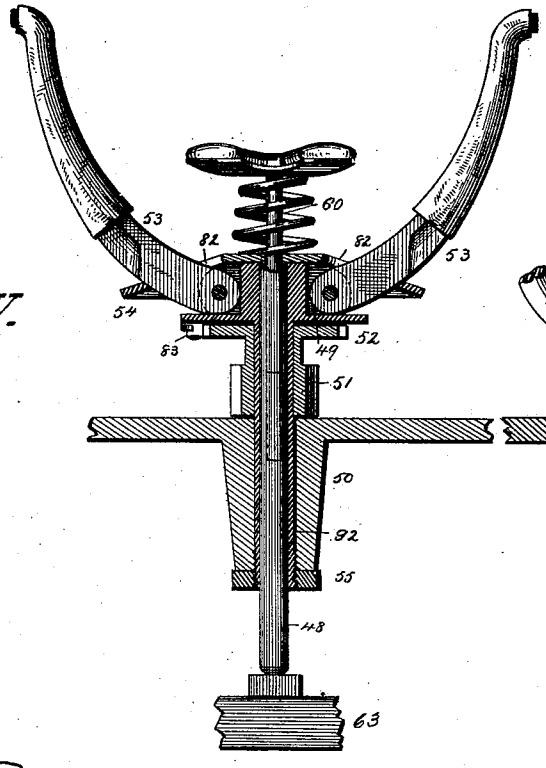
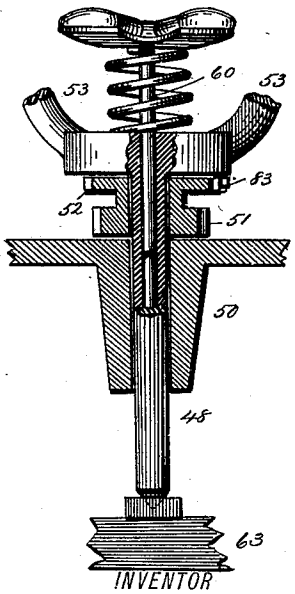


Fig. II.



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MACHINE FOR WRAPPING FRUIT.

No. 443,550. Patented Dec. 30, 1890.

Fig. VI.

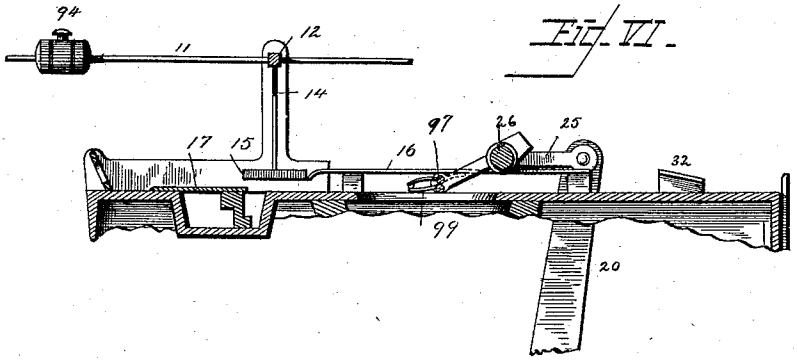


Fig. VII.

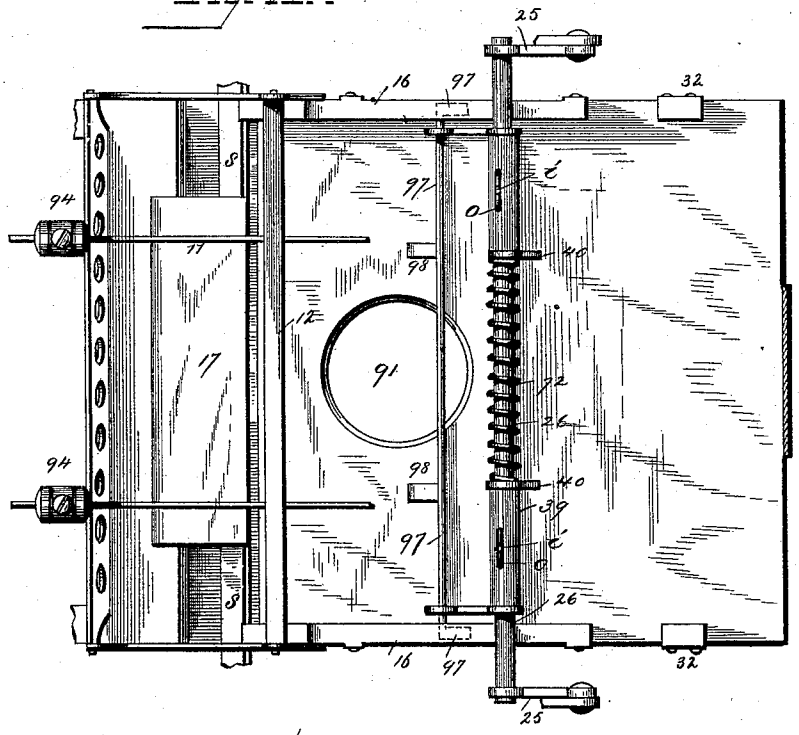
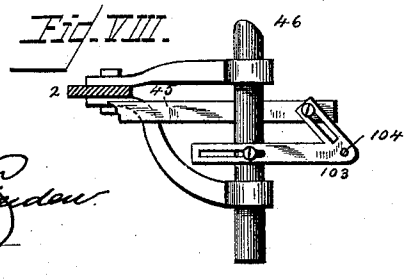


Fig. VIII.



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UNITED STATES PATENT OFFICE.

HOWARD B. STEVENS, OF CITRA, FLORIDA, ASSIGNOR OF ONE-HALF TO HENRY BLAKE AND EDGAR WILLIS BLAKE, BOTH OF EAST PEPPERELL, MASSACHUSETTS.

MACHINE FOR WRAPPING FRUIT.

SPECIFICATION forming part of Letters Patent No. 443,550, dated December 30, 1890.

Application filed September 6, 1884. Serial No. 142,396. (No model.)

To all whom it may concern:

Be it known that I, HOWARD B. STEVENS, of Citra, in the county of Marion and State of Florida, have invented a new and useful Machine for Wrapping Fruit, of which the following is a specification and description.

The object of my invention is to provide a machine for wrapping oranges, lemons, and other citrous fruits each in a separate paper preparatory to packing the same for shipment to market, in order that such fruit may be prevented from decay and injury during shipment and transportation from one point to another; and I accomplish this by the construction and in the manner substantially as hereinafter described, and illustrated in the accompanying drawings, making a part of this specification, in which—

Figure I is a perspective view of my new machine. Fig. II is a longitudinal section of the same at line *x* of Fig. III. Fig. III is a plan view of the same. Fig. IV is a reverse plan view of a part of the bed of the machine, showing the clamping-levers for holding the edges of the paper while the fruit in the holder is being rotated and the paper is being twisted. Fig. V is a sectional view showing a modification of a portion of the wrapping mechanism in which the holding-fingers are made movable upon the spindle of the holder. Fig. VI is a longitudinal sectional view of a modification of a portion of the feeding mechanism. Fig. VII is a plan view of said modification. Fig. VIII is a modification of the device for removing the fruit from the holder after being wrapped, and Fig. IX is a detail sectional view of the form of the removing device shown in Fig. II.

In the drawings, 2 represents a suitable frame for supporting the working parts of the machine, and in which a cam-shaft 3 has its bearing to revolve therein, to each end of which shaft is secured a cam 4. Arms 6 are pivoted to the rear end of the frame, as at 7, so as to swing freely upon their pivots, one arm on each side of the machine, and a vertical knife 18, preferably made of sheet-steel and secured to a cast-metal bar extending transversely across the machine above, is secured at its ends to these arms 6, so that the knife may be moved up and down past a stationary knife 17, fixed to the table or bed of the machine or to a support *s*, made slightly movable, if desired, in the recess in the frame just beneath the knife 17, so that the latter may be nearly on the same plane as the bed of the machine and be easily readjusted when out of adjustment from any cause.

The arms 6 extend downward at their free swinging ends to ride upon the periphery of the cam 4, secured to each end of the shaft 3, or the end of each arm 6 may rest or bear upon an elastic steel bar 8, one end of which is pivoted to the machine and whose other end rides upon the periphery of said cam, so that much of the shock is removed as the arms and bars drop from the larger to the smaller portion of the cams as the shaft 3 is revolved.

An upright arm 20 is pivoted at its lower end to the lower part of the frame, one arm on each side of the frame, so as to swing freely upon its pivot, and a rod 21 is secured at one end to this arm and at the other end to the cam 4 or to a winch or a driving-wheel secured to the end of the cam-shaft, by which means the arm 20 is given a reciprocating or vibrating movement to and fro. A short link 25 is pivoted at one end to the upper end of each arm 20, and the other end of the link is secured to the end of a tripping-bar 26, extending across the machine from one side to the other, from which extends in front and a little downward a feed mechanism, which, in the use of a friction-feed, consists of a rod 30, firmly secured to the bar 26 at each end, and which is padded with rubber on its lower side, and the padded rod 30 is held down firmly upon the bed of the machine or upon the guideways 16, upon which it moves, by the shaft 26, and the spring 24, secured to the link 25 at one end and to the arm 20 at the other.

Guideways 16, consisting, preferably, of strips of sheet-steel, extend along lengthwise the machine—one on each side just above the frame—and are firmly secured thereto at the forward end of the strip at its edge, and both strips are bent or inclined downward at their rear ends and there rest upon the bed of the machine in the construction shown in Figs. I, II, and III. Two short stop-bars 32 are also secured to the bed of the machine, one on each side, and these are also inclined at their

front ends, as shown in Figs. I, II, and III. Two dogs 33 are also secured to the bed of the machine, one on each side, and just inside and a little in rear of the forward end of the stop-bars 32, the forward ends of these dogs being inclined outward.

The ends of the rod 30 project outward sufficiently to ride upon the guideways as the feed moves forward; but when the feed is moving backward upon the bed of the machine and feeding the paper to the knife to be cut these projecting ends move backward beneath the guideways and out from beneath them at their rear inclined or curved ends, raising these ends of the guideways as they pass out, and the guideways fall back into place again upon the bed as soon as the ends of the rod have passed out. When the feed is moved forward again, these projecting ends of the rod ride up upon the guideways 16 and move forward thereon, and when they reach their forward ends, if the rock-shaft 12 is not tilted and the shoes 15 moved forward, the ends of the rod will move forward upon the shoes and then back again upon the guideways, as shown in Figs. I, II, and III.

The tripping-bar 26 is elevated somewhat above the bed of the machine, and upon this bar are placed two sleeves 39, which I denominate the "trips," and which are held outward against a suitable shoulder or stop by a spring *n*, and they may be held from turning on the bar by a slot *o* made lengthwise in each and a pin *i* inserted through the slot and into the bar.

An aperture 91 is made through the bed of the machine, which may be lined with wood secured to the lower side of the bed of the machine, to which lining I secure rubber fingers or strips 73, which all extend toward the center of the aperture, but incline downward, and which assist somewhat in preventing the fruit from being injured in falling and in gathering and holding up the corners and edges of the paper in a position to be grasped by the clamping-levers in twisting the paper.

Two levers 9 are pivoted at 29, and their short arms extend downward and outward, as at 27, substantially at right angles to their long arms, to a point just inside the path of the inner ends of the trips (when the latter are not forced in) and directly into the path of their inner ends when the trips are forced in. The long arms of these levers 9 extend forward, and two half-rings 10, preferably made of wood, are secured one to each long arm in such position that when the levers are held together by a spring 23, attached to each, these two parts 10 will together form a circular receiver, as shown in Fig. III. The levers 9 extend forward beyond this receiver, and, being suitably formed at their forward ends, hook over or loosely engage with the wire 11, whose middle portion extends partially across the machine and whose end portions extend forward to a point a little distance in front of a rock-shaft 12, to which the wire is also attached, and the forward ends of said levers are free to slide along said wire whenever they are moved from or toward each other. A small rod 14 is secured at its upper end to this rock-shaft, one on each side of the machine, and is loosely attached at its lower end to a small shoe 15, adapted to have a limited sliding movement lengthwise just at the forward end of each guideway 16, as shown in Figs. I and II. As shown in these figures, the upper side of each shoe is on the same horizontal plane as the upper side of its respective guideway, and when these shoes are moved forward and away from the ends of the guideways the ends of the feed-bar 30 will move forward off the guideways and down between their ends and the shoes and permit the rubber pad on the feed-bar 30 to bear upon the bed of the machine, and when the feed is moved backward the ends of the feed-bar will pass along beneath the guideways; but if the shoes are allowed to remain stationary at and against the ends of the ways the feed-bar, instead of moving down at the ends of the ways and permitting the pads to bear upon the bed of the machine, will simply move back upon the ways and prevent the feed from being operative to move the paper at that movement.

The levers 9 are so pivoted at 29 as to permit a slight vertical movement, and weights 94 are adjusted to the end portions of the wire 11 to just overbalance the weight of the levers 9 and receiver 10 and hold the latter in its most elevated position; but if any article, as a lemon or an orange, be placed in the receiver its weight will press down the levers 9 and also the wire 11 and tilt the rock-shaft 12 and move the shoes 15, leaving a space between the latter and the forward ends of the guideways, through which the ends of the feed-bar may pass downward.

A spindle 48 is placed vertically in a bearing in the lower part of the frame at 50, (shown in Fig. II, and also, enlarged and in detail, a part of the spindle, gear, and frame being in section, in Fig. IX,) and fingers 53, preferably three in number, are made on the upper end of this spindle, said fingers being suitably padded with rubber or some soft fabric, and a ratchet-pawl 83 is also secured to the upper part of the spindle. I prefer to bore a small hole in the upper end of this spindle from the top and insert therein a small rod 60, having an enlarged padded top, with a spring between the pad and the top of the spindle. A small toothed wheel 51, having ratchet-teeth 52 on its upper end, is placed loosely upon this spindle just beneath the fingers before the spindle is put in place, so that when the latter is in its bearing the pawl 83 may engage with the ratchet-teeth.

A rack 58 is arranged to slide to and fro in guideways 74, made in the side portion of the frame, and is provided with a projection or stud 57, to which is pivoted one end of a bar 56, whose other end is pivoted to the ver-

tical vibrating arm 20, by which a reciprocating movement is given to the rack. A toothed wheel 59 has its bearing on a stud or pivot in the lower part of the frame and engages with the teeth of the rack, by which it is given a reciprocating or alternating rotary movement, and this wheel engages with the teeth of the small pinion 51, placed loosely on the spindle 48, and when the wheel 59 is rotated by the rack moving in one direction the small pinion 51 is rotated, and as the ratchet 52 on this small pinion engages with its pawl 83 the fingers 53 are also rotated; but when the rack moves in the other direction the small pinion 51 and its ratchet 52 are rotated in the opposite direction, the fingers 53 and the pawl 83 remaining stationary.

I attach a bolster or bar 76 somewhat loosely to the lower side of the machine-bed, and to this bolster I pivot at 75 two clamping-levers 70, whose short arms are curved and recede from each other, as shown clearly in Fig. IV, and the long arms are each bent into convenient form to stand or remain when at rest one on each side of the aperture 91 or of its lining and beneath the machine-bed, and they are also bent so that one portion of the long arm of one of the levers near its fulcrum is above the corresponding portion of the other lever and at a point near the end of the long arm is below the corresponding portion of the other lever, as shown in Fig. IV. By this arrangement the long arms when brought together will cross each other at the angle where they seize or grasp the paper at a point beneath the center of the aperture 91, and I prefer to widen said clamping-levers in a vertical direction at said angle in order to obtain a greater clamping-surface against the paper, and these portions of the levers should approximately fit each other.

The clamping-levers 70 are operated or caused to move toward and from each other by rectangular-shaped hooks 69, extending from a rock-shaft 68 and each inclosing or partially inclosing the short arm of its respective lever 70.

The rock-shaft 68 is provided with a projection 90, and a cam 84, secured to the cam-shaft, as it revolves, impinges against this projection and moves the shaft in its bearings, and a spring 93 moves the shaft back into its original position after the cam has passed the projection. The bolster may be so attached in place or the clamping-levers may be so pivoted thereto as to prevent the said levers from rising too high and coming into contact with the elastic fingers 73 at the aperture or with the wooden lining of the aperture. The revolving movement of the fingers 53 and the clamping action of the levers 70 continue while the arms 20 and feed mechanism are moving forward to bring the web of paper to be cut again; but when the said arms and feed start to move back with the paper the action of the cam 84 and rock-shaft 68 releases the grasp of the clamping-levers upon the paper.

As shown in Fig. II, an upright arm 46 is pivoted to the lower part of the frame of the machine adjacent to the fingers 53, to which arm is pivoted one end of a bar 45, whose other end is connected with a suspended vertical arm 43, held into contact with a cam 42 on the cam-shaft. As this cam revolves it imparts a quick forward-and-back movement to the bar 45, causing the upright arm to move quickly in between the fingers 53 as soon as they stop their rotary movement and out again, giving a blow sufficient to knock out any fruit there may be between the fingers into a receptacle placed to receive it.

If desired, a counter may be attached at any convenient place on the machine to be operated by one of its working parts to indicate the number of oranges or other fruit which have passed through the machine and been wrapped at any time; but the ordinary counters being well known no specific description thereof is necessary.

A web of paper suitable in quality and weight to wrap fruit may be wound upon the roll 41, and the end of the web may be passed under a tightening-rod adapted to move vertically in guideways or grooves 33′, made in the frame, and thence over a roll 36, and thence beneath a swinging blade 35, suspended at its ends in an inclined position with its lower edge resting upon the bed of the machine and toward the knife, by which the web of paper is prevented from being accidentally pulled backward.

A trough 106 of any desired construction may be placed in an inclined position and terminate at the receiver 10, as shown in Fig. I, so that the fruit to be wrapped will roll down the inclined trough, the weight of those behind always forcing the foremost one into the receiver, where it remains until the latter is opened or its two portions forced apart by the action of the machine.

It is evident that all the springs used to hold the bars or levers against the periphery of the cams may be dispensed with and ordinary grooved cams be used instead and the levers made to engage in said grooves and be operated in both directions thereby and give a positive movement to the parts operated by the cams; but I have used the cams and springs, as hereinbefore described, as being easier and cheaper to construct.

The operation of the machine is as follows: The trough being filled with oranges or other fruit to be wrapped, and the end of the web of paper being in place beneath the blade 35 and upon the bed of the machine, and the feed mechanism in its extreme rearward position, as the cam-shaft 3 is revolved the arms 20 move forward, causing the bar 26 and feed mechanism to move forward, the ends of the feed-bar moving up and upon the guideways 16. The weight of the first orange in the re-

ceiver 10 moves the levers 9 and wire 11 down, raising the weights 94 and tilting the rock-shaft 12 and moving the shoes 15 away from the forward end of the guideways. As the feed-bar 30 moves forward its ends move off the forward ends of the guideways and down between the latter and the shoes, and the pads on the feed-bar then press down upon the end of the web of paper, and as the arms 20 move back they draw the paper back into a position over the aperture 91 and upon the bed of the machine. In this movement backward the ends of the feed-bar pass beneath the guide-ways 16, and when the forward part of the feed or the feed-bar 30 reaches the stops 32 it rides up their inclined ends, which raises the rubber pads from the paper and leaves the latter in its proper position over the aperture 91, which is then nearly central with and beneath the paper. While this movement of the feed has been going on the cam 4 has raised the knife-arms 6, and after the paper has stopped in its backward movement the knife 18 is caused to fall by the movement of the cam 4 and cut off the rectangular portion of the paper lying upon the bed of the machine in rear of the knife. The outer ends of the trips 39 or vertical projections made thereon, as at 96, then strike against the inner sides of the dogs 33, and the trips are thereby moved inward or toward each other, and the inner ends of the trips or the projections 40 thereon strike against the projecting short arms 27 of the pivoted levers 9, whose long arms are thereby quickly opened or moved apart, opening the receiver 10 and permitting the orange therein to drop through the aperture 91 and in between the fingers 53, carrying the paper which is cut from the web with it, the orange by its own weight falling down and fitting snugly in between the fingers 53 and their rubber coating or packing. When the trips 39 have passed the short arms 27 of the levers 9, the latter are quickly moved together again by the spring 23, and the receiver is thereby closed and catches the next orange which rolls forward in the trough. As the cam-shaft or driving-shaft revolves, the rock-shaft 68 is tilted by the cam 84, and the rectangular hooks 69 close the clamping-levers 70, which grasp the corners and edges of the paper (which fell through the aperture with the orange) firmly between them at a point beneath the center of the aperture, and at the same time the forward movement of the rack 59 causes the toothed wheel and pinion to revolve the fingers, while the edges of the paper are being held by the clamping-levers, and the paper between the said levers and the orange is firmly twisted and secured thereon. As the arms 20 and rack reach their forward position the action of the cam 84 opens the clamping-levers 70, the orange being then wrapped with paper and resting upon the pad at the upper end of the stem and between the fingers, and as soon as the fingers are stopped in their rotary movement by the backward movement of the rack the cam 42 forces the upper end of the arm 46 rearward and in between the fingers 53 with a quick sudden movement, striking the orange a little blow sufficient to remove it from its position between the fingers, which are then ready to receive another orange from the dropper or receiver 10. Of course all the cams are so timed and formed with reference to their position on the cam or driving shaft that the wrapping part of the operation is being performed at the same time and while the feed mechanism and knife are preparing and placing the paper.

It will be seen that when the weights 94 are properly adjusted on the end portions of the wire 11 if there is no orange in the receiver the rock-shaft will not be tilted, and the shoes will not be moved away from the forward ends of the guideways 16, in which case the feed-bar moves back upon said guideways, instead of beneath them, and the trips 39, instead of being forced inward by the dogs 33, will pass backward above them, and the trips will not be operated and the receiver will remain closed. In other words, no paper will be fed back to be cut if there is no fruit in the receiver to be wrapped, because when the feed-bar moves back upon the guideways 16 it does not ride upon the stops 32 until it leaves the guideways, and until that occurs the trips 39 or the projections 96 thereon move backward above the dogs 33; but when the feed-bar moves back beneath the guideways the trips or their projections 96, being sufficiently low, strike against the inner sides of the dogs and are moved inward, the guideways 16 being a little higher than the stops and extending back far enough for that purpose.

It has been mentioned that the guideways 16, which support the feed mechanism in its forward movement, (and in its backward movement also when no paper is being fed to the knife,) are elastic; but it is only necessary, in the construction shown in Figs. I, II, and III, to make them elastic in case they are rigidly secured to the frame at their forward ends. If they should be pivoted to the frame at that point, so as to be movable each on its pivot, then they might be made rigid instead of elastic.

Inasmuch as the tripping-bar 26, the feed-bar 30 in front of it and to which are secured the rubber pads, and the short pieces 98, which connect the said bars, are all rigidly secured together, it is evident that all these pieces or parts may be made in one piece, in which case the trips 39, instead of being in the form of a solid tubular sleeve and entirely surrounding the bar 26, might be made in two parts longitudinally and be clamped together, or they may be made in any convenient form to properly fit the bar and be secured thereto by screws inserted through a slot made in the trip, so that they would remain

in place and yet slide freely to and fro along the bar without departing in the least from the invention.

The retaining-blade 35 extends across the machine and rests in suitable bearings in the frame at each end with its lower edge resting in an inclined position upon and with reference to the bed, so that its lower edge can only be moved backward away from contact with the bed and cannot be moved forward toward the roll of paper except by swinging it over in its bearings. The web of paper is passed in between the lower edge of said blade and the bed, and when so inserted may be easily and freely moved in that direction, but cannot be moved in the opposite direction. By this means the web of paper may be intermittently drawn from the roll by the feed at each movement of the latter into position over the aperture 91, with the latter central with and beneath the piece to be cut from the web, and it will always remain in exactly that position after the feed is released from it and will not be liable to be accidentally displaced.

The machine might be operative with only one guideway 16 extending along the machine and a single vertical stop 32 to raise the feed from the bed and release the paper; but I prefer to duplicate those parts—one on each side of the machine—to insure easy and rapid operation of the same.

Inasmuch as the receiver 10 and the levers 9, to which its two parts are secured, operate together to drop the fruit through the aperture in the bed of the machine, those parts as taken together may very properly be denominated the "dropper" or "dropping mechanism."

It is of course evident that the two-part receiver 10, instead of being made separate from the levers 9 and secured thereto, may be made by forming or bending the levers each into the desired semicircular form at that point and suitably padding those portions or attaching some soft fabric thereto to prevent the fruit from being bruised.

As the feed-bar rides up upon the rear curved or inclined ends of the guideways in the construction shown in Figs. I, II, and III, the downward projections 96 on the outer ends of the trips are carried above the dogs 33 and are not moved on the bar 26.

I do not wish to be limited to all the precise details of this machine, inasmuch as modifications of the same may be used without in the least changing the nature of the invention or the substantial operations of the machine. For example, in Figs. VI and VII is shown a modification of the feed mechanism operating in substantially the same way as that hereinbefore described, but in which clips are used to seize the paper in drawing it forward instead of the friction-pads on the feed-bar 30. In this modification 16 represents the guideways, preferably rigidly secured to the sides of the machine and above the bed, and which may be substantially straight, except at their forward ends, where they incline or bend downward a little, the position of the guideways being reversed from that shown in Figs. I, II, and III. The shoes 15, instead of moving upon the bed of the machine, are suspended by the rod 14 a little above the bed, and their lower sides are substantially on the same horizontal plane with the lower inclined ends of the guideways, which are also a little above the bed of the machine, and an inclined stop is secured to each side of the machine at a point in rear of the guideways 16. The feed-bar 30 is provided with one or more stationary jaws or projecting pieces 99, and another small bar 97 extends along and parallel with the feed-bar 30, being secured thereto, if desired, at suitable points, and having also projecting pieces or jaws corresponding in form and position with those on the feed-bar 30, and the extreme ends of the bar 97 extend out each side of the machine, so as to pass along above or beneath the guideways, as the case may be. The upper projections on the bar 97 are made to shut down firmly upon those on the feed-bar 30 by any convenient arrangement of spring, a spiral spring wound on the bar being perhaps more convenient. It will be seen that as thus arranged the upper and lower projections together form a clip, which may be opened by pressing down upon the extreme ends of the rod 97, and when this pressure is released the clip will be closed by the action of the spring, and may be still more firmly closed by an upward pressure against the extreme ends of the rod 97.

When in use in feeding the web of paper to the machine, as the feed moves forward toward the paper (whose end lies upon the stationary knife 17 and parallel with it) the extreme ends of the bar 97 will just pass along beneath the guideways 16, and as they approach the forward inclined ends of the guideways these ends of the bar will be pressed down and the clips opened. As the ends of the bar 97 are just leaving the extreme forward ends of the guideways in the forward movement of the feed the clips themselves or their jaws are in a position with the under one just beneath the thin fixed knife 17 and the upper one above the said knife and the paper lying thereon, and if there is fruit in the receiver to be wrapped and the shoes 15 are held away from the guideways as the extreme ends of the bar 97 leave the ways the forward movement of the feed ceases and the jaws of the clip are closed, with the blade and the paper between them. The inside of the upper jaw may be padded with rubber, and as the feed starts in its backward movement the extreme ends of the bar 97 ride up the inclined forward ends of the guideways and the jaws are closed more firmly, drawing the web of paper along with them. As the ends of the bar 97 ride along upon the guideways the jaws are held firmly closed until the

ends pass off the guideways and beneath the inclined stops 32, against the lower side of which the ends of the bar 97 press, and the clips or jaws are thereby opened and the paper is released therefrom and is then in position upon the bed to be cut from the web, with the aperture 91 central with the portion of the paper to be severed. In the forward movement of the feed, if there is no fruit in the receiver to be wrapped and the shoes 15 remain in position at the forward ends of the guideways, the extreme ends of the bar 97 will not be released from downward pressure, but will pass beneath the shoes, and the jaws or clips will not be closed, and the ends of the bar 97 will pass back beneath the guideways, instead of upon them, without feeding any paper. In this modification of feed the dogs 32 may have a projecting lip on top or otherwise be suitably formed in connection with the downward projection on the trips, so that the latter will not strike the dogs and be moved thereby, except in the backward movement of the feed.

The action of the clips, as above described, is to get a more positive hold upon the paper and prevent any liability of its slipping away from the feed in being drawn into position to be cut.

Instead of using a tilting bar for removing the wrapped fruit from between the holding-fingers 53, I may use a sliding bar, as shown in Fig. VIII, in which the upright bar 46 is placed in vertical bearings in the lower part of the frame and adjacent to the spindle of the rotating holder, and so as to slide up and down freely therein, with its upper end sufficiently below the rotating fingers not to interfere with the rotation of the latter, and a bell-crank 103 is pivoted to the frame, as at 104, and whose arms are slotted and one arm pivoted to the cam-rod 45 and the other to the vertical bar 46, so that when the fingers stop their rotary movement and the wrapped orange is ready to be removed the movement of the cam and bar 45 forces up the bar 46 and pushes out the wrapped orange or fruit from between the fingers. This movement is not so liable to bruise the fruit as when a positive blow is struck against it.

Instead of using rotating fingers made rigid with the spindle or in the same piece therewith, I may use them made movable, so as to open and close in receiving the orange or fruit and holding it while being wrapped and in releasing it after the wrapping is complete, as shown in Fig. V, in which a hollow spindle 92 is placed vertically in the bearing 50, and the upper end of this spindle is provided with ears 49, between which are pivoted the fingers 53, which may have rubber or some soft fabric applied thereto, and the ratchet-pawl 83 is secured to the upper part of this spindle or to a plate or projection thereon beneath the ears. The lower end of the spindle has a screw-thread upon which to turn a nut 55 beneath its bearing in the frame. The other and solid spindle 48, having a plate 54 at the top with holes 82 through it, is inserted into and through the hollow spindle 92, and is adapted to have a free vertical movement therein, with the fingers 53 extending up through the holes in said plate. The small toothed wheel or pinion 51, before mentioned, and having the ratchet-teeth 52 on its upper end, is placed upon the hollow spindle 92 before the latter is inserted into its bearing in the frame, so that when all the parts are in place the ratchet and its pawl engage with each other, and the nut 55 is then turned on in place upon the lower end of the spindle 92, and it will be seen that when thus secured in place if the spindle 48 and its plate be raised the shoulders at the outer ends of the holes 82 will draw the curved fingers inward to grasp any fruit placed between them. If the spindle and its plate be lowered again, the fingers will either fall outward from their own weight or will be forced outward by the shoulders at the inner ends of the holes and their grasp upon the fruit released. In using these movable fingers a cam 62 is fixed to the cam-shaft 3, against the periphery of which is held by a spring 65 one end of a lever 63, pivoted at the other end to the frame, as at 64, and the lower end of the vertical spindle 48 has a bearing in a step or recess in this lever, so that as the cam revolves the lever is raised, and with it the spindle 48 and plate 54, and thus forcing in the fingers 53, while they are at the same time given a rotary movement by the rack, toothed wheel, and pinion.

Vertical guide-pieces *l*—one at each end of the shaft 26 and extending downward therefrom outside the bed of the machine—may be used, if necessary, to cause the several parts of the feed and tripping mechanism to move to and fro above the bed in the same vertical plane.

Having described my invention, what I claim as new is—

1. The combination, in a machine for wrapping fruit, of a reciprocating feed mechanism, substantially as described, for feeding the paper to its position upon the bed, guideways inclined at one end for supporting and guiding the feed mechanism in its movement to feed the paper into its position, and a shoe adapted to have a movement toward and from the end of each guideway, whereby the feed may be made to feed the paper or not, according to the position and movement of said shoe, substantially as described.

2. The combination, in a machine for wrapping fruit, of two pivoted levers whose long arms extend along and above the machine-bed, each with a half-ring formed thereon, one opposite the other, to form a circular receiver, and whose short arms project outward toward the side of the machine and at an angle with the long arms, a spring attached to said levers to hold the two parts of the receiver together, and trips adapted to be moved

past and strike said projecting short arms, whereby the two parts of the receiver are opened or moved apart to drop the orange or fruit therefrom and are quickly closed by said spring to receive another, substantially as described.

3. The combination, in a machine for wrapping fruit, of guideways for guiding and controlling the feed, a rock-shaft, a movable shoe at the end of each guideway and connected with said rock-shaft to be moved thereby, a weighted rod or wire attached to said rock-shaft, and two pivoted levers adapted to have a vertical movement and engaging with said weighted rod or wire and supporting a receiver made in two parts to be opened or be moved apart by tripping mechanism operating against said levers, whereby said shoes are moved to permit the feed to seize the paper in feeding the latter to the knife to be cut by the weight of the fruit in the receiver, substantially as described.

4. In a machine for wrapping fruit, a holder for holding the fruit and rotating it in securing the paper thereon, consisting of a spindle provided with projecting fingers at its upper end, adapted to hold the fruit and paper when dropped therein, in combination with rotating wheels connected therewith for giving a rotary movement to said fingers in securing the paper upon the fruit, substantially as described.

5. In a machine for wrapping fruit, the combination, with a rotating holder for holding and rotating the fruit while being wrapped, of a movable bar adapted to be moved against the fruit when in its position between the said fingers, an operating-cam, and mechanism, substantially as described, pivoted to said bar and connected with the cam, whereby when the fruit has been wrapped and the rotary movement of the fingers has ceased said bar is moved against the wrapped fruit to remove it from its position between the fingers, substantially as set forth.

6. In a machine for wrapping fruit, the combination of a holder for receiving, holding, and rotating the paper and fruit to be wrapped therein, mechanism, substantially as described, for rotating said holder, elastic fingers secured in the aperture through which the paper and fruit are dropped into the holder, and clamping mechanism, substantially as described, for grasping and holding the paper near its edges while the paper and fruit therein are being rotated by the holder to twist the paper and secure it upon the fruit, substantially as described.

7. In a machine for wrapping fruit, the combination of a holder having fingers to receive, hold, and rotate the paper and the fruit to be wrapped therein, mechanism, substantially as described, for rotating said fingers, and clamping-levers for grasping the paper near the edges and holding it while the paper and fruit therein are being rotated to twist and secure it upon the fruit, substantially as and for the purpose set forth.

HOWARD B. STEVENS.

Witnesses:
A. McINTYRE,
E. W. AGNEW.