July 29, 1924.

1,502,929

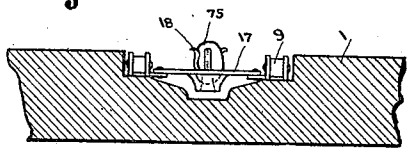
J. K. TUTTLE

OLIVE STUFFING MACHINE

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3 Sheets-Sheet 1

Fig. 3



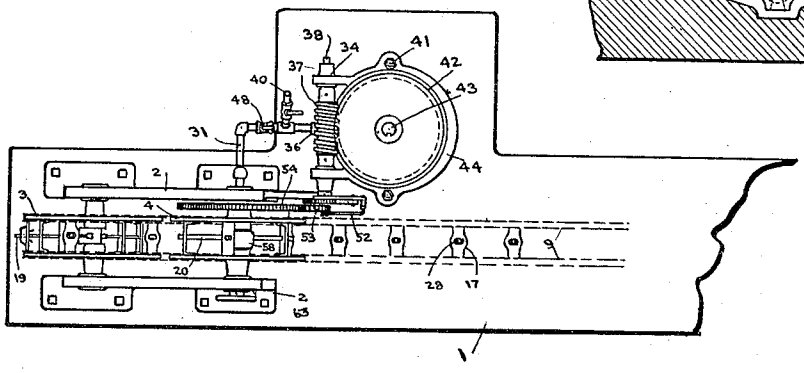


Fig. 2

Fig. 1

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OLIVE STUFFING MACHINE

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Fig. 8

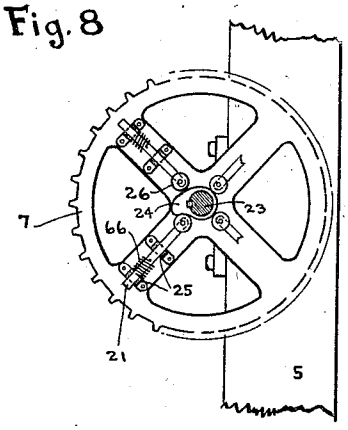
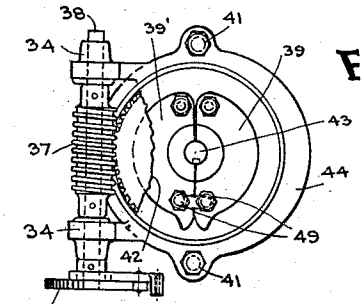


Fig. 5



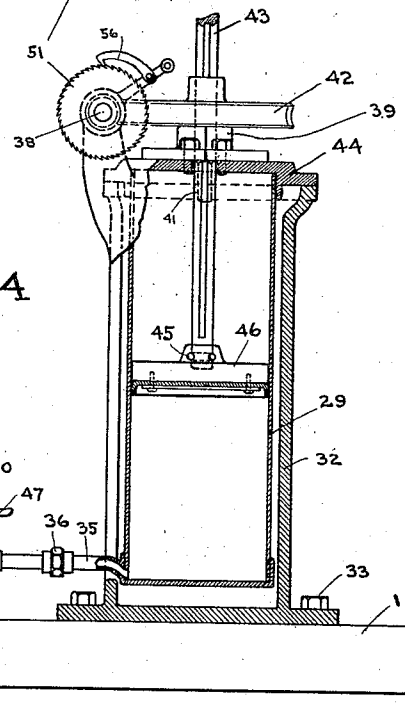


Fig. 4

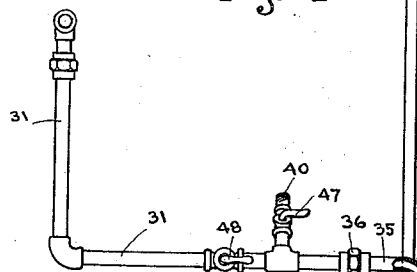
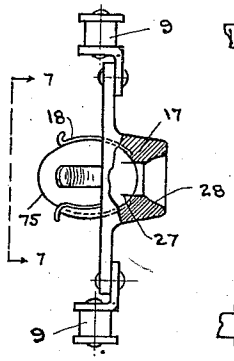


Fig. 6



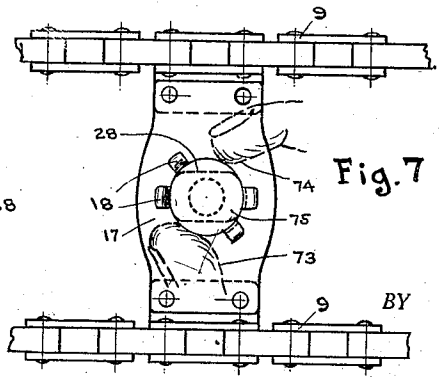


Fig. 7

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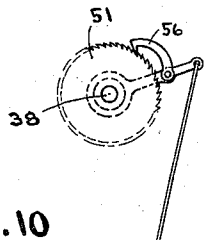


Fig. 10

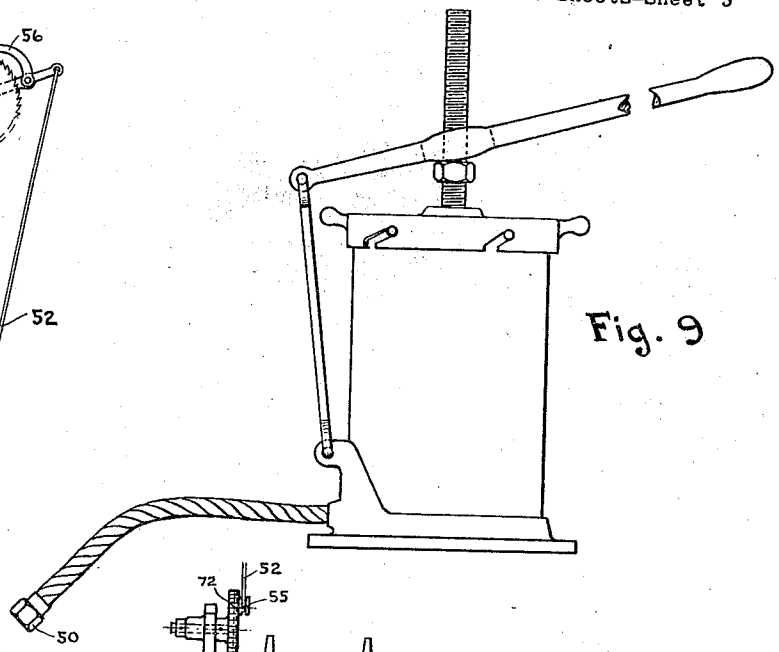


Fig. 9

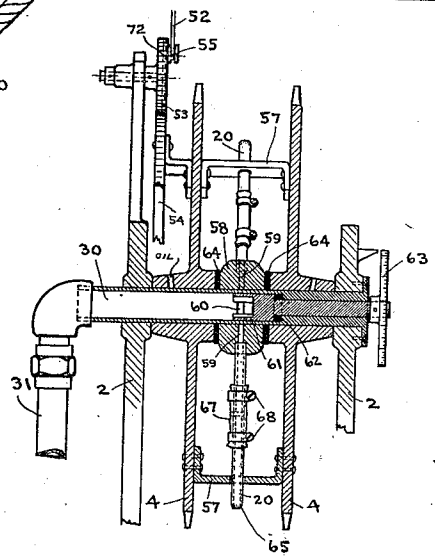


Fig. 11

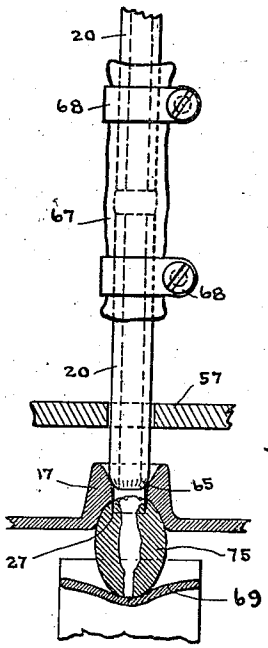


Fig. 12

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Patented July 29, 1924. 1,502,929

UNITED STATES PATENT OFFICE.

JAMES K. TUTTLE, OF OAKLAND, CALIFORNIA.

OLIVE-STUFFING MACHINE.

Application filed June 26, 1923. Serial No. 647,868.

To all whom it may concern:

Be it known that I, JAMES K. TUTTLE, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in an Olive-Stuffing Machine, of which the following is a specification, and which is illustrated in the accompanying drawings.

My invention relates to improvements in an olive stuffing machine for the production of what are known as "stuffed olives" or "pimento olives" and wherein the olives have the pits removed and the spaces filled with a red pepper and cheese or other spiced compound in the form of a very stiff paste.

The object of my invention is to reduce the large amount of hand labor heretofore always used in the preparation of these olives, by carrying out the various operations on an automatic machine of simple construction and which will provide for controlling the amount of filler paste injected into the olives, and which will permit of quick replenishment of the paste filler container when exhausted, and also an automatic machine of this character wherein all the features are actuated by a common driving element to insure permanent register of the co-operating parts.

I achieve the objects above mentioned, together with other desirable features, by the mechanism illustrated in the drawings accompanying this application and forming part hereof, and in which Fig. 1 is a front elevation of my complete machine. Fig. 2 is a plan view of the left hand end showing the paste filler container and gearing arrangement, etc. Fig. 3 is an enlarged cross section of the base showing the chain strands running in a groove, and Fig. 4 is an enlarged sectional elevation of the paste container showing it supported within a hollow casing.

Fig. 5 is a top view of the container with its worm wheel removed showing the split nut for the plunger rod. Figs. 6 and 7 show in larger detail, one of the olive holding sockets.

Fig. 8 is an enlarged detail of either the ejecting or the pitting punches as they both have the same construction.

Fig. 9 shows one form of device for refilling the pimento paste container of the machine. Fig. 10 is a diagrammatic view to illustrate the automatic pressure feed for the paste container.

Fig. 11 is an enlarged cross section of the injector nozzles and sprockets and showing the paste passage and control within the hollow fixed shaft, and Fig. 12 is a full size view showing an injector nozzle positioned against a socket and over an olive, the olive and socket being drawn in section.

In all of the views, like parts bear similar numerals, and with further reference to Figures 1 and 2 my machine will be seen to consist of a long base 1 having a pair of bearing or shaft supporting frames 2 at one end carrying sprockets 3 and 4, and at the other end a double vertical frame 5 carrying sprockets 6, 7 and 8.

The standards 5 are as stated, double, being spaced for bearings for transverse shafts supporting the sprockets arranged as shown, all clear enough to anyone skilled in the art without further detailed description or other drawings.

All the sprockets mentioned are double, that is, there are two of each mounted spaced a short distance apart side by side, for revolution about common centers. A double strand of chain 9 is threaded over the various sprockets as shown, and travels in the direction of the arrow actuating the several sets of sprockets simultaneously.

A motor 10 delivers power through worm gearing 11 to the shaft of the extreme right hand lower sprocket to actuate the machine, the chains referred to transmitting the motion to all of the other sprockets, and thus, since all have a common means of actuation, proper sequence of operation is assured.

To maintain the chains under proper working tension the upper pair of sprockets 6 are carried on bearings 12 formed to embrace and slide up and down on the standards 5 and the bearings are pulled upwards by a weight and pulley arrangement as indicated at 14 and 15, tho the bearing plates may also be clamped to the standards 5 by the screws 16, being simply released once a month to permit the slack being taken up, then re-tightened to prevent possible surging of the drive.

The chain strands run in a groove or guide in the base (as shown in Figure 3) and have riveted to and between them at

spaced intervals, usually about eight inches, sockets 17 for receiving the olives. These sockets are detailed about full size in Figures 6 and 7, and are adapted to receive the olives tightly between spring fingers 18, and the chains travel at about six or eight inches a second thus presenting from forty-five to sixty sockets a minute for filling by an operative who separately places an olive in each socket.

Attention may here be called to the fact that the springs are placed on the sockets at an angle of about forty-five degrees to the run of the chain, as indicated in Figure 7, so as to leave a working space for the thumb and index finger of an operative positioned in front of and facing the strand of chain, as the thumb and index finger holding an olive for placing in a socket then naturally assume the position of about forty-five degrees across the run of chain.

The sockets carry the olives over the sprockets 3 where the cam actuated punches 19, spaced around the sprockets to match the socket intervals, punch out the pits, and then over the sprockets 4 where similarly spaced injector tubes 20 inject the pimento paste into the olives from the reverse side from which the pit punches entered the olives. The stuffed olives then pass over the idlers 6 and over the sprockets 7 where the paste filler is smoothed and the olives ejected by the flat nosed punches 21, falling into the receiving trough 22.

The complete operation of the machine will thus readily be understood and some of the more important details will now be taken up.

The sprockets 7 idle on a fixed shaft 23 and carry between them the punches 21 actuated by a stationary cam 24 on the fixed shaft, all as detailed in Figure 8, this view being a cross section taken between the sprockets and in which the punches 21 are seen to be slidably supported in bearings 25 extending between and riveted to both sprockets, a spring 66 around each rod serving to hold the cam roller 26 against the cam.

On the other end of the machine the sprockets 3 likewise carry a series of punches 19 for punching out the pits of the olives, but since these punches are operated just the same as the ejecting punches described no further detail or description is required. The only difference between these punches and the ejecting punches is that the latter are as large in diameter as the hole in the socket will permit and are flat on the end so as to smooth off the paste filler and also push against the edges of olive meat extending more or less within the hole and eject the olives without penetrating into the paste filler, whereas the pitting punches are considerably smaller in diameter and preferably slightly "cupped" on the ends to better engage the pit.

Referring to Fig. 6, the olive socket will be seen to consist of a shallow cup 17 having olive retaining springs 18 projecting above it, and a central opening through which the pit is pushed, surrounding the hole is a short tube 27 against which the olive is pressed by the operative and which cuts the olive skin and insures that the skin or meat will not break away beyond its cutting limits when the pit is punched out, thus preventing a ragged appearance to the pimento filler.

The punches do not enter the olives through the sprocket rotation, but act positively by the cam, thus they do not enter nor leave the olives at an angle.

At the under side of the opening through the socket it is, at 28 slotted and funneled in direction of travel to permit the angular entry and withdrawal of the pimento injector nozzles or tubes 20 carried by the sprockets 4. The injectors receive their supply of pimento in the form of a stiff paste from the cylindrical container 29 in which it is kept under a proper working pressure to force it through the piping and tubes. The paste passes from the container through the piping 31 to a hollow fixed shaft 30 around which the sprockets 4 and the injector tubes revolve.

The container is here shown as a single compression cylinder, but it is evident without illustration that two or more may be used so that as one is emptied another may be cut into the line by suitable valves on the piping, and the empty one removed for filling, but I prefer to refill the container in place as given below.

To rigidly support the container cylinder in place I insert it into a heavy iron cylinder casing 32 which is permantly bolted to the base at 33. This outer casing serves as a rigid base to carry the compression paste cylinder within it and also supports the bearings 34 for the worm pressure feed gearing on top. The casing is slotted vertically to permit insertion and withdrawal of the lower paste outlet nipple 35 extending from the paste cylinder for connection by means of the coupling 36 to the piping 31.

A feed worm 37 is mounted at the top of the outer casing on a shaft 38 for meshing with a wormwheel 42 on top of the paste cylinder.

The upper head of the paste cylinder is flanged to rest on the outer casing and is properly located thereon by the bolts 41.

The upper end of the paste cylinder also carries the wormwheel 42, this wheel is splined to a threaded plunger rod 43 for sliding thereover but is not threaded thereto, so that the wormwheel being turned by the worm will rotate the rod and screw it

downward through the threaded split nut 39 secured to the upper head 44 of the cylinder.

The paste cylinder may be easily removed for filling it with paste, by simply disconnecting the coupling 36 and loosening the bolts 41, then sliding back out of engagement with the worm and lifting the cylinder bodily out of the casing 32, but I prefer to refill the container when low, by attaching an auxiliary refilling cylinder to a branch 40 in the piping, then opening the valve 47, closing the valve 48 and forcing the container 32 full from under its plunger through its outlet pipe 35. To permit the threaded plunger rod 43 to rise I have the threaded nut 39 through which the rod passes "split" as shown in Figure 5, so that by loosening the screws 49 and separating the halves 39, 39' of the nut, the plunger rod is free to back up through the cylinder when the latter is forcibly refilled from below the plunger.

A convenient refilling device is shown in Fig. 9 which takes the form of a simple pressure pump as shown having an outlet 50 adapted to couple to the pipe connection 40 of the machine.

No particular importance attaches to the exact construction of the refilling device, as it may be similar to any of the well known "grease guns" with screw, lever or power arrangement for forcing its contents into the line and paste container of the machine.

Fig. 4 is a sectional view of the interior construction of the paste cylinder in position within its casing. The plunger rod 43 is shown threaded through the split nut 39 secured to the head 44 of the cylinder and connected swivelly at 45 to a plunger 46 for forcing the contents of the cylinder down and out of the lower outlet 35, thence to the piping and injectors.

To maintain a constant pressure in the cylinder at each injection of paste into an olive, an automatic pawl and ratchet feed arrangement 51 of the well known type is secured to the end of the worm shaft 38 and is actuated by a crank link 52 pivoted to a gear 53 meshing with a larger gear 54 secured to the outer side of one of the sprockets 4, the ratios being such that the feed will operate just as each olive is in position against an injector nozzle.

Fig. 10 is an enlarged diagrammatic view of the feed device, and it will be seen that the feed can be varied by sliding the pivotal connection 55 to any point along a gibbed slot 72 in the outer face of the gear 53, also that the pawl 56 may be thrown back out of engagement to stop the feed in the usual manner.

The arrangement of the injector nozzles 20 in relation to the hollow fixed shaft 30 is best shown in Fig. 11 an enlarged cross section through the sprockets 4. The sprockets revolve on the fixed shaft and are connected together at five places by arms 57 also loosely supporting five injector tubes 20 for rotation therewith, two only being shown in this view.

The tubes are all secured to a revolving hub 58 having holes 59 from the bore of the hub to each tube. The fixed hollow shaft has a slotted hole 60 for registering with the holes 59 as the sprockets and hub revolve, and within the hollow shaft is a rotatable valve or cut-off 61 for opening or closing the slot 60 to control the amount of filler injected into the olives. The valve seats against a packing ring 62 against a shoulder in the hollow shaft and has an extension through the shaft with an index wheel 63 for adjustment of the valve outside the frame 2 of the machine.

Felt packing rings 64 at both ends of the hub 58 prevent oil working into the paste or paste under pressure from exuding.

The injector nozzles are tapered at the end 65 so as to enter and center themselves in each socket for injecting paste into the olives as the sprockets rotate and the tubes are successively passed over the feed slot 60, the machine being so timed that the pressure feed mechanism 51 operates simultaneously with the registering of each injector tube with the slot.

To give freedom to the nozzles to seat themselves properly in the sockets they are loose in the arms 57 and each is divided and with its divided ends joined with a short section of rubber hose 67 clamped to the tube sections by means of the clamps 68.

Figure 12 shows in full size section, a socket with an olive in position to be stuffed and an injector tube or nozzle in place ready to inject the paste.

To prevent the possibility of the paste pushing the olive out of the socket a short endless rubber belt of considerable flexibility bears against the olives during the injecting period. This belt is indicated at 69 in Fig. 12 and its general position is shown in Fig. 1 of the drawings, it being carried loosely over two small ball bearing pulleys 70, and 71, supported by an extension of the frame 2, the friction of the passing olives serving to move the belt.

Having thus described my automatic olive stuffing machine and its operation, what I believe to be my invention and what I desire to claim is:—

1. An organized mechanism for stuffing olives, comprising means for centering the olives, means for pitting the olives, and means for filling the pit spaces with a compound comprising an injector nozzle inserted into the pitted olive and withdrawn upon the space being filled.

2. An organized mechanism for stuffing olives, comprising means for holding the

olives, means for pitting the olives, means for filling the pit spaces with a compound, and means for ejecting the olives from the mechanism, said last mentioned means comprising a punch adapted to eject the olive and smooth the outer surface of the paste in so doing.

3. In a device of the character described, a continuously traveling chain with holders thereon conveying the pitted olives, means for stuffing the olives with a filler while traveling in the holders, and means traveling adjacent the chain supporting the olives in the holders while being stuffed.

4. In an organized mechanism for stuffing olives, a plurality of traveling sockets, means on each socket for holding an olive therein, means for passing said sockets over a pitting device whereby the olives are pitted, and means for injecting a filler into the pit spaces comprising a source of paste form filler under pressure, a duct therefrom with an injector nozzle connected thereto arranged to successively register with the pit spaces of the olives, and a valve between said nozzle and said source for admitting paste to the nozzle for injection into the olives.

5. In a combination as specified in claim 4, said valve having a control thereon for admitting a predetermined amount of filler to each olive.

6. In an organized mechanism for stuffing olives, a plurality of traveling sockets, means on each socket for holding an olive therein, means for passing the sockets over a pitting device whereby the olives are pitted, and means for injecting a filler into the pit spaces comprising a source of paste form filler under pressure, intermittently operated means for maintaining the pressure, a duct from the filler source and an injector connected therewith arranged to successively register with the pit spaces of the olives and inject in each a predetermined amount of the filler.

7. In an organized mechanism for stuffing olives, an endless chain, a series of sockets thereon with means for holding olives therein, a rotary element over which said chain passes and means associated therewith for punching out the pits of the olives through said sockets, a second rotary element over which said chain passes and means associated therewith for injecting a filler into the pit spaces, and another rotary element over which said chain passes having means associated therewith for ejecting the olives from the sockets.

8. In a machine for automatically stuffing olives, an endless chain passing over a series of sprockets and thereby simultaneously actuating them, a power drive to one of the sprockets, a plurality of spaced olive holding sockets on the chain, said chain being arranged with a straight stretch exposing a row of said cups to facilitate feeding them with olives, and devices associated with successive sprockets for successively punching out the pits of the olives placed in the sockets, stuffing a filler into the pit spaces, and ejecting the olives from the sockets.

9. In a machine of the character described, an endless chain with spaced devices thereon for receiving olives, sprocket wheels over which said chain is adapted to travel, means associated with one of the wheels adapted to punch out the pits from the olives while the chain is traveling thereover, and means associated with a subsequent wheel adapted to inject a filler into the pit spaces while the chain is traveling over said subsequent wheel.

10. In a machine for automatically stuffing olives, a traveling conveyor, a series of olive receiving sockets thereon, springs projecting above each socket for holding an olive therein, said springs being arranged at substantially right angles to the normal position of the thumb and index finger of an operative placing olives therein, and with a free space for the thumb and index finger.

11. In a machine for stuffing olives, a series of sockets adapted each to hold an olive, a cutting ring in each socket adapted to cut the skin of the olive placed therein for determining the outer margin of the stuffing hole.

12. In an organized mechanism for stuffing olives, a chain with olive carrying sockets thereon, a sprocket over which said chain passes, a hollow shaft supporting the sprocket, a source of paste filler open to the hollow shaft, and a tubular injector revolvable around the shaft with the sprocket adapted to inject the filler into the olives in the sockets.

13. In a structure as recited in claim 11, a controllable communication between said hollow shaft and said injector.

14. In a machine of the class described having an injector for stuffing olives with a filler, a supply cylinder for the filler, means for applying pressure to the cylinder to force the filler therefrom at one end to the injector, and means adapting said cylinder to be re-filled with filler from its outlet end.

JAMES K. TUTTLE.