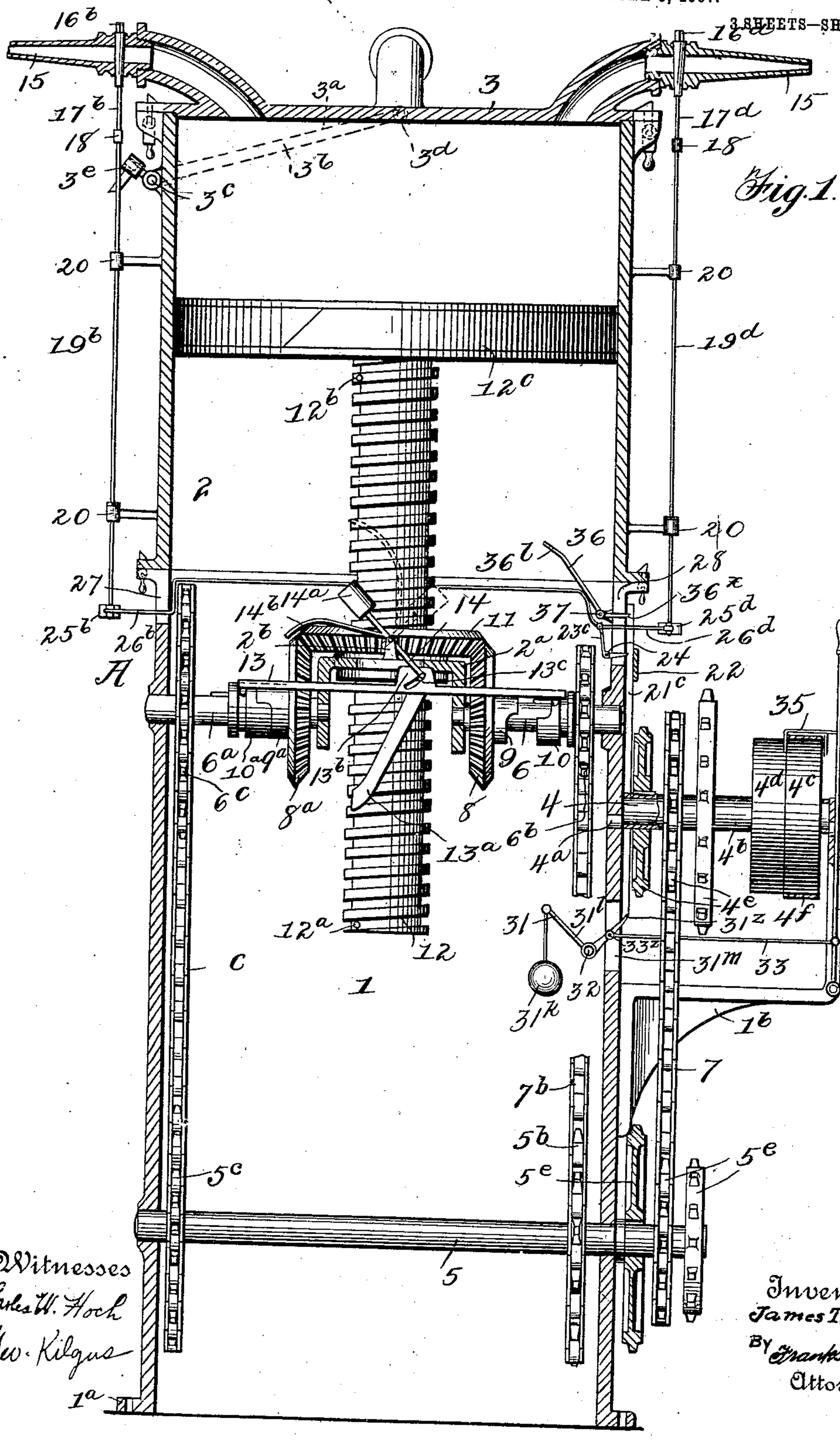
No. 859,192. PATENTED JULY 9, 1907.

J. T. BARBER.

SAUSAGE STUFFING MACHINE.

APPLICATION FILED MAY 2, 1905. RENEWED JUNE 3, 1907.

3 SHEETS—SHEET 1.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 2.

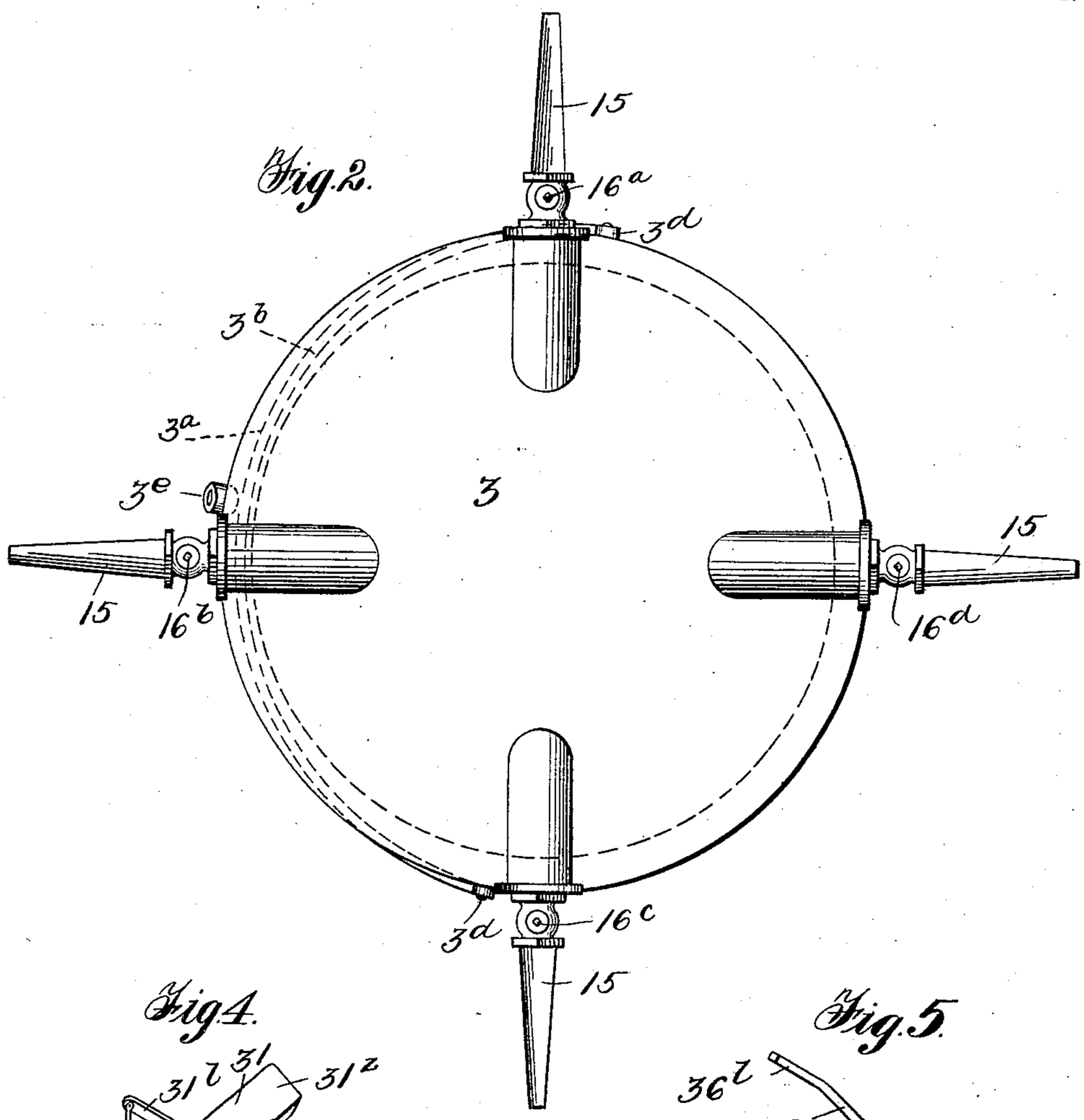


Fig. 4.

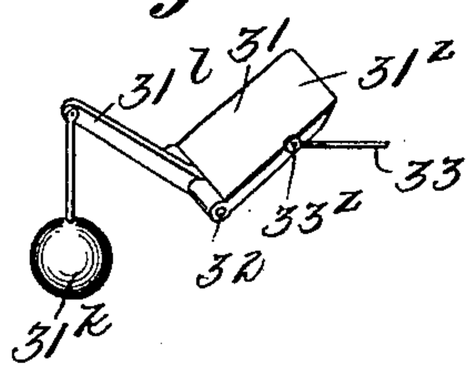


Fig. 5.

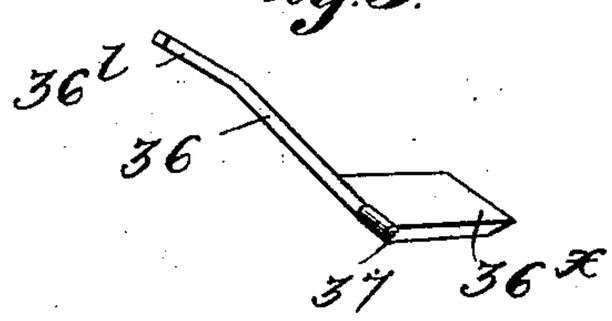


Fig. 7.

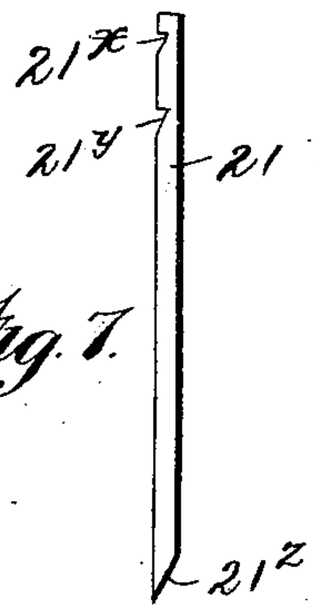
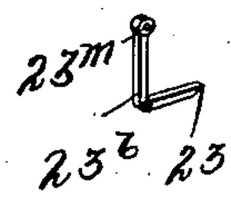


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 3.

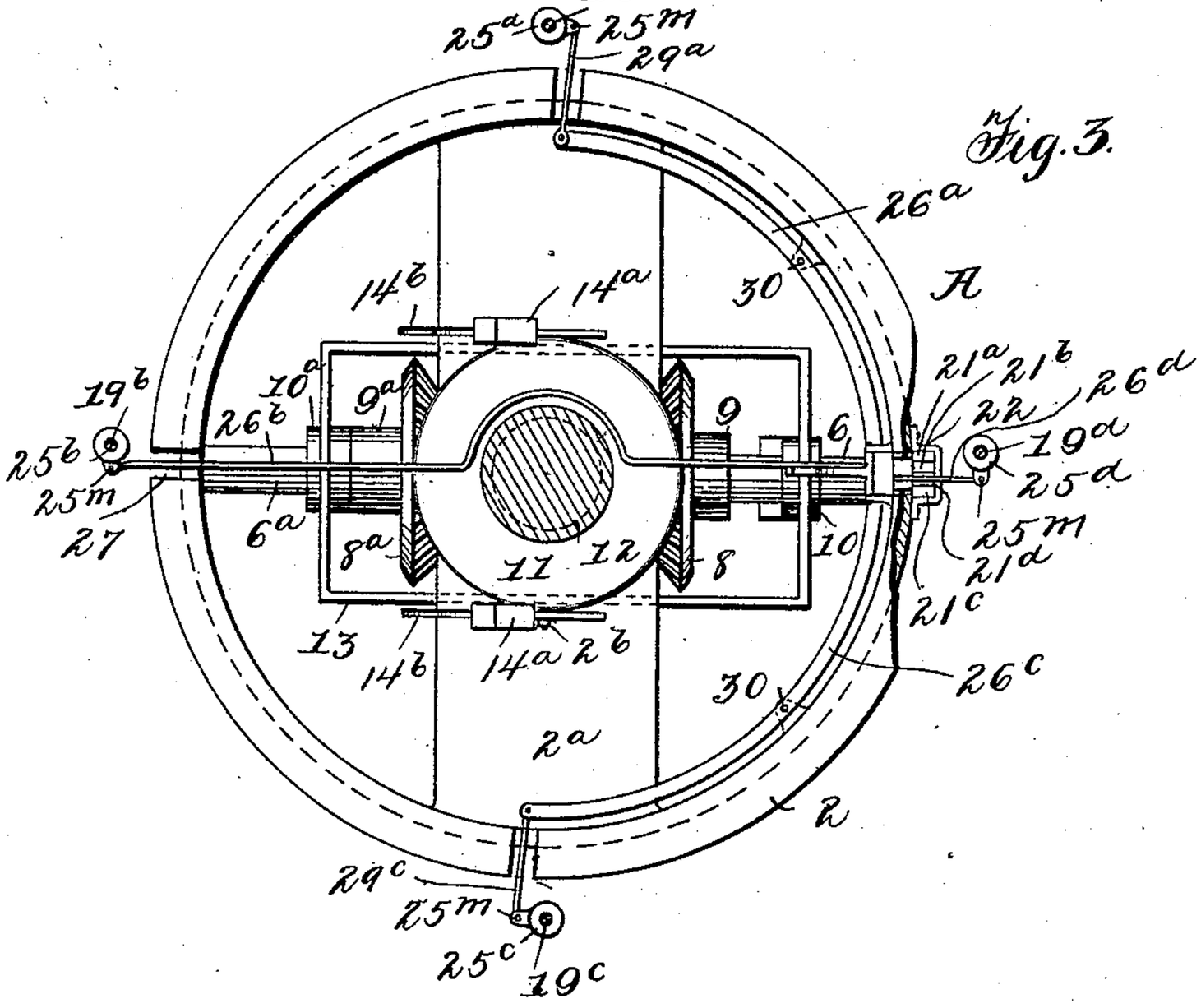
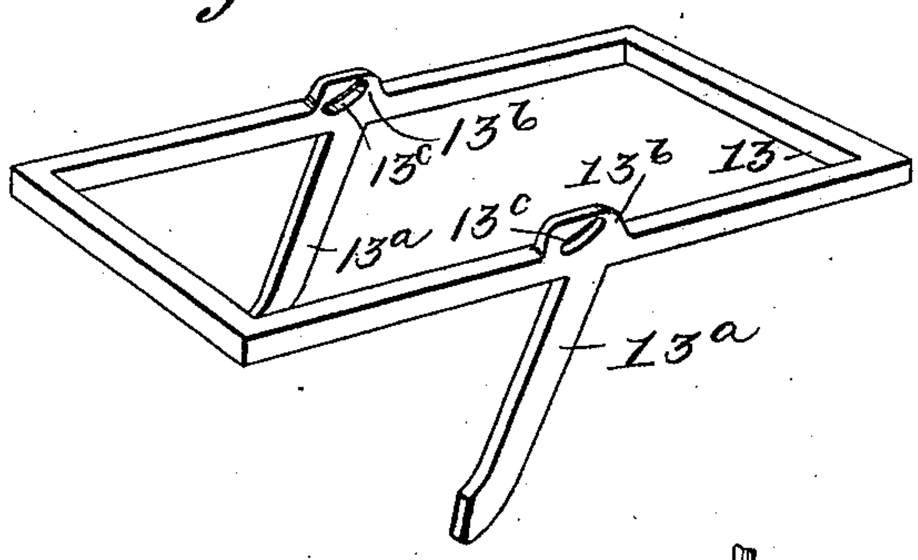


Fig. 8.



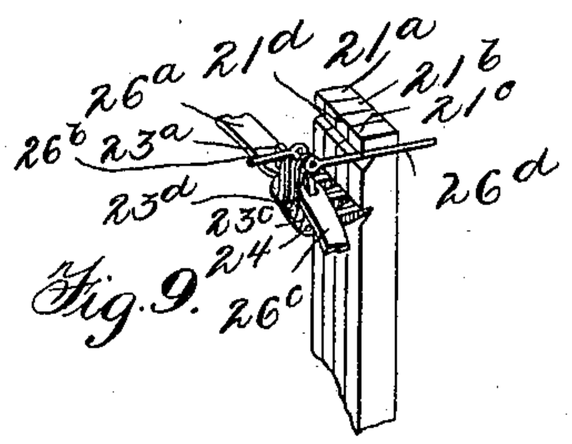


Fig. 9.

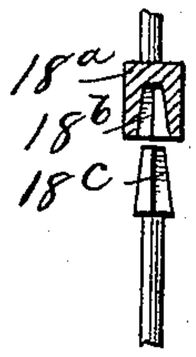


Fig. 10.

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UNITED STATES PATENT OFFICE.

JAMES T. BARBER, OF BROOKLYN, NEW YORK, ASSIGNOR TO BARBER STUFFING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SAUSAGE-STUFFING MACHINE.

No. 859,192. Specification of Letters Patent. Patented July 9, 1907.

Application filed May 2, 1905. Renewed June 3, 1907. Serial No. 377,043.

To all whom it may concern:

Be it known that I, JAMES T. BARBER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sausage-Stuffing Machines, of which the following is a specification.

My invention relates to certain new and useful improvements in sausage stuffing machines, and contemplates a construction in which means are provided to stop the machine automatically in the event of the supply of meat in the feed cylinder becoming exhausted, and independent means are provided to stop the machine by manually closing the filling valves. In addition to the automatic and manual control of the operation of the machine, I provide means by which the direction of the feeding plunger is automatically reversed when the said plunger reaches the limit of its vertical movement in either direction.

More specifically the means for stopping the operation of the machine comprises a series of sliding detents normally engaging a belt shifter to hold the belt upon the drive pulley, which detents are automatically operated by the piston in the event of the material in the feed cylinder becoming exhausted before the skins are filled, or manually operated from the filling cocks to release the belt shifter and stop the machine when the skins are filled before the supply of material in the feed cylinder is exhausted.

Still another object is the provision of means whereby the speed of the machine may be increased or decreased at will, such means embodying a duplex series of drive sprockets arranged in respective correspondingly increasing and decreasing order of sizes, and a chain trained over a pair of said sprockets, one in each series. One series of sprockets is keyed upon a sleeve, rotatable with the drive shaft, said sleeves being mounted concentrically upon a rod journaled on an eccentric axis between the cylinder and the supporting bracket. Thus by turning said rod upon its eccentric axis, the said series of sprockets mounted thereon will be raised or lowered as the case may be to facilitate the removal of the chain in changing from one pair of corresponding sprockets to another.

The detailed construction will appear as the description proceeds, reference being had to the accompanying drawings, in which:

Figure 1 is a vertical section showing the operating mechanism and the construction of the feed cylinder; Fig. 2 is a top plan view; Fig. 3 is a top plan view of the lower section of the feed cylinder showing the arrangement of the operating levers and rods, Fig. 4, a view in perspective of the bell-crank lever for operating the belt shifter, Fig. 5, a similar view of the bell-crank lever for simultaneously raising the detents, Fig. 6, a similar view of one of the bell-cranks for operating an individual detent, Fig. 7, a view in elevation of one of the detents, Fig. 8, a perspective view of the clutch operating frame, Fig. 9, a fragmental perspective view of the detents and individual operating means, and Fig. 10, a detail view of one of the rod couplings.

The feed cylinder A, is formed in three sections 1, 2 and 3, secured together by suitable clamps, the operating mechanism being located in the section 1, the section 2 containing the meat, and the section 3 comprising a lid which is hinged in a manner to be described to the section 2. The section 1 is bottomless and is provided at its base with an annular flange 1^a, by which the machine is clamped upon a suitable bed or table.

An L-shaped bracket 1^b is mounted upon one side of the casing, and a horizontal rod 4 has its eccentrically disposed reduced ends 4^a journaled in said bracket and the wall of the cylinder, the purpose of which rod, as intimated above, to be more fully explained hereinafter. A sleeve 4^b is frictionally mounted upon said rod and disposed in concentric relation thereto, the drive pulley 4^c and loose pulley 4^d being mounted upon one end of said sleeve in the well known manner, and a plurality of sprockets 4^e, graduated in size, being keyed upon the other end thereof and rotating therewith.

The section 1 is provided at its upper end with a web 2^a, extending transversely thereof, and of an inverted U-shape in cross-section, which serves as a bearing for certain parts of the machine as will be more fully pointed out.

A transverse shaft 5 is journaled in the section 1, adjacent the base, the end of said shaft extending beyond the cylinder a short distance in order to accommodate a plurality of sprockets 5^e rigidly mounted thereupon, corresponding in arrangement to the sprockets 4^e but graduated in opposite order thereto.

A pair of oppositely disposed stub-shafts 6 and 6^a, have their respective ends journaled in the casing 1 and the adjacent side of the web 2^a, these shafts being located in opposite sides of the cylinder, and being disposed in vertical alinement with the shaft 5 and parallel thereto, the shaft 6 carrying the sprocket 6^b, and the shaft 6^a, the sprocket 6^c. Relatively corresponding sprockets 5^b and 5^c, are mounted within the cylinder A upon the shaft 5.

The sprockets 4^e and 5^e are connected by a chain 7 and the pairs of sprockets 5^b and 6^b and 5^c and 6^c, are connected by chains 7^b and 7^c, respectively, the chain 7^b being partly broken away to show the automatic belt-shifting mechanism. Bevel pinions 8 and 8^a

are loosely mounted upon the ends of the shafts 6 and 6^a respectively, these pinions having formed integral therewith stationary clutch members, respectively 9 and 9^a. Corresponding clutch members 10 and 10^a, are keyed upon the shafts 6 and 6^a, but are capable of limited reciprocatory movement to engage or disengage the respective clutch members 9 and 9^a.

A bevel pinion 11, in mesh with the pinions 8 and 8^a, is rotatably mounted in the web 2^a, and is formed with a central opening through which a screw rod 12, provided at its upper end with a piston 12^c, equaling in surface area the interior of the cylinder, extends, said opening being formed with internal threads, corresponding in pitch to that of the threads of the screw rod 12.

The means for engaging the corresponding adjacent pairs of clutch members above referred to comprises a frame 13, of substantial rectangular contour, and having positive connection at its ends with the movable clutch members of each pair.

The frame 13 extends through the web 2^a, which is slotted to permit a free lateral motion of said frame. The latter carries between the sides of the web 2^a, oppositely arranged downwardly extending arms 13^a, lying in the same plane, and disposed at an angle to the frame, so as to present their lower faces inclined. A pair of oppositely disposed lugs 13^b, provided with an inclined slot 13^c are mounted upon the frame adjacent the arms 13^a. The web 2^a is provided with a pair of oppositely disposed apertured lugs 2^b, arranged on each side of the bevel pinion 11, the lugs 2^b serving as bearings for a pair of oppositely disposed weighted levers 14, which duplicate one another in construction and operation. Each lever 14 has pivotal connection with the adjacent lug 2^a, at an approximately central point, and at its upper end is provided with a weight 14^a, the lower end having loose connection in the slot 13^c, with the lugs 13^b. The lever 14 is provided adjacent its intermediate pivotal point with an angularly disposed arm 14^b, possessing an arc-shaped curvature or cam-shape, and normally lying on the same side of the machine as the arms 13^a, of the frame 13.

The screw rod 12 carries at its lower end a pair of oppositely disposed laterally extending pins 12^a, for engagement with the aforementioned arms 13^a, and at its upper end a pair of oppositely disposed laterally extending pins 12^b for engagement with the arms 14^b. The sectional view in Fig. 1, shows the screw rod 12, with the pins 12^a and 12^b in front elevation. Hence as this view is taken, only one pin of each pair is visible.

The elements above described constitute the operating mechanism. Power is transmitted from a generator by a belt 4^f to the fixed pulley 4^c, the sleeve 4^b and sprockets 4^e, keyed upon said sleeve and rotating with said pulley 4^c. By virtue of the chains 7 trained over the sprockets 4^e and 5^e, rotary motion is imparted to the shaft 5, and oppositely disposed sprockets 5^b and 5^c, and through the medium of the chains 7^b and 7^c, and the respective connecting sprockets 6^b and 6^c to the stub-shafts 6 and 6^b and movable clutch members 10 and 10^a keyed thereupon, and rotatable therewith.

I have arbitrarily chosen that the piston and screw rod be fed upward by the gears upon the left hand side of the cylinder, and downward by the gears upon the right hand side. The left hand sprockets 5^c and 6^c are of equal size, but the upper right hand sprocket 6^b is much smaller than its corresponding sprocket 5^c, in order that the screw rod 12 may be fed downward in its return to initial position at a much greater degree of speed than in its upward movement.

As shown in Fig. 1, the left hand clutches are engaged and the piston has completed approximately half the distance of its upward travel. At the termination of its upward movement the pin 12^a will engage the arm 13^a, thereby moving the frame 13 to the left, and swinging the weighted lever 14 to the right until the latter reaches a point just beyond its center of gravity, when the weight 14^a will act to draw the lever 14 still further to the right, and move the frame 13 as far as possible to the left to disengage the clutch member 10^a from the member 9^a, and engage the right hand clutch member 10 with its opposing member 9, thereby throwing the right hand system out of gearing into operation, reversing the direction of movement of the pinion 11, and feeding the screw 12 downward. During the downward travel of the screw 12, the weighted lever 14 will incline to the right and present the arc-shaped arm 14^b in the path of the pin 12^b. At the completion of the downward travel of the screw 12, the pin 12^b will engage the arm 14^b, thereby throwing the weighted lever to the left to a point just beyond the center of gravity, when the weight 14 will act to draw the lever 14 as far as possible to the left, and at the same time that the weighted upper end of the lever 14 is moving to the left, the lower end will be moving to the right, sliding the frame 13 therewith to disengage the clutches 9 and 10, and engage the clutches 9^a and 10^a, thereby throwing the left hand system of gearing into action to feed the machine upward, when the operations above described will be repeated. However, the movement of the screw rod 12 is not continuous since the piston 12^c, upon its restoration to its lowermost position, operates an automatic belt-shifting mechanism, to be described, to shift the belt from the fast pulley to the loose pulley and stop the operation of the driving gear in order that the section 2 may be refilled with meat.

A hand lever 4^a is mounted upon the outer end 4^b of the rod 4, upon the exterior of the bracket 1^b, by virtue of which the rod 4 may be turned upon its eccentric axis to raise or lower the series of sprockets 4^e in shifting the chain 7 from one pair of sprockets to another in ascending or descending series of graduations. The lever 4^g is provided with a short depending arm 4^h, engaging a stop 4^i, provided upon the bracket 1^b, to prevent the accidental movement of said lever under the strain of vibration.

The lid 3 is clamped upon the section 2 by pivoted eccentric clamps 3^a. A yoke 3^b is centrally fulcrumed as at 3^c, to the section 2 at a point near its top and it is fulcrumed at its ends as at 3^d to opposite sides of the lid 3. The yoke 3^b serves as a double hinge upon which the lid 3 is swung from its position upon the section 2, of the cylinder A. The yoke carries an angular extension 3^e, formed with a beveled end which bears against the side of the cylinder and serves to brace the lid when the latter is raised from the section 2, and assumes an approximately perpendicular position.

The lid 3 is provided with a plurality, in this instance 4, of filling nozzles 15, upon which the skins to be filled are secured, and in each of said nozzles a valve is

located to control the material fed from the cylinder, there being four such valves, designated 16^a, 16^b, 16^c, and 16^d, preferably of the turning plug type. It is permissible to increase or decrease the number of valves employed according to the amount of work to be produced, without departing from the spirit of my invention, four valves being shown merely for the sake of clearness of illustration and description. Downward extensions 17^a, 17^b, 17^c and 17^d are carried by each respective valve. These extensions turn with the valve and are detachably coupled as at 18 to complementary vertical rods, 19^a, 19^b, 19^c, and 19^d, respectively, supported in apertured brackets 20 carried by the section 2.

The specific form of coupling employed to join the valve extensions 17 etc. and complementary vertical rods 19 etc. is shown in Fig. 10, and comprises an enlarged socket 18^a, carried upon the lower end of each extension 17 etc. provided with frustum-shaped recesses 18^b which receive an enlarged head 18^c of corresponding contour to the said recesses formed upon the upper end of each of the rods 19 etc. These couplings duplicate one another in construction, so that the above description is equally applicable to all. Owing to the frustum shape of the socket and head received thereby, the rods 17 etc. and 19 etc. may be instantly uncoupled without removing any parts or operating any extraneous mechanism, but simply by lifting the lid 3 from the section 2. When the aforementioned rods are coupled together, the coupling 18 forms a rigid connection, so that each of the rods 19 etc. are rotatable with the corresponding valve and extension.

The vertical rods 19 etc. constitute one of the elements by which the valves are operatively connected to the belt-shifting devices for the manual control thereof, the corresponding correlative elements possessing the same index letter, so that in the following description the elements designated by a numeral and bearing the index letter *a* correspond. In like manner those in each respective series possessing the indices *b*, *c* or *d*, are correspondingly correlative.

The specific means for shifting the belt from the fast to the loose pulley in stopping the operation of the various driving gear trains, comprises a series of horizontally alined vertical rods, one rod being operatively connected to each valve and being designated by numerals having corresponding indices as follows: 21^a, 21^b, 21^c, and 21^d.

The valve rods which I will designate "detents" are counterparts of one another in construction, so that a description of a single detent, as illustrated in Fig. 7, will suffice for all.

In the upper portion of each detent I provide a pair of superposed notches, the upper notch being designated 21^x, and the lower notch 21^y. The lower end of each detent is beveled as at 21^z. A U-shaped bracket formed integral with the section 2, incloses all of said detents and coacts with other elements to form a common support therefor. A series of bell-cranks are mounted upon a transverse rod 24, journaled in bearings carried by the section 2, and correspond in number and arrangement to the aforementioned detents, these bell-cranks being designated 23^a, 23^b, 23^c and 23^d. The bell-cranks 23^b and 23^d are counterparts of one another in construction, so that a description of a single bell-crank as illustrated in Fig. 6, will suffice. In their normal position, one of the arms of the bell-crank is disposed vertically, and the other arm is horizontally disposed. The vertical arm terminates in an enlarged apertured end 23^m, and the horizontal arm 23^y is beveled at its end to engage the notch 21^y in the corresponding detent. The bell-cranks 23^a and 23^c, do not possess the enlarged apertured end 23^m, but otherwise the construction is the same as that of the bell-cranks 23^b and 23^d.

Each rod 19 etc. carries at its lower end a rigid horizontally disposed lever, these levers being designated 25^a, 25^b 25^c and 25^d, provided with an apertured end 25^m, by virtue of which the said rods are operatively connected to the corresponding bell-crank for operating the detents. The rod 19^b is positively connected to the bell-crank 23^b, by a transverse rod 26^b, extending through a slot 27 in the section 2, and bent into a peculiar angular contour as shown in Figs. 1 and 3 to pass around the operating sprockets and screw, the said rod 26^b, having pivotal connection at its ends with the end 25^m of the lever 25^b, and with the end 23^m of the bell-crank 23^b. In like manner the lever 25^d is positively connected to the corresponding bell-crank 23^d by a transverse rod 26^d extending through a slot 28 provided in the section 2, in which slot the various operating bell cranks have a limited movement.

The oppositely arranged levers 25^a and 25^c are each connected by a corresponding link 29^a and 29^c to corresponding levers 26^a and 26^c, which duplicate one another in construction. The levers 26^a and 26^c, possess a curvature of about 90 degrees and are arranged adjacent the walls of the section 2, being centrally fulcrumed as at 30, in a bracket formed integral with the section 2. The rod 29^a and 29^c, have pivotal connection at their ends with the ends 25^m of the levers 25^a and 25^c, and with the adjacent ends of the levers 26^a and 26^c, the other ends of the last named levers being secured to the ends of the bell cranks 23^a and 23^c.

A bell-crank lever 31 is mounted at the junction of its arms upon a horizontal rod 32 within the section 1, adjacent the beveled ends 21^z of the detents 21 etc., one arm 31^z of said lever 31 projecting through a slot 31^m in the section 1. This arm 31^z is equal in width to the combined widths of the beveled-ends 21^z of the detents 21 etc., which rest and are normally supported on said arm.

A weighted rod 31^k is suspended from the other arm 31^l of the bell-crank 31 within the section 1. A rod 33 has its one end pivoted at 33^z centrally upon the arm 31^z and its other end at 33^h to a vertical lever 34, pivotally connected at its lower end 34^a to the bracket 1^b. The lever 34 carries adjacent its upper end a laterally-extending yoke 35 whose edges overlap the sides of the drive-belt 4^k. The bell-crank 31 is shown in detail in Fig. 4, and comprises the automatic means for shifting the drive-belt 4^f, from the fixed pulley 4^c, to the loose-pulley 4^d, the specific operation of which will be presently explained.

Still another bell-crank lever 36 is mounted upon a horizontal rod 37, within the section 1, adjacent to the top thereof, and directly above the bell-cranks 3 etc. The bell-crank 36 is provided with a leg 36^x, having a beveled end and equaling in width the combined width of the detents 21 etc. The other

end 36^1 of said bell crank 36 is inclined upwardly and is engaged by the piston 12^c in its downward movement for a purpose to be described.

In Fig. 5 of the drawings, I have illustrated the bell-crank 36 in perspective to show the detailed construction thereof.

The detents 21 etc., normally rest with their beveled ends 21^z upon the ends 31^z of the bell-crank 31, and the beveled ends 23^y of the bell-cranks 23 engaging the notches 21^y in each corresponding detent. In like manner, the beveled arm 36^x engages the adjacent notches 21^x in the detent.

In practical use, when the supply of material in the section 2 of the cylinder A becomes exhausted before the skins are filled, the operation is as follows:

When the clutch members 10^a and 9^a are engaged, the pinions 8^a and 11 in mesh, and the screw 12 with the piston 12^c is on the up-stroke, the pin 12^a will, at the termination of the upward stroke, engage the arm 13^a of the frame 13 to reverse the direction of the travel of the said screw in the manner previously described. At the termination of the down-stroke of said screw, simultaneously with the action of the pin 12^b, in engaging the arm 14^b to set the gear train for the up-stroke of the screw 12, the piston 12^c will strike the arm 36^1 of the bell-crank 36, thereby raising the arm 36^x of said bell-crank, said arm being equal in width to the combined width of all the detents, and lifting said detents 21 etc. synchronously from engagement with the leg 31^z of the bell-crank 31. The detents having been thus lifted, the weight 31^b will serve to draw back the bell-crank 31 and the rod 33 therewith, thus drawing the lever 34 towards the cylinder A and moving the yoke 35 to shift the belt 4^f from the fixed pulley 4^e, to the loose pulley 4^d, thereby stopping the operation of the machine.

As long as the piston remains stationary in the position assumed at the termination of its downward movement, the detents 21 etc. will be held elevated by the bell-crank 36. At this stage of the operation, the lid 3 may be lifted in the manner described, and the section 2 refilled with meat.

When it is desired to start the piston upward, the lever 34 is pulled manually outward against the tension of the weight 31^k, the yoke 35 being moved to shift the belt 4^f from the loose pulley 4^d, to the fixed pulley 4^e, to start the operation of the machine. As soon as the piston is elevated, sufficiently to release the bell-crank 36, the detents 21 etc. will fall by gravity back to their normal position upon the leg 31^z. holding the same against the tension of the weight 31^k, during the movement of the piston, and at the same time drawing the bell-crank 36 into the path of the piston 12^c to be actuated in a similar manner on the downward stroke.

On the up-stroke of the piston 12^c, the filling cocks 16 etc., are open, and the meat is fed from the cylinder into the skins fitted on the nozzles 16. As each skin is filled, the valve controlling the supply to that particular skin is closed manually. Owing to the manner in which the valves are connected, as shown in the drawings, it is necessary to turn the adjacent pair of cocks 16^a and 16^c to the right, and the adjacent pair 16^b and 16^d to the left, in order to actuate all of the bell-cranks 25 etc. in the same direction. The valves being of the turning plug type, can of course be turned in either direction as necessary.

When the skins are all filled, before the supply of material in the cylinder A is exhausted, the operation is as follows: Assuming that the filling cock 16^a is first closed, the valve being turned to the right, the complementary rods 17^a and 19^a and rigidly secured lever 25^a will be rotated in the same direction, and will draw back the rod 29^a, thereby imparting a limited oscillatory movement to the lever 26^a to move the bell-crank 23^a, causing the arm 23^y of said bell-crank to lift the detent 21^a from its normal position upon the arm 31^z of the lever 31. Let the cock 16^c be the second one to be closed, and be turned in the same direction, *i. e.*, to the left as was the cock 16^a. The rods 17^c and 19^c, and rigid lever 25^c will rotate therewith, drawing back the link 29^c, swinging the lever 26^c upon its pivot 30 to draw back the bell-crank 23^c, and lift the detent 21^c. The filling cock 16^b, being next closed, and moved to the left as set forth, the rod 26^b will be drawn back, and move therewith the bell-crank 23^b to lift the detent 21^b in the manner described above. The filling cock 16^d, we will say is the last one to be closed, it being also turned to the left and pushing toward the rod 26^d to actuate the bell-crank 23^d, to lift the detent 21^d in the same manner that the filling cock 16^b lifts detent 21^b. Thus, when all the valves, are closed manually, the detents are all lifted, one by one, from the leg 31^z of the bell-crank 31, allowing the belt-shifting mechanism to operate in the manner above described. The piston 12^c will thus be stopped in its upward movement before the completion of its travel, and the skins already filled may be removed from the filling nozzles 15, and replaced by empty ones. The belt-shifting lever is then drawn outward to place the belt upon the drive pulley, and the cocks are manually opened, the various actuating rods being thereby moved in the reverse direction to draw forward the bell-cranks 23 etc., and lower the detents upon the leg 31^z of the bell crank 31, the operation of the machine from this point being the same as previously described.

It is obvious that many minor changes may be made without departing from the spirit of my invention.

I do not limit myself to four filling cocks, but show and describe this number for the sake of convenience, as any desired number could obviously be used by making slight changes in the connecting rods and levers.

Having fully described my invention, I claim:

1. In a sausage stuffing machine, a receptacle, valved nozzles connected with said receptacle, a plunger in said receptacle, gearing to actuate said plunger, a belt shifter, and operative connections between the nozzle valves and the belt shifter to stop the plunger when the nozzles are closed, substantially as shown and described.

2. In a sausage stuffing machine, a receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a shifting mechanism secured to said clutches to throw them into operative position alternately, means secured to said screw to operate said shifting mechanism, a belt shifter for controlling the operation of said gearing, and mechanism for automatically operating said belt shifter at the completion of each forward and back stroke of the plunger to stop its operation, substantially as shown and described.

3. In a sausage stuffing machine, a receptacle, valved nozzles connected with said receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said

plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a shifting mechanism secured to said clutches to throw them into operative position alternately, means secured to said screw to operate said shifting mechanism, a belt shifter for controlling the operation of said gearing, and operative connections between the nozzle valves and the belt shifter to stop the plunger when the nozzles are closed, substantially as shown and described.

4. In a sausage stuffing machine, a receptacle, valved nozzles connected with said receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a shifting mechanism secured to said clutches to throw them into operative position alternately, means secured to said screw to operate said shifting mechanism, a belt shifter for controlling the operation of said gearing, mechanism for automatically operating said belt shifter at the completion of each forward and back stroke of the plunger to stop its operation, and operative connections between the nozzle valves and the belt shifter to stop the plunger when the nozzles are closed, substantially as shown and described.

5. In a sausage stuffing machine, a receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a slidable frame secured to said clutches, downwardly extending arms on the frame, weighted levers on the upper side of the frame, and means secured to said screw to engage said arms and levers to slide said frame, substantially as shown and described.

6. In a sausage stuffing machine, a receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a slidable frame secured to said clutches, downwardly extending arms on the frame, weighted levers on the upper side of the frame, and pins secured to said plunger screw to engage said arms and levers to slide said frame, substantially as shown and described.

7. In a sausage stuffing machine, a receptacle, valved nozzles connected with said receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a slidable frame secured to said clutches, means secured to the frame and the plunger screw to operate the frame, a belt shifter for controlling the operation of said gearing, mechanism for automatically operating said belt shifter at the completion of each forward and back stroke of the plunger to stop its operation, and operative connections between the nozzle valves and the belt shifter to stop the plunger when the nozzles are closed, substantially as shown and described.

8. In a sausage stuffing machine, a receptacle, valved nozzles connected with said receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a slidable frame secured to said clutches, downwardly extending arms on the frame, weighted levers on the upper side of the frame, means secured to the screw to engage said arms and levers to slide said frame, a belt shifter for controlling the operation of said gearing, mechanism for automatically operating said belt shifter at the completion of each forward and back stroke of the plunger to stop its operation, and operative connections between the nozzle valves and the belt shifter to stop the plunger when the nozzles are closed, substantially as shown and described.

9. In a sausage stuffing machine, a receptacle, valved nozzles connected with said receptacle, a plunger adapted to reciprocate in said receptacle, a screw secured to said plunger, gearing engaging said screw, clutches for controlling the direction of travel of said gearing, a slidable frame secured to said clutches, downwardly extending arms on the frame, weighted levers on the upper side of the frame, and pins secured to the plunger screw to engage said arms and levers to actuate said frame, a belt shifter for controlling the operation of said gearing, mechanism for automatically operating said belt shifter at the completion of each forward and back stroke of the plunger to stop its operation, and operative connections between the nozzle valves and the belt shifter to stop the plunger when the nozzles are closed, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES T. BARBER.

Witnesses:
CHARLES W. HOCH,
GEO. KILGUS.