(No Model.) 2 Sheets—Sheet 1.

A. WESTON.

BEEF STUFFING MACHINE.

No. 505,498. Patented Sept. 26, 1893.

Fig. 1.

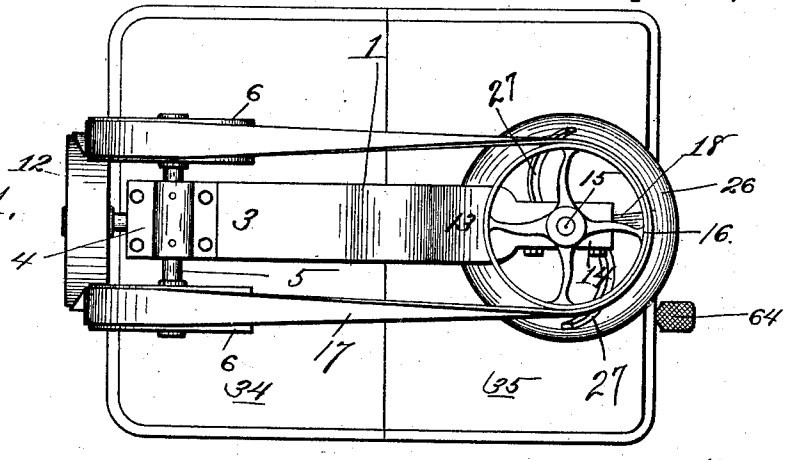

Fig. 2.

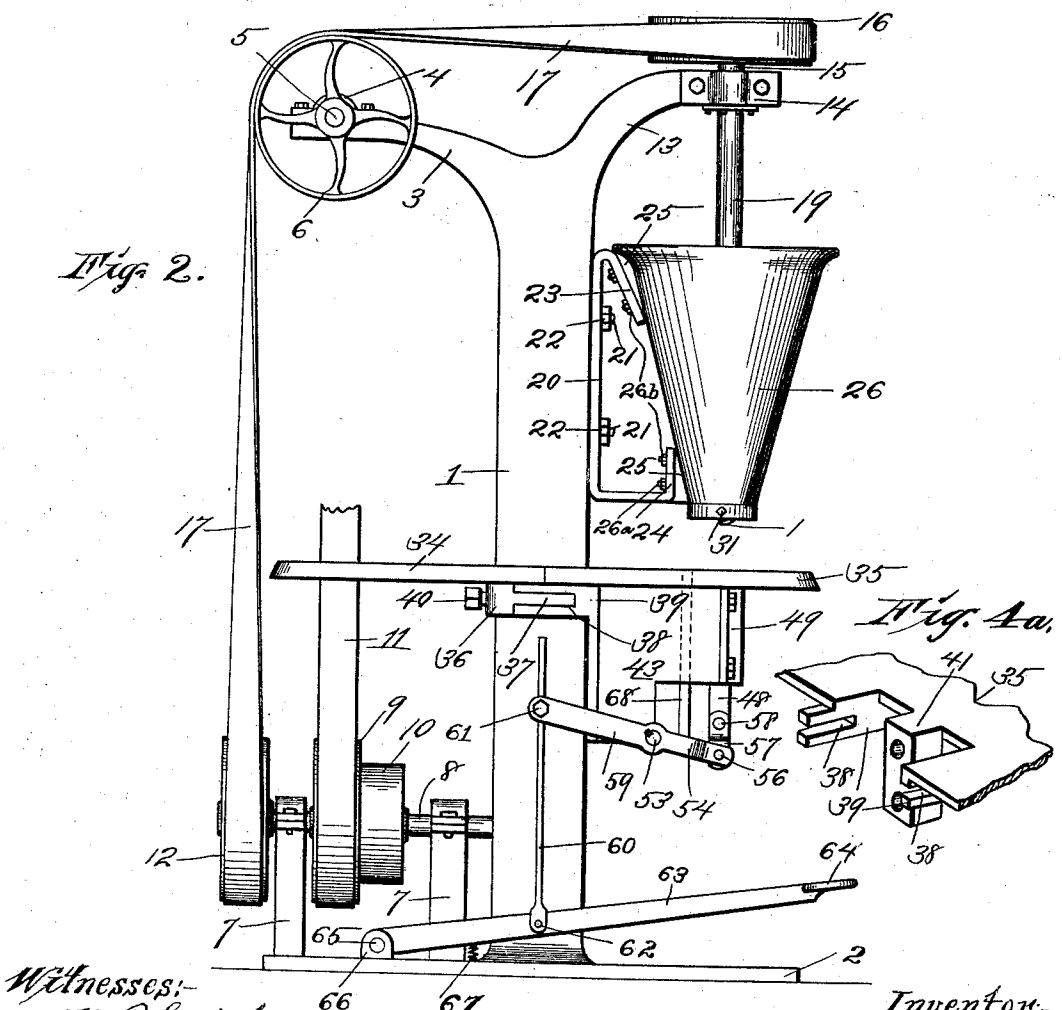

Fig. 4a.

Witnesses:-
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C. L. Thorpe.

Inventor:-
A. Weston.
By Higdon & Higdon
Atty's

(No Model.)

2 Sheets—Sheet 2.

A. WESTON.

BEEF STUFFING MACHINE.

No. 505,498. Patented Sept. 26, 1893.

Fig. 3.

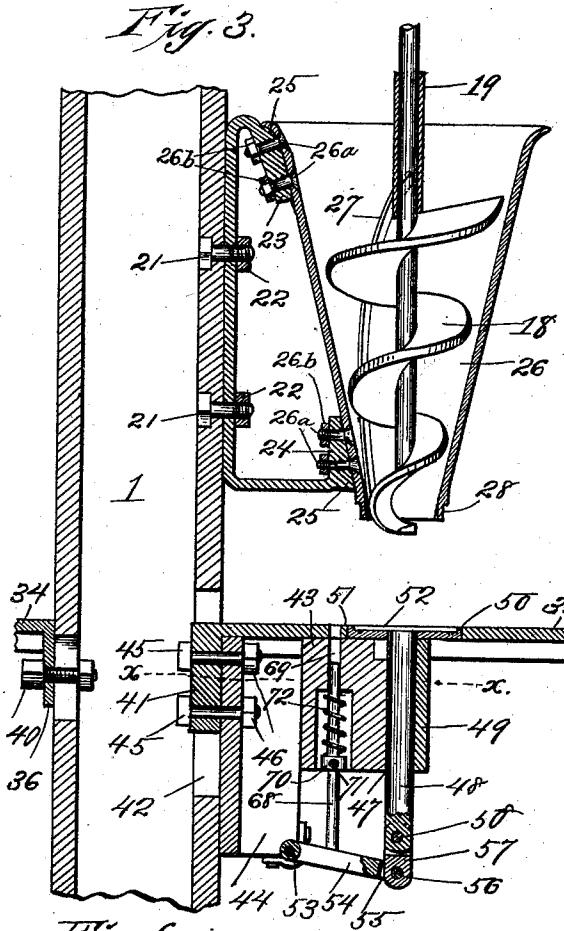
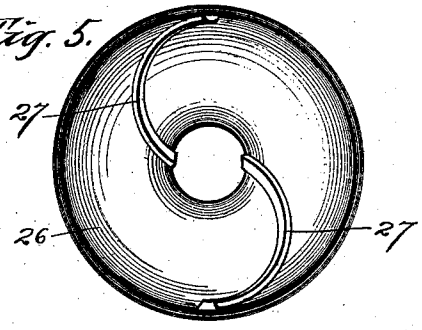


Fig. 5.



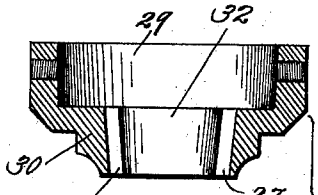


Fig. 8.

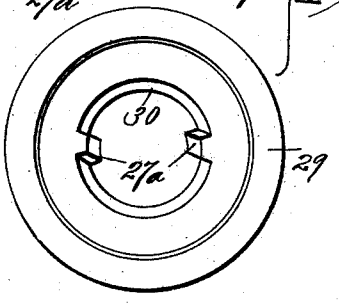
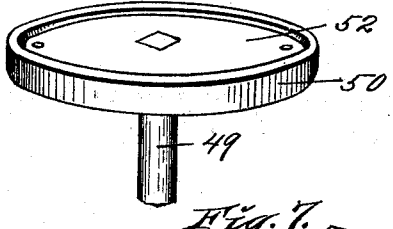


Fig. 6.



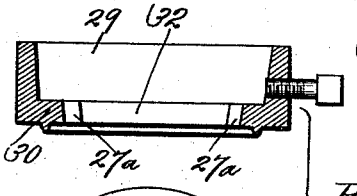


Fig 9

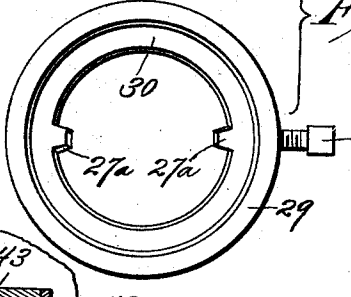
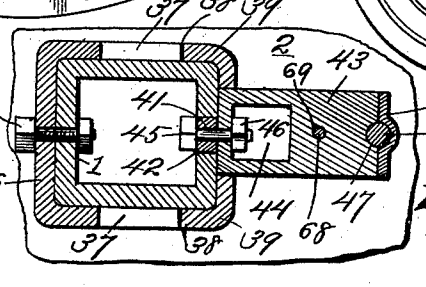


Fig. 7.

Fig 4.



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By:- Higdon & Higdon
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UNITED STATES PATENT OFFICE.

ALFRED WESTON, OF KANSAS CITY, KANSAS.

BEEF-STUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,498, dated September 26, 1893.

Application filed May 12, 1893. Serial No. 473,982. (No model.)

To all whom it may concern:

Be it known that I, ALFRED WESTON, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Beef-Stuffing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to beef stuffing machines for use in packing houses particularly; and the objects of my invention are to produce a machine of this character, which will stuff or fill the cans in a short space of time; is positive and direct in action; and which is strong, durable and inexpensive of construction.

With these objects in view, my invention consists in certain peculiar and novel features of construction and arrangement of parts as will be hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1, is a top plan view of a beef stuffing machine constructed in accordance with my invention. Fig. 2, is a side elevation of the same. Fig. 3, is a vertical central sectional view, to show more clearly the construction of the hopper and spiral conveyer therein and the adjustable table. Fig. 4, is a horizontal sectional view taken on the line x—x of Fig. 3. Fig. 4^a, is a detail perspective view of a portion of one section of the adjustable table. Fig. 5, is a top plan view of the hopper. Fig. 6, is a detail perspective view of the plate upon which the can is supported in operative position. Fig. 7, is a detail perspective view of a shoe which is adapted to be fitted on the lower end of the spiral conveyer, when used to fill or stuff a can of greater diameter. Fig. 8, is a vertical sectional view and a top plan view of a nozzle adapted to be secured upon the lower end of the hopper and adapted to be used when one pound cans are to be filled. Fig. 9, is a vertical sectional view and a top plan view of a nozzle adapted to be used with the hopper in connection with the two pound cans.

Previous to my invention, it has been necessary to stuff or fill the cans by descending plungers, and which crush and ruin all cans which are not placed in perfect vertical alignment therewith, and as these plungers work with great rapidity the cans have to be placed upon their support very quickly, which it is impossible to do and place them all in perfect alignment. Also slivers of bone, wire tags or nails which often find their way into the hoppers which are forced against the side of the can by the descent of the plunger, are wedged therein and upon the withdrawal of the plunger from the can, rip the side of the can entirely out and also damage the machine. Again, with the plunger system of stuffing cans, all of the meat which is weighed before being placed into the hopper is not forced into the can, therefore necessitating a second weighing.

With my present invention, a hopper is provided through which extends a spiral conveyer; this spiral conveyer being adapted to revolve and thereby force the meat into the can. This conveyer does not descend upon the can, therefore not endangering it; feeds all of the meat from the hopper, therefore requiring no second weighing, and should any slivers of bone, wire tags or nails be in the hopper, they will be fed with the meat into the can without injuring the same.

Referring to the drawings, 1 designates a standard which is of rectangular shape in cross section and is also preferably formed hollow as shown. This standard is vertically erected from a base-plate 2, which is bolted or otherwise secured to the floor. The standard 1 is formed at its upper end with the rearwardly extending arm 3, and arranged transversely of and having a bearing, between said arm and the bearing cap 4 is a shaft 5; said shaft carrying a belt-wheel 6 upon each end. Supported in suitable bearings 7, and near the lower end of the standard 1, is a shaft 8 said shaft extending horizontally and at right angles to the shaft 5. Large and small belt-wheels 9 and 10 respectively, are rigidly secured upon the shaft 8 and a belt 11 adapted to be connected up to a counter-shaft (not shown) engages one or the other of said wheels 9 or 10; according to the speed desired. A belt-wheel 12 is also carried rigidly upon the outer end of the shaft 8, and is so arranged that its periphery is vertically beneath the rear side of the periphery of the belt-

wheel 6. The standard is also formed at its upper end with the forwardly projecting arm 13, between which and the bearing cap 14 the vertical shaft 15 is journaled. A belt wheel 16 is rigidly secured upon the upper end of the shaft 14; this belt wheel being so arranged that the opposite sides of its periphery are longitudinally aligned with the upper side of the periphery of the belt wheels 6. An endless-belt 17 connects the belt wheels 12 and 16, and is guided over the intermediate belt wheel 6. The shaft 15 depends for a suitable distance below the arm 13, and is formed with a spiral-conveyer 18 surrounding it for a suitable distance and projecting below its lower end.

To form a bearing for the lower portion of the shaft 15, a sleeve 19 incloses the same and is bolted or otherwise secured to the under side of the arm 13, and extends downwardly to the upper end of the spiral-conveyer. A supporting bracket 20 is fitted vertically against the front side of the standard 1, and is secured thereto by means of the bolts and retaining nuts 21 and 22 respectively. This supporting bracket is formed at its upper end with a depending arm 23, and at its lower end with an upwardly extending arm 24; said arms being each formed with a projection 25, the outer surface of which is inclined and adapted to conform with the inclination of the hopper 26, and said hopper is secured thereagainst by means of the bolts 26^a and retaining nuts 26^b; this hopper is preferably approximately V-shaped in cross section, and surrounds or incloses the spiral-conveyer 17 of the shaft 15; said spiral-conveyer also being of gradually increasing diameter to conform to the interior shape of the hopper.

Guide strips 27 are secured on the inner side of the hopper, and are spirally arranged so as to extend from diametrically opposite points at the upper end of the spiral-conveyer to the lower open end of the hopper a distance of ninety degrees, so that their lower ends will be diametrically opposite to each other. The hopper 26 is formed at its lower end and outer side with the annular recess 28, against which the annular flange 29 of the nozzle 30 is placed, and secured by one or more set-screws 31, which pass through said flange and impinge upon the outer side of the hopper. The passage 32 of the nozzle is adapted to continue the tapering passage of the hopper 26, and is formed with the spiral guide strips 27^a which register with and are adapted to continue the curvature of the strips 27. When it is desirable to use a large can in connection with the apparatus, a nozzle of similar construction and arrangement is used, but the passage 32 thereof is of greater diameter, as shown in Fig. 9, and to make a spiral of a corresponding size, the detachable and tapering curved shoe 33 is used; this shoe being secured by screw bolts upon the lower end of the spiral conveyer as shown in dotted lines Fig. 7. A table is composed of two sections 34 and 35. The section 34 is formed with a depending flange 36, this flange being adapted to fit against the rear side of the standard 1, and also to rest against the adjacent sides of the same. The side portions of this flange are formed each with a tongue 37 which is adapted to register with and engage a groove 38 formed in each depending flange 39 of the table section 35. A bolt 40 passing through the rear portion of the flange of the section 34 passes through a vertical slot in the standard and supports said table in position, a retaining-nut engaging the inner end of said bolt. The front section 35 of the table is also formed with an inwardly extending and vertical tongue or projection 41 which is fitted and adapted to slide in the vertical slot 42 and the front side of the standard.

A casting 43 is formed with a vertical opening 44 near its rear side, and is secured against the under side of the front section 35 of the table, by the bolts 45 which pass through the vertical tongue or projection 41 of the front table section, and also through the rear portion of the casting 43, and have their projecting ends engaged by the retaining nuts 46. The front portion of this casting is formed with a vertical and semi-circular recess 47, and a cylindrical rod 48 is adapted to vertically operate therein and between the bearing cap 49 bolted or otherwise secured thereto. The upper end of this rod 48 carries a circular plate 50 which rests normally in a circular recess or passage 51 in the front section 35 of the table. This plate 50 is recessed in its upper side at 52, for the reception of the cans to be filled. A rock-shaft 53 is journaled near its opposite ends to the lower end of the casting 43, and is formed with a central and forwardly projecting rock arm 54; said rock arm being bifurcated at its outer end at 55, and pivotally connected at 56 to the lower end of a link 57, the upper end of which is pivotally connected at 58 to the lower end of the cylindrical rod 48.

Keyed upon the outer end of the shaft 53 and extending rearwardly to one side of the standard 1 is a rock arm 59, and extending vertically and adjustable through the rear end of said rock arm by means of the set screw 61 is a lift rod or link 60, the lower end of which is pivotally connected at 62 to a foot lever or treadle 63, which extends toward the front of the machine and is formed with a foot piece 64 at its outer end, and has its rear end pivoted at 65 to the upwardly extending ear or lug 66 of the base plate 2 in rear of the standard. A lift-spring 67 is secured to and bears at its opposite ends against said plate and the under side of the lever, and is adapted to normally hold the lever in the position shown in Fig. 2. In order to assist the lift-spring 67 to move the can carrying plate downward, a vertical rod 68 is provided; this rod resting at its lower end upon the rock-arm 54, and having its upper portion engaging and adapted to operate in the vertical

passage 69 of the casting 43. A collar 70 is secured by a set-screw 71 or other suitable means upon the rod 68, and a spring 72 spirally encircling said rod, bears at its opposite ends against the casting 43 and said collar; the tendency of said spring being to depress the rock-arm 54 and move the can-plate downward.

In operation, the height of the can being first ascertained, the table is first adjustably secured by means of the set-screw 40 to the proper height. The belt 11 is then thrown in gear with the counter shaft (not shown), and the spiral conveyer is operated, through the medium of the endless belt 17. The can is then placed upon the can receiving plate 50, so that the can shall rest in the circular recess 52 in the upper side of said plate. The desired quantity of meat is then placed in the hopper, and the treadle 64 is depressed, this operation causing through the medium of the link rod 60 and rock arms 59 and 54 the can to be elevated, so that the lower end of the spiral-conveyer which projects slightly below the lower end of the nozzle, enters the upper end of the can, and the revoluble movement of said spiral-conveyer, causes the meat to feed downwardly upon the spiral guide strips 27 and be forced tightly into the can. The spiral guide strips 27 are arranged so as to nearly contact with the periphery of the spiral conveyer, therefore causing all of the meat to be fed from the hopper into the can. After the can is filled the pressure is removed from the lever and the lift spring 67 causes the lever to assume its normal and elevated position, and at the same time through the intermediate connections moves the can-plate 50 downward to its original position. This machine can be operated with but very little trouble, and it is impossible for a can to be crushed or broken therewith, and it can also be operated and the cans be filled as quickly by a novice as by a person accustomed to handle the machine.

From the above description, it will be seen that I have produced a beef stuffing machine which is positive and reliable in action, and which is simple, durable and comparatively inexpensive of construction, and which may also be adapted for various sized cans.

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

1. A beef stuffing machine, comprising a hopper, having spirally arranged guide strips extending from the lower end toward the upper end, and a spiral conveyer adapted to revolve within said hopper and feed the meat therethrough, substantially as set forth.

2. A beef stuffing machine, comprising a cylindrical and tapering hopper, and spirally arranged guide strips secured to the inner side of said hopper and extending from its lower toward its upper end, and a spiral conveyer of diameter gradually decreasing to correspond with the interior tapering forming the hopper, substantially as set forth.

3. A beef stuffing machine, comprising a conical shaped hopper open at each end, and having spirally arranged guide-strips at its inner side, and a nozzle adapted to fit upon and continue the tapering formation of the hopper and having guide strips adapted to align with and continue the spiral curvature of the guide-strips of the hopper, and a spiral conveyer of gradually decreasing diameter adapted to operate in the hopper and nozzle, substantially as set forth.

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

ALFRED WESTON.

Witnesses:
MAUD FITZPATRICK,
G. Y. THORPE.