Feb. 23, 1960 L. OZOR 2,925,699

DEVICE FOR INTUCKING THE MOUTHS OF PAPER BAGS

Filed April 18, 1955 5 Sheets-Sheet 1

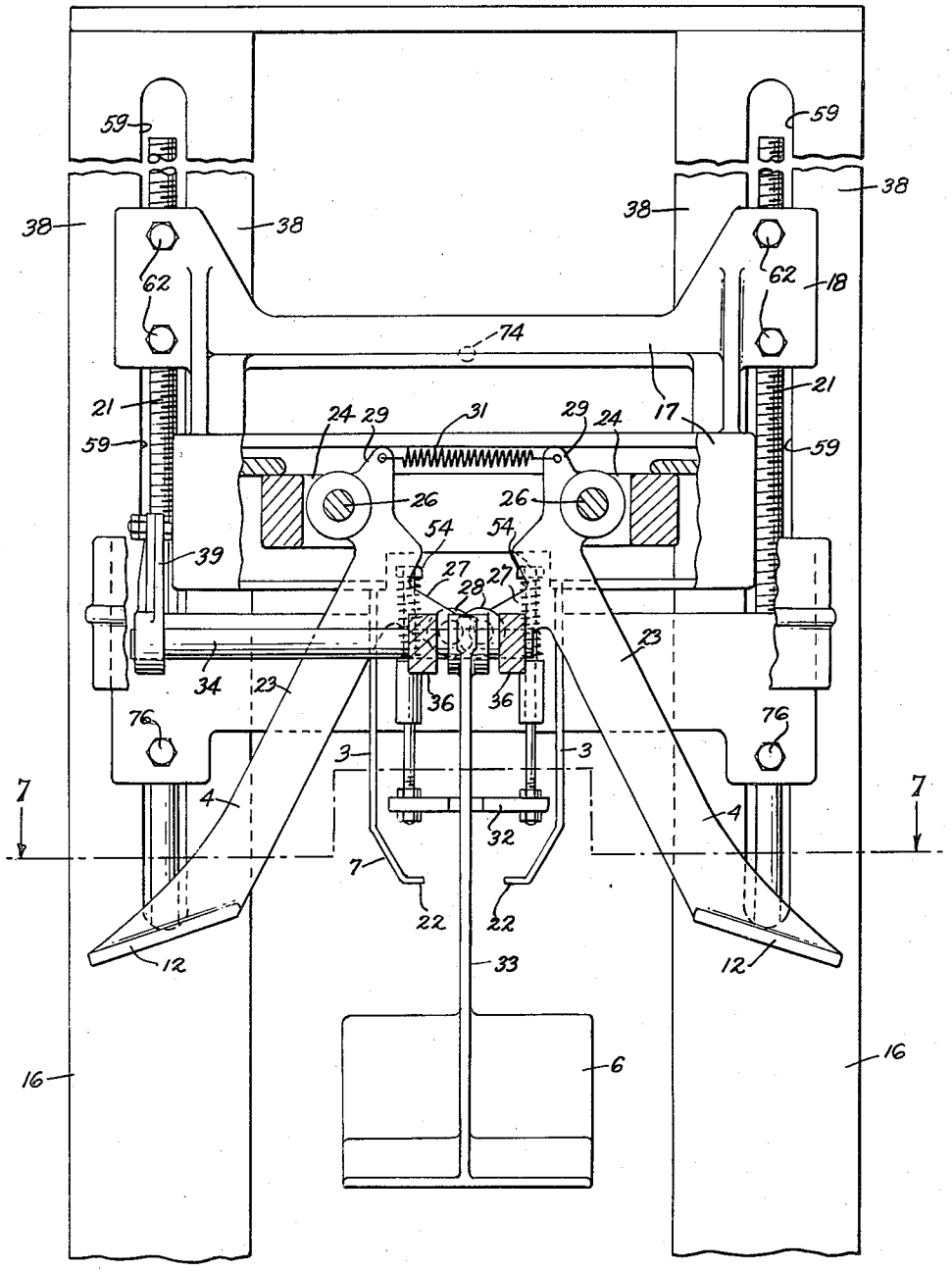


Fig. 1.

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DEVICE FOR INTUCKING THE MOUTHS OF PAPER BAGS

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Fig. 2.

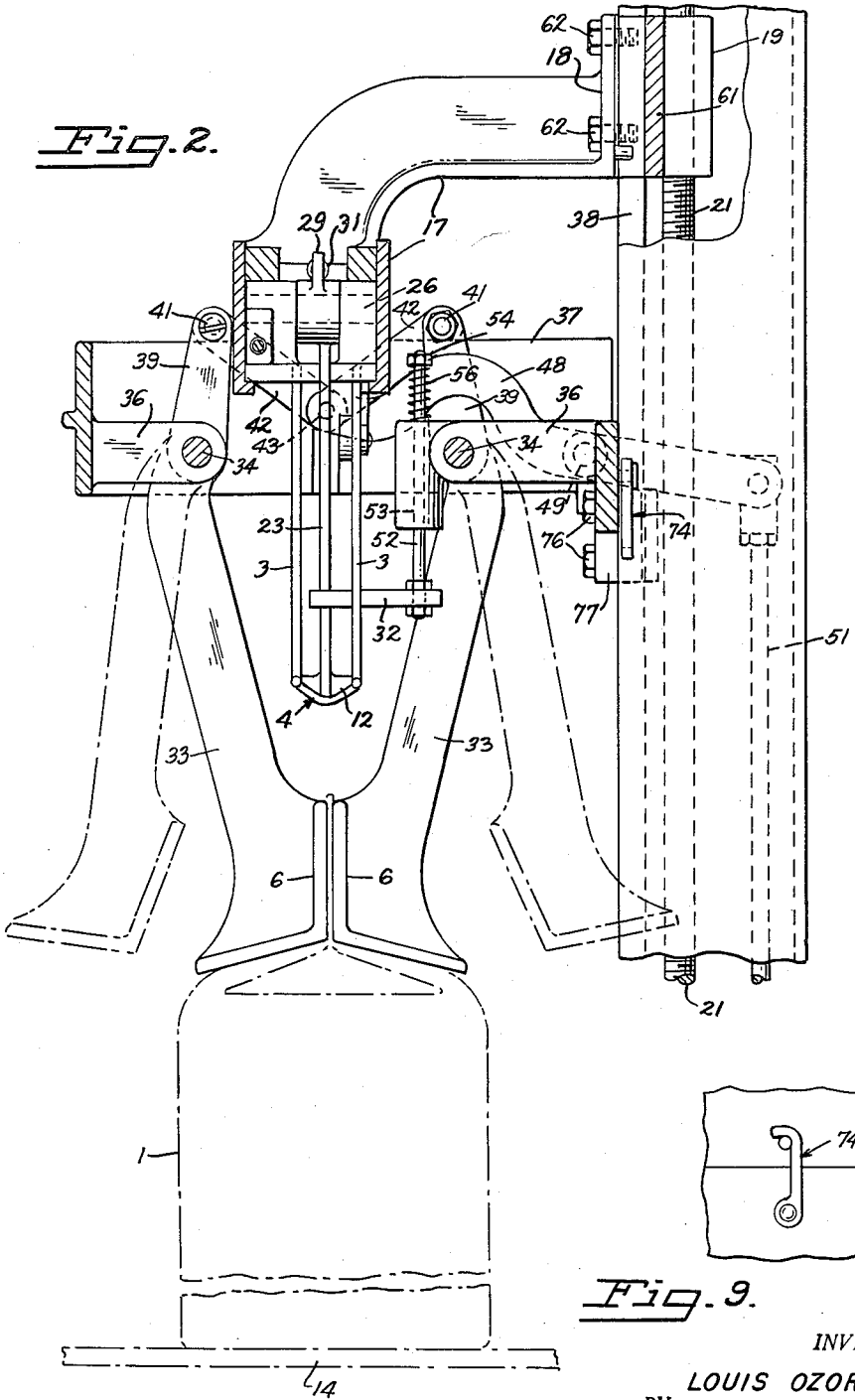


Fig. 9.

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DEVICE FOR INTUCKING THE MOUTHS OF PAPER BAGS

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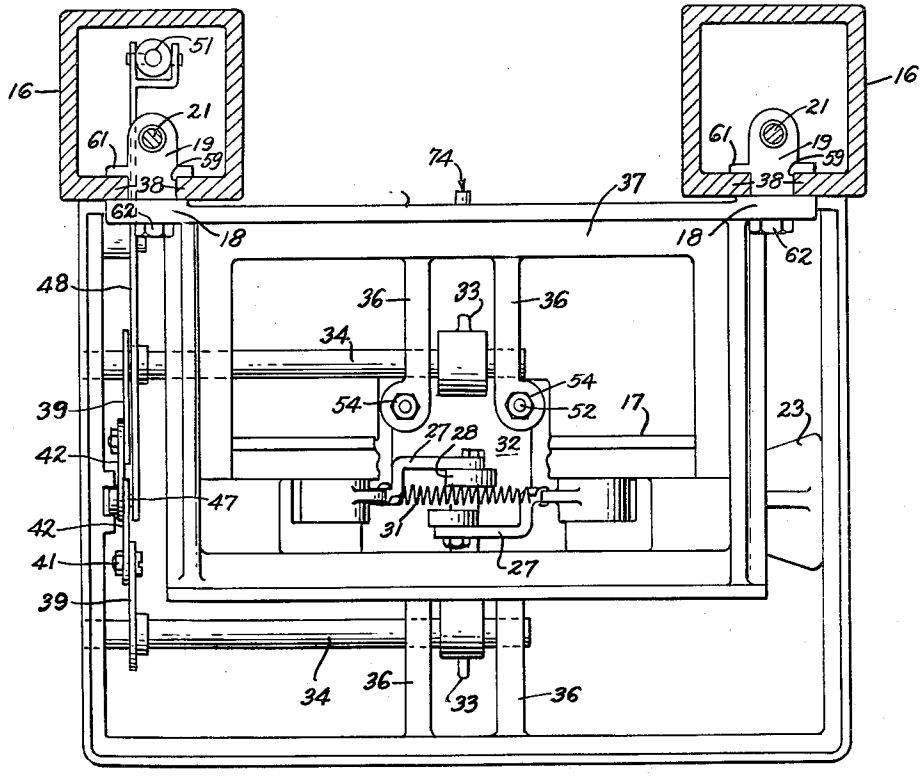


Fig. 3.

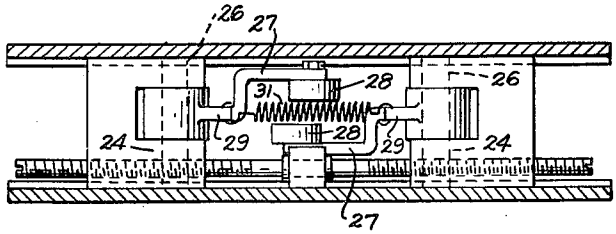


Fig. 4.

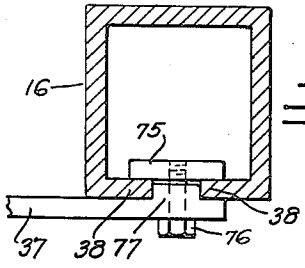


Fig. 10.

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DEVICE FOR INTUCKING THE MOUTHS OF PAPER BAGS

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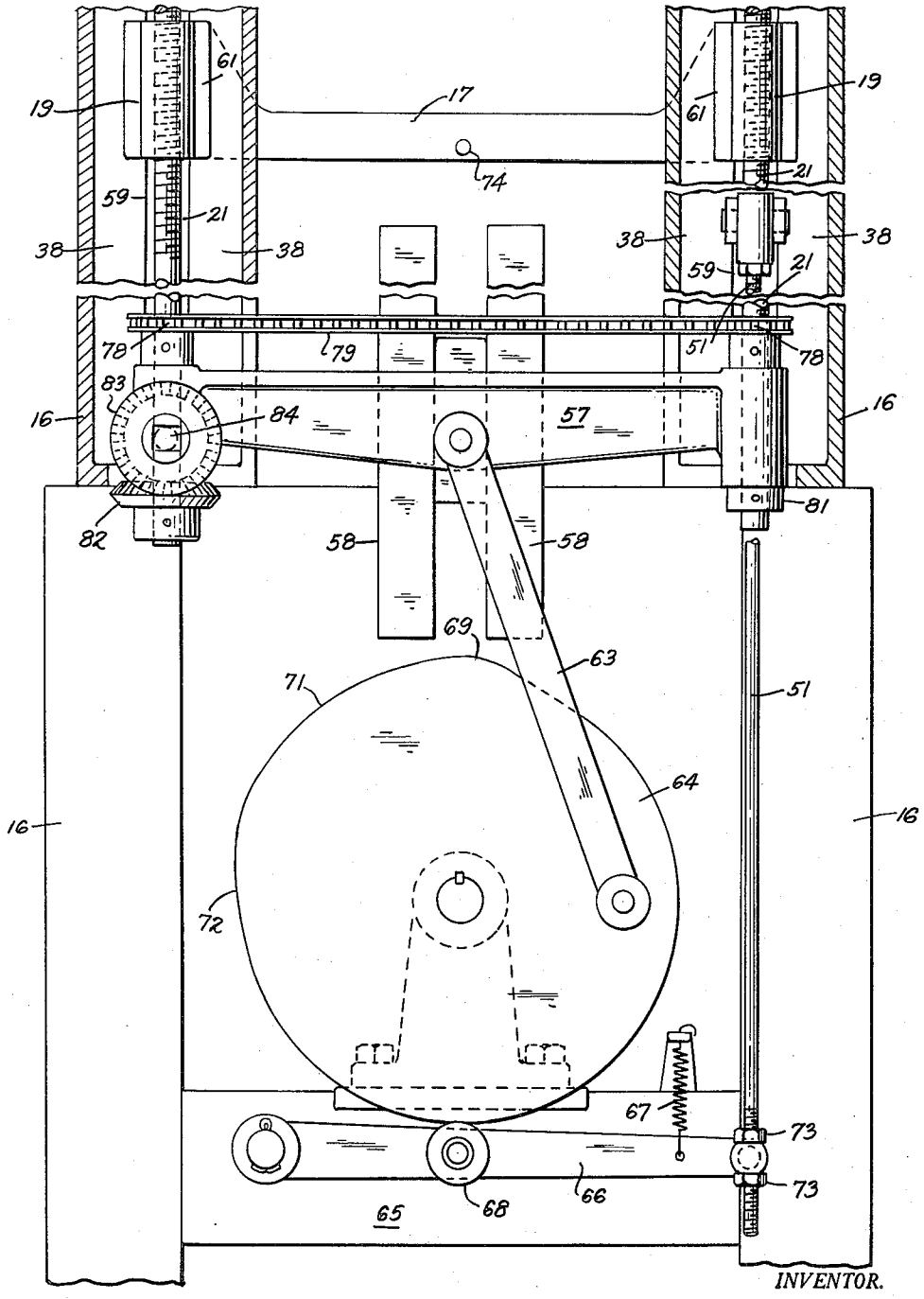


Fig. 5.

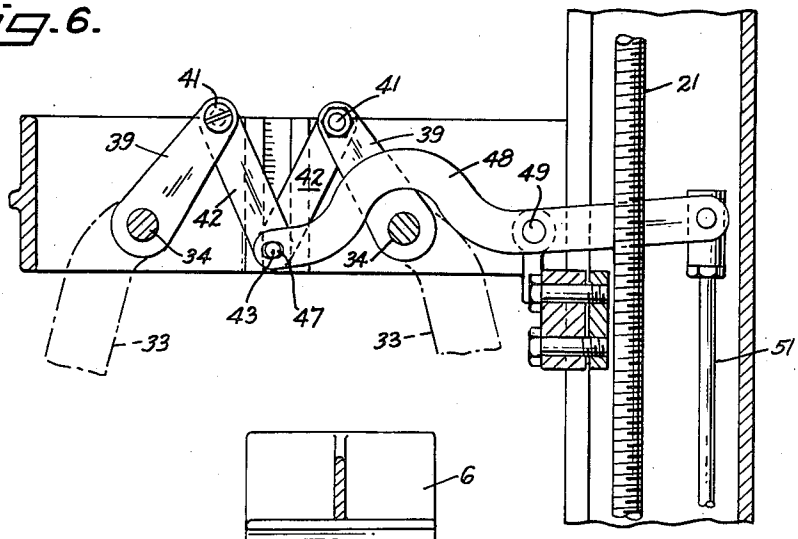
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DEVICE FOR INTUCKING THE MOUTHS OF PAPER BAGS

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Fig. 6.



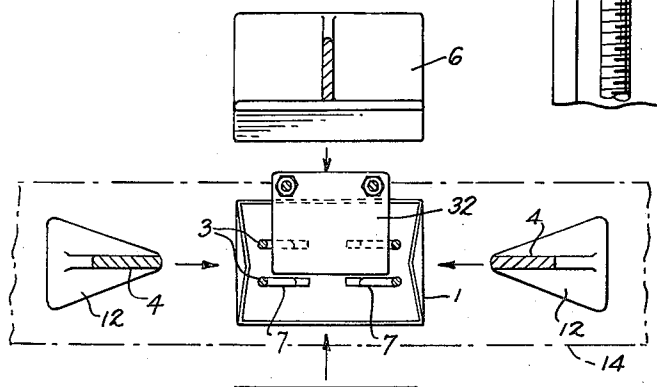


Fig. 7.

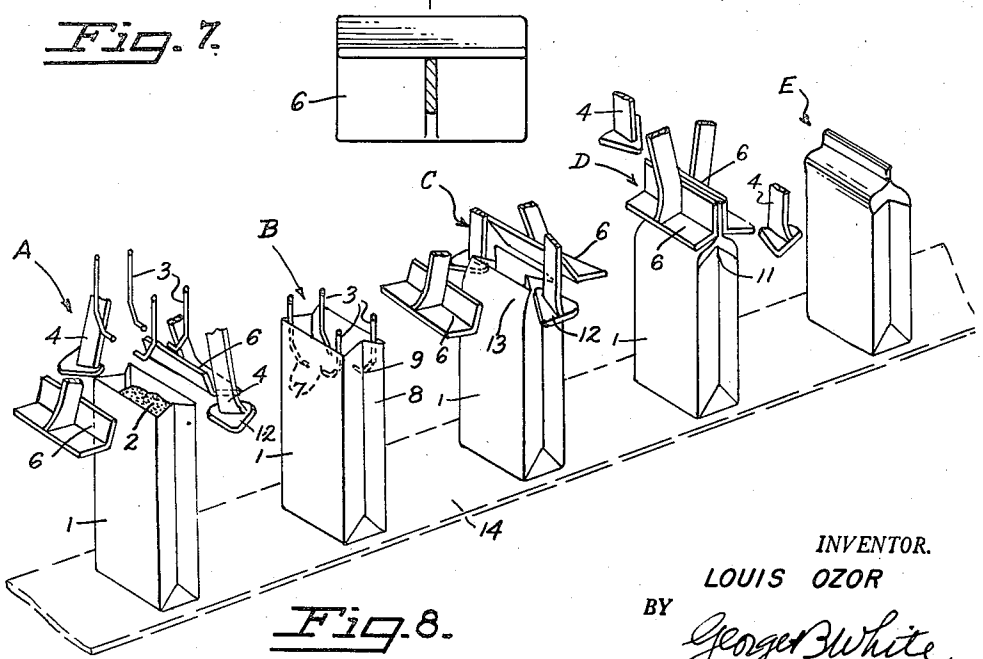


Fig. 8.

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United States Patent Office 2,925,699 Patented Feb. 23, 1960

2,925,699

DEVICE FOR INTUCKING THE MOUTHS OF PAPER BAGS

Louis Ozor, San Francisco, Calif.

Application April 18, 1955, Serial No. 502,120

7 Claims. (Cl. 53—371)

This application relates to a method and device for intucking the mouths of bags and the like.

It is an object of this invention to provide a method and machine for closing so-called "filled bags," namely bags which have been filled with suitable charge, for instance, coffee, and which are to be intucked at their open end.

Particularly, it is an object of this invention to provide a method and device whereby filled bags can be intucked in an efficient and accurate manner uniformly and in which the top creases at the top of the sides are pressed so as to form neatly so-called gussets at the opposite sides of the bag for the correct intucking of the bag.

Particularly it is an object of this invention to provide a method and device whereby spacers are introduced into the open end of the filled bag so as to permit the tucking of the edges of the bag between the respective spacers, and thereafter a downward and inward pressure is exerted at the edges toward and into the space between the aforementioned spacers for folding the edge creases and also pressing downwardly for forming a so-called gusset at the base of said tucked creases, and thereafter the sides of the bag above said gusset are pressed together by pressure plates; and then the pressure is first partially released so as to allow the freeing of the folded bag without sticking to the pressure plates.

I am aware that some changes may be made in the general arrangements and combinations of the several devices and parts, as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence I do not limit my invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, reference is had to the accompanying drawings for the illustrative embodiment of the invention, wherein:

Fig. 1 is a partly sectional and fragmental front view of my bag tucking machine.

Fig. 2 is a partly sectional and fragmental side view of my bag tucking machine.

Fig. 3 is a sectional plan view, of the bag tucking machine.

Fig. 4 is a sectional plan view of said assembly for the pivotal support of the edge tucking elements.

Fig. 5 is a fragmental, partly sectional rear view of the packing machine.

Fig. 6 is a sectional and fragmental detail of the link mechanism and control for the pressure plates of the machine.

Fig. 7 is a sectional view of the elements of the machine in relation to a bag, the section being taken on line 7—7 of Fig. 1,

Fig. 8 is a perspective diagrammatic view showing the various operating elements with respect to the bag during the steps of tucking operation.

Fig. 9 is a fragmental detail of the latch connection for hanging the stationary frame on the reciprocating frame during adjustment.

Fig. 10 is a fragmental detail view of the clamping means for the stationary frame.

As shown in Fig. 8, at "A" the bag 1 is already filled with suitable charge such as coffee 2 and is held in position under the operating parts of the device. Two sets of spacer wires or spacers 3 are poised above the open end of the bag ready for entry. Opposite edge tuckers 4 are spread apart and ready to be brought into action on the edges of the bag to form suitable creases and gusset. Opposite side pressure plates 6 are between the edge tuckers 4 and outside of the wire spacers 3 ready to press together the sides at the top of the bag.

At the step denoted as "B" in Fig. 8, the spacers 3 are lowered into the bag 1 so that one spacer wire 3 is located generally at each corner of the filled bag. The lower end of each spacer wire 3 forms a guide tip 7 which extends inwardly toward the opposite wire 3 of the pair so as to facilitate the entry of the spacer wires into the bag 1.

After so positioning the spacers 3, inward and downward pressure is exerted on the edges 8 of the bag 2 so that a crease 9 of the bag above the charge 2 is pressed inwardly and downwardly to form a gusset 11 as shown particularly in the position "D" in Fig. 8.

The application of the pressure as illustrated in position "C" on Fig. 8 involves the passing of wedge-shaped shoes 12 between the wires 3 in such a manner that the flat bottoms of the shoes pass downwardly and inwardly and extend between the adjacent pairs of wires 3. This sets the tops of the edges of the bag 1 in the intucked position. Then the guide wires 3 as well as the edge forming elements are withdrawn and the pressure plates 6 are pressed together upon the opposite sides 13 of the top of the bag 1 so that the tucked in edges of the bag are folded enclosed as shown in position "D" in Fig. 8 between the tops of the sides 1.

In the next step, as shown at E, in Fig. 8, the pressure plates 6 are partially released so as to free them from the bag 1 and prevent sticking. In the final step, the pressure is completely released to free the bag and allow its removal for further operations.

The aforementioned and enumerated steps as illustrated in Fig. 8 accomplish by down pressure perfect creasing of the fold so that at the bottom of the folded or tucked crease is a flat gusset assuring firm permanent intucking.

The bags 1 may be supported on any suitable surface such as a table 14 indicated in Fig. 8. Suitable means are provided and not shown, for moving the individual bags one by one under the intucking device and removing it after the intucking is completed.

The various mechanisms for the intucking steps are supported on vertical frame members or legs 16. The spacers or spacer wires 3 and the edge tuckers 4 are supported on a vertically traveling cross-head 17. The cross-head 17 is supported on a pair of spaced brackets 18 which brackets in turn are supported on traveling nuts 19. The respective traveling nuts 19 are on threaded screw shafts 21 in the respective vertical legs 16 for initial adjustment of the cross-head position relatively to the bags.

The spacers 3 consist of four wires spaced from one another so as to correspond respectively to the corners of the average bag. Each wire is secured at its upper end to the cross-head 17 and extends considerably below the same. The guide tips 7 are bent inwardly with respect to the area determined by the four spacer wires 3.

Each guide tip 7 terminates in a generally horizontal tip 22 so as to prevent the lower end of the guide tip 7 to become entangled in or catch the paper of the bag 1. As the cross-head 17 is lowered, the spacer wires 3 are lowered therewith to assume the position shown at the position B in Fig. 7.

Each edge tucker 4 has an arm 23 extended from the same terminating at its upper end in a bearing 24 which bearing is pivoted on a pivot 26. The pivots 26 are suitably spaced and extend in the cross-head 17 generally at right angles to the plane defined between the frame members or legs 16 so that the arms 23 and edge tuckers 4 can pivot around the respective pivots 26 toward one another and away from one another with respect to the edges of the bag 1 therebelow into and out of the position indicated at positions A and C in Fig. 8. The axial pivotal movement of the arms 24 and edge tuckers 4 is caused by an abutment mechanism to be hereinafter described.

From each arm 23 extends a finger 27 toward the opposite arm 23 so that the fingers 27 converge. On the end of each finger 27 is an abutment roller 28 so that the abutment rollers 28 are generally in the middle of the cross-head 17 as shown in Fig. 3. From each bearing 24 extends an ear 29. In the ears are hooked the opposite ends of a coil spring 31 so as to urge the ears 29 together. The ears 29 being above the respective pivots 26, the action of the spring 31 is normally to urge the edge tuckers 4 apart into the position shown in Fig. 1 and at position A in Fig. 7. As the frame 17 is lowered the rollers 28 approach toward fixed abutments 32. The abutments 32 are such that the edge tuckers 4 are suitably in registry with the respective edges of the bag 1 at about the time when the rollers 28 reach the abutments 32. Further movement of the cross-head 17 downwardly causes the fingers 27 to turn the arms 23 and the edge tuckers 4 inwardly toward one another about the respective pivots 26 and against the action of the spring 31 and toward the bag and into the position shown in position C in Fig. 7. The movement of the edge tuckers 4 about the pivot 24 is on an arc and the arc results in downward and inward movement with respect to the bag. Each edge tucker shoe 12 is generally triangular with an apex of the triangle pointing toward the opposite edge tucker and toward the bag. Thus as the tucker shoes 12 are forced against the crease in the edges of the bag, and the downward and inward movement of the point or apex of each tucker shoe 12 forces the part of the crease downwardly and inwardly thereby folding and tucking that part of the bag edge into a flat generally horizontal and triangular gusset. The free end of the bag is pulled downwardly correspondingly.

The exerting of downward as well as inward pressure is very important because it forms the triangular horizontal fold or gusset 11 on top of the contents of the bag. As the edge tuckers are moved completely in, the downward pressure completes the folding and forming of the gusset. According to the cycle of operation, by a mechanism to be hereinafter described, the screw shafts 21 are raised so as to lift the cross-head 17 upwardly. As the rollers 28 are thus freed from and lifted above the abutments 32, the action of the coil spring 31 pulls the ears 29 together and thereby moves the edge tuckers 4 outwardly into the position shown in Fig. 1 and at position A in Fig. 7.

The pressure plates 6 for the completion of the operation are supported respectively on arms 33. Each pressure plate 6 is generally in the form of an angle iron and its arm 33 extends from approximately the midle thereof. The support and manipulation of the pressure plates 6 is illustrated in Fig. 2 and in Fig. 6. As shown in Fig. 2 each arm 33 is pivoted on a pivot 34. The pivots 34 are journaled in suitable brackets 36 in a stationary head 37. This stationary head 37 is clamped onto flanges 38 of the respective legs 16, in a manner to be hereinafter described. The pivots 34 are spaced one from another

and extend generally at right angles to the pivots 26 of the edge tuckers 4. From an end of each pivot 36 at the left side of the machine viewing Fig. 1 and opposite the adjacent legs 16 extends a crank arm 39.

The crank arms 39 converge toward one another from the pivots 34. The free end of each crank arm 39 is connected by a pivot 41 and a link 42. The pair of links 42 are arranged normally to converge in a V-shape as shown in Fig. 6, the apex 43 of which is between and below the crank arms 39. The lower ends of the links 42 are connected by a pivot 47 at said apex 43. A lever 48 extends from the apex 43 to the top of an actuating bar 51. The lever 48 is fulcrumed on a pivot 49 generally intermediate between the ends of the lever 48. As the bar 51 is lowered as hereinafter described, it pushes the apex 43 upwardly and, by reason of the pivoted connection of the links 42 with the tops of the crank arms 39, it forces the upper ends of the arms 42 apart and thereby causes the crank arms 39 to swing outwardly. As the crank arms 39 are swung outwardly away from one another, the pivots 34 are rotated in their bearings so as to move the arms 33 and the pressure plates 6 toward one another, from the position indicated in broken lines in Fig. 2 to the full line position in Fig. 2, so as to press the plates 6 against the opposite sides of the tucked ends of the bag 1. The control of the movements of the pressure plates 6 toward one another is accomplished by a mechanism to be hereinafter described.

The abutments 32 are a pair of plates each of which is suspended on a connecting bar 52 which latter is slidable vertically in a passage or hole 53 in the respective bearing bracket 36. On the top of the bar 52 is a nut 54. A coil spring 56 between the nut 54 and the top of the bearing bracket 36 normally urges the bar 52 upwardly and thus yieldably holds the abutment 32 in position. The abutment 32 is thus resiliently cushioned so as to prevent breakage in the event of differentiation of stroke or control.

The cross-head 17 is moved up and down by the lifting and lowering of the screw shafts 21. This is accomplished by a lower cross-head 57 connecting the lower ends of the screw shafts 21. The lower ends of each screw shaft 21 is journalled in the cross-head 57. The cross-head 57 is guided on suitable fixed guides 58 between the frame members 16 of the machine. The screw shafts 21 are movable in the hollow legs 16, as particularly shown in Fig. 3.

The traveling nuts 19 are fixed to the bracket 18 which extend through longitudinal slots 59 on the inside of each hollow leg 16. Each nut 19 is provided with a flange 61 along and bearing against the inside wall of the leg 16 adjacent the vertical slot 59, and each bracket has machine screws 62 threaded thereinto for the purpose of holding the crosshead 17 on the nuts 19. This structure straddles the edges of the adjacent legs 16 along said slot 59 so as to allow vertical sliding of the cross-head 17 when the screw shafts 21 are lifted or lowered. The lower cross-head 57 is lifted and lowered by a connecting link 63 pivoted to the middle of the cross-head 57 at one end, and pivoted eccentrically to a wheel 64. As the wheel 64 is rotated it causes the reciprocation of the upper cross-head 17 to and from the bag 1.

The vertical actuating bar 51 which extends in the adjacent hollow leg 16 is actuated by a lever 66 connected adjustably to the lower end of the bar 51. The lever 66 is pivoted on a fixed base 65 between the legs 16 and is below the wheel 64. A coil spring 67 holds the lever 66 against the periphery of the wheel 64. An anti-friction follower roller 68 on the lever 66 forms anti-friction follower against the periphery of the wheel 64. The wheel 64 is formed with a series of peripheral cams 69, 71 and 72 for the purpose of raising the bar 51 in predetermined relation to the stroke of the cross-head 17.

The highest cam 69 is located generally about 90° from the pivot of the connecting link 63 on the wheel 64 in contra clockwise direction, viewing Fig. 6. The cam 69 is followed in series immediately by an elongated arcuate cam periphery 71 and then a releasing cam portion 72. As the wheel 64 is rotated in clockwise direction viewing Fig. 5, the bar 51 is held in its initial position by the coil spring 67 which holds the follower roller 68 on the lever 66 against the circular portion of the periphery of the wheel 64. As the cam 69 reaches and engages the follower roller 68 it pushes the lever 66 outwardly and away from the center of the wheel 64 and thereby pulls the bar 51 downwardly. The downward movement of the bar 51 moves the lever 48 about its fulcrum 49 so as to lift the apex 43 of the links 42 and causes the moving of the pressure plates 6 together and firmly against the opposite sides of the intucked bag. As the high cam 69 leaves the roller 68, the roller rides on the long cam surface 71 which is somewhat shallower than the cam 69, thereby accomplishes partial release of the pressure plates 6 from the bag sides. This facilitates and assures the disengagement of the plates 6 from the bag 1 and prevents sticking. At the end of the cam 71 the cam surface 72 gradually returns the roller 68 to its initial position, so that as the spring 67 pulls the roller 68 against the wheel periphery it will pull the lever 66 upwardly and will raise the bar 51 correspondingly to return the plates 6 to their initial disengaged position. The connection between the end of the lever 66 and the bar 51 is fixed by a pair of nuts 73, one on each side of the end of the lever 66. The portion of the bar 51 extending through the end of the lever 66 is threaded so that as the nuts 73 are tightened they fix the bar 51 in the selected initial position.

The wheel 64 may be driven in any suitable manner, such as by an electric motor or transmission, not shown.

The position of the cross-head 17 and the lower cross-head 37 can be adjusted relatively to the table 14 on which the bag 1 rests, and according to the size of the bag 1 to be intucked, by locking the two cross-heads 17 and 37 together and then turning the respective screw shafts 21 until the desired height is reached for the stationary head 37 and of the bag 1. For this purpose the cross-head 17 is lowered into contacting position against the lower cross-head 37, until the bracket 18 rests upon the frame of the lower cross-head 37. Then the cross-heads 17 and 37, or the bracket 18 and the cross-head 37, are suitably locked together. For instance, a releasable latch device 74 may be provided latch the lower cross-head 37 to the upper cross-head 17. Then the bolts 76 which clamp the flange pieces 77 of the cross-head 37 to the inner clamp plates 75 to fasten unto the adjacent flanges 38 of the legs 16, are loosened, so that the cross-head 37 is suspended on the brackets 18. Then the nuts 73 are loosened to allow the bar 51 to follow the adjustment of the cross-heads. Finally the screw shafts 21 are turned together so as to raise or lower the traveling nuts 19 and the brackets 18 and the cross-heads 17 and 37 together so as to locate the respective intucking mechanisms in proper relation to the height of the bag 1. Thereafter, the nuts 73 are tightened to fix the correct relative position of the bar 51, and the bolts 76 are tightened so as to fix the position of the lower cross-head 37. Finally the latch device 74 is released and the machine is again ready for the intucking operations as heretofore described.

To facilitate the turning of the screw shafts 21 for the last described adjustment of the height of the cross-heads 17 and 37, each screw shaft 21 is provided with a sprocket 78. This sprocket 78 rests upon the top of the cross-head 57, and supports the screw shaft 21 in said position. The sprockets are connected by a transmission chain 79 so that the turning of one of the screw

shafts 21 is transmitted through the sprockets 78 and chain 79 to the other screw shaft 21. For this purpose both screw shafts 21 are journalled in the respective ends of the cross-head 57. One of the screw shafts 21 is provided with a collar 81 at its lower end so as to confine the screw shaft in its bearing. On the lower end of the other screw shaft 21 is a bevel gear 82. Another bevel gear 83 is journalled on cross-head 57 so as to be held in mesh with the first bevel gear 82. The latter bevel gear 83 is provided with an element, such as a retangular or polygonal socket 84 for engagement by a suitable crank. Thus by cranking the bevel gear 83 the other bevel gear 82 is turned which latter, being keyed to the adjacent screw shaft 21, causes said screw shaft 21 to turn, which turning movement is transmitted by the sprockets 78 and chain 79 transmission to the other screw shaft 21 and adjusts both simultaneously until the cross-heads 17 and 37 are adjusted to the desired and suitable height for operation as heretofore described.

Suitable devices controlled by the driving mechanism of the wheel 64 are also provided, but not shown herein, to move bags intermittently under the intucking devices and hold each bag for the desired period required for intucking, and then to remove the bag and shift another bag into position.

The steps of the method for intucking filled bags include the sequence of steps for forming the firm gusset immediately above and against the contents of the bag. The essential step of the method is the arcuate downward and inward pressure exerted by a triangular intucking element flatly against the top level of the content of the bag, while the corners of the bag are kept from collapsing and the simultaneous pushing of the adjacent crease inwardly. In this manner the inward and downward motion of such element tucks the creases between the adjacent corners of the bag and at the same time pulls the edge of the bag downwardly and flatly against the top of the contents in the triangular shape as determined by the shoe or toe of the intucking element, and accordingly fixing the intucking firmly.

The method includes the steps of filling the bag to a level spaced from the top of the bag, then holding the corners of the bag above said level against collapsing, preferably by insertion of stiffeners in the respective corners of the bag; then exerting opposite inward and downward pressure on the crease edges of the bag opposite and generally above the level of the contents of the bag and simultaneously inwardly of the bag and downwardly over the top of the contents so as to intuck the crease and also form a triangular flat gusset surface over the top level of the contents of the bag, preferably by a triangular intucking shoe with its toe or point pointed toward the crease of the intucked end and its triangular generally flat surface bearing inwardly and downwardly pressing the intucked portion of the bag against the top level of the contents of the bag; then the pressing of the opposite sides of the bag together, while the corner stiffness or spacers and the intucking elements are withdrawn, and finally the gradual releasing of pressure upon the opposite sides of the intucked bag.

Both the method and the mechanisms are simply in construction and could be used in sequence with any of the usual filling machines or treating machines or in the order of operations combined with the preparing of the contents of the bag, filling of the bag, and subsequent sealing and labeling or other operations. The device can be inserted in its proper sequence for effectively tucking the tops of a bag in such a manner that the tucked portions remain firmly in place as accomplished by the steps of the method and by the respective mechanisms herein described.

I claim:

1. In a bag intucking device, a frame, means related to the frame to hold the bag in position, a movable head

on the frame reciprocable toward and away from said bag, a fixed head between said bag and said movable head, spacer elements extended from said movable head downwardly and being insertable into the top of the bag when said movable head is lowered to said fixed head, edge intucking elements on said movable head aligned generally with the opposite creased edges of the bag in position below said heads, a generally triangular shoe on said intucking element with a point thereof pointing toward the adjacent crease end of said bag, a pair of pressure plates, means on the fixed head to hold said pressure plates generally opposite to the respective opposite sides of said bag between said creased ends, means to reciprocate said movable head, a mechanism operated in accordance with the position of said movable head for swinging said shoes downwardly and inwardly with respect to the ends of said bag for intucking said crease pressing a triangular gusset unto the contents of said bag, and for swinging said intucking elements away from one another and from said bag and for raising said movable head, means to apply said pressure plates to the opposite sides of the bag in predetermined relation after the raising of said movable head and the withdrawal of said spacer elements and said intucking elements from said bag, and coacting means to predetermine the sequence of the series of operation of said mechanisms and said means, said coacting means including a rotating cam wheel, an eccentric connecting element between said head reciprocating means and said wheel for imparting reciprocation to said movable head when said wheel is rotated, cams on said wheel, cam follower means connected to said pressure plate applying means and coacting with said cams on said wheel for operating said pressure plate applying means in relation to the operation of said movable head as predetermined by the relation of said cams to said eccentric connecting element on said wheel.

2. In a bag intucking device, a frame, means related to the frame to hold the bag in position, a movable head on the frame reciprocable toward and away from said bag, a fixed head between said bag and said movable head, spacer elements extended from said movable head downwardly and being insertable into the top of the bag when said movable head is lowered to said fixed head, edge intucking elements on said movable head aligned generally with the opposite creased edges of the bag in position below said heads, a generally triangular shoe on said intucking element with a point thereof pointing toward the adjacent crease end of said bag, a pair of pressure plates, means on the fixed head to hold said pressure plates generally opposite to the respective opposite sides of said bag between said creased ends, means to reciprocate said movable head, a mechanism operated in accordance with the position of said movable head for swinging said shoes downwardly and inwardly with respect to the ends of said bag for intucking said crease pressing a triangular gusset unto the contents of said bag, and for swinging said intucking elements away from one another and from said bag and for raising said movable head means to apply said pressure plates to the opposite sides of the bag in predetermined relation after the raising of said movable head and the withdrawal of said spacer elements and said intucking elements from said bag, and coacting means to predetermine the sequence of the series of operation of said mechanisms and said means, said head reciprocating means including a pair of screw shafts, brackets on said screw shafts supporting said movable cross-head and a member reciprocable on the frame and supporting said screw shafts in said frame and operated by said coacting means.

3. In a bag intucking device, a frame, means related to the frame to hold the bag in position, a movable head on the frame reciprocable toward and away from said bag, a fixed head between said bag and said movable head, spacer elements extended from said movable head downwardly and being insertable into the top of the bag when said movable head is lowered to said fixed head, edge intucking elements on said movable head aligned generally with the opposite creased edges of the bag in position below said heads, a generally triangular shoe on said intucking element with a point thereof pointing toward the adjacent crease end of said bag, a pair of pressure plates, means on the fixed head to hold said pressure plates generally opposite to the respective opposite sides of said bag between said creased ends, means to reciprocate said movable head, a mechanism operated in accordance with the position of said movable head for swinging said shoes downwardly and inwardly with respect to the ends of said bag for intucking said crease pressing a triangular gusset unto the contents of said bag, and for swinging said intucking elements away from one another and from said bag and for raising said movable head, means to apply said pressure plates to the opposite sides of the bag in predetermined relation after the raising of said movable head and the withdrawal of said spacer elements and said intucking elements from said bag, and coacting means to predetermine the sequence of the series of operation of said mechanisms and said means, said coacting means including a rotating cam wheel, an eccentric connecting element between said head reciprocating means and said wheel for imparting reciprocation to said movable head when said wheel is rotated, cams on said wheel, cam follower means connected to said pressure applying means and coacting with said cams on said wheel for operating said pressure plate applying means in relation to the operation of said movable head as predetermined by the relation of said cams to said eccentric connecting element on said wheel, and a spring to urge said cam follower lever against the cams on said wheel and thereby to urge said linkage mechanism to a position wherein the plates are held apart.

5. In a bag intucking device, a frame, means related to the frame to hold the bag in position, a movable head on the frame reciprocable toward and away from said bag, a fixed head between said bag and said movable head, spacer elements extended from said movable head downwardly and being insertable into the top of the bag when said movable head is lowered to said fixed head, edge intucking elements on said movable head aligned generally with the opposite creased edges of the bag in position below said heads, a generally triangular shoe on said intucking element with a point thereof pointing toward the adjacent crease end of said bag, a pair of pressure plates, means on the fixed head to hold said pressure plates generally opposite to the respective opposite sides of said bag between said creased ends, means to reciprocate said movable head, a mechanism operated in accordance with the position of said movable head for swinging said shoes downwardly and inwardly with respect to the ends of said bag for intucking said crease pressing a triangular gusset unto the contents of said bag, and for swinging said intucking elements away from one another and from said bag and for raising said movable head, means to apply said pressure plates to the opposite sides of the bag in predetermined relation after the raising of said movable head and the withdrawal of said spacer elements and said intucking elements from said bag, and coacting means to predetermine the sequence of the series of operation of said mechanisms and said means, said coacting means including a rotating cam wheel, an eccentric connecting element between said head reciprocating means and said wheel for imparting reciprocation to said movable head when said wheel is rotated, cams on said wheel, cam follower means connected to said pressure applying means and coacting with said cams on said wheel for operating said pressure plate applying means in relation to the operation of said movable head as predetermined by the relation of said cams to said eccentric connecting element on said wheel, an operating rod in the frame for said link mechanism, means to adjustably connect said rod to a lever, connecting means between said cam follower means and said rod to lower or raise said operating rod for alternately closing or opening said plates together or apart from one another.

6. In a bag intucking device, a frame, means related to the frame to hold the bag in position, a movable head on the frame reciprocable toward and away from said bag, a fixed head between said bag and said movable head, spacer elements extended from said movable head downwardly and being insertable into the top of the bag when said movable head is lowered to said fixed head, edge intucking elements on said movable head aligned generally with the opposite creased edges of the bag in position below said heads, a generally triangular shoe on said intucking element with a point thereof pointing toward the adjacent crease end of said bag, a pair of pressure plates, means on the fixed head to hold said pressure plates generally opposite to the respective opposite sides of said bag between said creased ends, means to reciprocate said movable head, a mechanism operated in accordance with the position of said movable head for swinging said shoes downwardly and inwardly with respect to the ends of said bag for intucking said crease pressing a triangular gusset unto the contents of said bag, and for swinging said intucking elements away from one another and from said bag and for raising said movable head, means to apply said pressure plates to the opposite sides of the bag in predetermined relation after the raising of said movable head and the withdrawal of said spacer elements and said intucking elements from said bag, coacting means to predetermine the sequence of the series of operation of said mechanism, and means to slidably hold said movable head on said frame.

7. In a bag intucking device, a frame, means related to the frame to hold the bag in position, a movable head on the frame reciprocable toward and away from said bag, a fixed head between said bag and said movable head, spacer elements extended from said movable head downwardly and being insertable into the top of the bag when said movable head is lowered to said fixed head, edge intucking elements on said movable head aligned generally with the opposite creased edges of the bag in position below said heads, a generally triangular shoe on said intucking element with a point thereof pointing toward the adjacent crease end of said bag, a pair of pressure plates, means on the fixed head to hold said pressure plates generally opposite to the respective opposite sides of said bag between said creased ends, means to reciprocate said movable head, a mechanism operated in accordance with the position of said movable head for swinging said shoes downwardly and inwardly with respect to the ends of said bag for intucking said crease pressing a triangular gusset unto the contents of said bag, and for swinging said intucking elements away from one another and from said bag and for raising said movable head, means to apply said pressure plates to the opposite sides of the bag in predetermined relation after the raising of said movable head and the withdrawal of said spacer elements and said intucking elements from said bag, coacting means to predetermine the sequence of the series of operation of said mechanism, means to slidably hold said movable head on said frame, and releasable clamping means to hold said fixed head in adjusted position on said frame.

References Cited in the file of this patent

UNITED STATES PATENTS

1,851,676	Litchfield	Mar. 29, 1932
1,931,280	Allison	Oct. 17, 1933
1,977,502	Van Wormer	Oct. 16, 1934
1,979,496	Schilbach	Nov. 6, 1934
2,087,934	Anderson	July 27, 1937
2,243,805	Knapp	May 27, 1941
2,624,995	Allen	Jan. 13, 1953
2,641,882	Richard	June 16, 1953
2,662,357	Stone	Dec. 15, 1953
2,716,852	Kindseth	Sept. 6, 1955