

[54] **PACKAGING METHOD AND APPARATUS**

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**Related U.S. Application Data**

[62] Division of Ser. No. 139,453, May 3, 1971, Pat. No. 3,815,318.

[52] **U.S. Cl.** ..... 53/29; 53/37; 53/187

[51] **Int. Cl.<sup>2</sup>** ..... **B65B 43/12; B65B 43/36;**  
**B65B 51/00**

[58] **Field of Search** ..... 53/29, 33, 35, 37, 39,  
53/187, 182, 189, 182 M, 372, 373, 385

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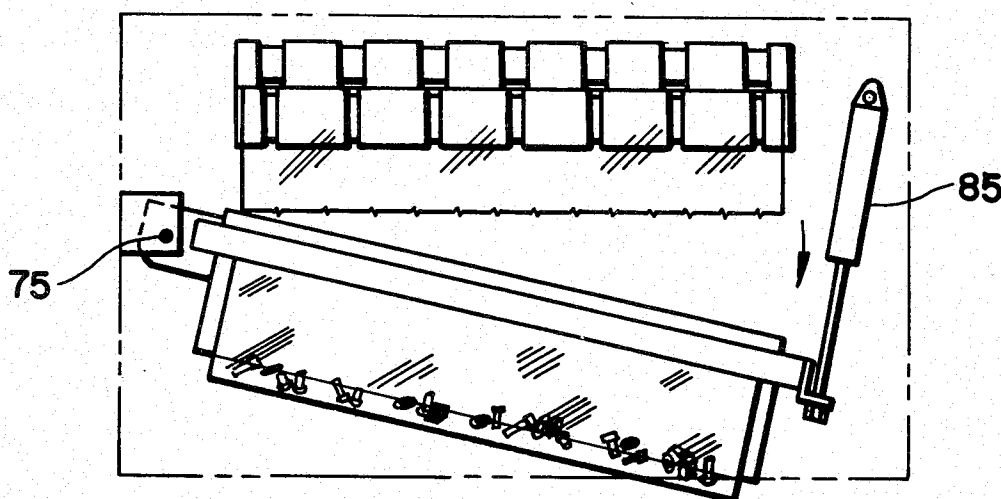
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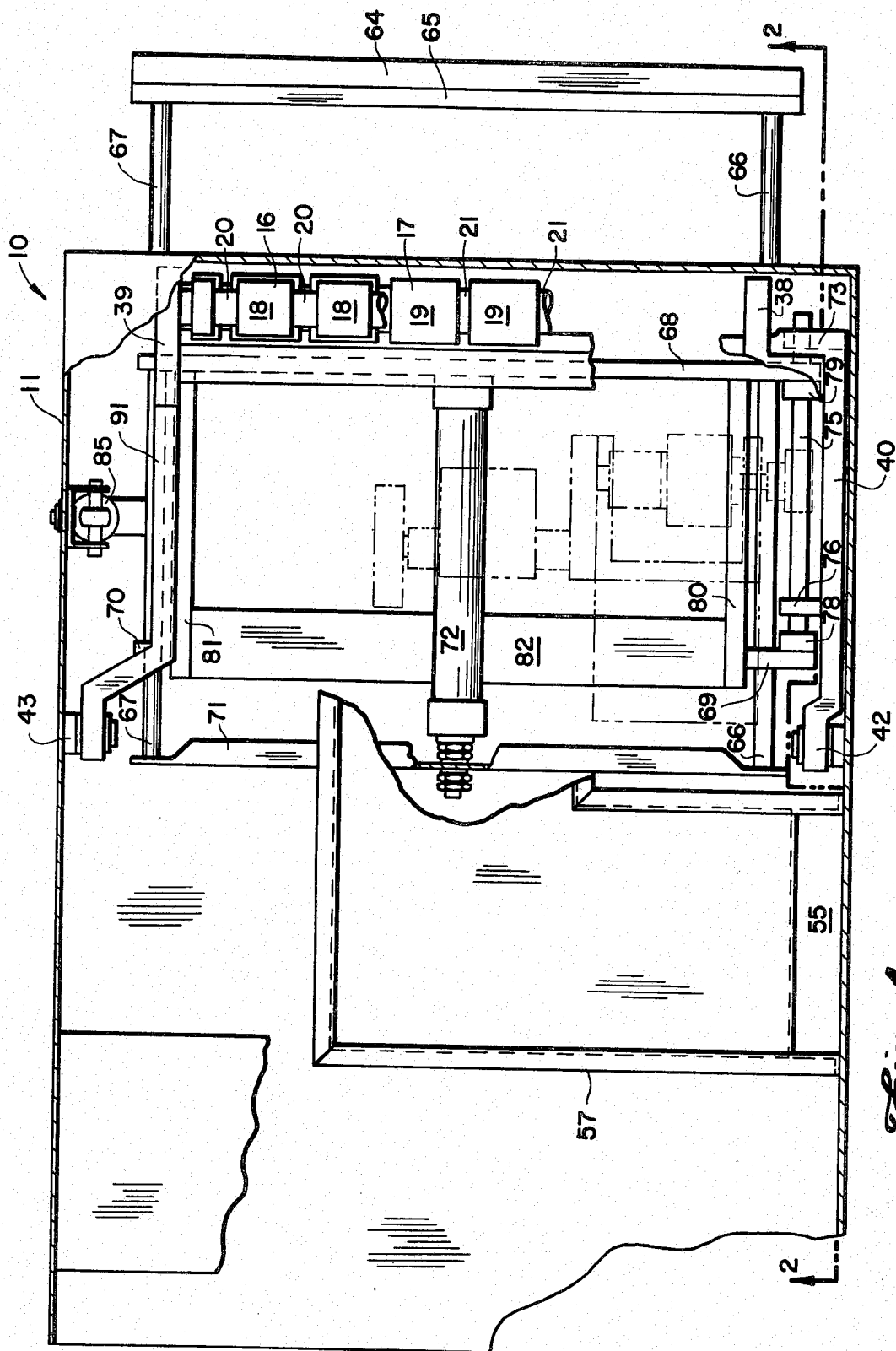
[57] **ABSTRACT**

A packaging machine and method for automatic or semi-automatic operation with a bag sealing station provided laterally rearwardly of a bag loading station. A web of interconnected heat-sealable bags are successively fed to the bag loading station. The loaded bag is moved rearwardly to the sealing station and is there clamped against a heater bar by a movable sealing bar.

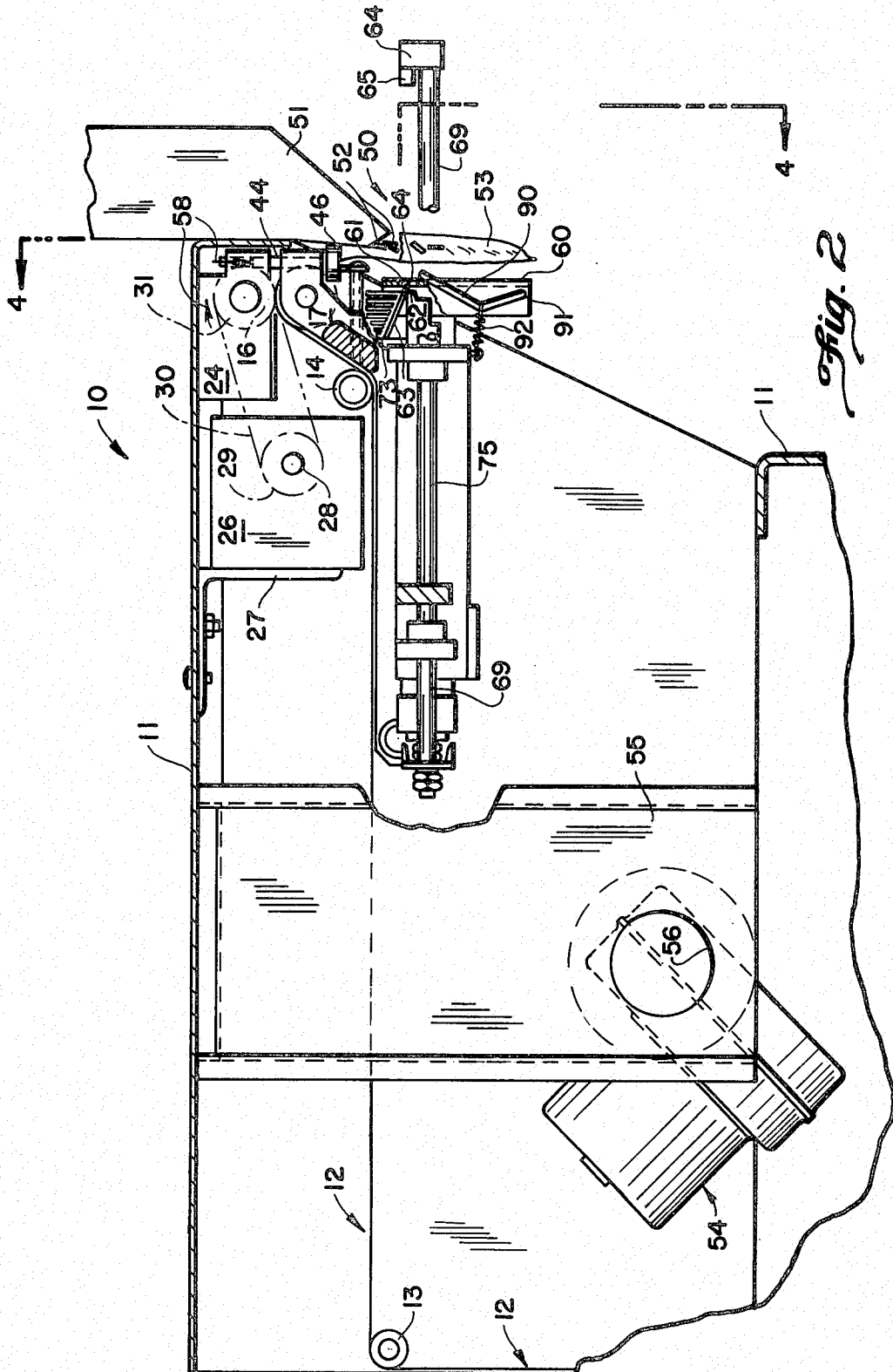
Automatic bag packaging is accomplished by providing a pivotally mounted sealing and detaching assembly which tears the loaded bag from the web during the sealing operation. Heat sealing is accomplished concurrently with separation of the loaded bag from the web. Teeth penetrate the web above the seal to prevent separation of the web at the seal and to assure separation along a preformed line of weakness above the seal. As the sealing bar is released from its clamping position, the web is advanced to move a successive bag into the bag loading position.

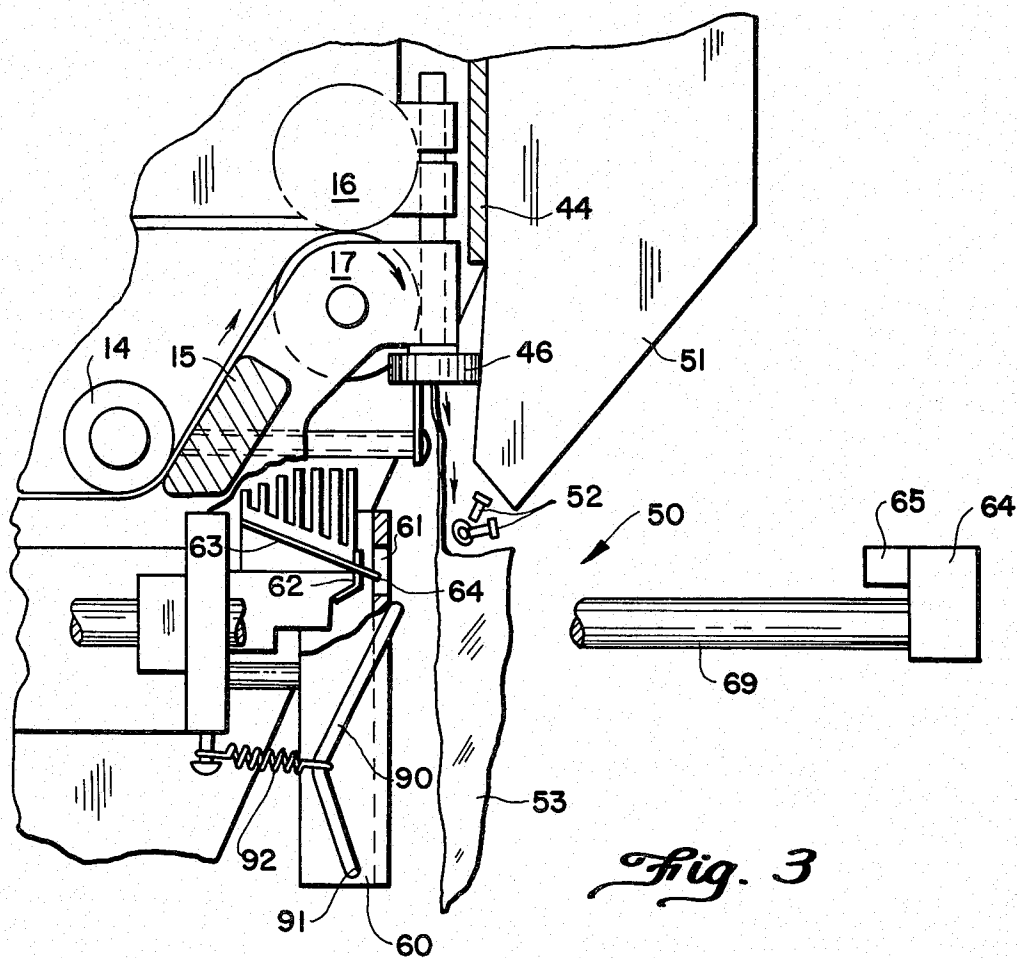
Semi-automatic bag packaging is accomplished by manually tearing the loaded bag from the web and manually inserting the bag in the sealing station. In semi-automatic operation the web is fed to advance a successive bag to the bag loading position concurrently with the sealing of a bag in the sealing position.

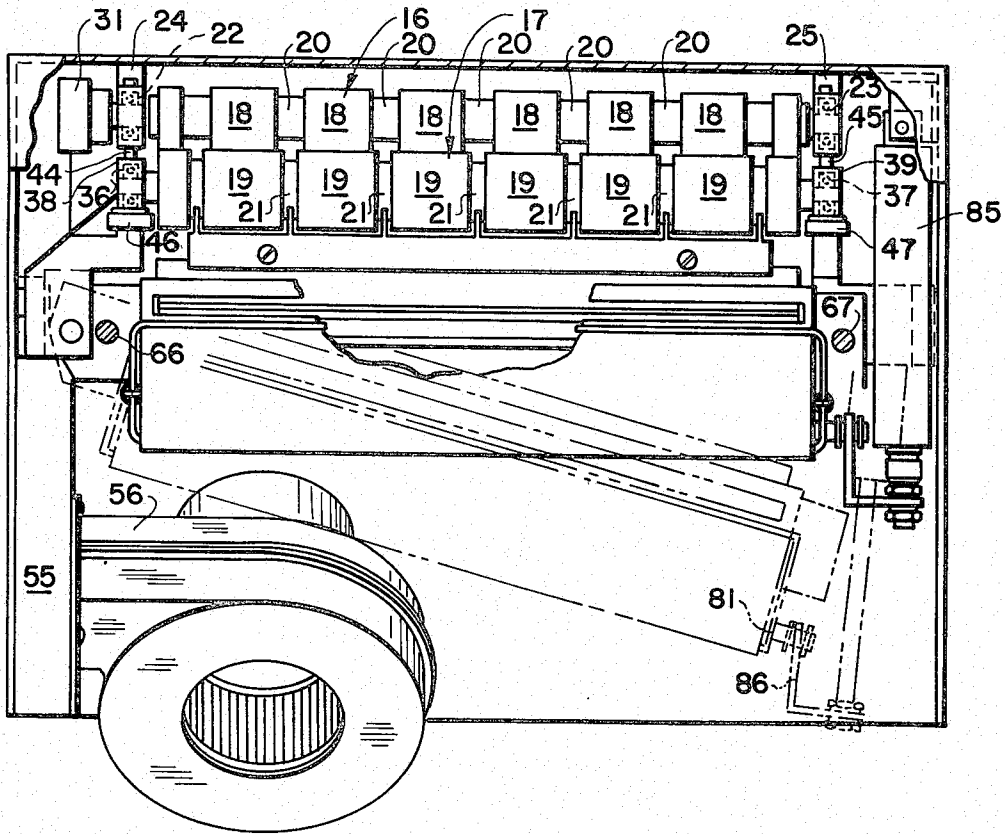
**4 Claims, 9 Drawing Figures**




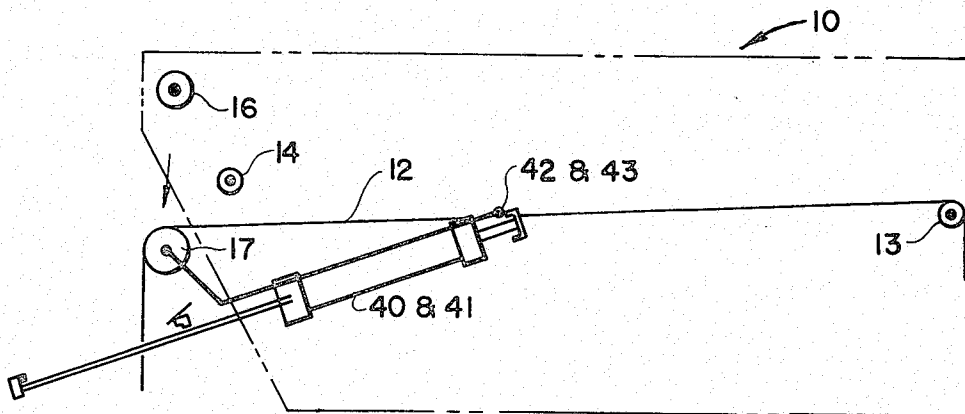
*Fig. 1*



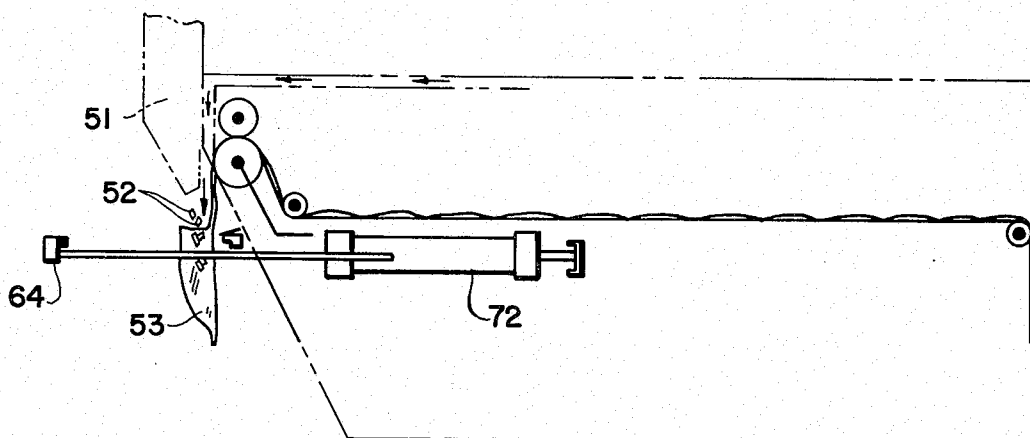




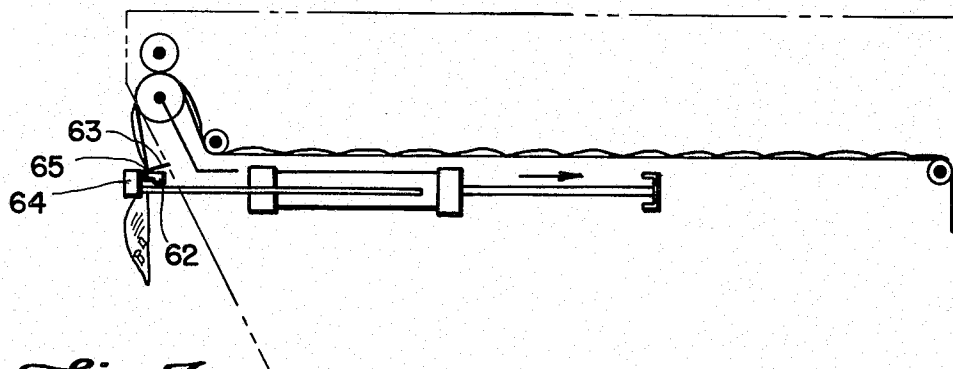
*Fig. 4*



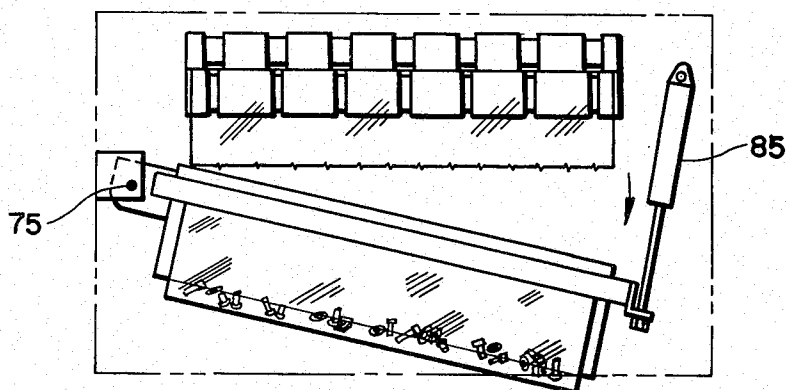
*Fig. 5*



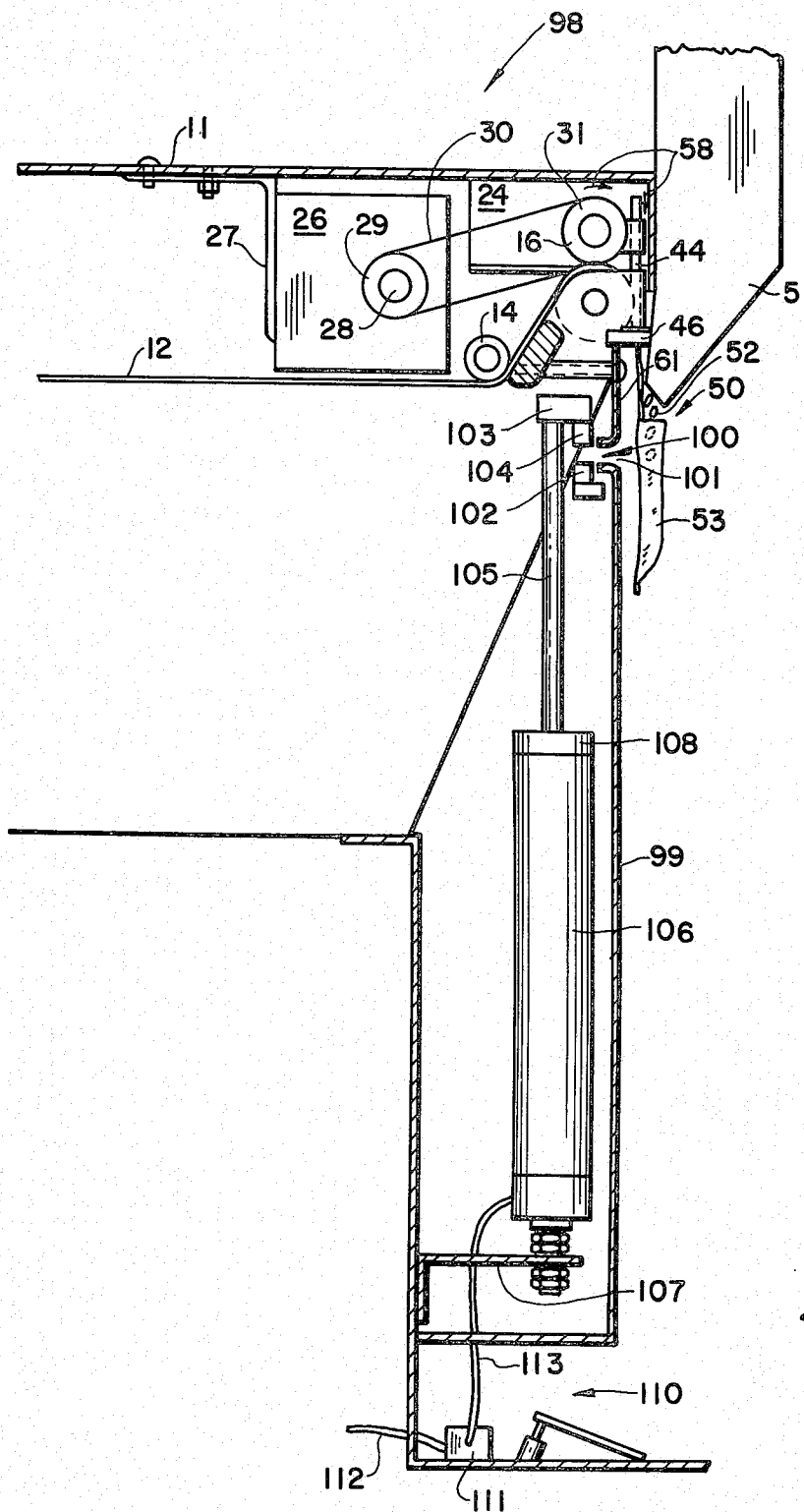
*Fig. 6*



*Fig. 7*



*Fig. 8*



*Fig. 9*

**PACKAGING METHOD AND APPARATUS**

This is a division, of application Ser. No. 139,453, filed May 3, 1971 and now Pat. No. 3,815,318.

**CROSS REFERENCE TO RELATED PATENTS**

Flexible Container Strips, U.S. Pat. No. 3,254,828 issued June 7, 1966 to Hershey Lerner. This patent will be referred to as the "Article Patent".

Mechanism for Automatically Feed, Loading, and Sealing Bags, U.S. Pat. No. 3,477,196 issued Nov. 11, 1969 to Bernard Lerner. This patent will be referred to as the "Machine Patent".

**BACKGROUND OF THE INVENTION****1. Field of the Invention**

This invention relates to packaging and more particularly to a novel and improved machine for packaging products in bags supplied in a web of interconnected bags.

**2. The Prior Art**

Each of the referenced patents describes the utilization of a plastic web composed of a chain of interconnected bags. The bags are each open on one face while the other face of each bag is connected to a contiguous bag along a line of weakness.

A simple mechanism for using a web of bags in packaging is described in the Article Patent. A coiled web is positioned on a mandrel in a carton. A blower is coupled to the carton to provide a positive pressure within the carton. The bags are fed, closed-end first, through a slot in the carton. As the bags emerge from the carton they are inflated by a flow of air emitted from the slot due to the positive pressure in the carton. A product is inserted in the inflated bag. The operator then moves the web until the next bag emerges from the box and inflates, and also separates the loaded bag for a sealing operation.

In the Machine Patent, a machine is described and claimed which dispenses the bags, seals them and then severs them in sequential, automatic operations. In addition, the machine is adapted to be connected to automatic counting and conveying equipment so that the products being packaged are all automatically measured and deposited in the bags as the bags are fed to a load station. The Machine Patent also provides a means for providing an interrupted heat seal line whereby heavily loaded bags are not so weakened during the heat sealing operation that they tear along the sealing line.

These two described systems for dispensing and loading bags, represent respectively a relatively simple, but slow, and a relatively complex, but fast, system for dispensing, loading and sealing bags. The optimized system for any given packager depends on a number of variables such as the size and nature of the products being packaged, the number of packages of any given product or group of products required, and the total number of packages, that is the total packaging rate, of the packager.

In the past, the most commonly-used system for dispensing separating and sealing packages has been basically manual. A machine similar in appearance to that shown in the Machine Patent has been the most commonly used. With this commercially-successful arrangement, a web of bags is mounted on a mandrel within a housing. The web is fed through an exit slot

near the top of the housing and then downwardly until an open bag is at a load station near the top of the machine and near the exit slot.

In use, the operator deposits the product to be packaged in the open bag at the load station. The operator then grasps the loaded bag, pulling it downwardly until the next bag is at the load station. The loaded bag is then manually severed and the open end is inserted between the jaws of a heat sealer provided near the base of the housing. The jaws are then actuated to close and effect a sealing of the bag. After a predetermined time interval, when a seal has been effected, the jaws will open, allowing the bag to drop in a box or other receptacle beneath the machine.

With the described method of operation, the loading, feeding, severing, and sealing steps are all sequential. Except to the extent that a skilled operator may in part cause the feeding and severing steps to overlap. The steps are not only performed sequentially, but the steps of one cycle must be fully completed before another cycle begins. In addition, the system is relatively fatiguing in that the operator starts above the machine picking up the parts to be placed in the bag, loads the bag, lowers it through the feeding, severing and sealing steps until his arms are at the base of the machine and then repeats. Thus, a relatively considerable amount of manual movement is required with each cycle.

With the device of the Machine Patent there is a limitation as to the length of a bag which can be handled in that sealing and severing are performed at stations below the load station and along a path of web travel. In addition, while performing the operations fully automatically and quite satisfactorily, there is a complexity in the system which is not required for many purposes. Namely, there is a unique mechanism for bringing the faces of the bag into full registry. With small and relatively light products, and certain other kinds of products, misregistration of the bag faces is not a serious problem. Moreover, while the described automatic machine is quite satisfactory for many applications, the machine does not afford flexibility of semi-automatic operation. Neither does it permit the feeding of the web until all steps of a cycle have been fully completed.

**THE MACHINE OF THIS INVENTION**

With the machine of this invention, one may, by simply changing the orientation of the sealer, provide either automatic or semi-automatic operation. In the semi-automatic mode, the sealer is positioned behind a vertical path of web travel with jaws positioned to move relatively along a path paralleling the web path of travel. After a bag has been loaded, the operator severs the bag and inserts the open end between the jaws of the heat sealer. The faces of the bag may be manually brought into registration.

A foot pedal is then actuated to cause the jaws to close. Simultaneously, a signal is sent to a web feed mechanism, such as that described in the Machine Patent, which feeds the web until a sensing mechanism detects a registered line of weakness in the web. Thus, the bag to be fed is being fed along its path in front of the bag being sealed concurrently with the sealing operation.

When the sealing operation is completed the jaws of the sealer will open dropping the bag irrespective of the extent to which the succeeding cycle has progressed. Conversely, the web will feed until the next bag is in the



load position and then stop for automatic or manual parts loading, all of which proceeds without regard to the preceding cycle and the stage of the sealing operation.

In the automatic mode of the machine of the present invention, the sealing jaws are positioned to reciprocate horizontally. After the jaws have closed they are pivoted about a pivot point at one end of the jaws which provides a horizontal pivot axis to sever the loaded bag concurrently with the sealing. The jaws also pull the bag somewhat rearwardly of the path of web travel so that, once the severing has been completed, the feed cycle of a subsequent bag can commence prior to the time when the sealing cycle is fully completed. So long as the successive web fed has not been too extensive by the time the sealing jaws open, the bag being fed will drop between the jaws when they open.

At first blush, it would seem that severing and sealing concurrently would be an impossibility because one would anticipate a bag would sever along the seal line. One of the outstanding features of the present invention resides in the mechanism provided to prevent such severing. This mechanism includes a toothed knife which is above and heat insulated from a heater bar which effects seals. A resilient pad, which is on one of the jaws of the sealer, coacts with both the sealer bar and the knife.

After the jaws of the heat sealer are closed and the sealing operation has commenced, as indicated above, one end of the sealer is moved downwardly about a pivot axis near the other end. This downward movement is sharp and rapid to effect a separation of the bag being sealed from the succeeding bag in the web along a preformed line of weakness, such as a row of perforations, delineating the ends of the two bags.

Where it is desirable to provide a chain of interconnected loaded and sealed containers, the tearing-off action of the automatic machine may be set to function only at the completion of a pre-set number of sealing cycles. By such an arrangement, chains of any number of interconnected loaded containers may be produced automatically.

In the semi-automatic mode of operation, the portions of a bag being sealed are disposed essentially horizontally so that the bag hangs over parts of the lower jaw of the machine and other parts of the machine. With the bag so hanging over parts of the machine, the friction of the bag and the machine takes some of the load on the package so that the full load or weight of the product being packaged is not imposed on the line along which a seal is being formed.

With the automatic version of the machine, however, the bag is hanging vertically from the seal and one would anticipate that the weight of the product, especially if a heavier product is being packaged, might cause a bag separation along the heat seal line. This tendency is mitigated by the sharp, rapid downward movement of the heat sealer as the bag is separated. Thus, by moving the bag down quickly, the effect is to reduce the force imposed by the weight of the product being packaged on the bag along the seal line. Where heavily loaded bags are being sealed, the interrupted heat seal method taught by the "Machine Patent" may also be used to assure that the bags do not sever along the seal line.

After the sealing operation has been completed, the jaws open and a stripper mechanism strips the sealed

bag from the knife. The stripper mechanism also serves to strip the sealed bag from the sealer bar if the bag is tending to stick to the sealer bar.

The heater bar and knife are positioned laterally rearwardly of the path of bag travel and of the load station. That is they are positioned closer to the frame of the machine than is the bag loading station. During the bag loading portion of a cycle, the coacting pad is in front of the path of travel. Thus, the heater bar is spaced from a bag being loaded so that any residual heat will not prematurely warm the bag. Moreover, the positioning of the heater permits the feed of a succeeding bag to commence immediately after the separating operation and concurrently with the completion of the heat sealing operation and the opening of the jaws of the heat sealer.

In accordance with another feature of the present invention the heater bar and knife bar are disposed inwardly of a slotted guard bracket. The slotted guard bracket serves both as a safety device and to facilitate stripping of sealed containers from the heater bar and knife bar. With the heater bar and the knife bar disposed inwardly of the guard bracket, the possibility of accidentally contacting either of these bars is minimized. Moreover, since the web is caused to form a generally U-shaped configuration upon insertion through the slotted guard bracket during sealing, the weight of a loaded bag will serve to pull the sealed bag away from the heater bar and knife bar at the completion of the sealing operation when the sealing bar pressure is released.

The sealing bar is air actuated. Should the operator accidentally insert his hand between the sealing bar and the guard bracket during sealing, the air actuation is sufficiently weak to prevent injury. Moreover, the resilient pad carried by the sealing bar also serves to prevent such injury.

From the preceding discussion it will be seen that with either the automatic or semi-automatic version of this machine, there is a heatsealing station spaced laterally and rearwardly from the path of travel of the bag and from the loading station. Thus, a loaded bag is moved rearwardly from the path of travel as the sealing step of a cycle is commenced.

It will also be seen that the provision of a heat sealer which may be oriented for vertical movement for semi-automatic or for horizontal movement followed by a pivotal tearing-off movement for automatic operation, provides a machine which is highly flexible and which can be tailored for optimum conditions according to a given user's needs. Moreover, the machine can be readily changed from semi-automatic to automatic, or vice versa, if the optimum conditions for a given packager change.

Accordingly, it is the principal object of the present invention to provide improved methods and apparatus for packaging heat-sealable containers.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of an automatic packaging machine constructed in accordance with the present invention;

FIG. 2 is a sectional elevational view as seen from the plane indicated by the line 2—2 in FIG. 1;

FIG. 3 is an enlarged sectional elevational view of a portion of the machine shown in FIG. 2;

FIG. 4 is a sectional elevational view as seen from the plane indicated by the line 4—4 in FIG. 2.

FIG. 5 is a schematic illustration of the automatic packaging machine with the lower feed roll moved away from the upper feed roll to facilitate threading of the web of interconnected bags between the feed rolls;

FIG. 6 is a schematic illustration of a bag being loaded in the loading position;

FIG. 7 is a schematic illustration of the container being moved to the sealing station at the beginning of the sealing operation;

FIG. 8 is a schematic illustration showing the pivotal movement of the sealing and detaching assembly during the sealing operation; and,

FIG. 9 is a sectional elevational view showing the packaging machine of the present invention arranged for semi-automatic operation.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1 and 2, a packaging machine is shown generally at 10. The packaging machine 10 includes a supporting and protective outer cabinet 11. A web 12 of interconnected plastic bags is fed vertically upwardly from a storage region (not shown) formed in the lower portion of the cabinet 11.

The web 12 is reeved over a first idler roller 13. From the idler roller 13, the web 12 extends substantially horizontally and is reeved around a second idler roller 14. From the idler roller 14, the web is directed upwardly by a guide bar 15 toward a pair of feed rolls 16, 17.

The upper and lower feed rolls 16, 17 as best seen in FIGS. 1 and 4, have a series of axially spaced enlarged cylindrical portions 18, 19 respectively. Each of the enlarged portions 18 is in engagement with an enlarged portion 19. Portions 20, 21 of reduced diameter are between the cylindrical portions 18, 19 respectively.

A drive motor 26 is mounted by means of a bracket 27 within the cabinet 11. Output shaft 28 of the motor 26 is provided with a drive pulley 29. A drive belt 30 is reeved around the drive pulley 29 and around a driven pulley 31. The driven pulley 31 is secured to the upper feed roll 16. By this arrangement, the motor 26 is operative to effect the feeding of the web 12 between the feed rolls 16, 17.

The upper feed roll 16 is journaled by a pair of bearings 22, 23. The bearings 22, 23 are carried by brackets 24, 25 which are secured to the cabinet 11.

The lower feed roll 17 is journaled by a pair of bearings 36, 37. The bearings 36, 37 are supported by a pair of brackets 38, 39. The brackets 38, 39 as best seen in FIG. 1, comprise the outer ends of a pair of arms 40, 41. The arms 40, 41 extend rearwardly from the region of the feed rolls 16, 17 and are pivotally mounted from the cabinet 11 by pivotal connections 42, 43.

The forward ends of the arms 40, 41 are supported by means of threaded lock bolts 44, 45. The lock bolts 44, 45 extend through apertures formed in the brackets 38, 39 and into the threaded apertures formed in the brackets 24, 25. The lock bolts 44, 45 are provided with knurled heads 46, 47 to facilitate their manual rotation.

Since the lower feed roll 17 is pivotally supported by means of the arms 40, 41, it may be pivoted downwardly as is schematically shown in FIG. 5 to facilitate the initial feeding of the web 12 between the feed rolls 16, 17. With the lower feed roll 17 pivoted downwardly, the web 12 may be fed straight through the machine 10 from the first idler roller 13 to the lower feed roll 17. The arms 40, 41 may then be pivoted upwardly to raise the lower feed roll 17 into its operative position with the web 12 disposed between the feed rolls 16, 17.

From the feed rolls 16, 17 the web 12 is fed downwardly along a substantially vertical path of travel to a loading station, indicated generally by the numeral 50, FIGS. 2 and 3. A loading chute 51 is provided for discharging parts 52 into a bag 53 positioned in the loading station.

In order to facilitate opening of the container 53 when in the loading station, a blower indicated generally by the numeral 54 is provided within the cabinet 11. A vertically extending duct 55 connects with the blower output duct 56. The vertically extending ducts 55 is disposed adjacent one side of the cabinet 11 and serves to duct air from the blower 54, which is disposed beneath the web 12, to the region above the web 12. A horizontally extending duct 57 connects with the vertically extending duct 55 and discharges air from the blower 54 into the region above the web 12. Air is thereby caused to flow over the upper feed roll 16 and downwardly along the surface of the web 12, as indicated generally by the arrows 58. This air flow serves to open a bag when it is positioned in the loading station 50.

In accordance with the automatic version of this machine of the present invention, a sealing and detaching means is provided for simultaneously sealing a loaded bag and for separating the loaded bag from the web 12 while the bag is being sealed. To these ends, a substantially vertically extending guard bracket 60 is provided rearwardly of the path of travel of the web 12 adjacent the loading station 50. A slot 61 is provided in the guard bracket 60. A heater bar 62 is positioned within the region of the slot 61. A knife-bar 63 having a toothed edge 64 is positioned above the heater bar 62 to project into the slot 61.

The slotted guard bracket 60 serves a number of functions. First, it acts as a safety device to prevent injury to the fingers or hands of an operator by shielding the heater bar and the knife bar from contact. Second, it facilitates stripping of sealed containers from the heater bar and the sealer bar. Since the portion of the web being sealed must assume a generally U-shaped configuration upon insertion through the slot 61, the weight of the loaded bag will tend to pull the bag outwardly and away from the heater bar and sealer bar at the completion of the sealing operation.

A sealing bar 64 is provided for clamping the faces of the bag 53 into engagement with one another with this inner face in engagement with both the heater bar 62 and the knife bar 63. A resilient rubber pad 65 is carried by the sealing bar 64 to perform this clamping function.

The sealing bar 64 is supported by a pair of support rods 66, 67. The support rods 66, 67 are journaled by a transversely extending bar 68 and by a pair of apertured brackets 69, 70. A transversely extending frame member 71 rigidly connects the inward ends of the rods 66, 67. A first actuator means in the form of a pneu-

matic cylinder 72 is connected between the transversely extending bar 68 and the transversely extending frame member 71. By this arrangement, the support rods 66, 67 may be moved axially by the actuator 72 to move the sealing bar 64 toward and away from the heating bar 62 and the knife bar 63. The actuator 72 in its extended position serves to clamp the rubber pad 65 of the sealing bar 64 in engagement with the heating bar 62 and the knife bar 63, and in its retracted position serves to move the sealing bar away from the heater bar and the knife bar.

When the sealing bar 64 is in its outwardly extended position, the web 12 with its integrally formed container 53 extends between the support rods 66, 67. The container 53 is then solely supported by its connection to the web 12. When, however, the sealing bar 64 is moved to its inward sealing position, the rubber pad 65 serves to clamp both sides of the container 53 against the heater bar 62 and the knife bar 63. At this time, the container is supported by this clamping action. The heater bar 62 then serves to heat seal the container 53 while the toothed edge 64 of the knife bar 63 punctures the web at intermediate positions across the web surface above the region of the heat seal.

When relatively heavily loaded containers are being sealed, it is frequently desirable to provide an interrupted seal whereby the web is not weakened across its entire width during the formation of the heat seal. This may readily be accomplished by wrapping a thread around the resilient pad 65 to compress spaced portions of the pad such that no seal will be effected in these regions.

In order to prevent the knife bar 63 from becoming heated by the heater bar 62, a finned heat dissipator 73 is provided in contact with the upper surface of the knife bar 63. The heat dissipator 73 has a large finned surface area for heat dissipation.

In accordance with another aspect of the present invention, as soon as the sealing bar 64 has moved to the sealing position, the sealing and detaching assembly pivots downwardly, as is shown in phantom in FIG. 4 to separate the bag 53 which is being sealed from the web 12. A scissors-like tearing off action is thereby provided, as is further illustrated in FIG. 8. The separation is along a preformed line of weakness in the web such as a row of perforations. The coaction of the knife 63 and the pad 65 assure that the separation is along this preformed line of weakness rather than along the heat softened portions of the bag present in the areas where sealing is being effected.

The sealing and detaching means therefore comprises a pivotally mounted assembly. This assembly is pivotally mounted about a shaft 75, as best seen in FIG. 1. The shaft 75 is supported by a pair of transversely extending brackets 76, 77 formed integrally with the arm 40. A pair of collars 78, 79 journaled on the shaft 75 connect respectively with the bracket 69 and the transversely extending bar 68.

The brackets 69, 70 connect with a pair of frame side members 80, 81. The frame side members 80, 81 connect at their front ends with a transversely extending frame member 82. By this arrangement, a rigid frame is formed comprising the elements 68, 80, 81, 82 and this frame is pivotally mounted about the shaft 75. This frame serves to support the heater bar 62, the knife bar 63, and the sealing bar 64, and the actuator 72 for moving the sealing bar.

A second actuator 85 is provided for moving the sealing and detaching assembly about the pivot shaft 75. The second actuator 75 connects at one end with the cabinet 11, as is best seen in FIG. 4, at the other end with a bracket 86. The bracket 86, in turn, connects with the side bar 81.

A stripper bar 90, as best seen in FIGS. 2 and 3, is pivotally mounted about an axis 91 from the guard bracket 60. A spring 92 biases the stripper bar against the front surface of the guard bracket 60. A magnet (not shown) carried by the sealing bar 64 serves to snap the stripper bar outwardly when the sealing bar 64 moves outwardly from its fully inward position. By this arrangement, the stripper bar serves to disengage sealed containers from the heater bar and knife bar.

The operation of the packaging machine 10 may best be described with reference to the schematic FIGS. 5, 6, 7, and 8. As has been previously explained, the web 12 is initially fed over the first idler roller 13 and between the feed rolls 16, 17 while the lower feed roll 17 is in its lowered position, as illustrated in FIG. 5. The lower feed roll support assembly is then moved to its upper position wherein the feed rolls 16, 17 are in engagement with the web 12.

After the bag 53 is advanced to the loading position and opened as illustrated in FIG. 6, parts 52 are discharged through the loading chute 51 into the open bag 53. The sealing bar 64 is then drawn inwardly as shown in FIG. 7 to clamp both sides of the container 53 into engagement with the heater bar 62 and the knife bar 63. As soon as the rubber pad 65 carried by the heater bar 64 has clamped the container against the heating bar and the knife bar, the second actuator 85 extends to pivot the sealing and detaching assembly about the shaft 75, as illustrated in FIG. 8.

During the scissors-like tearing action that is imparted by the pivotal movement of the sealing and detaching assembly, several things occur. First, the movement of the sealing and detaching assembly is sufficiently rapid to substantially withdraw the weight of the contents of the container 53 from the region of the heat seal. This action thereby removes a substantial portion of the strain on the region of the heat seal which might otherwise tend to cause the container 53 to shear off along the line of the heat seal during the heat sealing operation. The toothed surface 64 of the knife bar 63 simultaneously punctures the web 12 above the region of the heat-seal to assure separation of the bag 53 from the web 12 along the preformed line of weakness in the web rather than along the line of the heat seal.

With the sealing and detaching assembly in the downwardly pivoted position, the first actuator 72 is then rapidly retracted. This action draws the stripper bar 90 outwardly to strip the sealed container 53 away from the region of the heater bar 62 and the knife bar 63. The sealed container 53 is then free to drop onto a suitable container or conveyor which may be provided beneath the loading station 50.

The sealing and detaching assembly, with the sealing bar in its extended position, is then returned by the second actuator 85 to its sealing position. At the same time an electrical control means (not shown) operates the motor 26 to advance the web 12. By this arrangement, another container is brought to the loading position 50 simultaneously with the return movement of the sealing and detaching assembly. The container is then loaded and the sealing operation automatically repeated.

A semi-automatic version of the machine of this invention is shown in FIG. 9. The semi-automatic version is substantially identical to the automatic machine in many respects, and identical parts are indicated with the same reference numerals used previously. The semi-automatic version principally differs from the automatic version in that the sealing unit is oriented vertically rather than horizontally, and the knife bar assembly is removed. Also, the cabinet of the machine is provided with a forwardly extending guard portion to shield the repositioned sealing unit.

Referring to FIG. 9, a semi-automatic machine is shown generally at 98. The machine 98 includes an identical drive motor 26 and feed rolls 16, 17 for advancing a web 12 of inter-connected bag-like containers as was previously described in conjunction with the automatic machine 10.

A loading position is established at 50. The web 12 of interconnected containers feeds vertically downwardly from the feed rolls 16, 17 to the loading position where a container is opened by a stream of air adjacent the loading chute 51. When the container is filled, the operator then tears the loaded container from the web along a preformed line of weakness in the web between adjacent containers.

The cabinet 12 is provided with a forwardly extending guard portion 99. The guard portion 99 has a horizontally extending slot 101 formed therethrough at a position behind the loading position 50. The slot 101 defines a sealing station indicated generally by the numeral 100.

A heater bar 102 is provided adjacent the lower edge of the slot 101. A sealing bar 103 carrying a rubber pad 104 is provided for clamping both sides of the open end of the container 53 against the heater bar 102. A pair of support rods 105 support the sealing bar 103 and are adapted to move axially to move the sealing bar toward and away from the heater bar 102.

A pneumatic actuator 106 is supported by a bracket 107 from the cabinet 11. The actuator 106 connects with a transversely extending frame member 108 which, in turn, connects with the support rods 105. By this arrangement, the actuator 106 in its extended position serves to position the sealing bar 103 away from the heater bar 102, and in its retracted position serves to clamp the sealing bar 103 against the heater bar 102.

A foot operated control indicated generally by the numeral 110 is provided in the lower region of the cabinet 11. The foot control 110 is operative to control a pneumatic valve 111 and an electrical motor control (not shown). When the foot control 110 is depressed, the valve 111 is opened to admit pressurized fluid from a hose 112 to a hose 113 which connects with the actuator 106. The actuator 106 is thereby caused to extend to clamp the loaded container 53 against the heater bar 102. When the actuator 110 is released, the valve 111 vents the hose 113 to atmosphere to release the pressurized fluid from the actuator 106.

The foot operated actuator 110 also includes an electrical switch means (not shown) which controls the operation of the drive motor 26. By this arrangement, depression of the foot control 110 causes the feed rolls 16, 17 to advance the web 12 to bring a new bag into the loading position concurrent with the operation of the sealing mechanism. In the preferred embodiment of the invention, the web 12 is caused to commence to ad-

vance simultaneously with the movement of the sealing bar 103 from its clamping position.

Although the invention has been described in its preferred form with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

What is claimed is:

1. A method of packaging comprising the steps of:
  - a. providing structure defining a loading station;
  - b. feeding packaging web along a feed path to the loading station;
  - c. registering a container formed on the web with the loading station; and
  - d. while said container is at the loading station and without moving said container into registry with another station:
    - i. loading said container;
    - ii. closing said loaded container;
    - iii. gripping a portion of said closed loaded container in such fashion as will effectively isolate an adjacent portion of said container from stress producing forces imposed on another portion of said container; and,
    - iv. while said container is so gripped, initiating the performance of an operation on said container which will impose stress producing forces on said another portions, whereby said adjacent portion remains effectively isolated from said forces.
2. A packaging apparatus comprising:
  - a. means establishing a path of travel for a packaging web to a loading station for positioning a container formed on the web in registry with the loading station;
  - b. closure means operative while said container is positioned at said loading station and without moving said container once it has been loaded and to grip a portion of said closed loaded container in such fashion as will effectively isolate an adjacent portion of said container from stress producing forces imposed on another portion of said container; and
  - c. operating means operative while said container is gripped by said closure means and while said container remains at said loading station to initiate the performance of an operation on said container which will impose stress producing forces on said another portion, whereby said adjacent portion remains effectively isolated from said forces.
3. A method of packaging comprising the steps of:
  - a. providing structure defining a loading station;
  - b. feeding a packaging web along a feed path to the loading station;
  - c. registering a container formed on the web with the loading station; and
  - d. while said container is at the loading station and without moving said container into registry with another station:
    - i. loading said container;
    - ii. closing said loaded container;
    - iii. gripping a portion of said closed loaded container in such fashion as will effectively isolate an adjacent portion of said container from stress producing forces imposed on another portion of said container;

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- iv. while said container is so gripped, initiating the performance of a first operation on the adjacent portion of the container; and
  - v. while said container is so gripped, initiating the performance of a second operation on said container which will impose stress producing forces on said another portion, whereby said adjacent portion remains effectively isolated from said forces.
4. A packaging apparatus comprising:
- a. means establishing a path of travel for a packaging web to a loading station for positioning a container formed on the web in registry with the loading station;
  - b. closure means operative while said container is positioned at said loading station and without moving said container once it has been loaded and to grip a portion of said closed loaded container in such

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- fashion as will effectively isolate an adjacent portion of said container from stress producing forces imposed on another portion of said container;
- c. first operating means operative while said container is gripped by said closure means and while said container remains at said loading station to initiate the performance of a first operation on said container which will impose stress producing forces on said another portion, whereby said adjacent portion remains effectively isolated from said forces; and
  - d. second operating means operative while said container is gripped by said closure means and while said container remains at the loading station to initiate the performance of a second operation on the adjacent portion of said container.

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