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Benner, Jr. et al.

[11] **3,821,873**

[45] **July 2, 1974**

[54] **METHOD AND APPARATUS FOR FORMING AND FILLING POUCHES**

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[73] Assignee: **R. A. Jones & Co. Inc.,** Covington, Ky.

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[52] **U.S. Cl.** **53/24,** 53/29, 53/126, 53/183

[51] **Int. Cl.** **B65b 1/22**

[58] **Field of Search** 53/24, 29, 126, 183

[56] **References Cited**

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2,154,715	4/1939	Allison	53/126
3,453,799	7/1969	Cloud et al.	53/29
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Primary Examiner—Travis S. McGehee

Attorney, Agent, or Firm—Wood, Herron & Evans

[57] **ABSTRACT**

A machine for forming and filling pouches from a continuous supply of web material has a station forming said web into a continuous train of poucnes, each pouch having an upwardly opening side, a station for filling the pouches as they are carried around the periphery of a carrier wheel, and a station for sealing the open side of each pouch and separating the pouches into individual packets. The carrier wheel has a rocker assembly for rocking each pouch after it is filled, settling the material therein and forming a more compact package. A filling wheel is located above the carrier wheel and rotates therewith to automatically insert filling tubes into the pouches, deposit a charge of material to be packaged into each pouch, and withdraw the filling tubes from the pouches as the carrier wheel rotates. The pouches are opened to receive the filling tubes through the cooperation of vacuum nozzles which grip one side of each pouch, air jets directed into the pouches, and the rocker assembly which supports the pouches as they are rotated by the carrier wheel.

13 Claims, 8 Drawing Figures

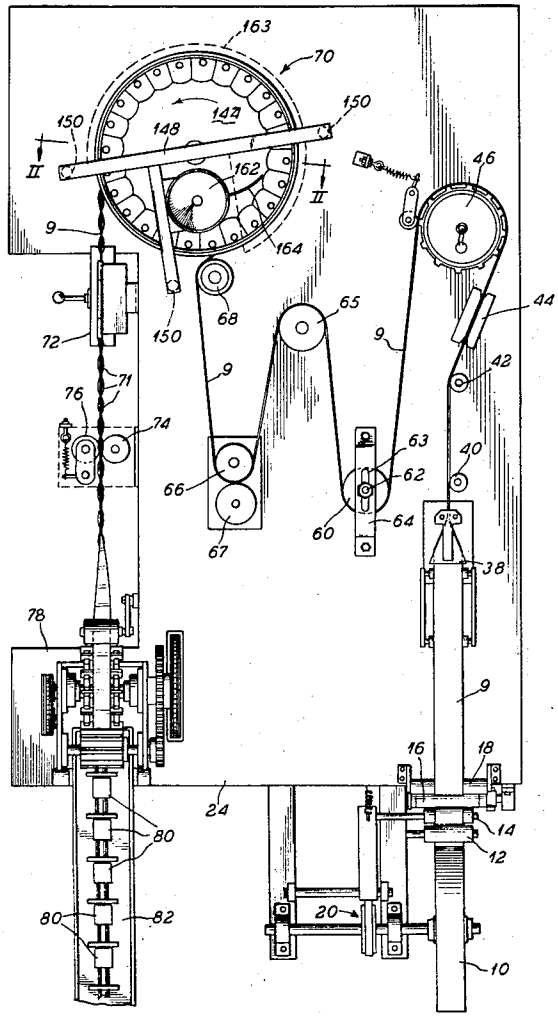
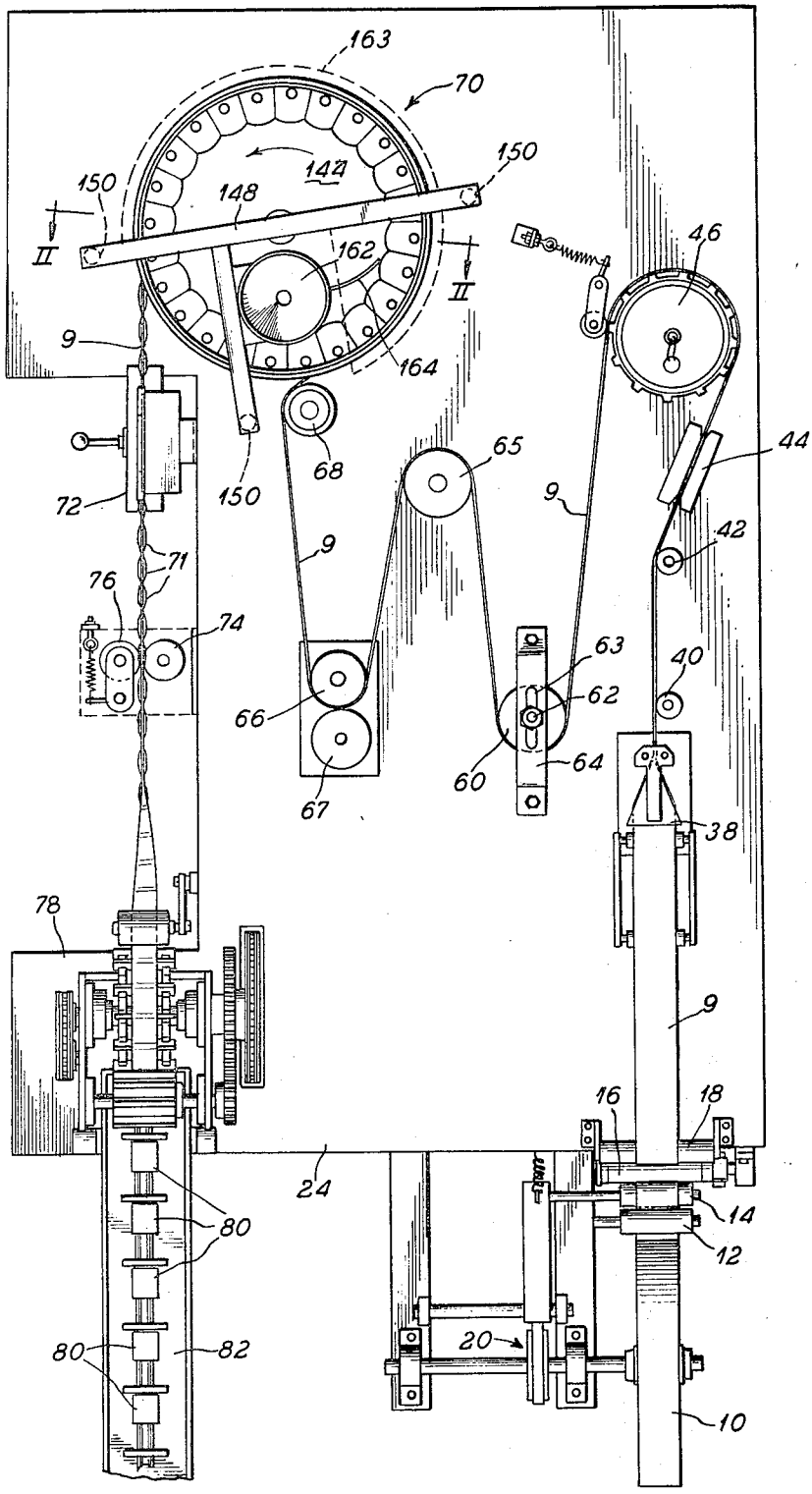


Fig. 1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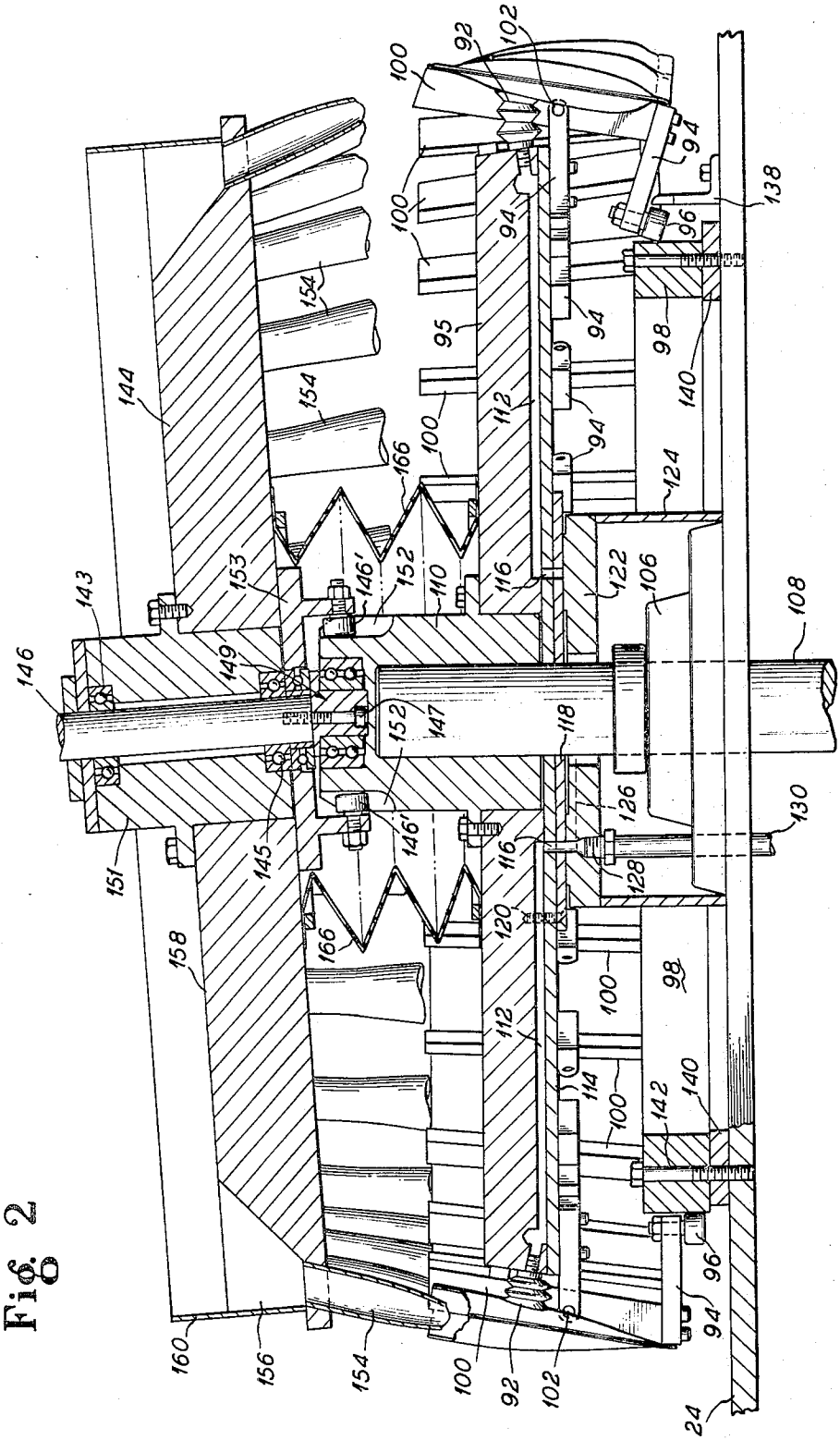
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Fig. 2

Fig. 3

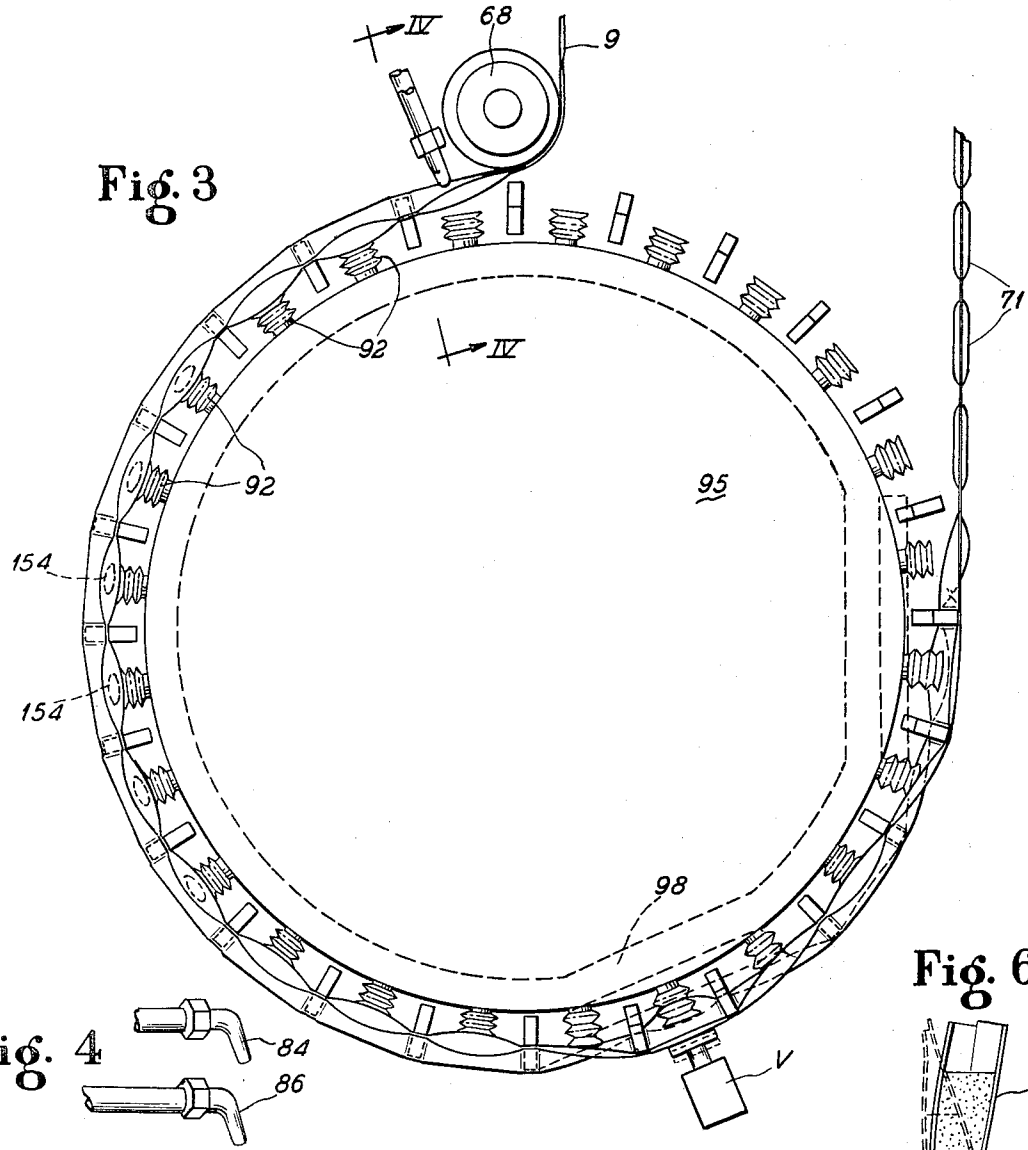
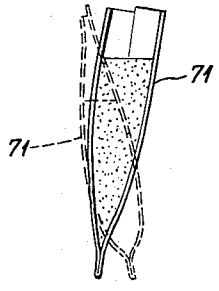


Fig. 4

Fig. 6



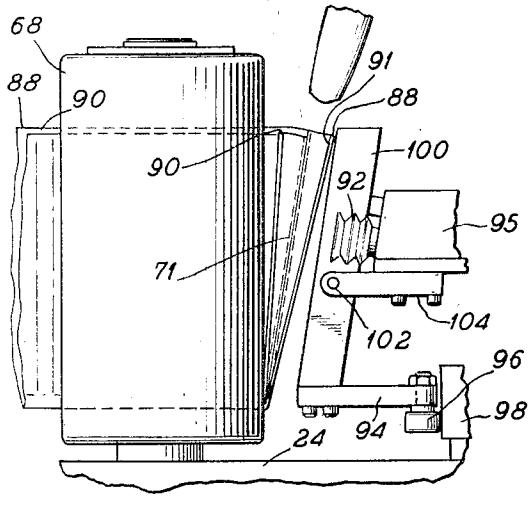


Fig. 5

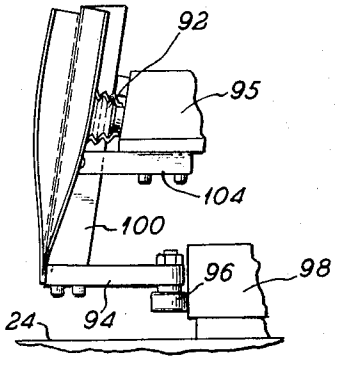


Fig. 7

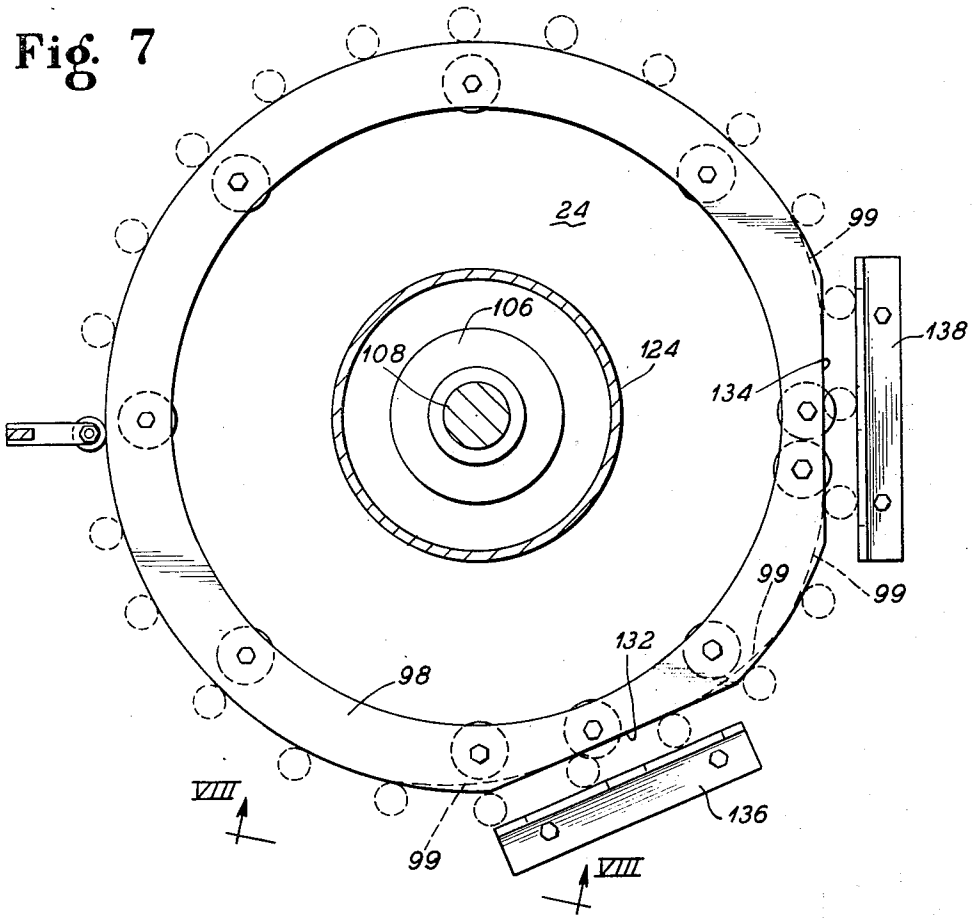

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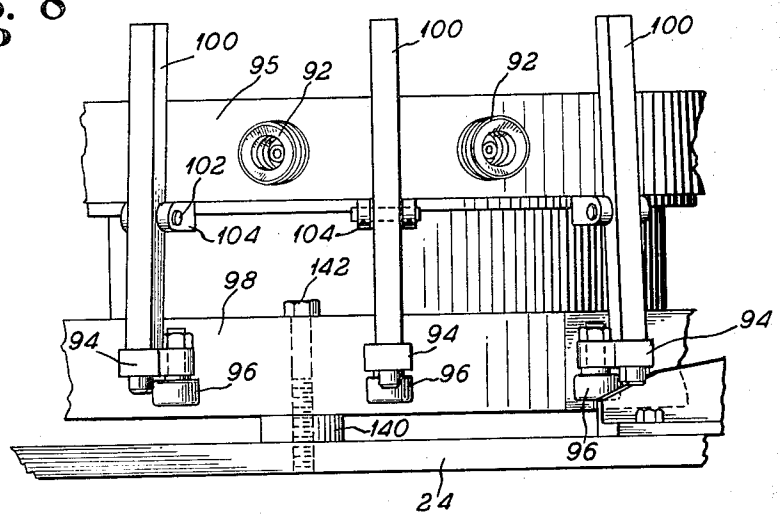
Fig. 8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METHOD AND APPARATUS FOR FORMING AND FILLING POUCHES

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a method of forming and filling packages, and more particularly to a method of forming packages as a continuous train of pouches having an upwardly opening side, filling the pouches through the open side and sealing the pouches to produce individual packages.

2. The Prior Art

Machines for forming pouches from a continuous web, and filling them are well known. For example, such a machine is disclosed in Cloud U.S. Pat. No. 3,344,576. Such machines have performed in a generally satisfactory manner, but it is desirable to improve the manner in which the pouches are opened prior to filling, to permit increased operating speeds, and it is also desirable to devise a way of causing the material placed in the pouches to settle as much as possible to the bottom thereof, so as to form the most compact package possible.

As the cost of the web material of which the packages are formed is considerable, it is desirable to produce packages with as little material as possible.

SUMMARY OF THE INVENTION

Accordingly, it is a principal object of the present invention to provide a method and apparatus for forming and filling packages having means for quickly and efficiently opening the package to receive a product thereinto.

Another object of the present invention is to provide a method and apparatus for forming and filling a package, in which a more compact package is achieved.

These and other objects and advantages of the present invention will become manifest upon an examination of the following description and the accompanying drawings:

In one embodiment of the present invention there is provided a method comprising the steps of providing a supply of web material adapted to be formed into a continuous train of pouches having an upper open side, opening the upper side of each said pouch, filling each said pouch with a predetermined quantity of a product, settling the product within the pouch, and sealing the open edge of said pouch to provide a complete enclosed package containing the product.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference will now be made to the accompanying drawings in which:

FIG. **1** is a plan view of apparatus incorporating an exemplary embodiment of the present invention, which performs the method of the present invention;

FIG. **2** is a vertical cross-sectional view of a portion of the apparatus illustrated in FIG. **1**, taken through the plane II—II;

Fig. **3** is a plan view of the carrier wheel of FIG. **1**, partly in cross-section, with the filling wheel removed;

FIG. **4** is a side elevational view, partly in cross-section, of a portion of the apparatus illustrated in FIG. **3**, as viewed from the plane IV—IV;

FIG. **5** is a side elevational view partly in cross-section, of a portion of the apparatus illustrated in FIG. **4**, showing a pouch in condition to be filled;

FIG. **6** is an illustration showing a freshly filled pouch in full line, and a pouch in which the product has been settled in phantom line;

FIG. **7** is a plan view partly in cross-section of the table which supports the carrier wheel; and

FIG. **8** is a side elevational view of a portion of the apparatus illustrated in FIG. **7**, as seen from the plane VIII-VIII.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, FIG. **1** illustrates a plan view of a complete packaging machine which utilizes a roll **10** of web material **9**, and successively forms the web material **9** into a train of connected pouches, fills the pouches with a product, settles the product in the pouches, seals the open edge of the pouches to form a train of filled packets, and separates the individual packets from the train. Some of the apparatus of FIG. **1** is well known in the art, and is illustrated in FIG. **1** only to show its cooperation with apparatus embodying the present invention. In particular, the apparatus for forming a train of connected pouches having an open side from a roll of web material is described in Cloud U.S. Pat. No. 3,505,776. As described in that patent, the roll **10** contains a supply of web material of any suitable type, and is preferably of the type coated on at least one side with a sealable material such as plastic or other suitable adhesive. The web **9** is unrolled from the roll **10** through a series of successive rollers **12, 14, 16** and **18,** and the tension on the web is controlled by a brake unit **20.** A paper plow **38** is supported by a table **24,** and folds the web **9** upwardly into a V-shaped cross-section, with the crease at the bottom, as described in the aforementioned Cloud U.S. Pat. No. 3,505,776. Then the web **9** passes over guide rollers **40** and **42** to a heat sealing means **44.** The heat sealing means is provided for the purpose of sealing together a thin margin adjacent the bottom folded edge of the web **9,** so as to maintain the web in tightly folded condition. As more fully described hereinafter, drive rollers **74** and **76** engage the top heat sealed portion after the pouches are filled and the open end is sealed.

Following the sealer means **44,** the web **9** passes around a segmented drum **46** which functions as a vertical sealer, to seal together the sides of the folded web **9** along spaced vertical bands, to form a train of pouches having an open upper side. The drum **46** is also described in the aforesaid Cloud U.S. Pat. No. 3,505,776.

The web **9** thereafter passes over a roll **60** which is mounted on a shaft **62** supported in an adjustable relation in a slot **63** provided in a bracket **64.** The bracket **64** is bolted to the surface of the table **24.** Adjustment of the position of the roll **60** relative to the bracket **64** permits synchronization between the operation of the drum **46** and the operations taking place at the filling station.

Following the roll **60,** the web **9** passes over a roll **65** and then through the nip of a pair of drive rollers **66** and **67** which are driven (by means not shown) so as to pull the web **9** from the supply roll **10.**

Following the drive rolls **66** and **67** the web **9** passes over an idler roller **68** and then around the periphery of a circular filling station **70.** As the web **9** passes around the filling station **70** the pouches are successively opened, filled with a quantity of product such as granulated sugar or the like, and then manipulated so as to settle the product in the pouches. Thereafter the web **9,** now comprising a series of filled pouches **71,** leaves the filling station **70** and passes through an upper sealing station **72** at which the upper edge of the pouches is sealed to form individual connected packets **80.** Apparatus for making the upper seal is described in Cloud et al U.S. Pat. No. 3,344,576. Thereafter the train of filled and sealed packets **80** passes through a second drive station incorporating a drive roller **74** and a spring biased idler roller **76.** The rollers **74** and **76** bear on the upper margin of the web, which is maintained in a relatively planar condition, as a result of the operation of the sealing means **44,** so that there is no risk of crushing the material with which the packets **80** are filled, nor of rupturing the packets as a result of application of driving pressure thereto.

Following the second drive station, the train of packets **71** is twisted through 90° and then passed through a cutting station **78** having a plurality of cutting blades adapted to engage the vertical sealed portions formed by the drum **46,** and separate the web into a plurality of separate packets **80.** A suitable cutting station is described in Cloud U.S. Pat. No. 3,597,898. Thereafter, the individual separate packets **80** are transported away by means of a conveyor belt **82.**

Referring now to FIGS. **3** and **4,** the arrangement of the web **9** as it passes by the roller **68** and enters the vicinity of the filling station **70** is illustrated in detail. Upstream of the roller **68** the web **9** is flat, with the opposite sides of the folded web lying closely together. After the web **9** rounds the roller **68,** however, the pouches **71** are caused to open, so that they are prepared to receive a charge of a filling product. The opening of the pouches is facilitated by several separate means which cooperate to insure that the pouch is opened quickly and with certainty, and maintained in open condition for as long as necessary.

A pair of air nozzles **84** and **86** are located above the path of the web **9** just downstream of the roller **68.** The nozzle **84** is located above the nozzle **86** (FIG. **4**) and both are directed downwardly toward the upper end of the pouch **71.** The stream of the nozzle **84,** in addition to being located above that of the nozzle **86,** is also spaced slightly inwardly thereof, relative to the center of the filling station **70.** Both nozzle **84** and **86** are connected to a source of air at a pressure greater than atmospheric, so that both direct streams of air downwardly and inwardly toward the upper end of the pouch **71.**

The web **9** is folded so that the radially inner edge **88** as the web **9** circles the filling station **70,** overlaps the opposite edge **90** and extends slightly thereabove. There is, therefore, a portion **91** on the radially inner side of the folded web, which is positioned to catch the air stream from the nozzles **84** and **86** so as to be forced inwardly thereby, away from the other side of the folded web. The air stream not only catches this portion and forces it inwardly but also enters into the pouch, billowing and puffing it so as to open its top unsealed side.

As the pouch **71** is opened by the combined action of the nozzles **86** and **84,** its radially inner side comes into association with a vacuum nozzle **92.** The nozzle **92** is formed from a length of longitudinal collapsable tubing so that the length of the nozzle is responsive to the pressure of the air therein. When the interior of the nozzle **92** is at atmospheric pressure, the nozzle is extended, as illustrated in FIG. **3.** When the pressure is reduced, however, below atmospheric pressure, the nozzle has a tendency to collapse, so that the free end of the nozzle is drawn inwardly relative to the center of the filling station **70.** At the same time, however, the radially inner side of the pouch **71** becomes attached to the mouth of the nozzle **92,** and it is thereby drawn inwardly, by the free end of the nozzle, which also contributes to opening the upper side of the pouch preparatory to filling.

One additional factor enhances the ability of the pouch **71** to open its upper side as it proceeds around the filling station **70,** and that is that the lower edge of the web **9** is caused to proceed around the filling station **70** following a path having a larger radius of curvature than the upper edge of the web. Therefore, the lower edge of the web **9** is generally under a slight tension, while the upper edge, being free of tension, is free to buckle slightly relative to the bottom edge. This buckling tends to move the vertical sides of each pouch closer together, especially near the upper edge, and permits the upper side of each pouch to open with the opposite surfaces of the pouch moving apart. This feature is best illustrated in FIGS. **4** and **5.**

As shown in FIG. **4,** the web **9** is just rounding the roller **68** and has not yet come into contact with a vacuum nozzle **92.** As shown in FIG. **5,** however, the nozzle **92** is engaged with the radially inner surface of the pouch **71,** and has drawn that side inwardly. The lower edge of the web **9** is maintained in an outward position by an arm **94,** while the vacuum nozzle **92** draws the upper edge of the web radially inwardly, where it traverses a path having a shorter radius of curvature, and therefore a shorter arcuate length, than the path of the lower edge. The outer extremity of the arm **94** is located radially outwardly of the vacuum nozzle **92.** Both of the arms **94** and the vacuum nozzle **92** are carried by a carrier wheel **95** disposed at the filling station **70,** and so the upper edge of the web follows a path of lesser radius than the lower edge.

The several factors described above combine to open each of the pouches **71** of the web **9,** and to maintain them in open position as the web **9** circles the wheel **95.**

As best seen in FIG. **3,** the carrier wheel **95** has a plurality of land members **100** equally spaced around the periphery thereof, each of which engages a vertical seal separating two of the pouches **71.** The lands **100** are each pivotally mounted on the wheel **95** by means of brackets **104,** each of which mounts a shaft **102** on which a land **100** is supported. The attitude of the lands **100** therefore influences the attitude of the pouches **71.** As described above, downstream from the roller **68,** where the lands **100** first engage the web **9,** that attitude is such that the lower edge of the web occupies a radially outer position. This condition of the lands **100** is assured by a cam **98** mounted on the surface of the table **24,** and which maintains the position of follower rollers **96,** which are disposed on the inner ends of the arms **94.** The lands **100,** the arms **94,** and the cam fol-

lower rollers **96** together form rocker assemblies which cooperate with the cam **98** to rock the pouches **71** following the filling operation, as described hereinafter.

After the pouches **71** rotate with the wheel **95** for about **60°**from the place where the web first engages the lands **100,** during which filling tubes are lowered into the pouches, the pouches **71** begin to be filled, and the filling operation continues for approximately 90° of the rotation of the wheel **95.** Thereafter about 30° of rotation of the wheel **95** is provided for removing the filling tubes from the pouches. The area where filling takes place is indicated in FIG. **3** by the ovals **154,** shown in dashed lines, which describe the positions taken by filling tubes during the filling operation.

Subsequently, the pouches **71** are caused to be rocked or shifted in a way which encourages the product deposited in a pouch to shift and settle in the pouch so as to form a compact mass at the bottom portion of the pouch. To this end, as the web **9** reaches a point approximately 180° from the position of the roller **68,** the upper portion of the web is forced outwardly, and the lower portion of the web is drawn inwardly, by action of the rocker assemblies. The change in altitude of a filled pouch is best illustrated in FIG. **6,** where the pouch **71** is shown in full line in the attitude assumed as it is filled. During the rocking operation, however, it is caused to assume a different attitude, as illustrated in phantom, in which the lower portion of the pouch **71** is drawn inwardly and the upper portion is forced outwardly relative to the wheel **70.** This causes the upper edge of the web, with the open side of the pouches, to be placed under tension, and releases the tension from the lower edge of the web, allowing the lower portions of pouches **71** to bulge in the same manner as its upper portion was caused to bulge during filling. The bulging of the lower portion of the pouch permits the product to move downwardly in the pouch, and the two illustrations of FIG. **6** show that the center of gravity of the pouch is lowered when the pouch has been rocked to the attitude shown in phantom.

The change in attitude of the pouches is filled by camming the arm **94** inwardly and outwardly relative to the carrier wheel **95,** via the follower roller **96.**

The construction of the wheel **95** is best illustrated in FIG. **2.** A bearing assembly **106** is supported on the surface of the table **24** and supports a shaft **108** which is driven from below (by means not shown). The wheel **95** is attached to a central hub **110,** and the hub is secured to the upper end of the shaft **108.** The bottom surface of the wheel **95** is provided with a plurality of grooves **112** which are provided for the various vacuum nozzles **92.** Each of the grooves **112** communicates with an individual nozzle **92,** and leads inwardly therefrom terminating at a position spaced outward slightly from the hub **110.** A cover plate **114,** secured to the bottom of the wheel **95,** encloses the bottom surface of the grooves **112,** except for a plurality of apertures **116,** located adjacent the radially inner end of each of the grooves **112.** The cover **114** is supported by a wear plate **118** and the wear plate, the cover **114** and the wheel **95** are secured together by means of screws **120.** The wear plate **118** has a plurality of apertures aligned with the apertures **116,** and is supported on a bearing surface **122** which is supported on the surface of the table **24** by a tubular support **124.** The bearing surface **122** is provided with a groove **126** in its upper surface which extends in a circular arc in alignment with some of the apertures **116.** The groove **126** is connected, by means of a bore **128,** to a tube **130** which is connected to a partial vacuum, having a pressure less than atmospheric pressure, so that the vacuum nozzles **92** are connected with the vacuum whenever their apertures **116** are aligned with the groove **126.** The arcuate length of the groove **126** extends through an angle, relative to the shaft **108,** and determines when the nozzles **92** are each connected to the vacuum and when they become disconnected therefrom, as the wheel **95** rotates. The groove **126** is positioned so that the nozzles become connected to the vacuum at about a time they first engage with the inner side of the folded web **9,** and are disconnected from the vacuum at about a time that the filled packets leave the wheel **95** on their way to the station **72.**

Referring to FIG. **7** the shape of the cam **98** is illustrated. It is seen to be generally circular in form, but with two flattened portions **132** and **134** adjacent the places where it is desired to rock the contents of the pouches **71.** A camming plate **136** in the form of an L-shaped bar is bolted to the surface of the table **24** adjacent the flattened surface **132,** and a similar camming plate **138** is bolted to the surface of the table **24** adjacent the flattened portion **134.** The camming plates **136** and **138** function to cam the rollers **96** inwardly so as to rock the bands **100** as shown at the right side of FIG. **2,** as the pouches pass the locations of the plates **136** and **138.** As illustrated in FIG. **7,** this occurs twice for each pouch, during its travel around the wheel **95.** Between the two plates **136** and **138** is a location where the circular outer surface of the cam **98** is resumed, which causes tension to be restored to the bottom edge of the web and released from the upper edge of the web, causing the filled pouch to again slacken at the top. By means of the successive slackening of the upper and lower portions of the pouches, the product placed into the pouches is shifted downwardly therein and forms a compact mass within the lower portion of each pouch.

When the product deposited into the pouches is very light and powdery, it may be preferable to avoid abrupt transitions between the circular and flat surfaces of the cam **98,** to reduce puffing of the product out of the pouch. This is accomplished by modifying the shape of the cam **98** to include gradual transitions indicated by the dashed lines **99.**

According to important features of the method, the lands are gradually pivoted or rotated outwardly to increase the tension at the top of the pouch. By eliminating the tension at the top of the pouch, the tendency for the pouch to close with a "snap" is minimized, thereby reducing puffing of the product out of the pouch.

The cam **98** is supported by means of spacers **140** on the surface of the table **24** and bolts **142** pass through the cam **98** and spacers **140** to hold the same in fixed relation with the table **24.**

Referring again to FIG. **2,** it is seen that a filling wheel **144** is supported above the upper end of the shaft **108,** on a second shaft **146,** which is supported at its upper end on a bracket assembly **148** secured above the surface of the table **24** by means of three upstanding posts **150** (FIG. **1**), and at its lower end by a bearing assembly **149** bolted to the shaft **146** by a bolt **147,** and rotatable in a recess disposed in the upper end of the hub **110.** The shaft **146** is disposed at an angle relative to the shaft **108** to facilitate filling of the pouches by

gravity in a manner which will be described. The filling wheel **144** is supported by a bearing assembly including bearings **143** and **145** mounted on the shaft **146** at the upper and lower ends of a hub **151** bolted to the wheel **144,** and rotated indirectly by the shaft **108,** by means of a universal joint comprising a pair of rollers **146'** secured to a bracket **153** attached to the bottom of the wheel **144,** the rollers **146'** being engaged in notches **152** within the upper portion of the hub **110.** As the shaft **108** rotates the sides of the notches **152** bear against the rollers **146',** imparting angular momentum to the wheel **144,** and the rollers **146'** slide up and down in the notches **152** as required to account for the difference in the axis of rotation of the shaft **108** and the shaft **146.** One portion of the filling wheel **144** is spaced closest to the carrier wheel **95,** and it is at this portion that the filling tubes **154** enter the pouches to deposit the product thereinto.

A plurality of the filling tubes **154** are disposed at spaced locations around the filling wheel **144** and each communicates at its upper end with the interior of a funnel **156** which opens at the upper surface **158** of the filling wheel **144.** A rim **160** surrounds the upper surface **158** so that the product which is deposited onto the surface **158** is constrained to remain within the rim **160** until eventually it enters one of the funnels **156** and falls through one of the tubes **154** into a pouch.

As best shown in FIG. **1** a filling funnel **162** is disposed above the wheel **144** and product material loaded into the funnel **162** is deposited at a uniform rate on the upper surface **158** of the wheel **144.** As the wheel **144** rotates a scraper blade **164** scrapes the material deposited by the funnel **162** into one or more of the funnels **156,** and by the time the wheel **144** has rotated to bring the product material to the end of the scraper blade **164,** all of it has fallen into the funnels **156.** Because of the uniform rate of depositing the material by means of a funnel **162,** and the uniform angular velocity of the wheel **144,** each of the funnels **156** receives an identical quantity of material, and this quantity is precisely the quantity desired to be inserted into the open pouches in the filling process. A hook (not shown) overlies the wheel **144,** except above the funnel **162,** to protect the upper surface **158** from drafts and the like. The position of the hood is indicated in FIG. **1** by the dashed lines **163.**

Referring again to FIG. **2,** it is seen that the lower side of the wheel **144,** which is shown on the left side of FIG. **2** is sufficiently low as to cause the filling tubes **154** to enter into the upper portion of the pouches **71,** while the filling tubes **154** are withdrawn from the pouches as they rotate toward the right side of FIG. **2.** The location of the funnel **162** and the scraper blade **164** is such that the material to be deposited in the pouches enters the tubes **154** while they are inserted within the pouches. Each of the tubes **154** is, therefore, in operative engagement with the open upper side of a pouch only during the filling process, and are automatically withdrawn therefrom by the rotation of the wheel **144.**

A bellows arrangement **166** is connected at its lower end to the upper surface of the wheel **95** and its upper end to the lower surface of the wheel **144,** and also to protect the universal joint and bearing arrangement from dust.

Shown in FIG. **3** is a vibrator V. The inclusion of the vibrator is optional. With certain types of material or product, it is envisioned that it would be helpful to use the vibrator for the purpose of enabling the product to be more totally redistributed to the bottom of each pouch.

From the foregoing, it can be seen that the present invention is effective to quickly and positively open each of the pouches, and to settle the product deposited therein as much as possible, to make a compact package. The entire process is carried out continuously with the web **9** moving at constant speed, and there is no need for indexing or other intermittent motion of the apparatus. The filling process is also continuous, with the steps of opening the pouches, inserting the filling tubes, filling the pouches, removing the tubes, rocking the pouches, and sealing the open ends thereof being carried out without hesitation or interruption.

What is claimed is:

1. A method of forming and filling pouches, comprising the steps of:
- forming a continuous train of pouches from a strip of web material, each of said pouches having an upwardly open side adjacent an upper edge of said web,
- filling each of said pouches with a predetermined quantity of a product,
- placing the upper edge of said web under tension and relieving the lower edge of said web from tension to settle said product within each of said pouches, and
- sealing the open side of each said pouch to form a filled and sealed package.

2. The method according to claim **1,** wherein said settling step comprises causing said web to traverse an arc with the path of said upper edge having a larger radius of curvature than said lower edge.

3. The method according to claim **1,** wherein said settling step comprises the steps of alternately and repeatedly placing said upper edge and said lower edge under tension.

4. The method according to claim **1** where said upper edge is gradually tensioned to gradually close the open side of each of said pouches.

5. In a packaging machine for forming and filling pouches including:
- means for forming a continuous train of pouches from a supply of web material, said pouches each having an upwardly opening side adjacent the upper edge of said web,
- means for opening the upper side of each said pouch,
- means for filling each said pouch with a predetermined quantity of product, and
- means for sealing the upper edge of said web to produce filled and sealed packages, the improvement comprising:
- means for placing the upper edge of said web under tnesion and relieving the lower edge of said tension after filling, thereby modifying the shape of said pouches after filling to settle the product therein.

6. Apparatus according to claim **5,** including means for alternately and repeatedly placing said upper edge and said lower edge under tension.

7. In a packaging machine for forming and filling pouches including:
- means for forming a continuous train of pouches from a supply of web material, said pouches each

having an upwardly opening side adjacent the upper edge of said web,

means for opening the upper side of each said pouch,

means for filling each said pouch with a predetermined quantity of product, and

means for sealing the upper edge of said web to produce filled and sealed packages, the improvement comprising:

said filling means including a carrier wheel having a plurality of land members projecting radially from said carrier wheel and adapted to engage areas of said web between adjacent pouches during the filling of each said pouch,

means for rotating said carrier wheel, and

means for varying the attitude of said land members as said carrier wheel is rotated to modify the shape of said pouches after filling to settle the product therein.

8. Apparatus according to claim **7,** including cam means mounted in fixed relation to the axis of said carrier wheel, cam follower means connected to each of said land members and means for mounting said land members on said carrier wheel whereby the attitude of said land members is controlled by said cam means as said carrier wheel is rotated.

9. Apparatus according to claim **8,** wherein said cam means has a cam surface engaged by said cam follower, said surface being shaped to gradually change the attitude of said land members to gradually increase the tension on the upper edge of said web to gradually close said upper side of said pouch.

10. In apparatus for filling pouches formed as a continuous train from a strip of web material, said apparatus including a carrier wheel about which said strip passes during filling, the improvement comprising:

a plurality of generally vertical lands movably mounted in spaced relation around said wheel, said lands being engageable by said strip with said pouches located between adjacent lands,

and means for shifting the attitude of said lands between a first upwardly radially inwardly-inclined position and a second upwardly radially outwardly-inclined position.

11. Apparatus as in claim **10** further comprising:

means pivotally mounting each land to said wheel,

a cam disposed adjacent said wheel,

and a cam follower interconnecting each land and said cam to rock each said land between said positions.

12. Apparatus as in claim **10** further comprising:

means for filling said pouches with a product when said lands are in said first position,

said lands thereafter moving to said second position to reduce the tension on the bottom of each pouch, thereby causing said product to shift to the bottom of said pouch.

13. A method of forming and filling pouches, comprising the steps of:

forming a continuous train of pouches from a strip of web material, each of said pouches being defined by spaced transverse seals and having an upwardly open side adjacent an upper edge of said web,

reducing the distance between the upper ends of adjacent transverse seals to open said pouches,

filling each of said pouches with a predetermined quantity of a product,

thereafter increasing the distance between upper ends of adjacent transverse seals while reducing the distance between lower ends of adjacent transverse seals to settle said product within each of said pouches, and

sealing the open side of each said pouch to form a filled and sealed package.

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