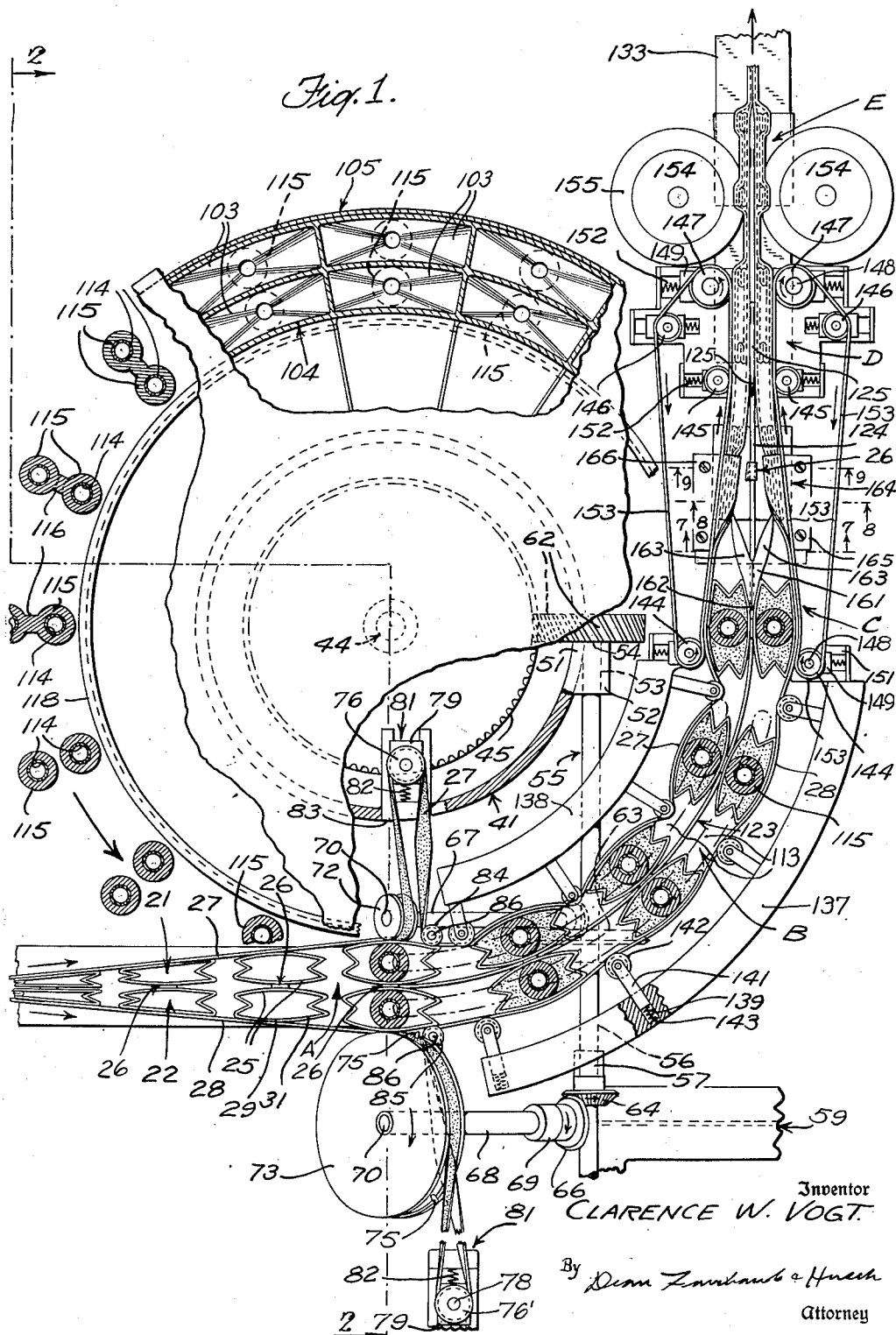


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3 Sheets-Sheet 1

Filed Nov. 18, 1948



March 9, 1954

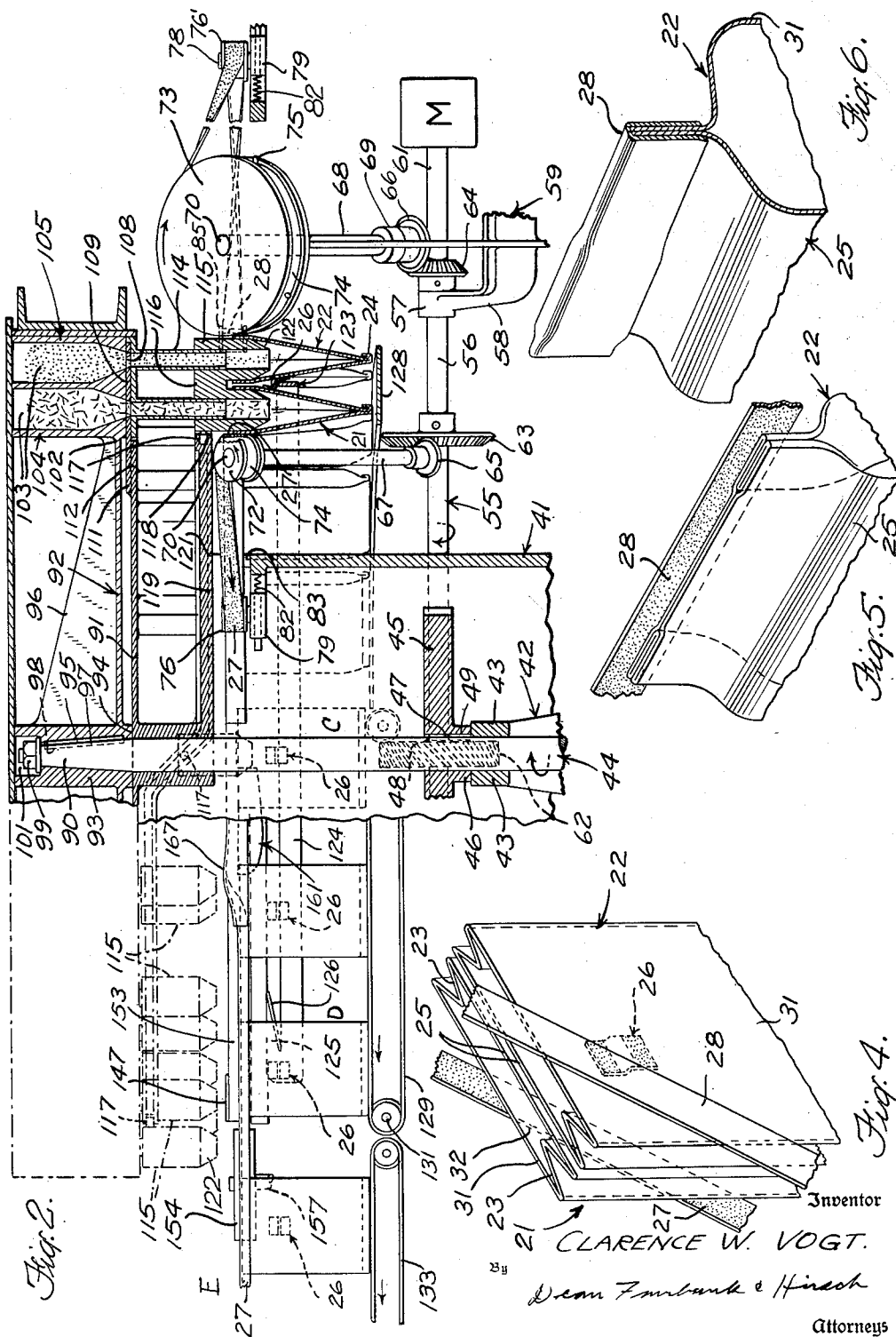
C. W. VOGT

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PAIRED BAG FILLING MACHINE

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3 Sheets-Sheet 2



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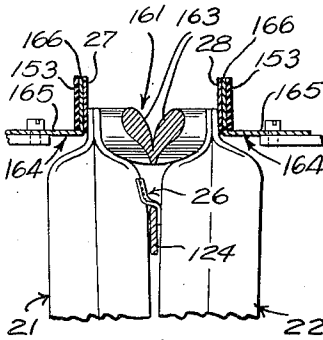
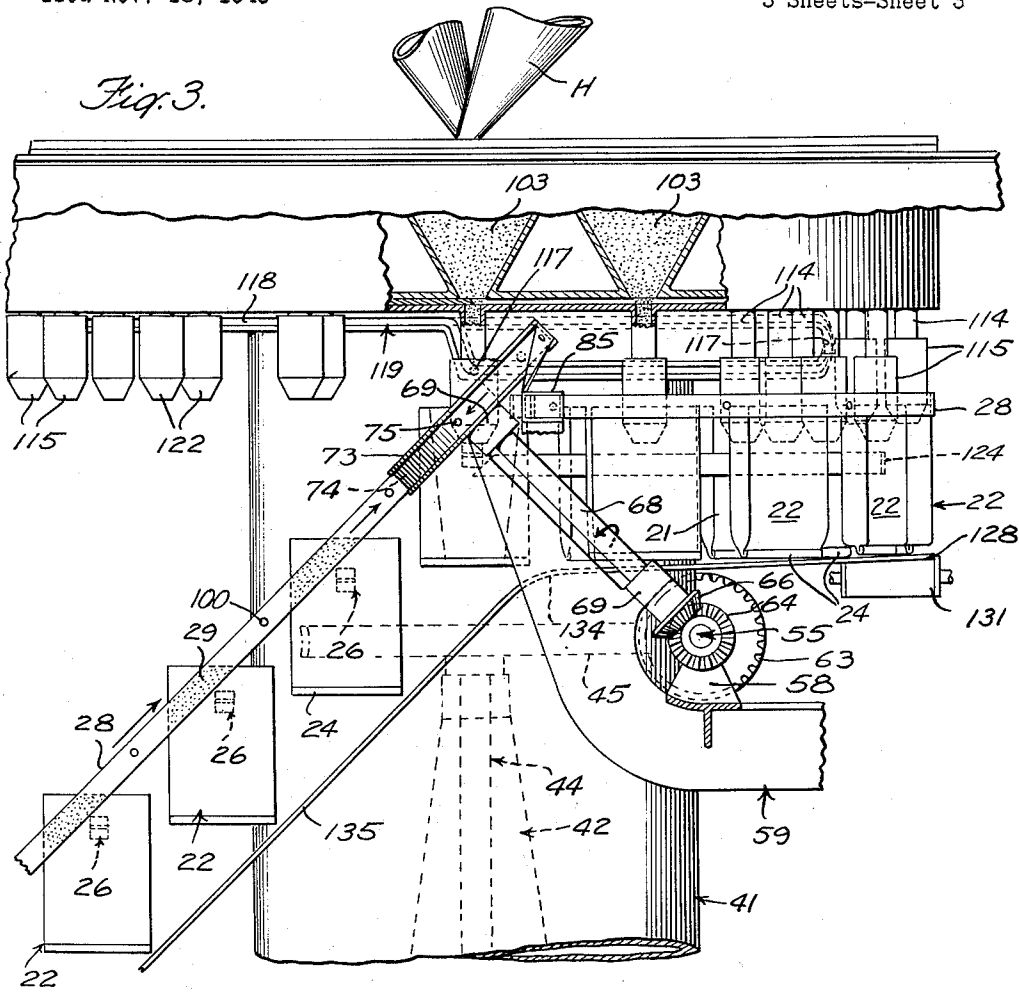
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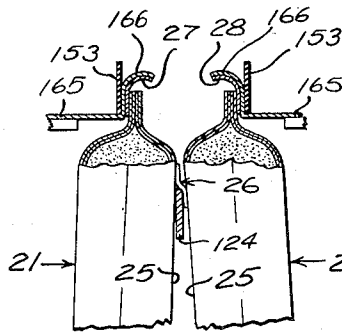
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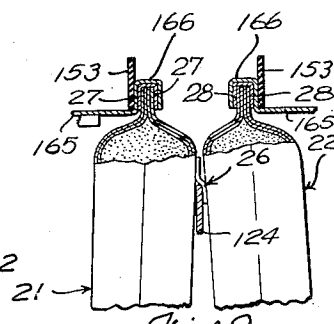
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*Fig. 7.*



*Fig. 8.*



*Fig. 9.*

Inventor  
CLARENCE W. VOGT.

By

Dean T. M. Bank & Hirsch

Attorneys

## UNITED STATES PATENT OFFICE

2,671,588

## PAIRED BAG FILLING MACHINE

Clarence W. Vogt, Norwalk, Conn.

Application November 18, 1948, Serial No. 60,694

13 Claims. (Cl. 226—51)

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This invention relates to apparatus for filling and closing bags, and more particularly of the end folded type, connected together in a chain of bag pairs by one or more flexible tapes extending at an angle to each of said bags substantially transversely across the mouths thereof.

Where bag chains of the above type are rolled, the overlapping double thickness bag ends will be superposed upon one side of the roll and the superposed tapes will be on the other side of the roll, and as the respective superposed portions will be substantially of the same thickness, a large quantity of bags may be collected on a single roll.

Unless such bag pairs can be filled with a measured quantity or weight of material, and the bags sealed to form airtight, moisture-proof and waterproof containers and the bags of each of said pairs separated from each other automatically, at a relatively high rate of speed and with a minimum of handling, the cost of packaging is often disproportionate with respect to the cost of the material being packaged.

It is accordingly among the objects of the invention to provide a bag filling machine which will utilize the connecting tapes on the outer faces respectively of a chain or series of bag pairs of the above type to advance said bags automatically from a source of supply therefor to the bag filling station of the machine without requiring manual manipulation of said bags.

Another object of the invention is to provide a machine in which bag pairs connected in a chain may be advanced through the machine, opened, filled with a measured quantity or weight of material, closed, the paired bags separated and sealed and thereupon delivered from the machine.

Another object of the invention is to provide a machine of the above type which will utilize a connecting tape joining the bags, for supporting such bags, for cooperating to open the mouths thereof to facilitate rapid filling, and for advancing the bags through the machine so that they may be filled, and the paired bags separated and thereupon sealed.

Another object of the invention is to provide a machine which will utilize the connecting tapes on the outer faces of a chain of bag pairs of the above type, which extend at an angle to the mouths of the bags, to advance said bags automatically, in upright position from a source of supply therefor, to the bag mouth opening station of the machine, and thereupon remove such tapes and apply them parallel to the mouths

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of the same bags or other bags of the series, and then utilize such tapes for advancing said bags through the machine so that they may be filled, the mouths of the filled bags closed, the paired bags separated and thereupon sealed.

Another object of the invention is to provide a machine of the above type which is fully automatic in operation, will operate at a relatively high speed, is compact and rugged in construction, functions with a minimum number of operating parts none of which is delicate or apt to become out of order, is capable of continuous operation for long periods without attention, and has its working parts readily accessible for maintenance and repair so that the cost of upkeep is low.

In a preferred embodiment herein chosen to illustrate my invention, a chain of bag pairs is provided, the respective pairs of bags being connected in series by two lengths of tape respectively affixed to each of the outer faces of each of the bags and extending at an angle to each of said bags substantially transversely across the mouths thereof, and a machine is provided with a plurality of operating stations which successively act upon the pairs of bags, to open the mouths thereof and thereupon to fill the bags, to close the mouths of the filled bags to separate the paired bags from each other, and thereupon to seal the bags and eject them from the machine.

Desirably means are provided to effect continuous movement of the chain of bag pairs past said operating stations, the operations performed at such stations including the stripping away of the connecting tapes which are at an angle to the mouths of the bags, the reapplication of the connecting tapes so that they extend parallel to the mouths of the bags, the charging of the latter with a predetermined amount or weight of material, the closing of the bag mouths, the separation of the paired bags, and the sealing of the closed mouths of the loaded bags.

The invention resides not only in the general assembly of parts, but also in the details of construction and operation of different sections or units which act in succession on the bags as they advance.

In the accompanying drawings there is shown only one of the various possible embodiments of the several features of the invention.

Fig. 1 is a fragmentary top plan view with parts broken away, of one form of apparatus embodying my invention.

Fig. 2 is a longitudinal sectional view with

parts broken away, and partly in cross-section, taken along line 2—2 of Fig. 1.

Fig. 3 is a fragmentary end elevational view of the machine with parts broken away and partly in cross-section.

Fig. 4 is a fragmentary perspective view on a larger scale, of a portion of the paired bag chain.

Fig. 5 is a view similar to Fig. 4, of a loaded bag showing the tape along the mouth thereof.

Fig. 6 is a view similar to Fig. 4, partly in cross-section, of a loaded bag that has been sealed, and

Figs. 7 to 9 are diagrammatic views illustrating three steps in the sealing of the mouths of a pair of loaded bags.

Although various types of cams, gears and sprocket wheels or other mechanism may be employed for operating the constituent elements of the machine in timed relation, and there are many possible ways of driving them from a motor, or other source of power, a particularly desirable arrangement is shown in the drawings, adapted for use with a chain of bag pairs.

As shown, the bags 21 and 22 have opposed inverted pleats 23 and the bottoms of the bags are closed by folding over the lower end portion 24. The adjacent panels 25 of each pair of juxtaposed bags 21, 22 near their upper open ends are adhesively secured together to form a bag pair, preferably by a reverse coated tab 26 shown and described in my copending application Serial No. 48,675, filed September 10, 1948, although other means such as a spot of adhesive material could be used.

Desirably the bag pairs are spaced apart and connected preferably by two parallel longitudinal tapes 27 and 28 which extend at an angle to each of the bags substantially across the mouths thereof and adhesively secured respectively as at 29 to the outer walls 31 of each of said bags.

Thus when the bag chain is rolled, the overlapping double thickness bag ends 24 will be superposed on one side of the roll, and the superposed tapes 27, 28 will be on the other side of the roll, and as the respective superposed portions will be substantially of the same thickness, a large quantity of bags may be collected on a single roll.

The bags may be of paper or similar material, in which case they are provided at their open ends with inwardly facing surfaces 32 formed of or coated with a sealing material which may be of non-tacky latex, which will seal upon closing of the mouth of the bag and the application of pressure thereto, or the facing surface may be in the form of strips of a heat and pressure responsive thermoplastic film extending along and around the inner surfaces of each bag at the mouth thereof, so that when heat and pressure are applied, the mouth of the bag will be closed and sealed.

It is to be noted that the making of the entire bag of non-porous material is preferred where the bags are to be filled with material which must be kept free from dirt, dust or moisture.

There are many types of materials that could be used for the tapes 27 and 28 which join the bag pairs 21 and 22 respectively. Thus, for example, if the bags as well as tapes are of paper, a coating of non-tacky latex could be applied to each which would only adhere when in contact, or if a thermoplastic bag was used, the tape could be of the type known as "Scotch tape," which could readily be applied to the bag.

Preferably, as illustratively shown herein, the tapes are of thermoplastic coated paper of the type put out by the Nashua Gummed and Coated Paper Company under the trade-marks "Thermo-Kote" or "Thermo-Stix," which tapes are actuated by heat and applied under pressure.

The machine comprises a frame having a vertical central housing 41 substantially cylindrical in shape, as shown in Figs. 1, 2 and 3. Rising vertically in the center of said housing is a hollow standard 42 having a bearing 43 at the upper end thereof through which extends a vertical shaft 44, rotatably mounted in said standard. A horizontal worm gear 45 is positioned on said shaft immediately above said bearing 43 with the hub 46 of said gear 45 resting on the upper surface of bearing 43, said gear 45 being secured to shaft 44 by means of key 47 positioned in keyways 48, 49 on shaft 44 and gear 45 respectively.

Housing 41 has an opening 51 in the rear wall thereof substantially transversely aligned with horizontal gear 45 and a horizontal boss 52 is provided on one side of said opening, said boss 52 having a transverse bore 53 therethrough. Extending at one end as at 54, through said bore 53, is a horizontal drive shaft 55, supported near its other end 56 and extending through a bearing 57 on upright arm 58 rigid with a bracket 59 affixed to the frame, the shaft 55 being driven by means of a motor M operatively connected to the end 61 of shaft 55 extending through bearing 57.

Affixed at the end 54 of shaft 55 extending through bore 53 is a vertical spiral gear 62, the periphery of which extends through opening 51 in housing 41 and meshes with horizontal worm gear 45 to drive the latter. Also affixed on drive shaft 55 are spaced vertical worm gears 63 and 64 which mesh with associated worm gears 65 and 66 affixed respectively at the ends of inclined hollow shafts 67 and 68 tilted toward the front of the machine and rotatively supported near their respective ends in bearings 69 rigid with bracket 59, said shafts each having a heating element 70 positioned in the bores thereof.

The upper ends of each of said shafts 67, 68 which protrude beyond the uppermost bearings 69, has a wheel 72 and 73 preferably of heat conducting material affixed thereon respectively. Each of said wheels has an annular groove 74 in the periphery thereof, and a plurality of equally spaced radially extending indexing pins 75 are positioned in the groove 74 in wheel 73 for the purpose hereinafter set forth.

As it is desired that the peripheral distance traveled by wheels 72 and 73, which are of different size, be the same with each rotation of main drive shaft 55, the ratio of gear 63 to gear 65 which drives the smaller wheel 72 is greater than the ratio of gear 64 to gear 66 which drives the larger wheel 73.

Associated with each of said wheels 72 and 73 respectively are horizontal take-up wheels 76, 76', each having a groove in the periphery thereof and rotatably mounted on a vertical stud 78 affixed to a slide 79 movable in a transverse track 81, said slide being normally urged away from its associated wheel 72, 73 by a coil spring 82 positioned between the end of the track and the slide.

As shown in Fig. 2, track 81 associated with wheel 73 is affixed to the frame at the right side thereof, and track 81 associated with wheel 72 is rigid with the wall of housing 41, extending

laterally therein, the housing 41 having an opening 83 therein, transversely aligned with take-up wheel 76.

Also associated with wheels 72, 73, and positioned adjacent the latter, are horizontal wheels 84 and 85 respectively, acting on the tapes 27 and 28 in the manner hereinafter set forth, transversely aligned with take-up wheels 76, 76' respectively, and rotatably mounted on vertical stud shafts 86 affixed to the frame.

Rigidly affixed to the frame over housing 41 is a fixed horizontal circular plate 91 through which protrudes the upper portion 90 of shaft 44. A rotatable horizontal circular table 92 is provided having an upstanding hollow hub 93, the lower end 94 of which rests on plate 91 with the upper end 90 of shaft 44 extending through the bore 95 of said hub. Table 92 is provided with radially extending strengthening ribs 96 and is secured to shaft 44 by means of keys 97 rigid with the inner wall of bore 95 of the hub and which extend laterally inward into keyway 98 of shaft 44. A nut 99 threaded on the upper end 90 of shaft 44 in a cavity 101 in hub 93 prevents vertical displacement of the table.

Positioned on the rim 102 of table 92 and extending laterally outward therefrom are a plurality of upstanding measuring pockets 103. The pockets desirably form two coaxial rings 104 and 105 preferably integrally connected, girdling the rim 102 of the table 92 with adjacent pairs of pockets of rings 104 and 105 having their open bottom mouths 108 extending below the lower face of the table 92.

As shown in Fig. 2, an annular transverse slot 109 is provided in the bottom of the rings, extending outwardly from the rim 102 of the table 92 and beneath the latter, and in which is positioned an annular ring member 111 affixed at its inner periphery to the rim 112 of the fixed plate 91. Ring member 111 has a pair of parallel arcuate slots 113 therein extending substantially from midway between wheels 72 and 73 in a counterclockwise direction for a distance of approximately 90°, which slots may be aligned respectively with the opened bottom mouths 108 of the measuring pockets of rings 104 and 105, and which comprise the bag filling station B.

The bottom portion of each of the rings 104, 105 beneath transverse slot 109 has a plurality of downwardly extending nozzles 114 rigid therewith and aligned respectively with the bottom mouths 108 of the measuring pockets 103. Each nozzle 114 has a sleeve 115 slidably mounted thereon and the associated pairs of sleeves are connected together as at 116. One of the sleeves of each of said pairs, illustratively the sleeves on the inner ring 104 as shown in Fig. 2, has a lateral pin 117 at one side, operating in a groove 118 in the periphery of a stationary annular band or cam 119. This cam 119 is positioned beneath plate 91 and rigidly supported on the upper rim 121 of housing 41, being affixed thereto as by welding. The groove 118 along almost its entire length is in a single horizontal plane so that sleeves 115 will remain in their raised position. For a short distance along the length of the groove, desirably substantially 90° and substantially aligned with arcuate slots 113, the groove makes a sharp dip so as to lower the sleeves 115. Preferably the sleeves at their lower ends have their outer surfaces tapered as at 122, so as to guide them into the bags to be filled in the manner hereinafter described.

Mounted on the frame of the machine midway between the rings 104 and 105 of measuring

pockets 103 is a curved track or rail 123. One end of the track 123 is positioned midway between wheels 72 and 73 so as to be aligned with the connection 26 joining the inner faces of the bag pairs, the track thereupon following the curvature of the ring of measuring pockets midway therebetween, for a distance of approximately 90° in a counterclockwise direction as shown in Fig. 1, at which time it extends in a straight line as at 124 to the bag pair separating station D at the other end of the track.

The separating station D comprises a knife blade 125 longitudinally aligned with the straight portion 124 of the track 123, rigidly affixed at the end thereof in the same plane therewith and extending above the latter as shown in Fig. 2. The blade 125 has an inclined cutting edge 126 against which the connected portion 26 of the bag pairs will abut when the bag pairs are moved thereagainst to be separated as hereinafter described.

Positioned beneath the track 123 and spaced therefrom a distance substantially equal to the length of the upright bags 21, 22, is a table 128 desirably of sheet metal or other rigid material affixed to the frame. The table 128 substantially follows the curved portion of track 123 in a counterclockwise direction to the bag mouth closing station C, at which point a horizontal conveyor belt 129 is provided, rotatably mounted on rollers 131 which are driven by suitable mechanism (not shown). The conveyor 129 extends beneath the straight portion 124 of track 123 and is longitudinally aligned at its discharge end with a discharge conveyor 133. The front end 134 of the table 128 which is positioned between wheels 72 and 73 has preferably integral therewith a downwardly inclined table 135 which extends forwardly of the machine, this table serving as a support for the chained bags as they are fed into the machine.

Also mounted on the frame on each side of the curved portion of the track 123 are arcuate brackets 137 and 138. Each of said brackets has a plurality of lateral bores 139 therein in which is slidably positioned a plunger 141 having a horizontal roller 142 rotatably mounted at the outer end thereof and normally urged toward said curved track by a coil spring 143 positioned in said bore against the end thereof and the end of said plunger. Suitable means (not shown) are provided to retain plungers 141 in their respective bores.

The bag mouth closing station C comprises two sets of rollers, each illustratively having four horizontal rollers designated 144, 145, 146 and 147, the sets being respectively positioned on each side of the straight portion 124 of the track 123. As shown in Fig. 1, each of the rollers is rotatably mounted on an upstanding stud 148 affixed in a slide 149 movable in a track 151 rigid with the frame and extending transversely of the straight portion 124. By means of suitable means such as coil springs 152 positioned between the end of the track and the associated slide, rollers 144, 145, and 147 are normally urged toward the track, and roller 146 is urged away from the track. Each set of rollers has an endless belt 153 therearound, and one of the rollers, i. e., illustratively roller 147, is driven by a suitable transmission (not shown).

Means are provided to bring the mouth walls of the paired bags toward each other respectively and to fold the tapes 27, 28 affixed to each of the bags respectively over said bag mouths.

These means desirably comprise a substantially plow shaped wedge 161 positioned over the straight portion 124 of track 123 and rigid with the frame, the leading edge 162 of said wedge being aligned with said straight portion 124 of the track 123 and in the path of movement of the portion of said bags above connector piece 26.

As shown in Fig. 1, the side walls 163 of the wedge member 161 taper outwardly away from track 123 toward the leading edge of tape folding members 164. These members, which are desirably heated by any suitable means (not shown) are positioned respectively on each side of the straight portion 124 of the track 123. Each member comprises a horizontal base 165 affixed to the frame, having an upstanding wall 166 on the inner edge thereof with the belt 153 being positioned on the outer face of said wall 166. The leading edge of wall 166 is vertical, as is clearly shown in Fig. 7, and the wall thereupon gradually bends inwardly toward the track as shown in Fig. 8 until, as shown in Fig. 9, the wall 166 is reversely bent over the bag mouth.

Positioned adjacent rollers 147 at the discharge end of the machine is the bag mouth sealing station E, which comprises a pair of rollers 154 each desirably having a layer 155 of soft rubber on the periphery thereof, with such peripheries in relatively close proximity, and heated in any suitable manner, said rollers 154 being driven by a suitable transmission (not shown) through vertical shafts 157 connected thereto respectively.

#### Operation

The operator when setting up the machine for operation unrolls a length of the chain of bags from the roll (not shown). Desirably the portion of the tapes 27, 28 at the beginning of the chain has no bags affixed thereto. The tape 28 is positioned in the groove 74 in wheel 73 with indexing pin 75 in an opening 100 in the tape, and tape 27 is positioned in the groove 74 in wheel 72. The portions of the tapes 27, 28 which have no bags thereon are thereupon twisted and passed around wheels 76, 76', respectively, with the tacky portion of the tapes facing outwardly, and then passed around wheels 84 and 85 respectively so that the tacky portions of the tapes face each other.

The tapes are then passed between rollers 142 at the ends of plungers 141, between the two sets of rollers on each side of the straight portion 124 of the track and then between rollers 154, the peripheries of which are adjacent each other and hence will grip the tapes therebetween.

With the measuring pockets 103 filled with material through hoppers H positioned thereabove, motor M, which will rotate continuously, is thereupon turned on to begin the automatic operation of the machine, which is as follows:

Rotation of motor M and shaft 55 driven thereby in a clockwise direction as shown in Fig. 3, will rotate bevel gears 63 and 64 in a clockwise direction to drive meshed beveled gears 65 and 66, shafts 67, 68, and wheels 72, 73 thereon respectively in a counterclockwise and clockwise direction. At the same time as motor M rotates, rollers 154 will be pulling on the tapes therebetween, the indexing pins 75 in the openings 100 in tape 28 in the space between the bags insuring proper indexing of the latter as they are pulled off the roll (not shown) at an angle of approximately 45° to the bag mouth opening station A.

It is to be noted that with an indexing pin 75

in an opening 100 in the tape 28, the mouths of a pair of bags 21, 22 at station A will be directly below the sleeves 115 of a pair of associated measuring pockets 103, and by reason of the fact that the tapes are pulled apart and spaced from each other when positioned around wheels 72 and 73, the mouths of the paired bags will be pulled open so that as the bags are lifted the mouths thereof will respectively straddle the sleeves 115, the tapering ends 122 thereof aiding in the positioning of the bag mouths thereover.

With bags 21 and 22 at station A, the heated wheels 72 and 73 will actuate the thermoplastic spot seal 29 joining the bags to the tapes 27 and 28 respectively to render such seal tacky. At the same time as the wheels 72, 73 rotate, spiral gear 62 on shaft 55 which meshes with gear 45 on shaft 44 will rotate the latter and table 92 thereon in a counterclockwise direction as shown in Fig. 1, so that the measuring pockets 103 and associated nozzles and sleeves will move from station A to the filling station B.

As the sleeves are inside the bags, as they move in a counterclockwise direction they will move a pair of bags from station A to station B. During the course of such movement they will pull on the bags at the reactivated and tacky spot seal 29. Inasmuch as at the same time the tapes 22 and 28 are being pulled away from the bags which are held in place by the sleeve by reason of the arrangement of wheels 72, 73, 76, and 76', the tapes will be peeled from the bags as they are slid onto the track 123 which is positioned under the connector 26 joining the opposed inner walls 25 of the bags with the bags straddling the track. During the course of the movement of such bags the bottoms thereof will be moved onto table 128 which supports the bags as shown in Fig. 3. At the same time the outer walls of the mouths of the bags which are moving in a horizontal plane, will be pressed against the activated tacky faces of the now horizontal portion of the tapes 27, 28, which by reason of the position of roller 84, 85, will press such tapes against the bag mouths and apply pressure thereto, so that the tapes will be securely affixed to such mouths parallel thereto, as shown in Fig. 5, with approximately one-half the width of the tape below the bag mouths and one-half above the bag mouths.

With the bags at station B, the open mouths 108 of the measuring pockets 103 of rings 104, 105, will be aligned respectively with the beginning of the pair of arcuate slots 113 in annular ring 111, thereby allowing the material in the pockets to flow into the bags. Continuous movement of the table 92 and the tapes 27, 28, advances the pair of bags through filling station B to the bag closing station C, to which position the arcuate slots 113 extend, thereby filling the paired bags.

As the paired bags move through the filling station B, the rollers 142 will press against the tapes 27 and 28, thereby to prevent the bag mouths from opening too much as the bags are being filled.

When the loaded bags leave the filling station B and enter the bag closing station C, the bottoms thereof ride off the end of the table 128 onto moving conveyor belt 129 which is moving in timed relation with table 92, and at the same time pin 117 rides up the inclined portion of cam 119 to withdraw the nozzles 115 from the bags.

Belts 153 around rollers 144, 145, 146 and 147,



are moved in timed relation with conveyor belt 129 and are aligned respectively with tapes 27 and 28. As the bags are moved through station C to the bag pair separating station D, the inner walls 25 of the mouths thereof will abut against the walls 163 of fixed wedge 161. Thus, as the bags advance, the mouths of the respective bags will be moved toward each other until, as shown in Fig. 7, they are pressed by said wall 163 against the vertical portion of wall 166 of the tape folding member 164. As the bags are advanced further, as shown in Fig. 8, the curved portion of the wall 166 will start to fold the tapes 27, 28 over the respective bag mouths until, as shown in Fig. 9, the tape will be completely folded over such mouths. As the tape folding members are desirably heated as heretofore described, the thermoplastic faces of the tapes will consequently be activated. Further movement of the paired bags will cause the inclined knife edge 126 to abut against the connector 26 and cut therethrough to separate the paired bags.

As the mouths of the bags are tightly compressed at such time between rollers 147 which are resiliently urged toward each other by tensed compression springs 152, the bags are retained in upright position, and as the closed mouths thereof pass between heated rollers 154 of the sealing station E, the tapes 27, 28, and the adhesive facing on the inner surface of the bag mouths will be heated and further activated so that the bag mouths become tightly sealed, as shown in Fig. 6.

As the bags are moved beyond roller 154 they will move onto discharge conveyor 133 from which they may readily be removed.

If desired, the bags on each tape 27, 28, may be separated or the bags may be packed in chains of any desired length.

It is also within the scope of this invention to dispense with the heating elements 70 and the heating of rollers 154 and tape folding members 164 entirely, and use self-stick material for the mouths of the bags and the tape. This self-stick material requires only pressure for sealing, and the tape thus coated also may readily be peeled off a correspondingly coated area on the bag in the same manner as previously described with respect to the activated thermoplastic tape.

The machine herein described can operate for many hours without supervision, at a relatively high rate of speed, requiring as it does, only an adequate supply of material and bags. As there are but relatively few operating parts, none of which is delicate or apt to become out of order, the possibility of breakdown is remote, thus increasing the efficiency and likewise the output of the machine.

As many changes could be made in the above construction, and many apparently widely different embodiments of the invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

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

1. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said machine having mounted thereon means for filling bags, means for engaging continuous tapes secured to the outer faces of the bag means and feeding the tapes and bags up-

wardly and at an angle to the vertical in the direction of the filling means, said engaging means including means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart, and means to move the bag means from the filling means.

2. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said machine having mounted thereon means for filling bags, means for engaging continuous tapes secured to the outer faces of the bag means and feeding the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means, said engaging means including means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart, means to remove the tapes from the bag means, means to reapply the tapes to the bag means, and means to move the bag means from the filling means.

3. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said machine having mounted thereon means for filling bags, means for engaging continuous tapes secured to the outer faces of the bag means and feeding the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means, said engaging means including means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart, means to move the bag means away from the filling means in a horizontal direction, means to remove the tapes from the bag means at the filling means, and means to reapply the tapes to the bag means with the tapes extending in a horizontal direction.

4. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said machine having mounted thereon means for filling bags, means for engaging continuous tapes secured to the outer faces of the bag means and feeding the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means, said engaging means including means to space the bag means beneath the filling means with the side of the bag means spaced apart, means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart, means to move the bag means away from the filling means in a horizontal direction, means to remove the tapes from the bag means at the filling means, means to reapply the tapes to the bag means with the tapes extending in a horizontal direction and extending above the tops of the bag means, and means to turn over the tapes to seal the tops of the bag means therewith.

5. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said machine having mounted thereon means for filling bags, means for engaging continuous tapes secured to the outer faces of the bag means and feeding the tapes and bags



upwardly and at an angle to the vertical in the direction of the filling means, said engaging means including means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart, means to move the bag means away from the filling means in a horizontal direction, means to remove the tapes from the bag means at the filling means, means to reapply the tapes to the bag means with the tapes extending in a horizontal direction and extending above the tops of the bag means, means to subject the tapes to continued pressure against the bags, and means to turn over the tapes to seal the tops of the bag means therewith.

6. A machine for filling prefabricated bag means connected together in a chain by a pair of the tapes one on each of the outer faces of said bag means, said mechanism comprising a rotatable table, means on the table to fill the bag means, means on opposite sides of the filling means for engaging the tapes, means to actuate the tape engaging means to feed the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to cause the filling means to introduce material into the bag means, and means to move the bag means with the rotatable table.

7. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer face of said bag means, said mechanism comprising a rotatable table, means on the table to fill the bag means, means on opposite sides of the filling means for engaging the tapes, means to actuate the tape engaging means to feed the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to remove the tapes from the bag means, means to reapply the tapes to the bag means in a horizontal position, means to cause the filling means to introduce material into the bag means, and means to move the bag means with the rotatable table.

8. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said mechanism comprising a rotatable table, means on the table to fill the bag means, means spaced on the inner and outer sides of the filling means for engaging the tapes, means to actuate the tape engaging means to feed the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to direct the tapes away from the tape engaging means and the bag means, means to reapply the tapes to the bag means in a horizontal position, means to cause the filling means to introduce material into the bag means, and means to move the bag means with the rotatable table.

9. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said mechanism comprising a rotatable table, means on the table to fill the bag means, means spaced radially inwardly and outwardly of the filling means for engaging the

tapes, means to actuate the tape engaging means to feed the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to direct the tapes away from the tape engaging means and the bag means, means to reapply the tapes to the bag means in a horizontal position, said last named means driving the tape from the radially outer tape engaging means at a greater speed than that of the tape from the radially inward tape engaging means, means to move the bag means with the rotatable table, and means to cause the filling means to introduce material into the bag means during travel of the latter with the table.

10. Mechanism for filling prefabricated bag means connected together in a chain by a pair of tapes one on each side of the outer faces of said bag means and lying at angles to the sides and ends of the bag means, said mechanism comprising a machine having a means thereon for filling bags, means spaced upon opposite sides of the filling means for engaging the tapes and advancing them with the bags upwardly and forwardly to the filling means with the sides of the bag means spaced apart beneath the filling means, means for driving the tape engaging means, and means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart.

11. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said mechanism comprising a rotatable table, means on the table to fill the bag means, rollers journaled on the inner and outer sides of the filling means for engaging the tapes and feeding the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means to space the bag means beneath the filling means with the sides of the bag means spaced apart, means to direct the tapes away from the rollers and bag means, means to reapply the tapes to the bag means in a horizontal position, means to cause the filling means to introduce material into the bag means, and means to move the bag means with the rotatable table.

12. Mechanism for filling prefabricated bag means connected together in a chain by a pair of tapes one on each side of the outer faces of said bag means and lying at angles to the sides and ends of the bag means, said mechanism comprising a machine having a means thereon for filling bags, rollers journaled on the inner and outer sides of the filling means for engaging the tapes and advancing them with the bags upwardly and forwardly to the filling means with the sides of the bag means spaced apart beneath the filling means, means for driving the tape engaging means, and means to cause the filling means to introduce material into the bag means while the sides of the bag means are spaced apart.

13. A machine for filling prefabricated bag means connected together in a chain by a pair of tapes one on each of the outer faces of said bag means, said machine having mounted thereon means for filling bags, means for engaging continuous tapes secured to the outer faces of the bag means and feeding the tapes and bags upwardly and at an angle to the vertical in the direction of the filling means, said engaging means including means to space the bag means beneath the filling means with the sides of the bag means spaced apart, and means to cause the filling means to introduce material into the bag

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means while the sides of the bag means are spaced apart.

CLARENCE W. VOGT.

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