

Jan. 18, 1944.

V. A. VON HAASE

2,339,304

SEALED BAG AND PROCESS FOR MAKING SAME

Filed Sept. 30, 1940

3 Sheets-Sheet 1

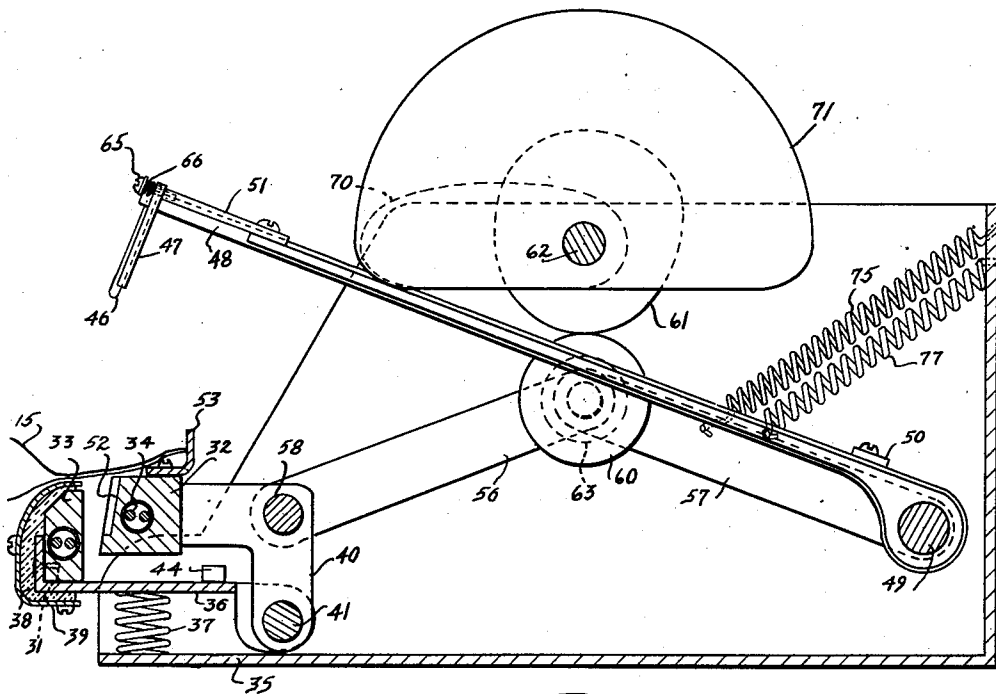


FIG. 1

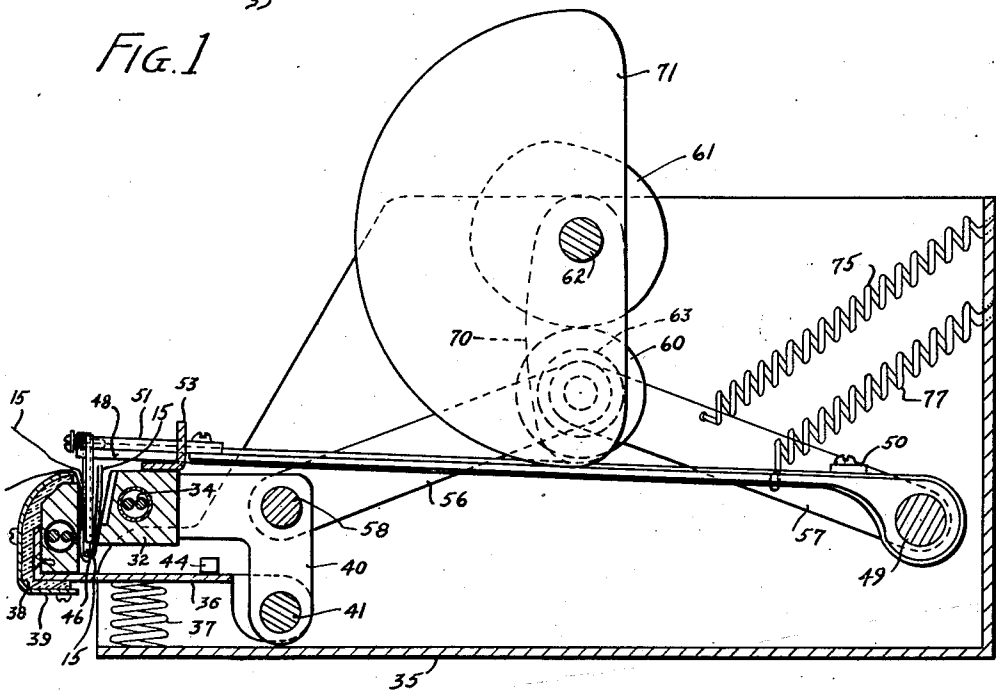


FIG. 2

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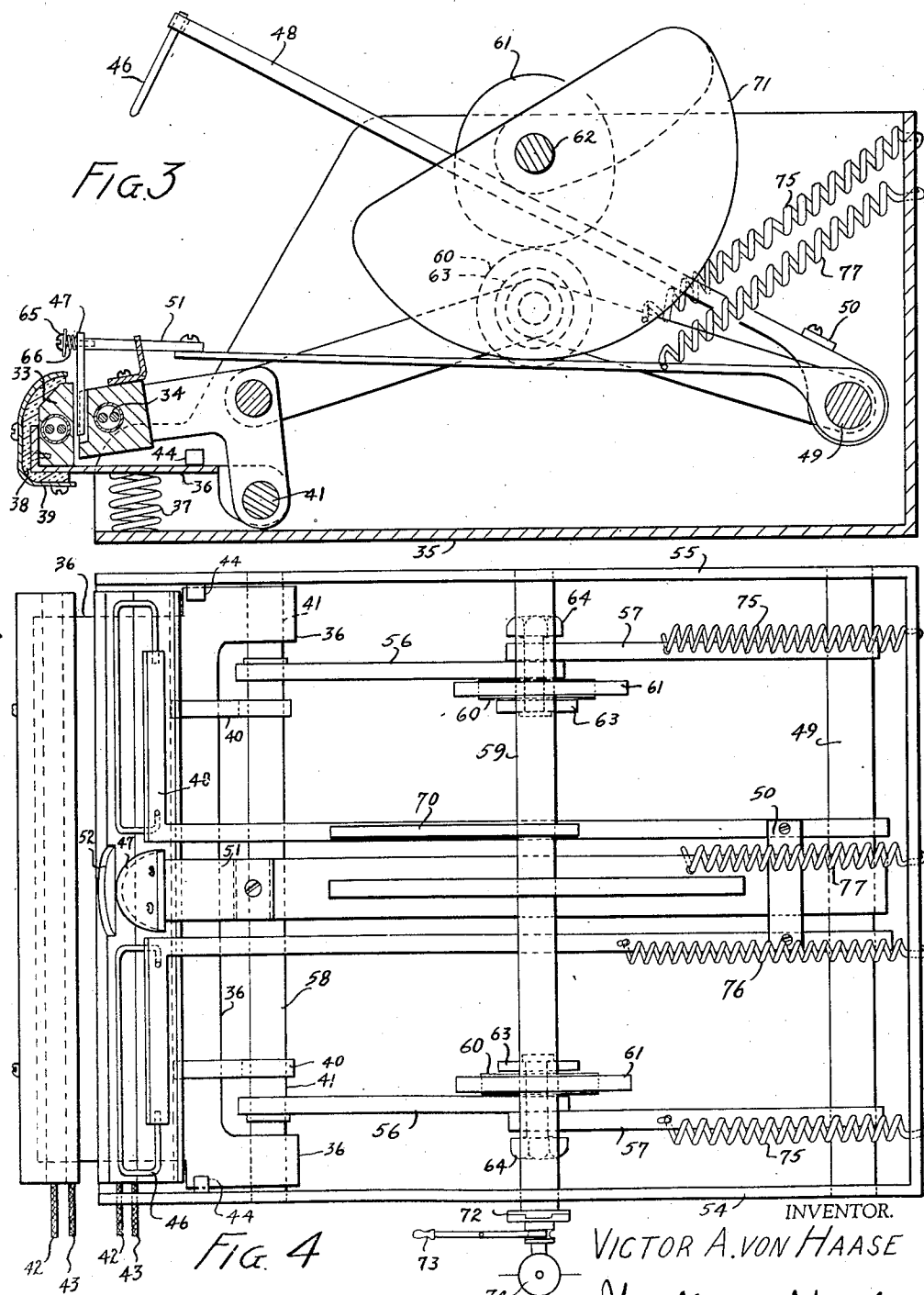
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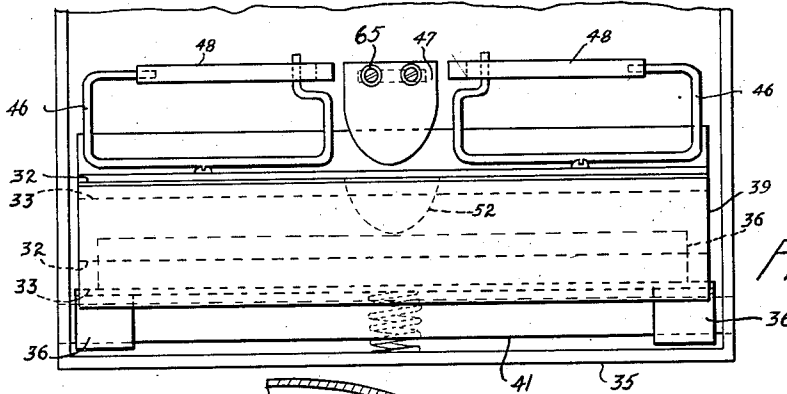


FIG. 5

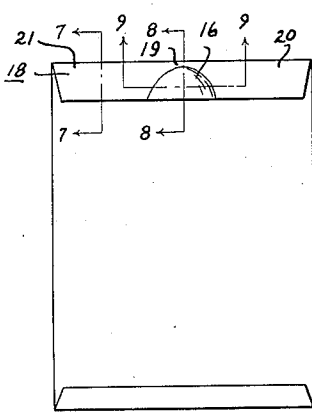


FIG. 6

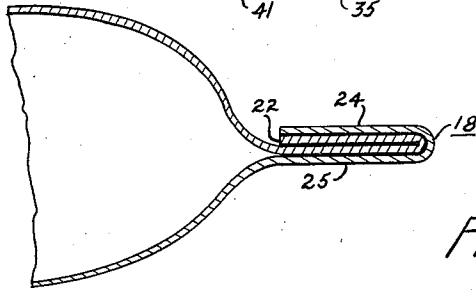


FIG. 7

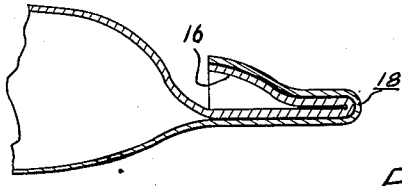


FIG. 8

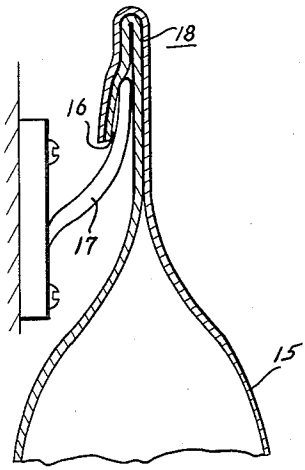


FIG. 10

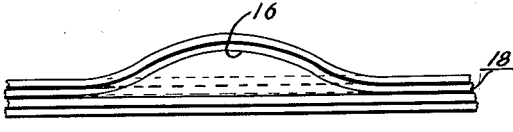


FIG. 9

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UNITED STATES PATENT OFFICE

2,339,304

SEALED BAG AND PROCESS FOR
MAKING SAME

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Application September 30, 1940, Serial No. 358,969

12 Claims. (Cl. 93—35)

My invention relates in general to sealed bags and more particularly to sealed bags having an external pocket and the method and means for sealing an end of a bag having the said external pocket.

The modern practice is to merchandise certain edible products in sealed transparent bags. In the stores, the sealed bags are displayed upon a suitable rack to attract the attention of customers. To facilitate the displaying of my bag upon a rack, I provide in one end of the bag an external pocket which constitutes a means whereby the bag may be easily hooked upon the rack.

An object of my invention is the provision of a bag having an external pocket provided in one end thereof.

Another object of my invention is the provision of a method and means for making a pocket in an end of the bag at the same time that the end of the bag is sealed.

Another object of my invention is to provide for making a pocket in the end of a bag by folding the end portion of the bag back upon itself and sealing the folded end portion of the bag with a certain portion unsealed to form the pocket.

Another object of my invention is the provision of forming an external pocket in a sealed end of a bag by folding the end portion of the bag back upon itself and then separating a portion of the folded material to form the pocket and sealing the remaining portion of the folded material about the separated material to support the pocket.

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

Figure 1 represents a side elevational and cross-sectional view of a device for sealing the end of a bag and making a pocket therein, said view being taken along the line I—I of Figure 4;

Figure 2 is a view similar to Figure 1, with the parts shown in a different operating position;

Figure 3 is a view similar to Figure 1, with the parts shown in a still different operating position;

Figure 4 is a plan view of the device;

Figure 5 is a front view of my device, with certain parts removed for the purpose of clarity;

Figure 6 is a front elevational view of a bag embodying the features of my invention;

Figure 7 is an enlarged cross-sectional view of the sealed end of the bag, taken along the line 7—7 of Figure 6;

Figure 8 is an enlarged cross-sectional view of

the sealed end of the bag, taken along the line 8—8 of Figure 6;

Figure 9 is an enlarged cross-sectional view of the sealed end of the bag, taken along the line 9—9 of Figure 6, and

Figure 10 is a view showing a bag embodying my invention as hung upon a hook of a rack.

With reference to Figures 6 to 10, inclusive, the reference character 15 represents generally a bag having a sealed end 18 with a pocket 16, whereby the bag may be suspended on a hook 17 of a suitable rack. As illustrated, the upper marginal edge of the sealed end 18 of the bag is sealed all the way across from one edge of the bag to the other. The upper marginal edge is represented by the reference character 19 and the seal provided thereby tightly encloses the contents within the bag. In making the sealed end 18 of the bag, the end portion of the bag is folded back upon itself, as shown for example in Figure 7, thereby making two inner thicknesses 22 and 23 and two outer thicknesses 24 and 25. The material from which the bag is made is of the kind in which a sealing action takes place when pressure and heat is applied thereto. The side portions of the folded material on opposite sides of the pocket 16 are represented by the reference characters 20 and 21. In sealing the bag, pressure and heat is applied to the portions represented by the reference characters 19, 20 and 21, thereby sealing the four thicknesses of the material with the exception of the pocket 16. The pocket 16 is provided by separating the two thicknesses of material 22 and 23, so that the adjacent side of the thicknesses 22 and 23 are not sealed together, although the adjacent sides of the thicknesses 22 and 24 and 23 and 25 are sealed together.

The device for sealing the pocket 16 in the folded end of the bag is shown in Figures 1 to 5, inclusive. The folded end 18 of the bag is heated and pressed together by two longitudinal pressing members 31 and 32, each respectively carrying electrical heating elements 33 and 34 therein. The electrical heating elements 33 and 34 may be energized by a suitable source through wires 42 and 43. The pressing member 31 will be characterized as being stationary although it is not strictly immovable. The pressing member 32 will be characterized as being movable relative to the stationary pressing member 31. The stationary pressing member 31 is supported at each end by a bracket 36 which in turn is pivotally anchored to a pivot pin 41 having its end fastened to the side walls 54 and 55 of the frame 35. The

brackets 36 are supported by a relatively strong spring 37, which depresses slightly when an extra thickness of the folded bag is pressed between the pressing members. A stop or boss 44 limits the brackets 36 from swinging upwardly by the urging force of the spring 37. The front longitudinal edge of the stationary pressing member 31 is insulated by means of insulation 38 over which is a cover plate 39 suitably connected thereto by means of the illustrated screws. The movable pressing member 32 is moved relative to the stationary pressing plate 31 by means of a pair of spaced L-shaped arms 40 which pivotally swing about the pivot pin 41.

The end of the bag to be sealed is placed across the top of the pressing members 31 and 32 as shown in Figure 1, and the end of the sack is folded back upon itself between the two pressing members 31 and 32 by means of a folding device 46 which is swingably carried by an arm 48 rotatively mounted about a rear pivot shaft 49 having its ends carried in the side walls 54 and 55 of the frame 35. The separating device for making the pocket 16 is illustrated by the reference character 47 and it is resiliently fastened to a swinging arm 51 by means of a screw 65 and a spring 66, which permits the separating device 47 to assume an unconstrained position between the pressing members. The swinging arm 51 is rotatively mounted about the pivot shaft 49. The separating device 47 is positioned substantially centrally of the longitudinal length of the pressing members 31 and 32, and the folding device which comprises two parts is positioned respectively on opposite sides of the separating device 47. The actuating arm 48 which swingably moves the folding device 46 is likewise in two parts, one being on each side of the swingable arm 51 which actuates the separating device 47. The two parts of the swinging arm 48 are connected together near the pivot shaft 49 by means of a cross strap 50. In this manner the two parts of the swinging arm 48 move simultaneously. A recess 52 is provided in the movable pressing member 32 to receive the separating device 47 upon the closing of the pressing members 31 and 32. A guard 53 or stop member is provided upon the rearward edge of the movable pressing member 32 to serve as a stop against which the end of the bag to be sealed is abutted when it is placed over the pressing members for the sealing operation.

When effecting the sealing operation, the bag is placed over the two pressing members 31 and 32 as shown in Figure 1, after which both the folding device 46 and the separating device 47 move downwardly and fold the end portion of the bag back upon itself between the two pressing members 31 and 32 as shown in Figure 2. After the end of the bag is folded back upon itself between the two pressing members 31 and 32, the folding device 46 is raised as shown in Figure 3, leaving the separating device 47 positioned in the recess 52 between the pressing members 31 and 32. In the position shown in Figure 3, pressure and heat is applied to the portions 19, 20 and 21 of the folded end of the bag for sealing the four thicknesses of the material. Pressure and heat is also applied to the two thicknesses of the material 22 and 24 for sealing these two thicknesses together. Pressure and heat is also applied to the two thicknesses 23 and 25 for sealing these two thicknesses together. The portion which is unsealed is the surfaces between the two thicknesses 22 and 23 which is separated by the separating device 47. After the sealing is com-

pleted, the movable pressing member 32 moves away from the stationary pressing member 31 and the separating device 47 is then withdrawn as shown in Figure 1. The separating device 47 may comprise a material which is a non-conductor of heat such, for example, as a rubber composition or any other suitable metal and its shape conforms to the shape of the pocket to be formed.

The movable pressing member 32 is actuated about the pivot pin 41 by means of a pair of knee action levers 56 and 57 mounted near opposite sides of the frame side walls 54 and 55, see Figure 4. The rear ends of the levers 57 are rotatably mounted about the pivot shaft 49. The forward ends of the knee action levers 56 are connected to the L-shaped members 40 by means of a cross pin 58. The intermediate ends of the knee action levers 56 and 57 are connected together by connecting pins 59, each having a roller 60 mounted thereon. As illustrated in Figure 4, the connecting pins 59 are provided upon one end with heads 63 which are placed adjacent the rollers 60 and the opposite ends of the connecting pins are provided with nuts 64 which keep the pin securely in position. The rollers 60 are actuated downwardly by a pair of spaced cams 61 mounted upon spaced locations about a drive shaft 62 which is rotatively mounted in the side walls 54 and 55 of the frame 35. Therefore, as the cams 61 are rotated by the drive shaft 62, the rollers 60 are depressed causing the knee action levers 56 and 57 to actuate the movable pressing member 32 forwardly against the stationary pressing member 31. The knee action levers 56 and 57 are raised by means of springs 75 having one end attached thereto and the other end attached to the rear of the frame 35. The swingable arm 48 which carries the folding device 46 is actuated downwardly by means of a cam 70 positioned upon the drive shaft 62. As shown in Figure 4, the cam 70 engages only one of the two parts of the swinging arm 48 but inasmuch as the two parts of the arm 48 are connected by the connecting member 50, the cam 70 actuates both of the parts of the swingable arm 48 and thus both parts of the folding device simultaneously. The swingable arm 51 which carries the separating device 47 is actuated downwardly by a cam 71 which is rotated by the drive shaft 62. The rotation of the cams 70 and 71 depress the swingable arms 48 and 51 to cause the folding device 46 and the separating device 47 to fold the end of the bag back upon itself between the two pressing members 31 and 32, as shown in Figure 2. A spring 76 having one end connected to the swinging arm 48 and having the other end connected to the rear of the frame 35 is arranged to withdraw the folding device 46 from between the two pressing members. A spring 77 having one end connected to the swinging arm 51 and the other end connected to the rear of the frame 35 is arranged to withdraw the separating device 47 from between the pressing members. The cams 61, 70 and 71 are so arranged that the cycle of operation may be described as follows: Beginning with the position as shown in Figure 1 the folding device 46 and the separating device 47 are both moved downwardly between the two pressing members 31 and 32 for folding the end of the bag to be sealed back upon itself between the two pressing members 31 and 32. Upon the completion of the folding of the end of the bag between the two pressing members 31 and 32, the folding device 46 is

withdrawn, after which the movable pressing member 32 moves toward the stationary pressing member 31, which presses and heats the folded end of the bag therebetween, with the separating device 47 positioned between the two inner thicknesses 23 and 24 which prevent them from being sealed together. After the sealing action is completed, the movable pressing member 32 is withdrawn, after which the operating device 47 is withdrawn between the two pressing members 31 and 32 and assumes the position as shown in Figure 1 which completes the cycle of the operation.

As shown in Figure 4, the drive shaft 52 may be operated by means of a motor 74 and a clutch 72 controlled by a control lever 73.

My invention for forming an external pocket in a sealed end of a bag may be used to form a pocket during the sealing of the closed end of the bag as originally made, or may be used to form a pocket during the sealing of the open end of the bag after the contents are placed therein.

I have shown and described a bag made of material which seals upon the application of heat and pressure and in which the sealed end of the bag is provided with the pocket 16 which may be suspended upon a hook 17 of a suitable rack for displaying the bag. I have also shown and described a process by which the pocket 16 may be positioned in the sealed end of the bag as well as a device for accomplishing the sealing action above described.

Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure 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.

I claim as my invention:

1. A bag having two sides with a pocket provided in a sealed end portion thereof, said sealed end portion comprising the transverse edge of the two sides folded back upon themselves and forming four walls of the material of the bag with one of the walls of the folded portion disposed adjacent to the side wall of which it is a continuation, the marginal edge portion of the transverse folded end of the bag being sealed all the way thereacross, the central portion of the said one of the walls of the folded portion and of said side wall of which it is a continuation being unsealed with each other and forming the inside surfaces of said pocket, the remaining portion of the four folded walls between the edges of the bag and the pocket being sealed and supporting the pocket, said four folded walls being sealed in a flatwise relation, the said four sealed walls and the pocket therein lying in a plane substantially parallel to the medial plane of the bag.

2. A bag having two sides with a pocket provided in a sealed end portion thereof, said sealed end portion comprising the transverse edge of the two sides folded back upon themselves and forming four walls of the material of the bag with one of the walls of the folded portion disposed adjacent to the side wall of which it is a continuation, the central portion of the said one of the walls of the folded portion and of said side wall of which it is a continuation being unsealed with each other and forming the inside surfaces of said pocket, the remaining portion of the four folded walls between the edges of the bag and the pocket being sealed and supporting the pocket, said four folded walls being sealed in a flatwise

relation, the said four sealed walls and the pocket therein lying in a plane substantially parallel to the medial plane of the bag.

3. A bag having two sides with a pocket provided in a sealed end portion thereof, said sealed end portion comprising the transverse edge of the two sides folded back upon themselves and forming a plurality of walls of the bag material with one of the walls of the folded portion disposed parallel to the side wall of which it is a continuation, the central portion of one of said plurality of walls of the folded portion and an adjacent wall being unsealed with each other and forming the inside surfaces of said pocket, the remaining portion of the walls of said folded portion between the edges of the bag and the pocket being sealed and supporting the pocket, said folded walls being sealed in a flatwise relation, the said sealed walls and the pocket therein lying in a plane substantially parallel to the medial plane of the bag.

4. The process of forming an external pocket in a sealed end of a bag made of heat sealing material comprising the steps of bringing the two side walls of the bag adjacent to each other, transversely folding the two side walls back upon themselves to form four walls of the material with one of the walls of the folded portion disposed adjacent to the side wall of which it is a continuation, separating a central portion of the said one of the walls of the folded portion from the said side wall of which it is a continuation to form the pocket while heating and pressing the remaining walls together to seal said remaining walls and to support the pocket.

5. The process of forming an external pocket in a sealed end of a bag made of heat sealing material comprising the steps of bringing the two side walls of the bag adjacent to each other, transversely folding the two side walls back upon themselves to form four walls of the material with one of the walls of the folded portion disposed adjacent to the side wall of which it is a continuation, leaving unsealed a central portion of the said one of the walls of the folded portion from the said side wall of which it is a continuation to form the pocket while heating and pressing the four walls all the way across the marginal edge portion of the transverse folded end of the bag and the four walls on the opposite side of the pocket to support the pocket.

6. The process of forming an external pocket in a sealed end of a two-sided bag made of heat sealing material comprising the steps of bringing the two side walls of the bag at said end adjacent to each other, transversely folding the said two side walls back upon themselves to dispose the folded walls parallel to the said sides of the bag with at least one of the folded walls disposed adjacent to one of said side walls, heating and pressing the folded walls along the marginal edge of said end transversely of the bag to seal the same and also inwardly from said marginal edge on opposite sides of a centrally disposed area of said folded walls to leave unsealed said centrally disposed area, said folded walls at said centrally disposed area thereby forming an open pocket supported by the sealed walls along said marginal edge and on said opposite sides.

7. A bag having two relatively flat sides joined along their longitudinal edges and having a pocket provided in a sealed end portion thereof, said sealed end portion comprising the transverse edge of the two flat sides folded back upon themselves and forming an end comprised of a plurality of

double walls of the material of the bag with the folded back walls disposed substantially parallel to the said flat sides of the bag, the marginal edge portions of the transverse folded end of double walls being sealed all the way across the bag between said longitudinal edges to close the end of the bag, the folded end of double walls inward from said marginal edge portion and adjacent said longitudinal edges being also sealed, and having a central portion therebetween unsealed to provide said pocket between the said walls disposed substantially parallel to said flat sides.

8. The process of forming an external pocket in a sealed end of a bag having two relatively flat sides joined along their longitudinal edges and made of heat sealing material, comprising the steps of bringing said two flat side walls of the bag adjacent to each other in parallel relationship, transversely folding the two side walls back upon themselves to form a plurality of double walls of said material disposed substantially parallel to said flat sides of the bag, sealing the marginal edge portion of the transverse folded end of double walls all the way across the bag between said longitudinal edges to close the end of the bag, and sealing the said folded end of double walls a distance inwardly from said marginal edge portion adjacent said longitudinal edges of the bag and leaving unsealed a central portion therebetween to provide said pocket between said walls substantially parallel to said flat sides.

9. A bag having two flat sides joined at an end of the bag to form the end portion of the bag and having a pocket formed in said end portion, said end portion being sealed across the width of said flat sides along the marginal edge of said end portion to close the end of the bag, said end portion having at least two thicknesses of the material of the bag formed by at least one of said flat sides being folded back upon the bag at said end, the central portion of the said at least two thicknesses inward of the bag from said marginal edge being unsealed with each other and forming the inside surfaces of said pocket, the portion of the said at least two thicknesses on op-

posite sides of the pocket and inward of the bag from said marginal edge being sealed to support the pocket.

10. A bag having two flat sides joined at the end of the bag to form the end portion of the bag and having a pocket formed in said end portion, said end portion having said flat sides in face contact along the marginal edge of said end portion to close the end of the bag, said end portion having the flat contacting sides folded back upon the bag at said end, forming at least four thicknesses of the material of the bag, the central portion of the part folded back upon the bag being unsecured to the bag, forming with the bag a pocket, the four thicknesses of the end of the bag on opposite sides of the pocket being secured together.

11. A bag having two flat sides sealed at an end of the bag to form a sealed end portion of the bag and having a pocket in the said sealed end portion, said sealed end portion having said flat sides in face contact along the marginal edge of said sealed end portion to seal the end of the bag, said sealed end portion having the flat contacting sides folded back upon the bag at said end, forming at least four thicknesses of the material of the bag, the central portion of the part folded back upon the bag being unsealed to the bag, forming with the bag a pocket, the said at least four thicknesses of the end of the bag on opposite sides of the pocket being sealed together.

12. A bag made of heat sealing material having two flat sides heat sealed at an end of the bag to form a heat sealed end portion of the bag and having a pocket in the said sealed end portion, said sealed end portion having said flat sides in face contact along the marginal edge of said sealed end portion to seal the end of the bag, said sealed end portion having the flat contacting sides folded back upon the bag at said end, forming at least four thicknesses of the material of the bag, the central portion of the part folded back upon the bag being unsealed to the bag, forming with the bag a pocket, the said at least four thicknesses of the end of the bag on opposite sides of the pocket being heat sealed together.

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