United States Patent

Schwarzkopf

[15] **3,693,867**

[45] **Sept. 26, 1972**

[54] **HANDLE-TYPE CARRYING BAG MADE OF PLASTICS MATERIAL SHEETING**

[72] Inventor: **August Schwarzkopf,** Heinestrasse 2, 454 Lengerich of Westphalia, Germany

[22] Filed: **June 23, 1970**

[21] Appl. No.: **49,084**

[30] **Foreign Application Priority Data**

June 24, 1969 Germany.....P 19 32 047.9

[52] **U.S. Cl.**.....**229/54 R**

[51] **Int. Cl.**.....**B65d 33/06**

[58] **Field of Search**.....229/54, 54 R

[56] **References Cited**

UNITED STATES PATENTS

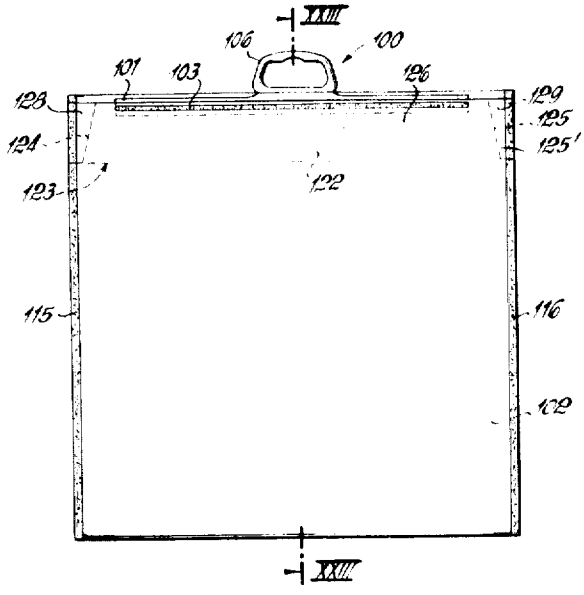
3,549,085	12/1970	Hart	229/54 R
3,525,468	8/1970	Kamins et al.	229/54 R
3,429,498	2/1969	Dorfman	229/54 R

Primary Examiner—Evon C. Blunk
Assistant Examiner—H. Shane
Attorney—Fleit, Gipple & Jacobson

[57] **ABSTRACT**

Only one wall of the bag is provided with a heat-sealed carrying handle made of stiff synthetic thermoplastics. The other wall of the bag is provided with a lead-out slot on the level of the lower end of the handle and has a reversely foldable portion extending beyond said lead-out slot.

3 Claims, 35 Drawing Figures



PATENTED SEP 26 1972

3,693,867

SHEET 01 OF 11

FIG. 3a

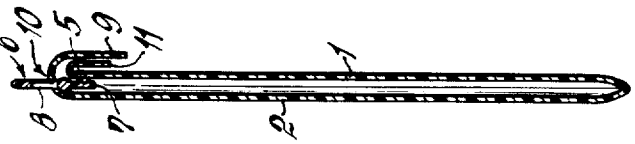


FIG. 3

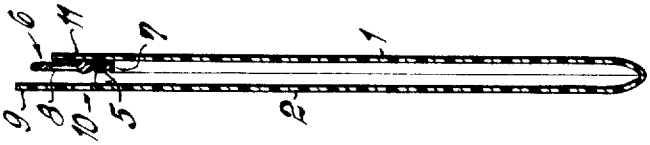


FIG. 2a

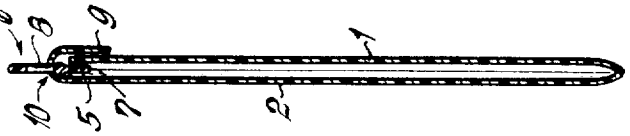


FIG. 2

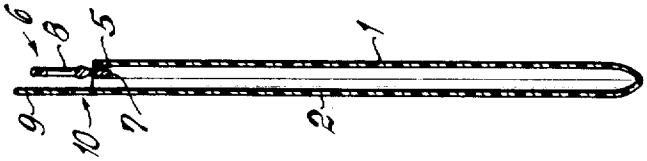
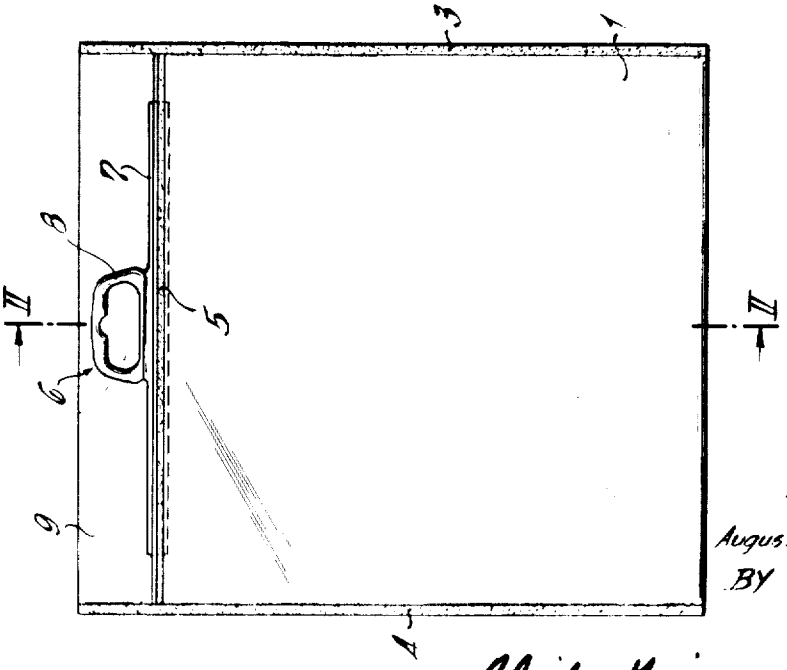


FIG. 1



INVENTOR
August SCHWARZKOPF
BY

Flint, Dipple & Jacobson
his ATTORNEYS

FIG. 5a

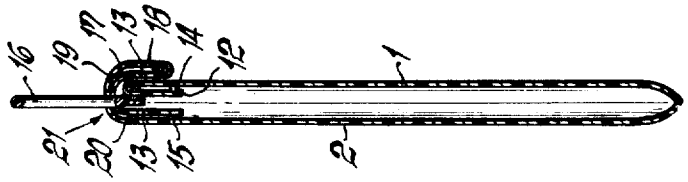


FIG. 5

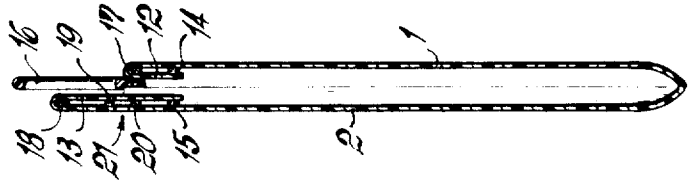
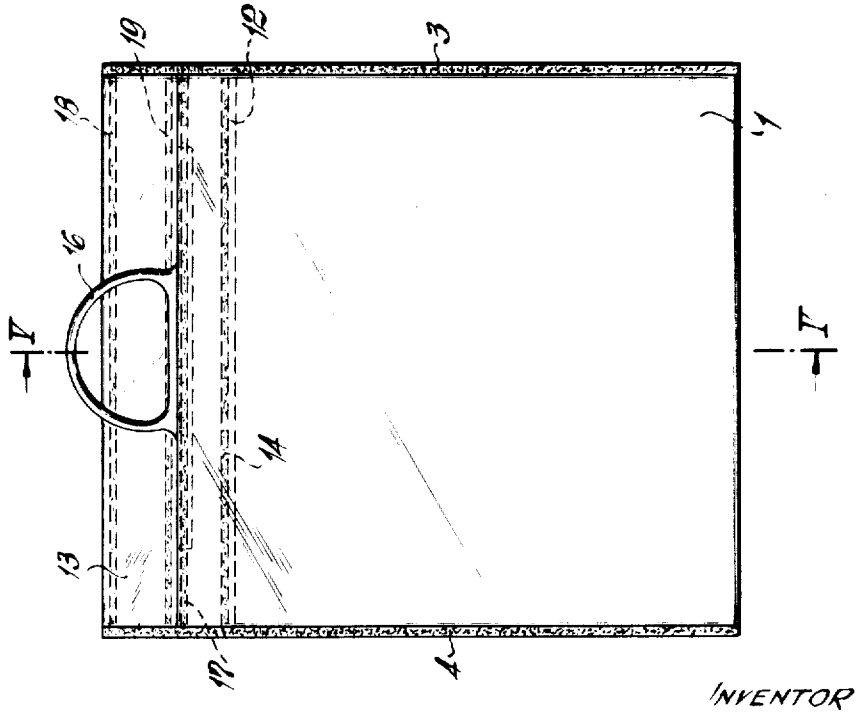


FIG. 4



INVENTOR
August SCHWARZKOPF
BY

Fleit, Dippel & Jacobson
his ATTORNEYS

FIG. 7a

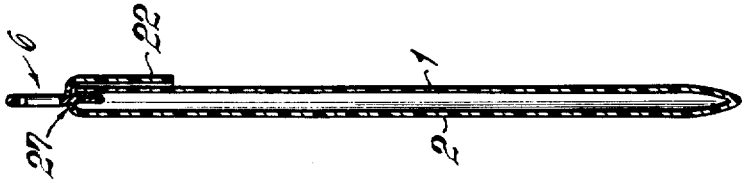


FIG. 7

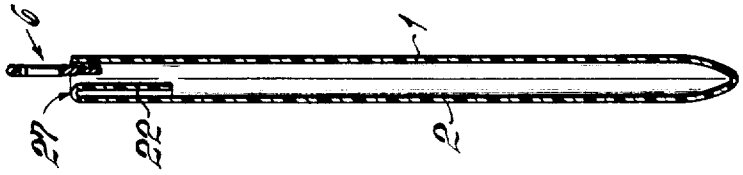
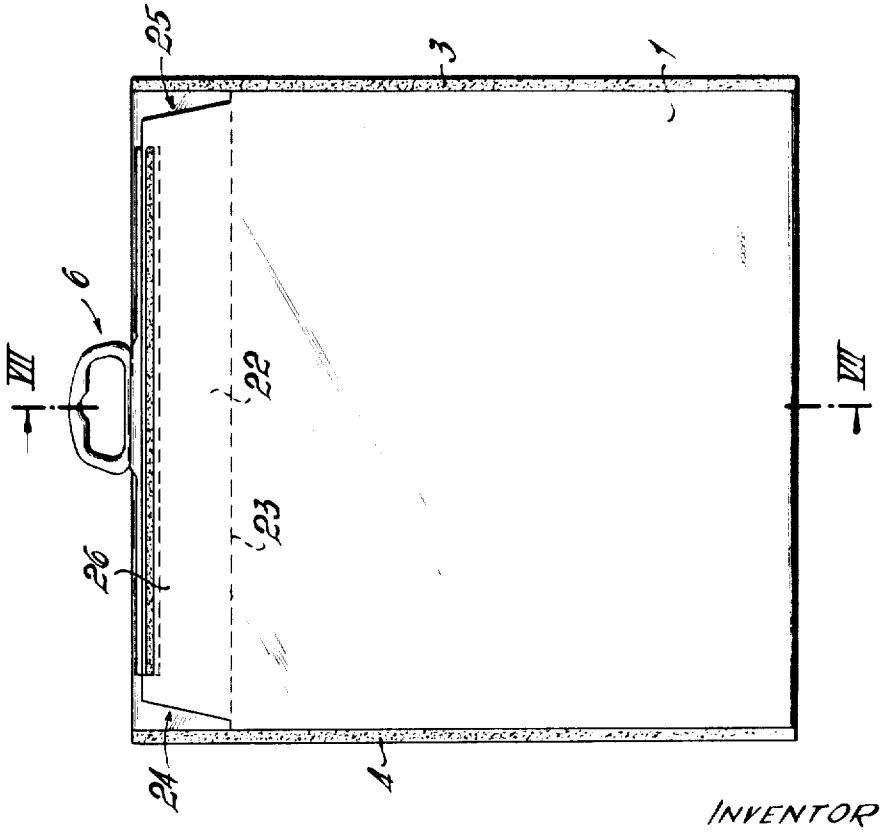


FIG. 6



INVENTOR
August SCHWARZKOPF
BY
Fleit, Dippel & Jacobson
his ATTORNEYS

FIG. 9a

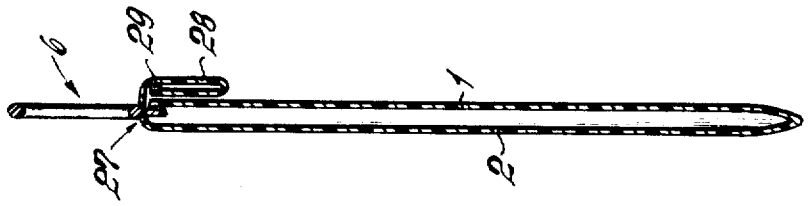


FIG. 9

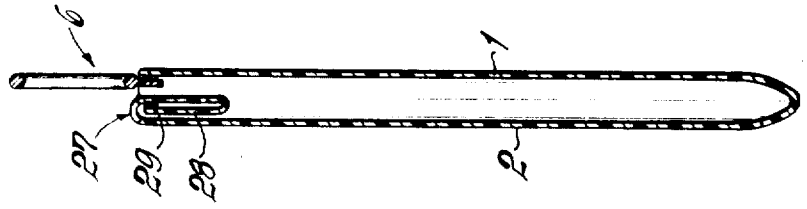
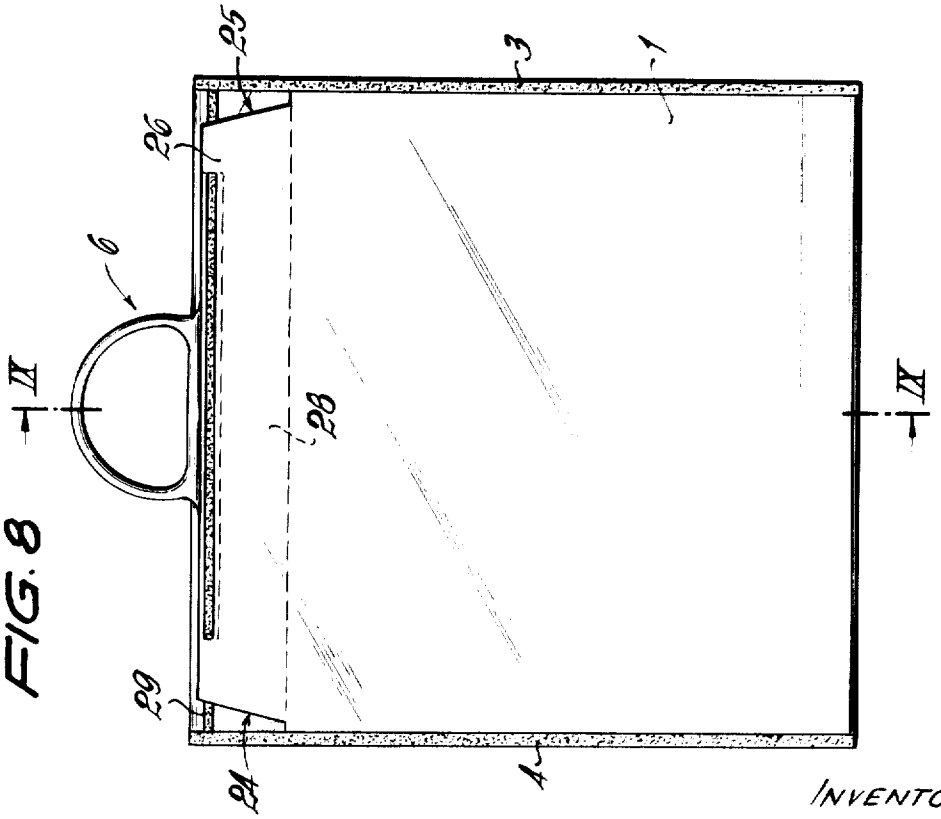


FIG. 8



INVENTOR
August SCHWARZKOPF
BY

Flint, Cippel & Jacobson
his ATTORNEYS

FIG. 10

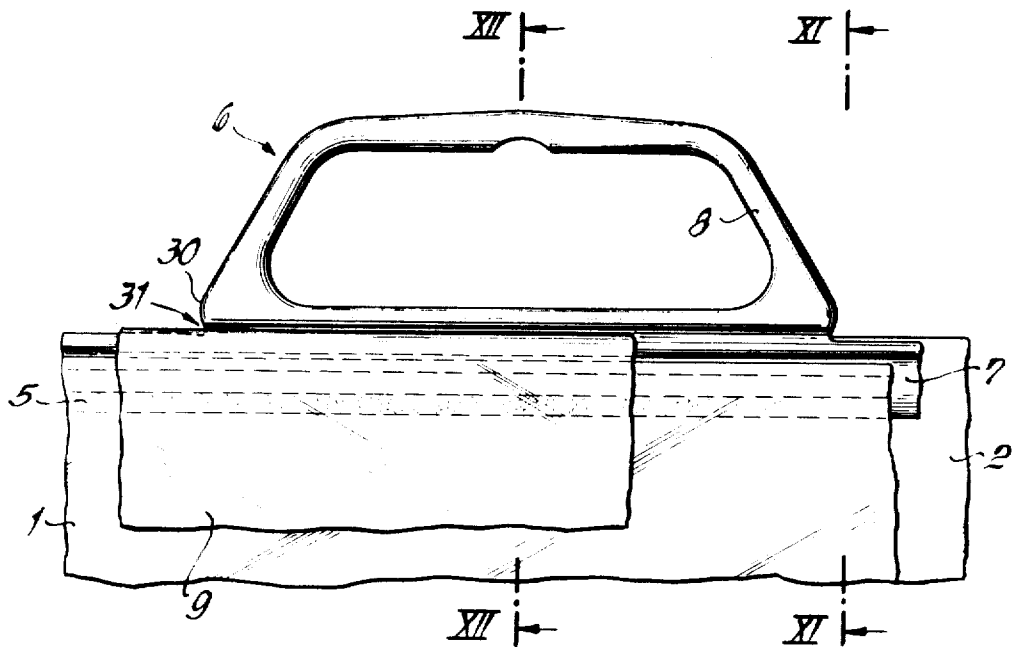


FIG. 11

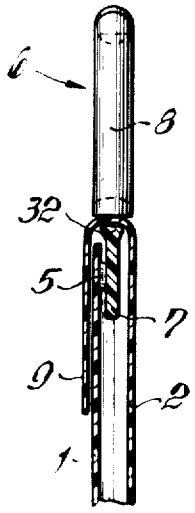
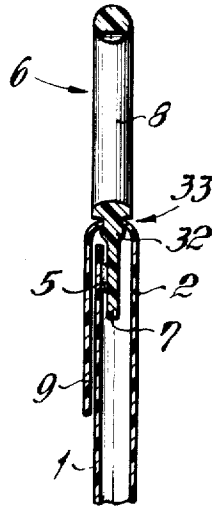


FIG. 12



INVENTOR
August SCHWARZKOPF
BY

Fleit, Gipple & Jacobson
his ATTORNEYS

FIG. 13

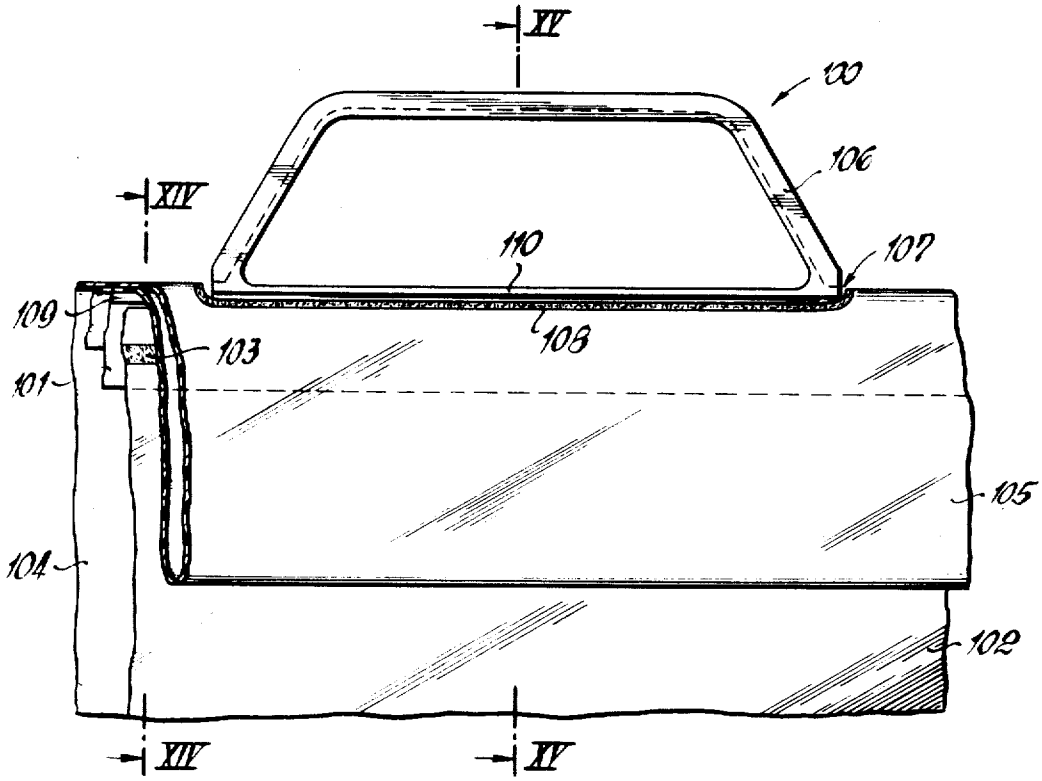


FIG. 14

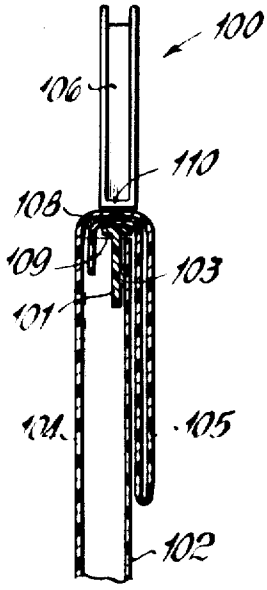
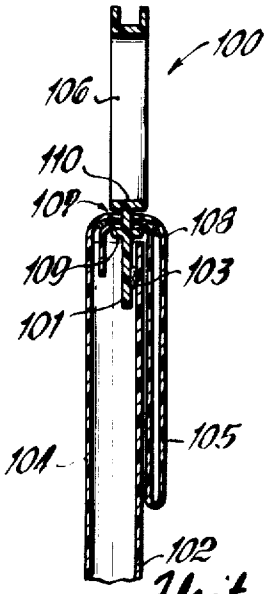


FIG. 15



INVENTOR
August Schwarzkopf
BY
Fleit, Gipple & Jacobson
his ATTORNEYS

FIG. 18

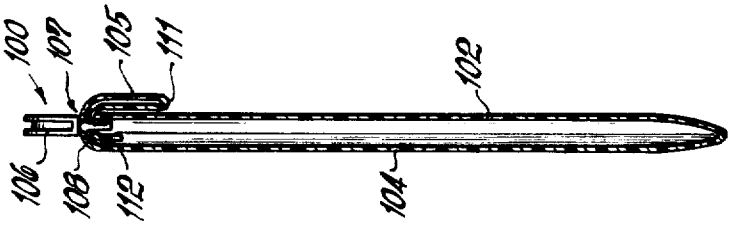


FIG. 17

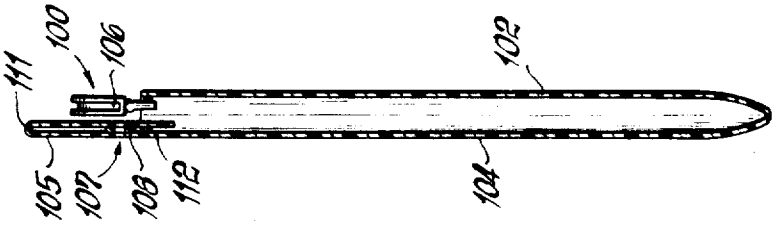
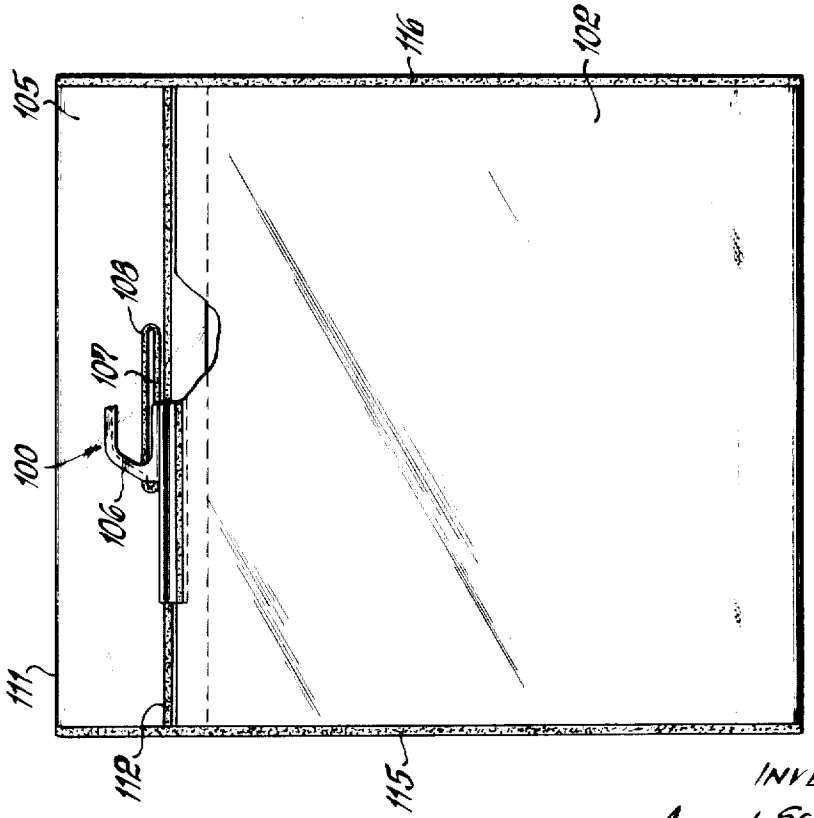


FIG. 16



INVENTOR
August SCHWARZKOPF
BY
Fleit, Gipple & Jacobson
his ATTORNEYS

FIG. 21

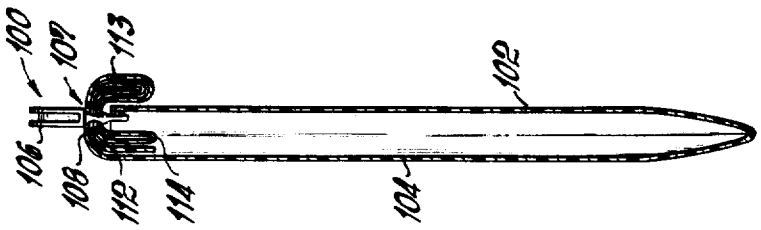


FIG. 20

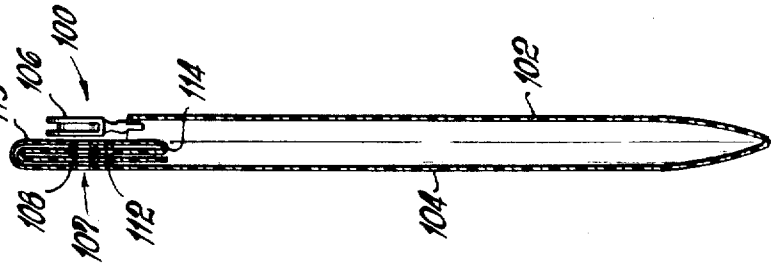
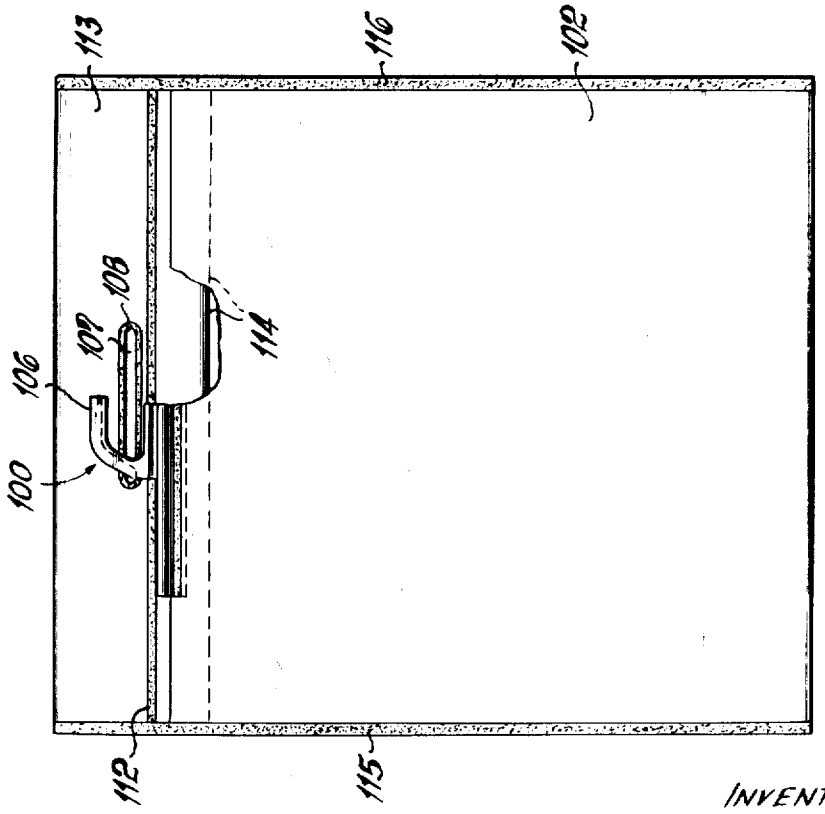


FIG. 19



INVENTOR
August SCHWARZKOPF

BY

Fleit, Gipple & Jacobson
his ATTORNEYS

FIG. 23a

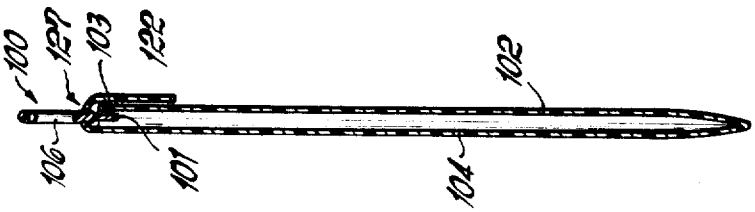


FIG. 23

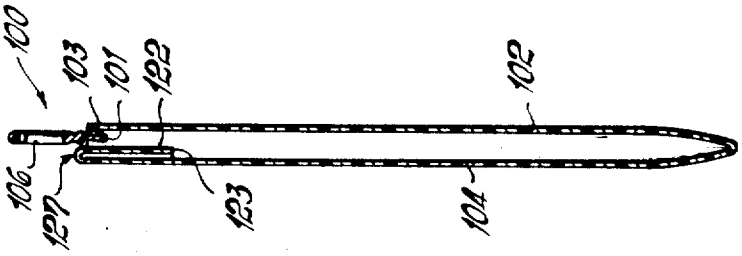
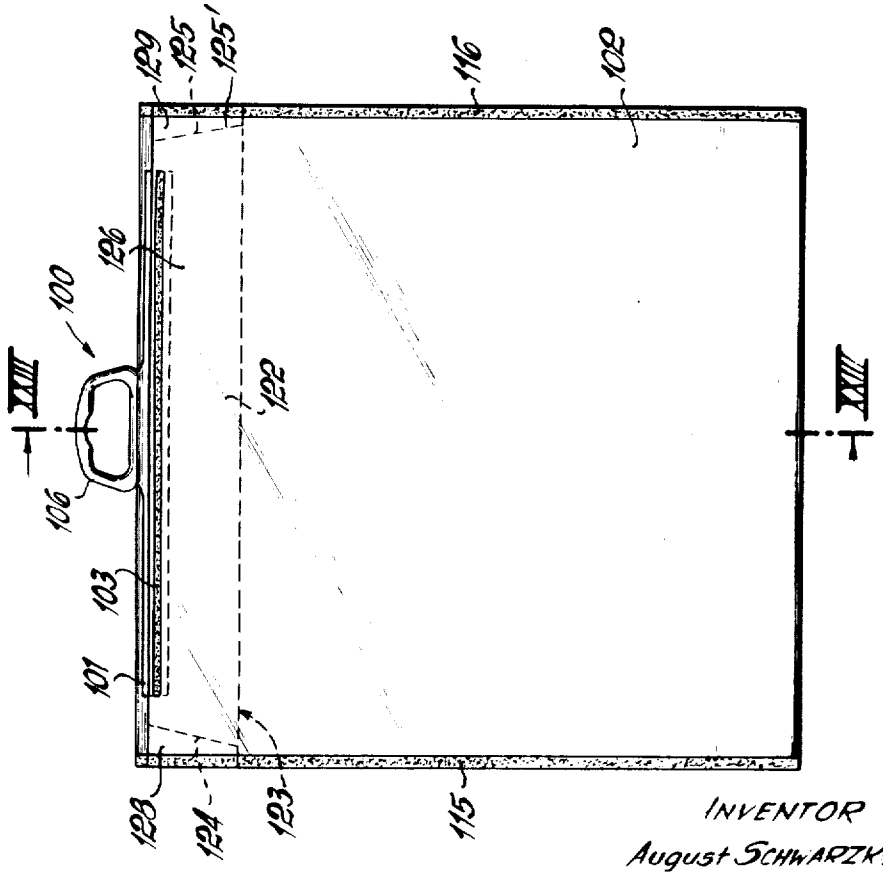


FIG. 22



INVENTOR
August SCHWARZKOPF
BY

Fleit, Gipple & Jacobson
his ATTORNEYS

FIG. 26

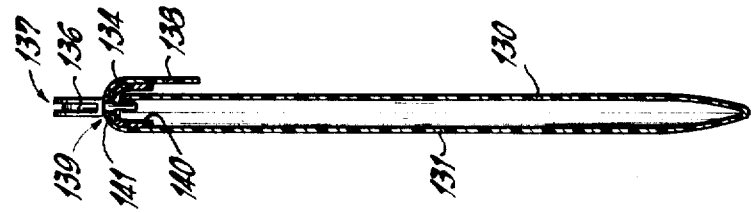


FIG. 25

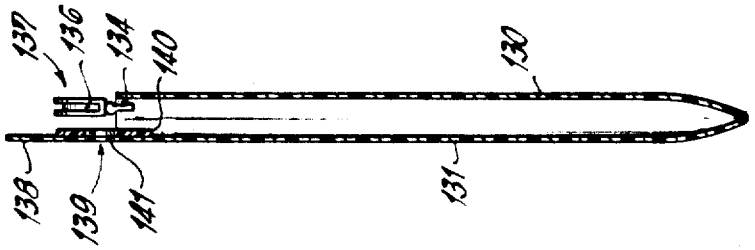
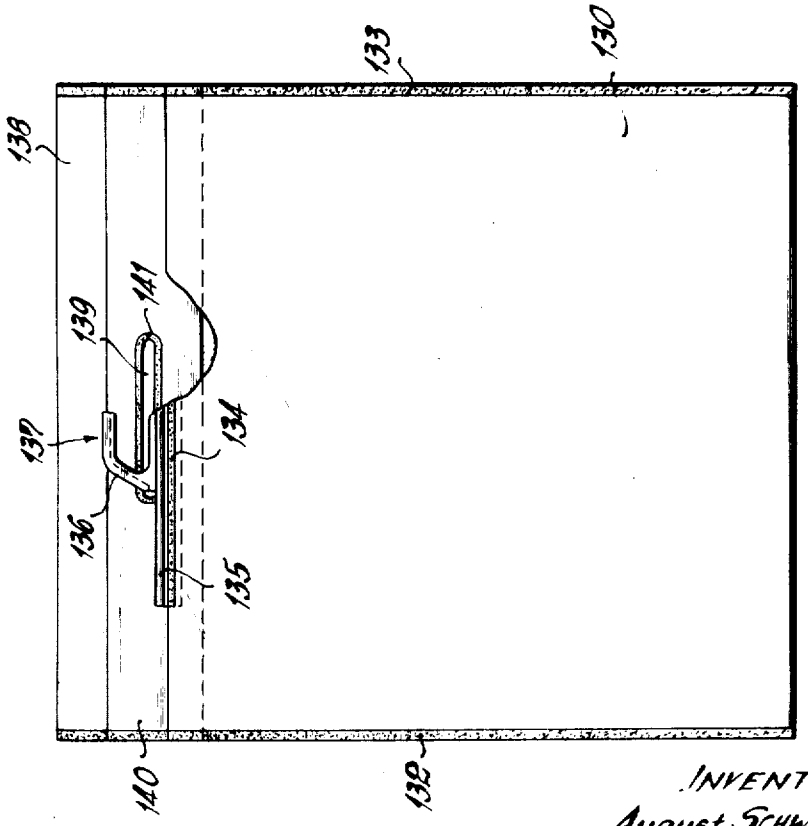


FIG. 24



INVENTOR
August SCHWARZKOPF
BY

Fleit, Gipple & Jacobson
his ATTORNEYS

FIG. 29

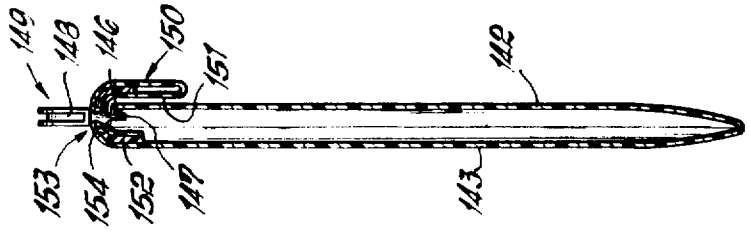


FIG. 28

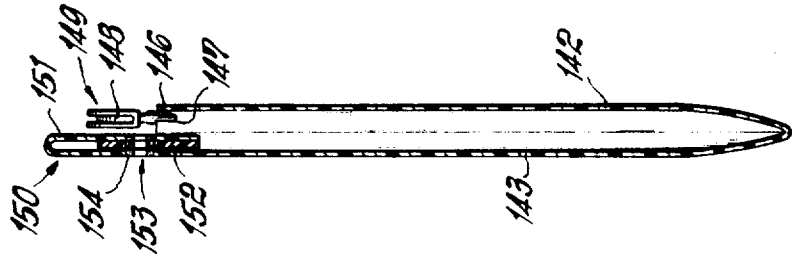
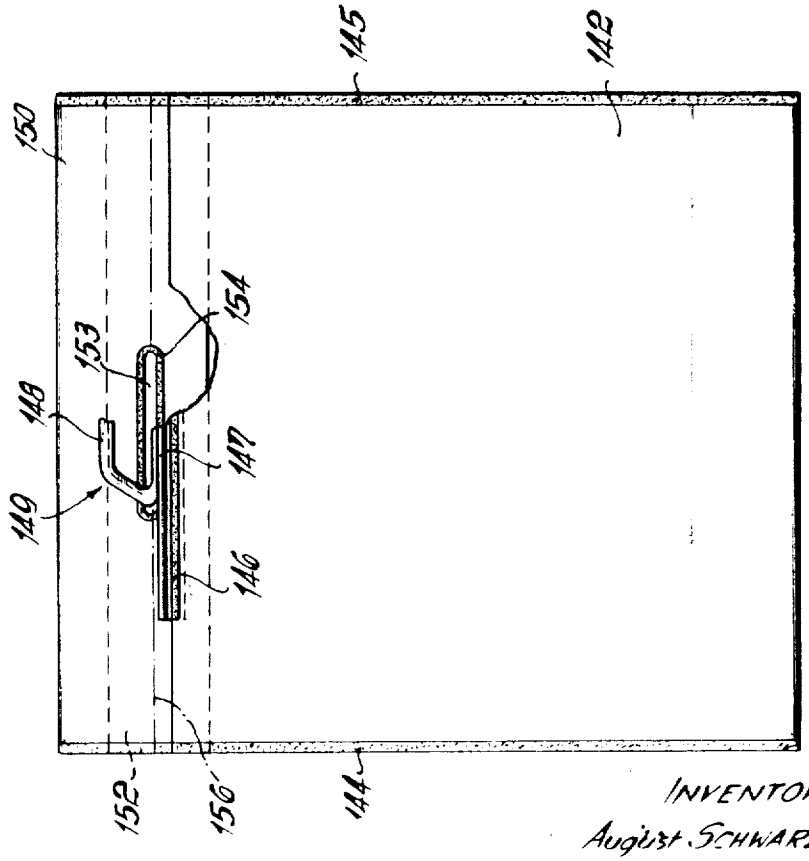


FIG. 27



INVENTOR
August Schwarzkopf
BY

Flint, Dipple & Jacobson
his ATTORNEYS

HANDLE-TYPE CARRYING BAG MADE OF PLASTICS MATERIAL SHEETING

Carrying bags which are made of synthetic thermoplastic sheeting and provided at their open rim with a pair of U-shaped carrying handles made of synthetic thermoplastic sheeting have been known for a long time. In these known carrying bags, each handle comprises a grip portion and a heat sealing strip, which extends at least over a substantial part of the width of the bag and serves to heat-seal the U-shaped carrying handle to the open rim of the carrying bag. Owing to the thickness of the material of the heat sealing strips and possibly because the same may consist of a channel or angle, these strips are so stiff, although they consist of inherently flexible plastics material, that the carrying bag is reliably rectangular even when it is filled, whereas, for instance with carrying bags made of plastics material sheeting and provided with gripping apertures, the end portions of the open rims are pulled down by the weight of the contents of the filled bag so that the carrying bag has an unpleasant appearance.

The known handle-type carrying bags of the kind defined are generally provided at both U-shaped handles with fastening means by which the two handles are releasably connected before the carrying bag is filled. This releasable connection between the two handles has mainly the purpose to enable during the manufacture of the carrying bag an insertion of both handles as a unit between the edges of a half-tubing and a heat sealing of said unit to said half-tubing, from which the several carrying bags are subsequently made by the formation of transverse seams by combined heat sealing and severing operations. When the bag has been filled, the two handles usually are not connected to each other. Such connection would be difficult if the contents of the carrying bag cause the open rim to gape. For this reason, the known carrying bags have the disadvantage that the contents of the bag are generally accessible to rain, snow, dust or the like. In spite of the generally recognized advantages of the known handle-type carrying bags made of plastics material sheeting, the same have not yet been successful in certain fields of application, such as the packaging of textile products, for the reasons set forth above.

For this purpose, carrying bags having gripping apertures and a reversely folded edge portion and made of paper are still employed, which bags are provided with an adhered reinforcing strip of paper adjacent to the open rim and ensure that the rectangular shape of the carrying bag will be retained even when the bag is filled.

It is an object of the invention to provide a handle-type carrying bag which is made of plastics material sheeting and ensures the known advantage of carrying bags having stiff handles, namely, good form-retaining properties, whereas the bag affords a considerable protection against an ingress of rain, snow, dust or the like to the contents of the bag.

This object is accomplished according to the invention in that only one wall of the bag is provided with a heat-sealed carrying handle made of stiff synthetic thermoplastics and the other wall of the bag is provided with a lead-out slot on the level of the lower end of the handle and has a reversely foldable portion extending beyond said lead-out slot. This carrying bag has the advantage that it is sufficient to join only one handle by

heat sealing and there is no need for fasteners for connecting said handle to another handle.

The decisive advantage of the carrying bag according to the invention resides in that a protection of the contents of the bag against rain or the like is automatically provided because the bag cannot be carried unless the handle has been slipped through the slot. Otherwise the bag would be carried only at one wall and would open to a large extent. When the handle has been slipped through the lead-out slot, the reversely foldable part reliably closes the opening of the bag.

In a development of the invention, the handle may be heat-sealed to the inside of said one wall of the bag and the wall of the bag may extend upwardly beyond the heat-sealed joint. In this case that wall of the bag which is provided with the handle is reversely folded together with the reversely foldable portion of the other wall of the bag onto the outside of the bag wall provided with the carrying handle when the latter has been slipped through the lead-out slot. This condition results in an improved protection of the opening of the bag near its ends, where the reversely foldable portion of the other wall of the bag alone would not afford such good protection.

A particularly desirable, additional stiffening and reinforcement to avoid a tearing adjacent to the heat-sealed joint of the handle and adjacent to the lead-out slot may be obtained in that one wall or both walls of the bag have an upper portion comprising two plies. In this case, the lead-out slot may be disposed between two parallel heat-sealed seams, which extend throughout the width of the bag, so that a tearing adjacent to the slot will be particularly effectively avoided. The two-ply wall portions may comprise reversely folded edge portions, which are heat-sealed to the bag walls adjacent to their folds and at their lower edges. Whereas the heat-sealed seams adjacent to the folds are not required to form the reversely folded portion and to hold it in position, they prevent a shifting of the sheeting plies in the two-ply portion so as to substantially increase its stiffness.

In another embodiment of the carrying bag according to the invention, a shrunk heat-sealed seam may be provided instead of the two parallel heat-sealed seams extending on both sides of the lead-out slot and throughout the width of the carrying bag, which shrunk seam surrounds the lead-out slot at the edges thereof or is closely spaced therefrom and joins the two plies of the upper portion of the bag wall. By this shrunk seam, the reversely folded portion is joined to the rear wall in the critical area below the lead-out slot so that the forces are transmitted to the handle through a plurality of plies, as is desirable. The slot has a certain tear resistance because it has been formed by a combined heat-sealing and severing operation, but nevertheless tears may form at the slot. Such tears can propagate only as far as to the shrunk heat-sealed seam so that the entire bag wall provided with the reversely foldable flap cannot become torn off.

Whereas two-ply wall portions may comprise reversely folded edge portions which are heat-sealed to the walls of the bag at the folds and at the lower edges of said reversely folded edge portions, another embodiment of the invention comprises a reversely foldable portion which comprises preferably four plies and con-

sists of an edge portion which has been reversely folded several times and said edge portion comprises plies which are not heat-sealed to each other along the folds but are spaced apart owing to the elasticity of the material. This results in an improved stiffening action throughout the width of the bag as in the case of a section beam. This beam action of the reversely folded portion strongly opposes a sagging of the outer end portions of the bag. On the other hand, this multi-ply portion results in a desirable additional reinforcement of the lead-out slot.

In accordance with the invention, a tearing of the bag adjacent to the heat-sealed portions of the handle and adjacent to the lead-out slot can be avoided by a stiffening which is obtained in that the reversely foldable portion comprises two plies throughout the width of the bag, preferably only adjacent to the lead-out slot, and for this purpose is provided with a separate inserted sheeting strip, which is included in the side seams formed by a combined heat sealing and severing operation. This strip will desirably consist of a thicker material than the rest of the carrying bag. As a result, the bag may be made from fairly thin sheeting and the reinforced area may be as strong as is desired whereas an appreciable and superfluous expenditure of material is avoided.

Another desirable feature of the invention resides in that that wall of the bag which is provided with the lead-out slot and the reinforcing strip is provided with a reversely folded edge portion and the reinforcing strip is provided between that reversely folded edge portion and the wall of the bag. The reversely folded edge portion of the wall of the bag covers the reinforcing strip so that a pleasant appearance of the bag is ensured and the bag can be filled without trouble.

To ensure that the stiffness of the reinforcing strip will not hinder the reverse folding of the reversely foldable portion, the reversely foldable portion may be provided with a crease at its base, i.e., at the fold line extending below the reinforcing strip. This crease may be formed in that the reversely foldable portion is reversely folded, hot-pressed in a reversely folded condition and opened back. This crease ensures that the reversely foldable portion will reversely fold without difficulty and so as to form a sharp fold when the bag has been filled and the handle has been slipped through the slot and that the reversely folded portion will not disturbingly protrude from the bag but will snugly contact the same.

In a preferred embodiment of the carrying bag according to the invention, the bag wall portion extending beyond the lead-out slot has been reversely folded during the manufacture of the bag and has been heat-sealed to the side edges of the bag wall which carries the reversely folded portion whereas that wall which carries the carrying handle has a portion which corresponds to the reversely folded portion and which is so reduced in width that it is not included in the heat-sealed side seams. This feature results in a carrying bag which has a particularly pleasant appearance because it has no loosely depending, reversely folded portion. Because that wall of the bag which carries the handle is reduced in width, that wall remains freely movable adjacent to its free edge and can be inserted under the reversely folded portion of the bag wall when the bag has been filled and the handle has been slipped through the lead-out slot.

In a further embodiment of the carrying bag according to the invention, that bag wall which is provided with the carrying handle and which is reduced in width adjacent to its free edge when the bag is in condition for use extends as far as to the heat-sealed side seams and is included therein also adjacent to the free edge of the wall before the first use of the bag. Adjacent to that rim, the bag wall provided with the handle has easily destructible, weakened lines between the outermost portions of said wall, which portions are included in the heat-sealed side seams, and the middle portion of said wall, which middle portion is provided with the handle. As the bag is opened, the bag material is torn along the weakened lines so that the bag wall portion carrying the handle is reduced in width. The two outer bag wall portions disposed beyond the lines of severance are held in the heat-sealed side seams so that the tearing is enabled and these parts are still comprised in the bag when the same is ready for use.

This embodiment has the advantage that the manufacture of the carrying bags from a half-tubing, which is conveyed transversely to its longitudinal direction, does not involve a formation of punched waste portions, which could be removed only with difficulty because they can be charged electrostatically. Besides, the weakened lines consist desirably of cuts which are interrupted only by a few very thin lands and maintain the coherence of the entire edge portion as the bag is conveyed so that no trouble can arise from an unsatisfactory lateral guidance of the web. Moreover, the normal wall stress would be lost adjacent to such punched apertures and this loss of stress would adversely affect the processing. Finally, before the bag is used for the first time, there is no loose flap which would adversely affect the handling of the bag.

In accordance with the invention, a carrying handle which is particularly desirable for use in the carrying bag according to the invention comprises a solid grip portion, which is shorter in its upper portion than directly over its base, where the grip portion merges into the heat sealing strip and has a maximum length slightly over the heat sealing strip. Because the handle tapers upwardly, it can easily be slipped through the lead-out slot. On the other hand, the grip portion has a maximum length shortly over the heat sealing strip and this maximum length is equal to the length of the lead-out slot so that the reversely folded portion is held in position by the handle. It will be particularly desirable for this purpose to provide a handle having a grip portion which is undercut between its portion having a maximum length and the heat sealing strip so that the end edges of the lead-out slot snap into the undercut portions of the grip portion.

In a further embodiment of the invention, the grip portion of the handle consists of an open-topped channel. With this shape, the grip portion can well be gripped and has a uniform, small wall thickness so that the handle can be cooled rapidly and uniformly in an injection-molding die and the production rate can be much increased. Besides, the flat outside surfaces of the channel-shaped grip portion afford the advantage that the handles can readily be stacked in a magazine, from which the lowermost handle is pushed out by a

pusher during the manufacture of the carrying bags. With grips having other cross-sectional shapes, such as a shape of an inverted T, difficulties would arise in the manufacture of the carrying bags by machine.

In a further embodiment of the invention, the carrying handle is provided with a heat sealing strip which at its upper edge is enlarged in the form of a bead at least in that portion which is adjacent to the slot. This beadlike enlargement ensures a good seal at the edges of the lead-out slot. A constriction may be provided between the grip portion and the bead of the heat sealing strip and the grip portion may be thicker than the bead of the heat sealing strip so that the seal at the lead-out slot is further improved.

The invention will now be described more in detail with reference to the drawing, which shows several embodiments by way of example. In the drawing

FIG. **1** is a top plan view showing a first embodiment of a carrying bag according to the invention,

FIG. **2** shows sectional views taken on line II—II of FIG. **1** through the bag in open and

FIG. **2***a* in closed condition.

FIG. **3** is a sectional view similar to that of FIG. **2** and shows a modified embodiment in open and

FIG. **3***a* in closed condition,

FIG. **4** is a top plan view showing another embodiment,

FIG. **5** shows sectional views which are similar to those of FIG. **2** and taken on line V—V in FIG. **4** in open and

FIG. **5***a* in closed condition,

FIG. **6** is a top plan view showing a further embodiment,

FIG. **7** shows sectional views taken on line VII—VII of FIG. **6** through the bag in open and

FIG. **7***a* in closed condition,

FIG. **8** is a top plan view showing a still further embodiment of a carrying bag according to the invention,

FIG. **9** shows sectional views taken on line IX—IX of FIG. **8** through the bag in open and

FIG. **9***a* in closed condition,

FIG. **10** shows as a detail the handle portion of the carrying bag of FIG. **1** in closed condition,

FIG. **11** is a sectional view taken on line XI—XI of FIG. **10**,

FIG. **12** is a sectional view taken on line XII—XII of FIG. **10**,

FIG. **13** shows a detail of a carrying bag according to the invention with a channel-shaped grip portion,

FIG. **14** is a sectional view taken on line II—II of FIG. **13**,

FIG. **15** is a sectional view taken on line III—III of FIG. **13**,

FIG. **16** is a top plan view showing a still further embodiment of a carrying bag according to the invention,

FIG. **17** is a central longitudinal sectional view showing the carrying bag of FIG. **16** in open condition,

FIG. **18** is a sectional view which is similar to that of FIG. **17** and shows the carrying bag of FIG. **16** in closed condition,

FIG. **19** is a top plan view showing a still further embodiment,

FIG. **20** is a central longitudinal sectional view showing the embodiment of FIG. **19** in open condition,

FIG. **21** is a sectional view which is similar to that of FIG. **20** and shows the carrying bag of FIG. **19** in closed condition,

FIG. **22** is a top plan view showing a still further embodiment of the carrying bag according to the invention,

FIG. **23** is a sectional view taken along line II—II of FIG. **22** and showing the carrying bag in open and

FIG. **23***a* in closed condition,

FIG. **24** is a top plan view showing a still further embodiment of the carrying bag according to the invention,

FIG. **25** is a central longitudinal sectional view showing the carrying bag of FIG. **24** in open condition,

FIG. **26** is a sectional view which is similar to that of FIG. **25** and shows the carrying bag of FIG. **24** in closed condition,

FIG. **27** is a top plan view showing a still further embodiment of a carrying bag,

FIG. **28** is a central longitudinal sectional view showing the carrying bag of FIG. **27** in open condition, and

FIG. **29** is a sectional view which is similar to that of FIG. **28** and shows the carrying bag of FIG. **27** in closed condition.

FIGS. **1**, **2** and **2***a* show the simplest embodiment of a carrying bag according to the invention. The carrying bag is made in known manner by the formation of transverse seams in a half-tubing of synthetic thermoplastic sheeting in combined heat sealing and severing operations and comprises a shorter wall **1** and a longer wall **2**. The heat-sealed side seams are indicated at **3** and **4**. A carrying handle **6** is joined by a heat-sealed joint **5** to the free edge of the shorter bag wall **1** and consists of a long, stiff heat sealing strip **7** and a grip portion **8**. The longer bag wall **2** has a reversely foldable portion **9**, which protrudes over the shorter bag wall **1**. The bag wall **2** is formed with a lead-out slot **10** in register with the base of the grip portion **8**.

When the carrying bag has been filled, the grip portion **8** of the handle **6** must be slipped through the leadout slot **10**. Otherwise, the weight of the contents of the bag would pull down the longer bag wall **2** and the bag would be opened to a large extent. When the handle has been slipped through the slot, the reversely folded portion **9** assumes the position shown on the right in FIG. **2** to close the opening of the bag as desired.

In the modified embodiment shown in FIGS. **3** and **3***a*, the carrying handle **6** is not heat-sealed to the top edge of the shorter bag wall **1** and the latter has a portion **11** which extends upwardly from the heat-sealed seam **5**. As is shown on the right in FIG. **3**, the portion **11** is also reversely folded onto the outside of the shorter bag wall **1** as the bag is closed. In the embodiment shown in FIG. **3**, both bag walls may have the same length.

In the embodiment shown in FIGS. **4**, **5** and **5***a*, both bag walls comprise two plies adjacent to their upper edge, where they are provided with reversely folded edge portions so that the walls are additionally reinforced and stiffened. The shorter wall **1** has a reversely folded edge portion **12** and the longer wall **2** has a reversely folded edge portion **13**. Along their lower edges, the reversely folded edge portions are joined by heat-sealed seams **14** and **15** to the associated bag walls

so that the tension applied by the contents of the bag is taken up by both sheeting plies adjacent to the edge. Along its top fold, the reversely folded edge portion **12** is joined to the shorter bag wall by a heat-sealed seam **17**, which also joins the handle **16**. The reversely folded edge portion **13** is joined at its top fold to the longer wall **2** by the heat-sealed seam **18**. These heat-sealed seams prevent a shifting of the two sheeting plies relative to each other adjacent to the reversely folded edge portion so that the stiffness is increased. As is apparent from the drawing, the longer wall **2** comprises two further heat-sealed seams **19** and **20** on opposite sides of the lead-out slot **21**, which is well protected against tearing by the heat-sealed seams **19** and **20**. These seams also define the fold line for the reversely foldable portion **9**. The carrying bag according to this embodiment is shown in closed condition on the right in FIG. **5**.

In the embodiment of FIG. **6**, a portion **22** has been reversely folded before the provision of the heat-sealed seams **3**, **4**, which join this portion **22** to the bag wall **2**. The wall **1** which carries the handle **6** is reduced in width in its upper end portion, upwardly of the lower edge **23** of the reversely folded portion **22**. This upper edge portion is reduced in width to such an extent that it is not joined by the heat-sealed side seams **3** and **4** and a flap **26** is formed. When the bag has been filled, the flap **26** is slipped under the reversely folded portion **22** which is fixed to the wall **2** and the handle **6** is slipped through the lead-out slot **27** disposed at the fold of the reversely folded portion **22**.

The embodiment shown in FIGS. **8**, **9** and **9***a* differs from the embodiment of FIGS. **6**, **7** and **7***a* in that the reversely folded portion **28** comprises two plies and its edge is joined by the heat-sealed seam **29** to the other ply.

FIG. **10** is an enlarged view showing the handle **6** of the carrying bag according to FIGS. **1** and **2** with the heat sealing strip **7** broken away. The grip portion **8** tapers upwardly so that it can be slipped more easily through the lead-out slot **10**. The grip portion has a maximum length at **30** slightly above the heat sealing strip **7** and is somewhat undercut at **31** between the portion **30** and the heat sealing strip **7**. The lead-out slot **10** has such a length that it is held in position by the projections at **30** when the grip portion **8** has been slipped through the slot.

FIGS. **11** and **12** show that the heat sealing strip **8** has a bead along its upper edge at **32** and that the grip portion **8** of the handle **6** is thicker than the bead **32**. A constriction **33** between the bead **32** and the base of the grip portion **8** receives the edges defining the lead-out slot **10** so that a particularly good seal is ensured.

FIG. **13** shows another embodiment of the carrying bag according to the invention. The heat sealing strip **101** of the handle **100** is joined to the bag wall **102** by a heat-sealed seam **103**. The other bag wall **104** has a two-ply upper portion and has a portion **105** which is reversely folded over the upper edge of the wall **102** and of the heat sealing strip **101**. As a result, the grip portion **106** of the handle **100** has slipped through the lead-out slot **107**. The two plies of the reversely folded portion **105** have been joined at the edges of the lead-out slot **107** by a combined heat-sealing and severing operation. A shrunk heat-sealed seam **108** is closely spaced from the lead-out slot **107** and prevents a propagation of any tears forming at the edges of the slot **107**.

As is apparent from FIGS. **14** and **15**, the grip portion **106** of the handle **100** of another embodiment has the shape of an open-topped channel. As is also apparent from FIGS. **14** and **15**, the heat sealing strip **101** is T-shaped in cross-section and the crosspiece **109** of the T forms an abutment for the reversely folded portion **105**. The crosspiece **109** is smaller in width than the web **110** of the channel so that the handles **100** when stacked in the magazine of an automatic heat-sealing device contact each other only at the outside surface of the grip portions **106**.

FIG. **16** is a top plan view showing the carrying bag of FIG. **13**. The reversely foldable portion **105** comprises two plies, which are not heat-sealed at the fold **111** of the portion **105** so that the inherent elasticity of the plastics material causes the two plies of the reversely foldable portion to be spaced apart, particularly at the fold, and a beamlike action is obtained. FIG. **16** shows also the shrunk heat-sealed seam **108**, which eliminates the need for any further heat-sealed joint between the two plies of the reversely foldable portion because it ensures the desired sharing of the tensile forces by the two plies of the reversely folded portion. An additional heat-sealed seam **112** extending throughout the width of the reversely foldable portion **105** may be provided below the lead-out slot **107** which is provided with the shrunk heat-sealed seam **108**.

In the embodiment shown in FIGS. **19** to **21**, the reversely foldable portion **113** consists of a two-ply portion of the rear wall **104** and said two-ply portion is backfolded on itself so that the reversely foldable portion **113** comprises four plies, which are not provided with heat-sealed joints along their folds **114**. Just as in the embodiment shown in FIG. **16**, the several layers of the reversely foldable portion **113** are joined only by the shrunk heat-sealed seam **108**, possibly by the additional heat-sealed seam **112**, and by the heat-sealed side seams **115** and **116**. In the embodiment shown in FIGS. **19** – **21**, the reversely folded edge portion **113** has a particularly pronounced beam action and effectively prevents or reduces a sagging of the upper end portions of the carrying bag beyond the ends of the heat sealing strip **101**. Besides, the fact that the reversely foldable portion **113** consists of four plies results in a particularly good reinforcement of the lead-out slot **107**.

A further embodiment of a carrying bag according to the invention is shown in FIGS. **22**, **23** and **23***a*. The carrying bag comprises a shorter front wall **102** and a longer rear wall **104**. Before the provision of the side seams **115** and **116** by a combined heat-sealing and severing operation, the extension **122** of the wall **104** is infolded so that it is subsequently joined to the bag wall **104** by the seams **115** and **116**. A carrying handle **100** consisting of the long, stiff heat sealing strip **101** and the grip portion **106** is heated sealed to the front bag wall **102** at the free edge thereof by the heat-sealed seam **103**. At the fold line of the reversely foldable portion **122**, the bag wall **104**, **122** is provided with a lead-out slot **127** for the grip portion **106**. This slot extends throughout the length of the base of the grip portion **106**. In its upper edge portion extending upwardly from

the lower edge **123** of the reversely foldable portion **122**, the wall **102** carrying the handle **100** is provided on both sides with inclined incisions **124** and **125**, which are interrupted by narrow lands **125'**. When the bag is opened for the first time in that the handle **106** and the wall **104**, **122** are gripped, the lands **125'** are severed and a flap **126** is formed, which is provided with the handle **100**. When the bag has been filled, the flap **126** is slipped under the reversely folded portion **122**, which is secured to the wall **104**. As is shown on the right in FIG. **23***a*, the handle **100** is then slipped through the lead-out slot **127**. The wall end portions **128** and **129** remain connected to the bag because they are held in the heat-sealed seams **115** and **116**.

FIGS. **24 – 26** show another embodiment of a carrying bag. The carrying bag is made in known manner from a half-tubing of synthetic thermoplastic sheeting by a formation of transverse seams in combined heat-sealing and severing operations and comprise a shorter wall **130** and a longer wall **131**. The heat-sealed side seams are indicated at **132** and **133**. A carrying handle **137** consisting of a long, stiff heat-sealing strip **135** and the grip portion **136** is heat-sealed to the free edge of the shorter wall **130** of the bag by the heat-sealed seam **134**. The longer bag wall **131** has a reversely foldable portion **138**, which protrudes over the shorter bag wall **130**. A lead-out slot **139** is provided in the longer bag wall **131** on the level of the base of the grip portion **136**.

The longer bag wall **131** is reinforced adjacent to the lead-out slot **139** by a strip **140**, which is applied to the inside and extends throughout the width of the bag. Side seams **132** and **133** formed by a combined heat-sealing and severing operation join the strip **140** to the bag wall **131** and that portion of the strip which extends also adjacent to the shorter bag wall **130** to both bag walls. The lead-out slot **139** is surrounded by a heat-sealed seam **141** joining the strip **140** to the bag wall **131** which is provided with the lead-out slot. The heat-sealed seam **141** may consist of a special shrunk heat-sealed seam or may be formed during the manufacture of the lead-out slot as a reinforced seam by a combined heat-sealing and severing operation.

The reinforcing strip **140** consists preferably of thicker material than the remainder of the bag and has such a thickness that the lead-out slot is not excessively deformed or even torn. When the carrying handle **137** has been slipped through the lead-out slot, the bag wall **131** provided with the slot is suspended from the handle at the slot. The reinforcing strip stiffens the reversely foldable flap on both sides of the lead-out slot so that a beam action is provided at the top edge of the closed bag and prevents an unsightly sagging of the end portions of the bag, which are not supported by the heat-sealing strip **135** of the carrying handle.

A further embodiment of the carrying bag according to the invention is shown in FIGS. **27 – 29**. The carrying bag has a shorter wall **142** and a longer wall **143**. The heat-sealed side seams are indicated at **144** and **145**. A carrying handle **149** consisting of a long, stiff heat-sealing strip **147** and the grip portion **148** is heat-sealed to the free edge portion of the shorter bag wall **142**. The longer bag wall **143** comprises a reversely foldable portion **150**, which protrudes beyond the shorter bag wall **142**. The longer bag wall **143** comprises a reversely folded edge portion **151**. A reinforcing strip **152** is provided between the wall **143** and the reversely folded edge portion **151** and extends throughout the width of the bag. Hence, the heat-sealed side seams **144** and **145** include the reversely folded edge portion **151** and the reinforcing strip **152** and join these two elements to the bag wall **143** and join the lower portion of these elements also to the bag wall **142**.

In that portion of the longer bag wall **143** which is provided with the reversely folded edge portion **151** and the reinforcing strip **152** so that it comprises three plies, a lead-out slot **153** for the grip portion **148** is provided on the level of the base of the grip portion **148**. This lead-out slot **153** is surrounded by a heat-sealed seam **154**, which joins the three plies and may consist of a special shrunk heat-sealed seam or may be formed during the formation of the lead-out slot as a reinforced seam by a combined heat-sealing and severing operation.

The reinforcing strip **152** is preferably made of thicker material than the remainder of the bag and is so thick that the lead-out slot is sufficiently reinforced so that it will not be excessively deformed nor even torn. When the handle **149** has been slipped through the lead-out slot, the bag wall **143** provided with said slot is suspended from the handle at the slot. The additional reversely folded edge portion **151** of the bag wall **143** covers the reinforcing strip. Although the edges of said strip are held only in the heat-sealed side seams, they cannot disturbingly protrude from the remainder of the bag wall, such as may be the case with exposed reinforcing strips.

According to another feature of the invention, the reversely folded edge portion **150** may be prefolded, pressed and opened back at its base along the line **156** indicated as a dash-dot line in FIG. **27**. This will ensure that in spite of the stiff reinforcing strip the reversely foldable portion will fold into snug engagement when the handle has been slipped through the slot.

What is claimed is:

1. A handle-type carrying bag made of plastic material sheeting comprising two opposing walls, heat-sealed side seams uniting edges of said opposing walls, a heat-sealed carrying handle made of stiff synthetic thermoplastics mounted on one of said walls, the other one of said walls being provided with a lead-out slot on the level of the lower end of said handle and comprising a portion extending beyond said lead-out slot and being reversely folded and included in said heat-sealed side seams, said one wall, before the first use of the bag, comprising an easily destructable weakening line adjacent each of said side seams in a region of said one wall corresponding in width substantially to the width of said reversely folded portion.

2. A carrying bag according to claim **1**, characterized in that the weakened lines comprise cuts which are interrupted only by a few very thin lands.

3. A carrying bag according to claim **1**, wherein said weakening lines taper to said handle.

* * * * *