

Nov. 14, 1967

A. SCHWARZKOPF
SUPPLY BLOCK CONSISTING OF COMMODITY BAGS MADE
FROM PLASTIC MATERIAL

3,352,411

Filed Oct. 15, 1965

2 Sheets-Sheet 1

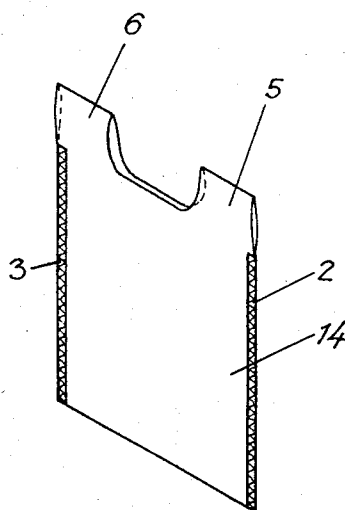
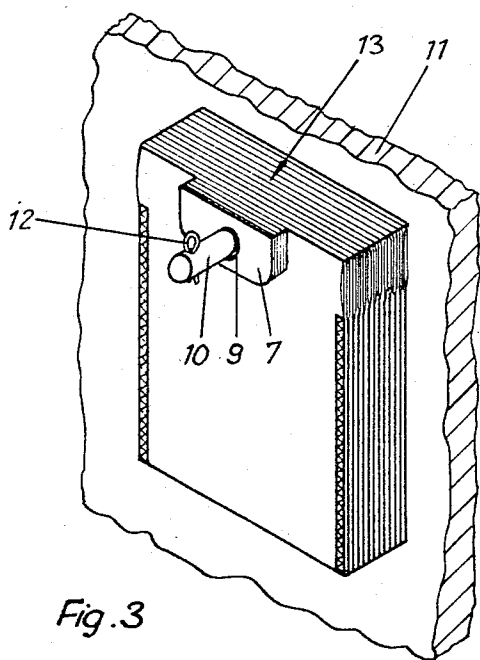
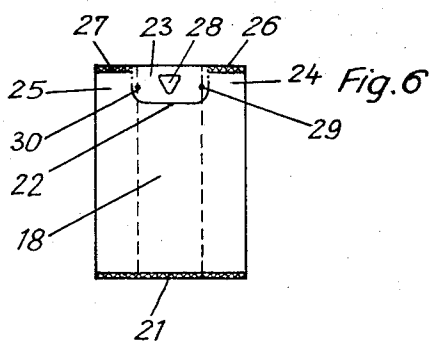
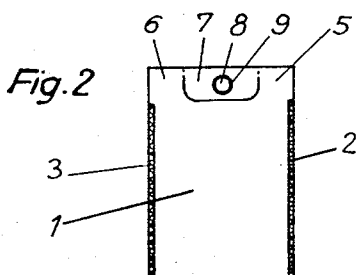
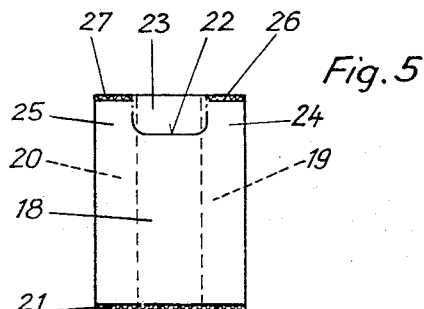
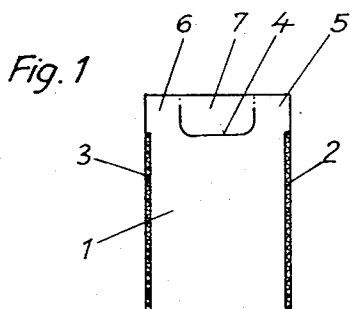


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2 Sheets-Sheet 2

Fig. 7

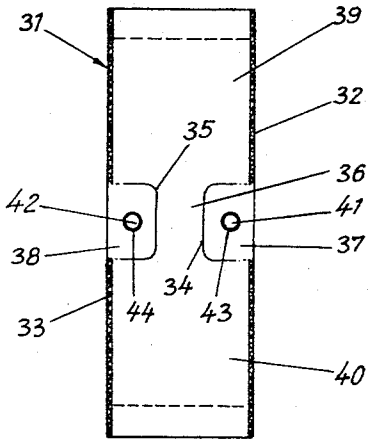


Fig. 10

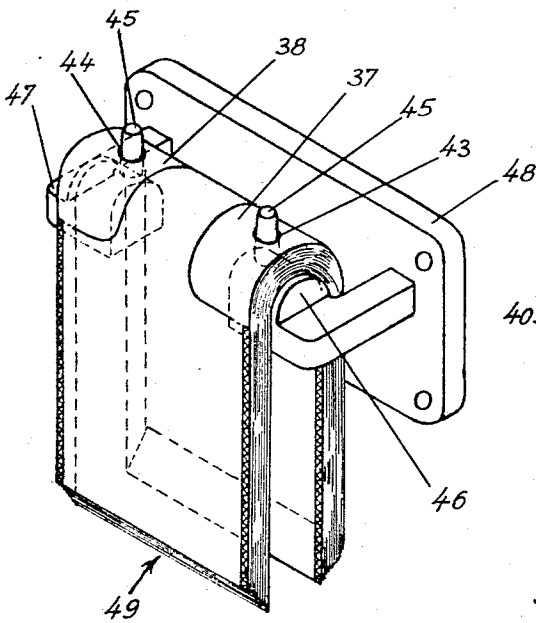
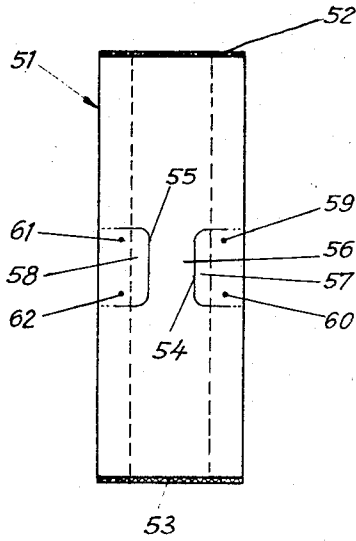


Fig. 8

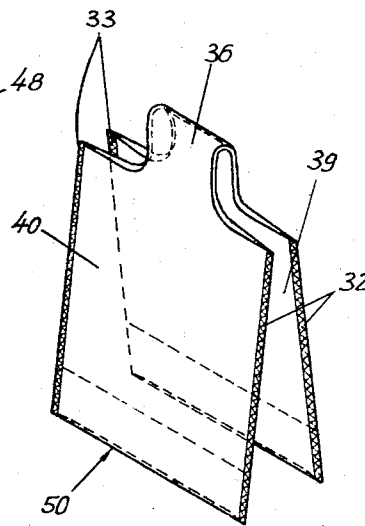


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3,352,411

SUPPLY BLOCK CONSISTING OF COMMODITY BAGS MADE FROM PLASTIC MATERIAL

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Filed Oct. 15, 1965, Ser. No. 496,340

Claims priority, application Germany, Nov. 30, 1964, W 38,062

3 Claims. (Cl. 206—57)

This invention relates to commodity bags made from synthetic thermoplastics and comprising one or two handles, which are made integrally with the bag portion proper. Such carrying bags are preferably made from tubing sections with or without gussets. The open ends of such tubing sections are at least partly closed by heat-sealed seams. Adjacent to one edge, one or more portions are cut out from said bags so that the remaining grip portions extend from one flat side of the bag to the other and may also include portions of the gussets. As these grip portions resemble the shoulder straps of a child's undershirt, such bags may be termed shoulder strap bags. This term will also be used in the following description.

Compared to other known bags which comprise handles, shoulder strap bags have the advantage that in their manufacture there is no need for operations whereby separate handle elements are fed and attached to the bags. For this reason, the cost of manufacturing the shoulder strap bags is lower than the cost of manufacturing other bags provided with handles. The known shoulder strap bags consist, as do other commodity bags, of a sheeting of synthetic thermoplastics, which is as thin as possible, and have the disadvantage that the handle or handles defining at least one cutout portion are not rigid. This results in difficulties when it is desired to form a bundle of a certain number of manufactured bags and to remove single bags from the bundle in the premises of the user. For this reason, more expensive bags having handles which are rigid and separate from the bag material are often preferred in practice to inexpensive shoulder strap bags.

For this reason it is an object of the invention to enable an assembling of the known shoulder strap bags in a simple and reliable manner in a bundle from which single bags can be taken by the user also in a simple and reliable manner.

To accomplish this object, the invention provides a supply block, which consists of commodity bags made from plastic material and comprising handles which are integral with the bag portion proper and are formed by the removal of portions from the bag portion proper. According to the invention one removable portion of each bag blank is connected at its line of severance, which consists at least partly of a tear line, to the associated bag portion, and adjacent removable portions of the bag stack constituting the supply block are secured to each other. Thus, the invention provides a bag block which is similar to a tear-off calendar, in which the line of severance defining that removable portion of each bag which is to be severed is so weakened that the bag can be torn off without difficulty and without damage to the bag and its handles. In known tear-off blocks which consist of commodity bags made from plastic material, the individual bag to be torn off was liable to be damaged and marred by the tearing operation, or additional material was required for the portions to be torn off. The firm connection between the bags of the supply block according to the invention prevents a relative displacement of the individual bags, as in a loose bundle. An unintended taking of two or more bags from the supply block according to the invention at the same time need not be feared. A remarkable advantage is afforded as regards the manufacture because the removable portions need not be removed in the bag-making

machine but subsequently so that the machine need not be arranged to discharge removed portions, which involves difficulties, particularly in the case of thin plastic material sheeting.

In a development of the invention, the line of severance between each bag and the associated removable portion may be cut through in a major part of its length and perforated or otherwise weakened in a minor part of its length, preferably near the edges. This arrangement prevents a tearing into the bag material even when the tearing operation is not performed with great care and ensures that the severing will be quickly and reliably effected along the relatively short, predetermined tear lines. The length of the cuts and of the perforations or other lines of weakness, respectively, will depend only on the toughness and strength of the material.

According to the invention, the removable portions may be formed with a punched hole for suspending the supply block. In a development of the invention, the removable portions may be joined by heat-sealing adjacent to the rims of the holes. The heat-sealing of the rims of the holes may be effected in a simple manner by heating the outside peripheral surface of the punching tool and joining the removable portions to each other in accordance with the invention. Alternatively, the removable portions may be joined by known pierce marks formed with a heat-sealing needle. Furthermore, the removable portions may be joined by staples or the like.

When the bags are formed with gussets, the lines of severance defining the removable portions which are connected to each other extend preferably outwardly beyond the inner edges of the gussets because the aperture defining the handles is then formed in a simple manner by cutting into the gussets.

The previously described features of the invention relate mainly to so-called shoulder strap bags. The invention may also be applied, however, to so-called twin carrying bags made from plastic material. Twin carrying bags are obtained from tubing section of plastic material, which is very long or wide and has heat-sealing seams at both ends, by forming said section in an intermediate portion of its edges with removable portions, which are arranged so that the webs remaining in the middle of the tubing section form joint handles for two carrying bags remaining on opposite sides of the webs. Such twin carrying bags can be made at very low costs; they can easily be opened and carried and their handles have a particularly high tear resistance.

The supply block according to the invention may also be characterized in that the bags consist of tubing sections of plastic material, which are very long or wide and closed at both ends by heat-sealing, and which are formed with webs extending at the center of the tubing section. The webs are defined by opposite cutout portions in an intermediated portion of the longer edges and serve as handles and connect the bag portions remaining on both sides. At least the removable portions on one of the side edges of the block which connect along predetermined tear lines to the associated bags are secured to each other. It is particularly desirable if the removable portions at both side edges remain connected to the bags by predetermined tear lines so that no part is removed before single bags are taken. In this case the two removable portions or flaps form stiffeners during the conveyance through the bag-making machine and during the assembling of the individual bag blanks in a bundle, and these stiffeners serve to hold the bags in the desired position during conveyance and during the operation in which the individual removable portions are joined.

The line of severance between each twin carrying bag and the associated removable portions may again be cut through in a major part or perforated otherwise weakened

in a minor part, preferably near the edges. Each removable part may be formed with a punched hole for suspending the supply block. In a preferred embodiment, the removable portions are joined by heat-sealing adjacent to the rims of the holes. Alternatively, the removable portions having no suspension holes may be joined by known pierce marks formed with the aid of heat-sealing needles, or by staples or the like.

To ensure that the bag portions are properly shaped like a parallelepiped, it is desirable to use gusseted tubing sections for manufacturing the twin carrying bags, the gussets being preserved as such when heat-sealed seams close the bottom of the bags, whereas the original gussets of the tubing of plastic material form bottom folds if the heat-sealed seams are provided along the sides of the bag portions. In the former case it is desirable according to the invention if the lines of severance of the removable portions which are interconnected extend beyond the inner edges of the gussets toward the center of the tubing section.

Several embodiments of the invention will now be described with reference to the drawings, in which

FIG. 1 is an elevation showing a shoulder strap bag which is not yet ready for use,

FIG. 2 is an elevation similar to FIG. 1 and showing superimposed and joined shoulder strap bags,

FIG. 3 is a perspective view showing a suspended block of shoulder strap bags,

FIG. 4 is another perspective view showing a shoulder strap bag which has been severed from the block according to FIG. 3,

FIG. 5 is an elevation similar to FIG. 1 showing a second embodiment of a shoulder strap bag,

FIG. 6 is an elevation similar to FIG. 5 showing a plurality of superimposed and joined shoulder strap bags according to the second embodiment,

FIG. 7 is an elevation showing superimposed and joined twin carrying bags which are not ready for use,

FIG. 8 is a perspective view showing a suspended twin carrying block,

FIG. 9 is also a perspective view showing a twin carrying bag which has been severed from the block of FIG. 8, and

FIG. 10 is an elevation similar to FIG. 7 and showing superimposed and joined twin carrying bags according to a further embodiment.

The shoulder strap bags used to form a supply block as shown in FIG. 3 leave the bag-making machine in a state in which they are not yet ready for use. FIGS. 1 and 5 show two unfinished shoulder strap bags in the state in which they leave the bag-making machine.

The shoulder strap bag shown in FIG. 1 is formed, e.g., from a section 1 of a flattened seamless tubing of synthetic thermoplastics. The two cut edges of the section are closed by heat-sealed seams 2 and 3, respectively, which extend from the lower edge of the tubing section in FIG. 1 to such an extent that the ends of the heat-sealed seams are spaced by a hand's breadth from the upper edge of the tubing section. A U-shaped cut 4 is formed through both plies of the tubing section so that the bight lies approximately on an imaginary line which connects the two ends of the heat-sealed seam, and the limbs are directed toward and extend close to the upper edge of the tubing section. The portion from the free ends of the limbs to the upper edge of the tubing section is bridged by lines of perforations. This design prevents an unintended lateral fluttering and folding of portions 5 and 6 during the formation of the bundle. These portions 5 and 6 subsequently form the handles. A flap 7, which is formed in each ply of the tubing section by the cut 4, is thus joined to the portions 5 and 6 only on its two sides by a narrow, perforated web. These flaps serve to hold the portions 5 and 6 in position. In the previous method of manufacturing the shoulder strap bag, this flap is removed in the bag-making machine.

As has been stated hereinbefore, the shoulder strap bags leave the bag-making machine in the unfinished state shown in FIG. 1. They are stacked in a desired manner at the end of the bag-making machine. A hole 8 is then punched into each stack of loose bags, as is shown in FIG. 2 in a top plan view taken on a stack of horizontally disposed bags. By heat action, the rims of the holes of superimposed plies of plastic material are joined by heat-sealing along part of their length or, as is shown in the drawing, throughout their length. In FIG. 9, the heat-sealed seam 9 is circular as is the hole. By the heat-sealed joints between the superimposed plies, the bags are joined in a block so that the individual blocks cannot be relatively displaced as in a loose bundle.

The shoulder strap bags are now held together as in a tear-off calendar and can be pushed in block form, e.g., on a supporting bar 10, which may fit the hole 8, as is shown in FIG. 3. The supporting bar 10 may be secured, e.g., to a wall or a separate carrying plate 11 at the location where the shoulder strap bags are required, e.g., at a wrapping counter. A block of shoulder strap bags which is fitted on the bar 10 may be locked on said bar in a simple manner against being pulled or falling from said bar, e.g., by means of a split pin 12.

In case of need, a shoulder strap bag may now be torn from the block 13 of shoulder strap bags. For this purpose it is sufficient to tear the perforated webs which have been left between portions 5, 6 and the flap 7. A shoulder strap bag 14 which has been torn from the block 13 and is ready for use is shown in FIG. 4. The former portions 5 and 6 now form the handles of the bag. The firm connection between adjacent shoulder strap bags prevents an undesired slipping of one or more bags along with the removed bag, as is the case when removing a single bag from a stack of loose bags.

By the joints provided according to the present invention between the superimposed plies and plastic material adjacent to the flaps 7, these flaps are held back on the bar 10 when single bags are removed from the firm block of stacked bags so that the severed block has no marks which mar the block and reduce its usefulness. Such marks result when known paper bags carried on a string or nail are torn off because the rim of the hole is then slit.

Some bags have been removed from the block 13 of shoulder strap bags shown in FIG. 3. When the block of shoulder strap bags has been consumed, the joint flaps 7 which have been retained on the bar 10 are removed from the latter and discarded so that the bar can now receive a new block of shoulder strap bags.

FIG. 5 shows a shoulder strap bag according to a second embodiment in an unfinished state, in which it comes from the bag-making machine. The starting material for making this bag is a section 18 of a seamless tubing of synthetic thermoplastics. This tubing has gussets 19 and 20 along its sides. The lower end of the tubing section 18 in FIG. 5 is entirely closed by a heat-sealed seam 21. Close to the upper end of the tubing section 18, a U-shaped cut 22 is formed, which corresponds to the U-shaped cut in the first embodiment. This cut defines in each ply of the tubing section of flap 23, which corresponds to the flap 7 according to FIG. 1. The cut 22 extends also into the two gussets 19, 20. The limbs of the U-shaped cut 22 are again extended by lines of perforations. The upper end of the section 18 is closed by heat sealing throughout its length or, as shown in FIG. 5, at least adjacent to the portions 24, 25, which subsequently from the handles, by two short heat-sealed seams 26, 27.

Individual unfinished shoulder strap bags are again stacked in a desired number at the end of the bag-making machine. Each stack is then formed with a hole 28 adjacent to the flaps 23 as shown in FIG. 6. In this embodiment, the rims of the holes in superimposed plies are not joined by heat-sealing but the superimposed plies are joined at points 29 and 30, for instance, by piercing with hot

needlelike elements whereby the superimposed plies are joined by heat-sealing adjacent to the periphery of the needlelike elements. The hole 28 is substantially triangular in cross section and enables a fitting of the block of shoulder strap bags on a supporting bar having a corresponding cross section. A non-circular cross section is desirable to avoid a swinging of the block of shoulder strap bags on the supporting bar.

As has been stated in the introductory part of the specification, the removal of the flaps 7 and 23 outside the bag-making machine has the advantage that the machine does not require means for discharging the flaps. An essential advantage of the novel shoulder strap bags is the fact that they can be combined in a bundle and removed singly in a simple and reliable manner, as has also been stated hereinbefore.

FIGS. 7 and 10 show the manufacture of a supply block of so-called twin carrying bags. The twin carrying bags leave the bag-making machine in an unfinished state. They are stacked in a desired number at the end of the bag-making machine.

FIG. 7 shows superimposed, flat unfinished twin carrying bags according to a first embodiment thereof. Each twin carrying bag has been formed from a section 31 of flattened, gusseted tubing made from synthetic thermoplastics. Each cut edge of the section is closed by a heat-sealed seam 32 or 33, which is interrupted at the center. The opposite portions where the heat-sealed seams are interrupted are about two breadths of a hand. Two U-shaped cuts 34, 35 are provided in both plies of the tubing section. The limbs of these cuts are extended in a straight line by lines of perforations, which meet the inner ends of the heat-sealed seams. The portions 36 between the two bights of the cuts 34 and 35 subsequently form a two-ply handle of the twin carrying bag. The flaps 37 and 38 defined in each ply of the tubing by the cuts 34 and 35 are connected by the narrow perforated webs, which form extensions of the limbs of the U, to portions 39 and 40 of the tubing section. Each of the latter portions subsequently forms one bag portion of the twin carrying bag. To use the block of twin carrying bags according to the invention, the flaps need not be removed in the bag-making machine so that the flaps form stiffening means for holding the bags in position during the transportation of the bags in the bag-making machine and during the bundling of the bag blanks.

When a desired number of twin carrying bag blanks have been stacked, holes 41 and 42 are punched. The rims of the holes in the superimposed plies of the plastic material are joined by heat-sealing by heat action in part of their length or, as shown, throughout their length. The heat-sealed seams 43 and 44 are circular as are the holes. The joining of the superimposed plies by heat-sealing results in the formation of a block of bags. In this block, the individual bags cannot be relatively displaced as in a loose bundle.

A block of twin carrying bags made in the described manner may be fitted on pins 45, e.g., with the aid of the holes 41, 42, as is shown in FIG. 8. The pins are preferably vertical and connected to saddle brackets 46 and 47, respectively, which are secured, e.g., to a carrying plate 48. The latter is mounted at a location where the twin carrying bags are required, e.g., a wrapping counter.

In case of need, the innermost twin carrying bag can now be torn from the block 49 of twin carrying bags. The two halves of this block straddle the saddle brackets. To remove a bag it is sufficient to tear the perforated webs between the flaps 37, 38 and portions 39 and 40. FIG. 9 shows a twin carrying bag 50, which has been torn from the block 49 and is now ready for use. The original portion 36 of both plies of the tubing now forms the handle of the bag. To tear off a twin carrying bag, it is not necessary to take hold of both depending ends of the bag. It is sufficient to take hold of and pull that end which is most

conveniently accessible. In this way, the two bag portions of the twin carrying bag are successively torn from the flaps 37 and 38.

The pins 45 retain the flaps 37 and 38 on the saddle brackets 46 and 47. When the block of twin carrying bags has been consumed, the interconnected flaps 37 and 38, which have been retained by the pins 45, are removed from the pins and discarded so that a new block of twin carrying bags can be placed on the brackets.

In the twin carrying bag which has just been described, the heat-sealed seams 32 and 33 are interrupted at their center. This design has been illustrated only by way of example. Alternatively, the heat-sealed seams may be continuous. In this case they are pierced or perforated at the corresponding parts when the cuts 34 and 35 are made so that the twin carrying bags can be torn from the flaps 37 and 38 as can the twin carrying bags having interrupted heat-sealed seams.

FIG. 10 is a view similar to FIG. 7 and shows a block of unfinished twin carrying bags according to a second embodiment. The starting material used in making the bag consists again of a section 51 of a gusseted tubing, which is made from synthetic thermoplastics and is much narrower than the tubing used in making the previously described bags. The tubing section is completely closed at both ends by heat-sealed seams 52 and 53, respectively. U-shaped cuts 54 and 55 are provided in the middle of the tubing sections and correspond to the sections 34 and 35 according to the first embodiment. The cuts extend into the gussets of the tubing section. The narrow webs left between the free ends of the limbs of the cuts and the edges of the tubing section are perforated, as in the first embodiment. The portion 36 disposed between the bights of the U-shaped cuts subsequently forms the handle of a twin carrying bag. Flaps 57 and 58 are defined in each ply of the tubing by the U-shaped cuts. The superimposed flaps of both plies are joined by the gusset portions disposed between them.

In this embodiment, the superimposed plies are joined at points 59, 60, 61 and 62 by piercing them with hot, needlelike elements, which join the superimposed plies by heat-sealing adjacent to the periphery of the needlelike elements. In this embodiment of the block of twin carrying bags there are no holes in the flaps 57 and 58.

To suspend such block so that single bags can be removed, a fixture is provided which has also two saddle brackets and in which the pins 45 are replaced by clamp members, by which the flaps 57 and 58 joined by heat-sealing are clamped against a saddle bracket.

What is claimed is:

1. An assembly of commodity bags, each bag comprising a flat plastic tube section closed on all sides except for an opening provided for filling said bag when it is in use, a front wall and a back wall formed by said tube section, at least one waste portion formed in each of said front and back walls adjacent said opening, each of said waste portions being defined by a substantially U-shaped line in said front and back walls respectively, the base extension of said U-shaped line extending toward the center of the respective wall, the major part of said line being an uninterrupted cut through said wall so as to divide said waste portion from its respective wall and a minor part of said line being otherwise weakened so as to keep said waste portion connected to its respective wall but in an easily tearable condition, the waste portions of all of said bags being welded together to form one single block, so that when a single bag is severed along said line from the respective waste portion, said waste portion will remain in said block, while simultaneously by said severing, gripping means for carrying said bag are formed integral with said bag walls adjacent said filling opening.

2. An assembly of commodity bags as set forth in claim 1, wherein a hole extends through said block of

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waste portions and wherein said waste portions are welded together along the rim of said hole.

3. An assembly of commodity bags as set forth in claim 1, wherein said flat tube sections are of an elongated configuration and wherein said opening provided for filling said bag when it is in use is located in the center portion of said bag walls, each of said bags including in a center portion of each wall two oppositely facing waste portions defining a web therebetween, said web being integral with adjacent bag wall portions and serving as a gripping means for the portions of the bag on each side of said gripping means after the bag is severed along said weakening line of each of said waste portions.

8

References Cited

UNITED STATES PATENTS

2,997,167	8/1961	Westfall	-----	206—57
3,008,569	11/1961	Murch	-----	206—57 X
3,180,557	4/1965	Thulin	-----	229—54

FOREIGN PATENTS

1,341,587	9/1963	France.
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