

Nov. 28, 1961

E. KUGLER
DRAW STRING BAG

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Filed July 29, 1958

2 Sheets-Sheet 1

Fig. 1.

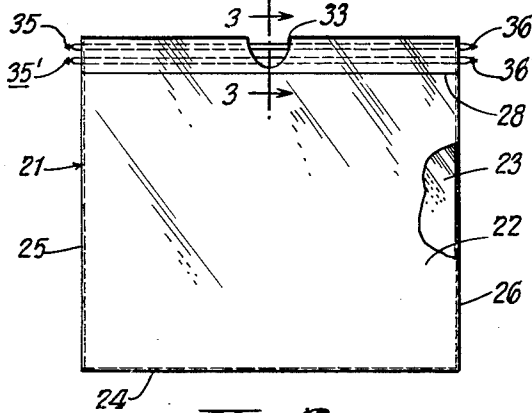


Fig. 2.

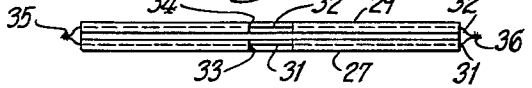


Fig. 4.

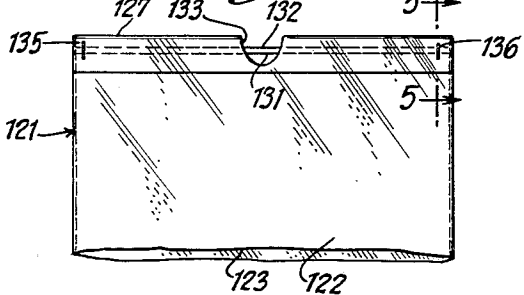


Fig. 6.

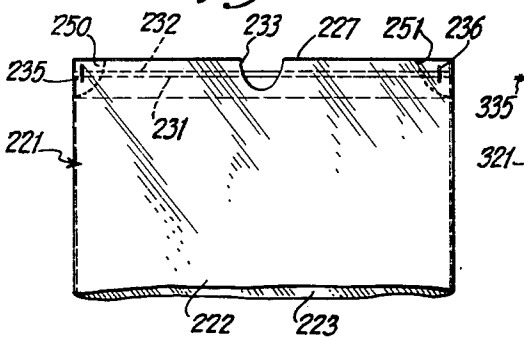


Fig. 3.

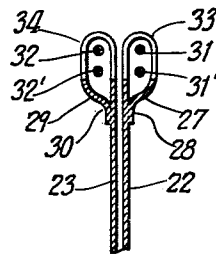


Fig. 5.

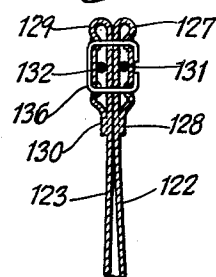
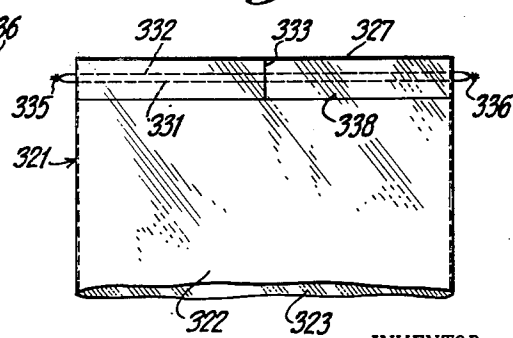


Fig. 7.



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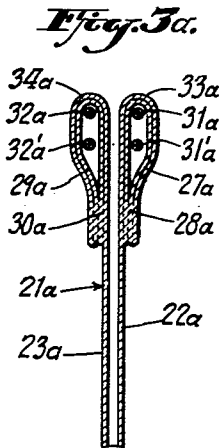
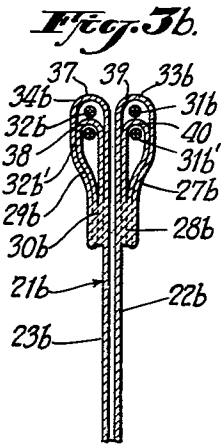
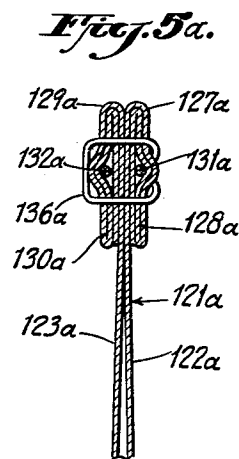
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DRAW STRING BAG

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2 Sheets-Sheet 2



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3,010,640

DRAW STRING BAG

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3 Claims. (Cl. 229—63)

This invention relates to draw string bags and more particularly to draw string bags in which draw strings are utilized to reduce the effective size of the opening at the mouth of the bag through which articles may be inserted or withdrawn.

According to one embodiment of the invention, a bag is provided which has oppositely disposed front and back walls connected together at the bottom and along longitudinal margins of the bag and in which transverse lips of the front and back walls cooperate to form an open end of the bag. At least a portion of each of these lips comprises a tubular hem containing a draw string and the tubular hem portions of the front and back lips have oppositely disposed openings extending through the upper edges thereof intermediate the longitudinal margins of the bag providing access to engage said draw strings.

Various objects, features and advantages of the invention will appear from the description taken in connection with the accompanying drawings which form a part of this specification and illustrate by way of example certain embodiments of the invention. The invention consists in the novel features and combinations as may be shown and described in connection with the articles herein disclosed.

For a better understanding of the invention reference should be had to the accompanying drawings in which:

FIG. 1 is a plan view of a bag constructed in accordance with the invention;

FIG. 2 is a top end view of the bag shown in FIG. 1;

FIG. 3 is a cross sectional view taken at 3—3 of FIG. 1 on a somewhat enlarged scale;

FIG. 3a is a cross sectional view similar to FIG. 3 showing a modification of the bag shown in FIG. 1;

FIG. 3b is a cross sectional view similar to FIG. 3 showing another modification of the bag shown in FIG. 1;

FIG. 4 is a segmental plan view of the mouth end of a bag showing a modification of the mouth end;

FIG. 5 is a cross sectional view taken at 5—5 of FIG. 4;

FIG. 5a is a cross sectional view similar to FIG. 5 showing a modification of the bag shown in FIG. 4;

FIG. 6 is a view similar to FIG. 4 showing a modification of the bag shown in FIG. 4; and

FIG. 7 is a view similar to FIG. 4 showing a further modification.

Referring to FIGS. 1, 2 and 3, a bag 21 is shown having a front wall 22 and a back wall 23. The bag 21 may be formed in any suitable manner such as by folding a sheet of material about a central fold line to provide a bottom 24 (FIG. 1) and interconnecting opposite folds of the material together along their edges to form the longitudinal margins or side seams 25 and 26 of the bag. It can be seen that the front panel 22 terminates in a transverse lip 27 which comprises a tubular hem formed by folding over the material of the panel and securing it along a seam line 28. Likewise the back panel 23 terminates in a lip 29 which comprises a tubular hem formed by folding over the material at the end of the panel and securing along a seam line 30. The tubular hem of the lip 27 contains draw strings 31 and 31' while the tubular hem of the lip 29 contains draw strings 32 and 32'. The strings 31—32 and 31'—32' are complementary respectively. The lip 27 is provided with a notch or cut-out portion providing an opening 33 extending through the tubular hem and disposed intermediate the longitudinal margins of the bag while the lip 29 has a corresponding notch providing a like opening 34 in its tubular hem which co-

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operates with the opening 33 to produce an opening extending through both front and back lips in the finished bag. As shown in FIG. 1, such oppositely disposed edge openings expose the draw strings within the tubular hem portions of the lips of the bag and allow the exposed portions of the draw strings to be grasped without grasping the material of the bag itself.

The opposite ends of the pair of complementary draw strings 31 and 32 are secured together as at 35 and 36 or fastened by suitable means so that their ends cannot be drawn into the interior of the tubular hem portions of the lips 27 and 29; and the opposite ends of the pair of complementary strings 31' and 32' are similarly secured as at 35' and 36'. Thus when either or both of the pairs 31—32 and 31'—32' of the draw strings are grasped where they are exposed by the openings 33 and 34 and are drawn away from the bag the fastened ends of the draw strings outside the bag are unable to enter the tubular hems and hence draw the corners of the bag toward the openings 33 and 34, thus tending to close the mouth of the bag; in which condition the extending string loop will serve as a handle to carry the bag. On the other hand, if desired, the bag may be used as a double draw string bag, namely, by grasping the fastened end of one pair of strings on one side of the bag and the fastened end of the other pair on the other side of the bag, e.g. 35 and 36' (FIG. 1), and pulling outwardly the bag may be closed in the manner of any double draw string bag.

Bags such as 21 may be constructed of any suitable material but flexible thermoplastic material such as polyethylene is preferred because heat sealing techniques may then be employed in forming the bag seams 25, 26, 28 and 30. The thickness of such material may vary over a wide range but the usual thickness for average use is between about 0.0005 and about 0.003". Where relatively thin material is used or where heavy loads are to be carried it is desirable to use a multiple thickness in the tubular hem to reinforce the same against tear stresses imposed by the strings. Likewise the draw strings may be of any suitable material such as ordinary textile cords or tapes of suitable size and material, or plastic cords or strips.

FIGS. 4 and 5 show a bag 121 which is similar in most respects to the bag 21 described in FIGS. 1 through 3. The bag 121 comprises a front panel 122 and a back panel 123 connected together at their longitudinal edges and bottom in the manner described with reference to FIGS. 1 through 3. The front panel 122 is provided with a lip 127 having a tubular hem containing a draw string 131 and the back panel is provided with a corresponding lip 129 having a tubular hem portion in which is disposed a draw string 132. These draw strings perform a function similar to that performed by the draw strings 31 and 32 in bag 21 but the draw strings 131 and 132, rather than being fastened at points outside the edges of the bag, are secured at their ends to the bag itself within the tubular hems and adjacent the sides of the bag by suitable means such as the wire staples 135 and 136. These draw strings may be secured to the bag in any other suitable manner. For example, if draw strings of thermoplastic material are used they may be secured to the bag and joined together by heat sealing. When the portions of these draw strings 131 and 132 exposed by the opening 133 are drawn away from the bag the draw strings draw the corners of the bag together in the same manner as the draw strings 31 and 32 draw the corners of the bag 21 together.

FIG. 6 shows a bag 221 embodying a modification of the bag shown in FIGS. 4 and 5 and correspondingly identical parts are designated by numerals the last two digits of which are identical with the corresponding parts of the bag shown in FIGS. 4 and 5, and therefore only the differences will be specifically recited below.

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The sole difference between the bag 221 and the bag 121 resides in the fact that the front lip 227 and the corresponding rear lip (not shown) are provided adjacent the opposite ends with perforations disposed along arcuate lines such as 250 and 251 extending across the opposite corners of the lips through the tubular hems to provide severable lines defining tear-out tabs containing the portions of the hems to which the draw strings are fastened at 235 and 236. Accordingly the bag 221 may be used in one of two ways, (1) by grasping the draw strings through the opening 223 and pulling the same upwards away from the bag to close the bag as above described with reference to FIGS. 2, 4 and 5, or (2) by grasping one or the other of the tab portions defined by the perforated lines 250 and 251 and severing the tab so that the draw strings may be pulled from the end to close the bag. If desired, the opposite tab may also be removed so that both ends of the draw strings are exposed. This structure has the added advantage that with the tabs severed from the bag the ends of the draw strings will have secured thereto the tab portions which may be grasped between the fingers to provide a larger engageable portion.

FIG. 7 shows a bag 321 having a modified form of opening and in other particulars is quite similar to the bag illustrated in FIGS. 1-3. In this structure the bag comprises a front panel 322 and a back panel 323 connected together at their longitudinal edges and bottom in the manner above described with reference to FIGS. 1-3. The front panel 322 is provided with a lip 327 having a tubular hem containing a draw string 331 and the back panel is provided with a corresponding lip having a tubular hem portion (not shown) in which is disposed a draw string 332; the complementary pair of draw strings 331-332 being suitably secured together at their opposite ends as indicated at 335 and 336. The front lip 327 is provided with a slit opening 333 extending through the tubular hem and the corresponding rear lip is provided with a similar slot in register with the slot 333. These slots perform essentially the same function as the openings 333 and 334 of FIG. 2 and provide access through which the draw strings 331 and 332 may be grasped and moved upwardly away from the bag to close the same. In this embodiment, as in that shown in FIGS. 1-3, the draw strings may be grasped at either end to close the bag in the manner of the usual single draw string bag.

FIG. 3a shows a bag 21a which is similar in most respects to the bag 21 described above. The various parts of the bag 21a are similar to the correspondingly numbered parts of the bag 21 except that the hem portions of the lips 27a and 29a of the bag 21a are formed of a double thickness of the material of which the bag 21a is constructed, as shown in FIG. 3a. Hems of multiple thickness, such as the hems of double thickness shown in FIG. 3a, may be formed by folding the material at the top of the panel over upon itself more than once or may be formed in any other suitable manner.

FIG. 3b shows a bag 21b which, like bag 21a, is similar in many respects to the bag 21 described above in connection with FIGS. 1 through 3. The various parts of the bag 21b are similar to the correspondingly numbered parts of the bag 21 except that the hem portions of the lips 27b and 29b of the bag 21b are formed of double thicknesses of the material of which the bag 21b is constructed. The bag 21b differs from the bag 21a in that in the bag 21b the draw strings are contained within hem portions of the lips 27b and 29b in such a way that the strings 31b and 32b are contained within the outer fold of the bag material as indicated at 37 and 39 while the strings 31b' and 32b' are contained within the inner fold of the bag material as indicated at 38 and 40.

FIG. 5a shows a bag 121a which is similar in many respects to the bag 121 shown in FIG. 4. The various

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portions of the bag 121a are similar to the correspondingly numbered portions of the bag 121 but in bag 121a the hem portions of the lips 127a and 129a containing the draw strings 131a and 132a are made up of double thicknesses of the bag material by means of a double hem fold. This serves as a reinforcement of the tubular hem where the staples such as 136a secure the ends of the draw strings to the bag material.

Lips having hem portions made up of multiple thicknesses of the bag material as shown in FIGS. 3a, 3b and 5a may be used in conjunction with any of the bags previously described in connection with FIGS. 1 through 7. Such lips are especially important where thin material is used and provide additional strength to resist tearing stresses caused by placing heavy loads in the bag and reduce the possibility of tearing the bag either by the use of such heavy loads or by sudden application of tearing forces such as may occur when the draw strings are pulled suddenly in order to constrict the mouth of the bag.

While the invention has been described in detail with respect to certain preferred embodiments and modifications thereof it will be understood by those skilled in the art that various changes and other modifications may be made without departing from the spirit and scope of the invention and it is intended to cover all such changes and other modifications in the appended claims.

What I claim is:

1. A draw string bag comprising oppositely disposed walls provided at one end with folded over lips forming an open mouth of said bag, each of said lips having a tubular hem comprising double folds of bag material and two pairs of complementary draw strings with one string of each pair disposed in the tubular hem of one lip and the other string of each pair disposed in the tubular hem of the opposite lip with one of the strings in the tubular hem of each lip being contained within the outer fold of the bag material while the other string in the tubular hem of each lip is contained within the inner fold of the bag material.

2. A draw string bag comprising oppositely disposed walls continuous around a folded bottom end and sealed together along longitudinal marginal edges, said bag walls provided at the top end with lips forming an open mouth of said bag, each of said lips having a tubular hem extending the full width of said bag and complementary individual draw strings disposed in said tubular hems respectively and extending throughout said hems for the full width of said bag and secured together respectively at opposite adjacent ends for closing said mouth, the lips of said bag being provided with perforations extending through said tubular hems across opposite corners thereof and defining tear-out tabs containing portions of said hems to which said draw string ends are fastened, both of said lips being provided with oppositely disposed openings extending through said tubular hems and positioned intermediate and spaced inwardly from the opposite ends of the hem, said opening providing access for engaging and pulling the draw string therethrough.

3. A draw string bag comprising oppositely disposed walls provided at one end with folded over lips forming an open mouth of said bag, each of said lips having a tubular hem comprising double folds of bag material and two pairs of complementary draw strings with one string of each pair disposed in the tubular hem of one lip and the other string of each pair disposed in the tubular hem of the opposite lip with one of the strings in the tubular hem of each lip being contained within the outer fold of the bag material while the other string in the tubular hem of each lip is contained within the inner fold of the bag material, said lips being provided with oppositely disposed openings extending through the upper edges of said tubular hems and positioned intermediate and spaced inwardly from the opposite ends of said hems,

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said openings providing access for pulling said draw strings therethrough.

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