Aug. 15, 1961 L. C. GISH 2,996,216

BOTTLE CARRIER

Filed March 12, 1959 2 Sheets-Sheet 1

Fig. 1.

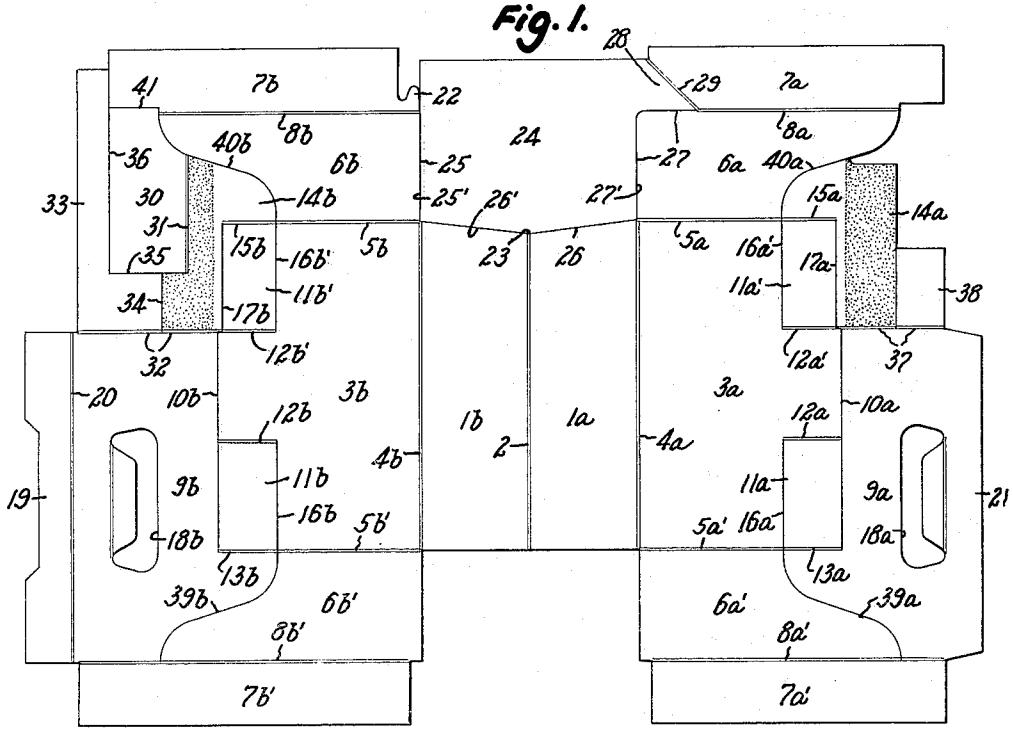


Fig. 8.

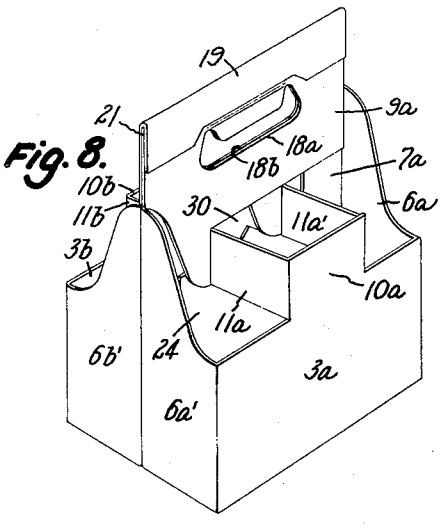
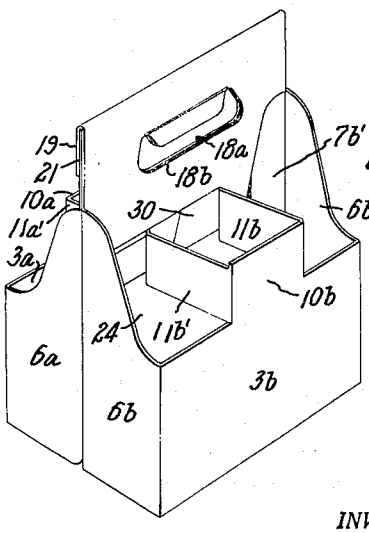


Fig. 9.



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BOTTLE CARRIER

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Fig. 2.

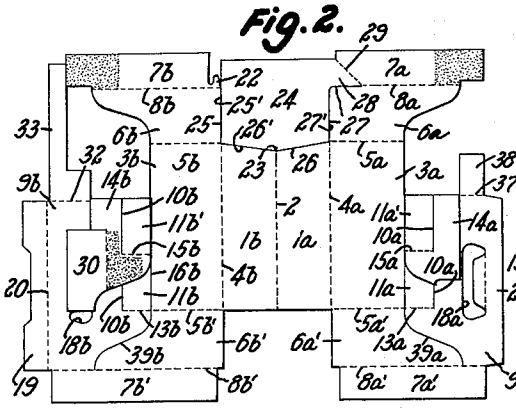


Fig. 3.

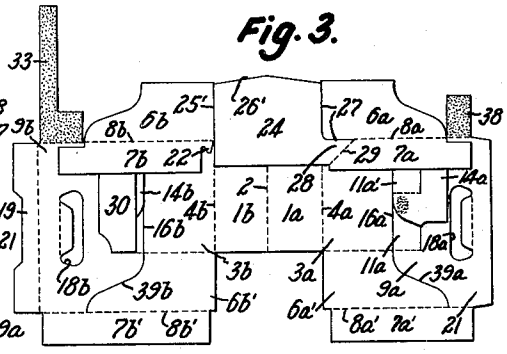


Fig. 4.

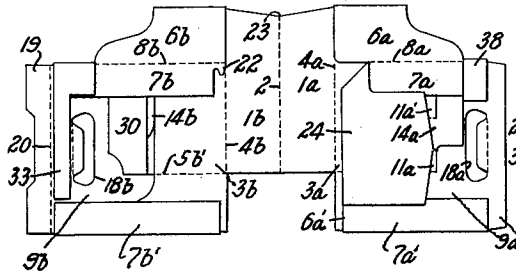


Fig. 5.

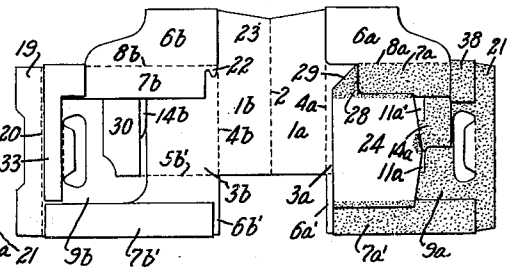


Fig. 6.

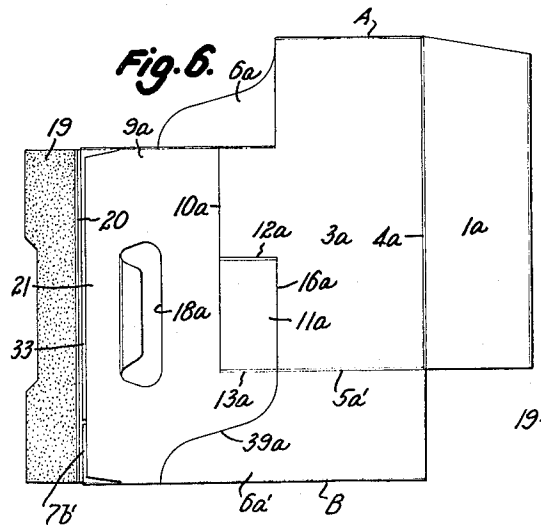
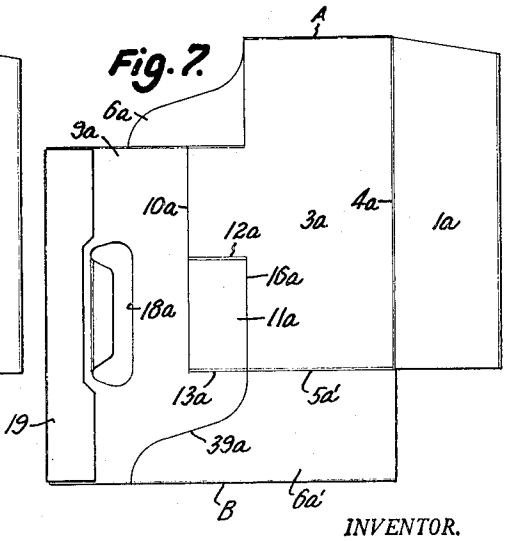


Fig. 7.



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2,996,216
BOTTLE CARRIER

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Filed Mar. 12, 1959, Ser. No. 798,942
2 Claims. (Cl. 220—113)

This invention relates to cartons made of paperboard or other apropriate sheet material and it is directed particularly to structural and functional modifications of bottle carriers of the type shown generally in the patents of Michael H. Kowal No. 2,692,700, granted October 26, 1954, and No. 2,712,397, granted July 5, 1955.

In bottle carriers of this general type it has been found desirable to provide a central partition member which will extend from the upwardly projecting carrying handle into close proximity to, or against, the bottom wall of the carrier in order to prevent contact of the bottles in the two rows thereof arranged longitudinally of the carrier at opposite sides of the carrying handle.

To this end one object of the invention is to provide such a partition member in a form which will permit flat-folding of the carton as is desired.

Another object is to provide in an integral sheet material blank parts, defined by cuts and folding scores, which, in the assembled, and ultimately erected, carrier will form the desired central partition, but which lie within the area of a blank of the size normally employed for the formation of carriers of this general type but not provided with such central partitions.

Having this in mind, a further object of the invention is to form these parts of the blank which will ultimately provide the central partition from areas of the blank which would normally constitute scrap in the blanks of carriers not provided with central partitions.

A still further object of the invention is to provide a carrier which, when erected and in use, is structurally stronger and more rigid than similar carriers now known, due, in part, to the presence and mode of formation of the central partition and its rigid connection with other elements of the carrier.

With these and other objects in view, as will be apparent from the following description, the invention comprises a carrier carton, particularly for bottles, and the sheet material blank for forming such carrier, including a bottom wall, side walls joined to the longitudinal edges of the bottom wall along appropriate folding scores, end wall sections joined to the end edges of the side walls and connected together substantially medially of the bottom wall to provide full end walls spanning the ends of the bottom wall between the side walls, a combined handle and partition disposed medially of the bottom and side walls, and bottle compartment straps arranged in spaced relation to each other and to the end walls and spanning the spaces between and connected with the side walls and handle and partition member, all of said parts being formed from a single integral blank of sheet material in which they are defined by cuts and folding scores, and those parts which are so assembled as to provide the partition being formed from portions of the blank which lie between other element-forming portions thereof and which would normally constitute scrap, all as will be explained hereinafter more fully and finally claimed.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated,

FIG. 1 is a plan view of the inner face of a sheet material blank from which the carton of the invention is constructed,

FIGS. 2 to 5, are views similar to FIG. 1, but drawn

to a smaller scale, showing the progressive steps of folding and adhesively securing the various parts of the blank prior to its final folding and securing,

FIGS. 6 and 7 show the opposite faces of the finally flat-folded and secured blank drawn to the scale of FIG. 1, and

FIGS. 8 and 9 are perspective views of opposite sides of the erected carrier carton.

Referring particularly to FIG. 1, it will be seen that the flat blank includes a bottom wall comprising relatively foldable halves **1***a* and **1***b* joined along a longitudinal folding score **2**, and at the opposite longitudinal edges of this dual bottom wall are side walls **3***a* and **3***b* joined to such edges along folding scores **4***a* and **4***b*. At the opposite end edges of the side walls **3***a* and **3***b* and joined thereto along folding scores **5***a*, **5***a'* and **5***b*, **5***b'* are end wall sections **6***a*, **6***a'* and **6***b*, **6***b'* provided, respectively, with complemental connecting flaps **7***a*, **7***a'* and **7***b*, **7***b'* which may be folded upon their respective folding scores **8***a*, **8***a'* and **8***b*, **8***b'* so that they may be adhesively secured together in pairs for completing the end walls from the end wall sections **6***a*–**6***b* and **6***a'*–**6***b'* when the blank is given its final assembly fold (FIGS. 6 and 7).

Extending outwardly in the blank from the side walls **3***a*, and **3***b*, and offset longitudinally thereof, are handle members **9***a* and **9***b*, respectively, which are defined from their side walls by cuts **10***a* and **10***b* and are connected to such side walls by separator straps **11***a*, **11***a'* and **11***b*, **11***b'* hinged on folding scores **12***a*, **12***a'*, and **12***b*, **12***b'*. The separator straps **11***a* and **11***b* are connected to the handle members **9***a* and **9***b* on folding scores **13***a* and **13***b*, and the separator straps **11***a'* and **11***b'* are connected to foldable handle reinforcing and partition forming elements **14***a* and **14***b*, respectively, on folding scores **15***a* and **15***b*. Cuts **16***a*, **16***a'* and **16***b*, **16***b'* separate the straps **11***a*, **11***a'* and **11***b*, **11***b'* from their respective side walls, and cuts **17***a* and **17***b* separate the straps **11***a'* and **11***b'* from their respective structural elements **14***a* and **14***b*.

The handle members **9***a* and **9***b* are provided with ultimately mating hand holes **18***a* and **18***b*, and the handle member **9***b* is provided with a finish flap **19** foldable upon a folding score **20** over an extension **21** on the handle member **9***a*, the thus folded flap **19** being appropriately secured, in the assembled blank, as by adhesive, to the extension **21** to provide a stiffening and reinforcing means for the handle assembly.

All of the elements of the blank thus far described have their structural and functional counterparts, disclosed in a slightly different form, in the Kowal Patent No. 2,692,700 hereinabove referred to.

Preferably one of the end wall elements, the element **7***b* as shown, will be provided with a hook **22** engageable in a notch **23** of the bottom wall **1***a*, **1***b* to serve in locking the carton in erected condition with its bottom wall portions **1***a* and **1***b* in substantially flat coplanar arrangement.

As hereinbefore stated the carrier carton of the invention is provided with a longitudinal center partition extending from the handle portion to the bottom wall of the erected carrier without increasing the usual area of the blank for a carton of this general character. In other words the center partition will be formed from parts of the blank which would normally constitute scrap, and they are so arranged and connected together and to other elements of the carton structure, particularly those forming the end walls and handle member, as not only to produce the desired partiion but also to make the whole erected carton stronger and more rigid and the handle member better adapted to support the load of the filled carton. Furthermore, the connection of the partition forming elements to the handle members makes them

serve, with the joined handle members, to form a combined partition and handle member.

To this end, that portion of the blank which lies between the proximate ends of the end wall elements 6*a* and 6*b*, and which in the assembled blank forms the partition panel 24, is severed upon a cut 25 defining one of its edges 25′ and the bottom edge of the end wall element 6*b*, and upon a cut 26 which forms another one of its edges 26′ and an end edge of the bottom wall elements 1*a* and 1*b*, and upon intersecting cuts 27 which form its third edge 27′ and the bottom edge of the end wall element 6*a*, a tab 28 provided by the intersecting formation of the cuts 27 being joined along a diagonal folding score 29 to the securing flap 7*a* of the end wall element 6*a*. A supplemental partition element 30 is joined by a folding score 31 to the structural element 14*b*. This partition element 30 is foldable with the structural element 14*b* upon a folding score 32 aligned with the folding score 12*b*′ of the strap 11*b* and defining one end edge of the handle member 9*b*.

A handle reinforcing element 33 defined by cuts 34, 35 and 36 from the material of the blank bordering the structural element 14*b*, the supplemental partition element 30 and one end of the securing flap 7*b* of the adjacent end wall element 6*b*, is foldable upon a portion of the last mentioned folding score 32. The structural element 14*a* is foldable upon a folding score 37, and flanking this structural element 14*a* is a handle reinforcing member 38 also foldable on the folding score 37. The folding score 37 defines an end edge of the handle member 9*a* complemental to the edge of the handle member 9*b* defined by the folding score 32.

Sinusoidal cuts 39*a* and 39*b* which extend between the folding scores 5*a*′, 8*a*′ and 5*b*′, 8*b*′ of the end wall elements 6*a*′ and 6*b*′ respectively, serve to sever these elements for hinging movement relative to the handle members 9*a* and 9*b* upon erection of the carton to usable form. Similar sinusoidal cuts 40*a* and 40*b* serve to sever the structural elements 14*a*, 14*b* and 30 from the end wall elements 6*a* and 6*b*, and it will be noted that an additional cut 41, formed as an extension of the sinusoidal cut 40*b*, frees the end of the element 30 from the end flap 7*b*.

The procedure for assembling the blank of FIG. 1 to the completed flat-folded form (FIGS. 6 and 7) from which it may be erected to usable carrier form (FIGS. 8 and 9) is preferably in a plurality of successive folding and gluing steps all of which are capable of being performed by known types of automatic machines with no more than the adjustments and substitutions of parts of such machines which are necessary for their adaptation to any special folding and gluing job.

Referring to FIGS. 1 to 7 by which an understanding of the assembly procedure from flat blank to flat-folded and glued carton may be obtained, it will be seen (FIGS. 1 and 2) that, with adhesive applied in the areas noted by stippling in FIG. 1, the structural elements 14*a* and 14*b* are folded over upon, and secured to, the inner faces of the handle members 9*a* and 9*b*, respectively, carrying with them in free contact with such faces the straps 11*a*′ and 11*b*′, and the element 14*b* also carrying with it the supplemental partition element 30, see FIG. 2. Then, with adhesive applied to the stippled area (FIG. 2) of the structural element 14*b*, the element 30 is folded upon its folding score 31 over upon and secured to the element 14*b* (FIGS. 3, 4, and 5) in the area of the adhesive applied as shown in FIG. 2.

Just subsequent to the folding of the partition element 30, the end wall elements 6*a* and 6*b*, with adhesive applied to their flaps 7*a* and 7*b* in the areas indicated by stippling in FIG. 2, are folded on their folding scores 5*a* and 5*b* flat upon, but free of, the underlying portions of the blank except in those areas where the adhesive carried by the flaps 7*a* and 7*b* adheres to underlying elements (FIG. 3), the flap 7*a* carrying with it the partition panel 24 by virtue of the connection of the relatively rigid diagonal folding score 29.

Next, adhesive is applied to the exposed surfaces of the handle reinforcing elements 38 and 33 in the areas indicated by stippling (FIG. 3), and they are folded over upon and secured to the handle members 9*a* and 9*b*, respectively, and to the ends of the end wall securing flaps 7*a* and 7*b* which underlie them (FIG. 4). Now, the end wall flaps 7*a*′ and 7*b*′ are folded upon their respective folding scores 8*a*′ and 8*b*′ so as to overlie their end wall elements 6*a*′ and 6*b*′ (FIG. 4) and, with a spot of adhesive applied to an exposed portion of the structural element 14*a* in the area indicated by stippling in FIG. 3, the partition panel 24 is folded upon its diagonal folding score 29 to the position shown in FIG. 4 in which the spot of adhesive applied to the element 14*a* will cause it to adhere to this element. It will be noted that, when thus folded, the edges of the partition panel 24 overlie the edges of the end wall flaps 7*a* and 7*a*′ and, if desired, adhesive may be applied in the areas of these mating edges prior to the folding of the panel 24. Thereafter, with adhesive applied to the exposed surfaces of the parts 9*a*, 21, 14*a*, 7*a*, 7*a*′, 38 and 28, and to the angular tip and edges of the panel 24 which overlie the parts 7*a* and 7*a*′, as indicated by stippling in FIG. 5, the thus far assembled and secured blank is folded upon the median folding score 2 of the bottom wall 1*a*, 1*b* to bring the two halves of the blank in register and effect their adhesively secured assembly. Finally, with adhesive applied to the exposed surface of the finish flap 19, FIG. 6, this flap is folded upon its folding score 20 over, and affixed to, the underlying extension 21 of the handle member 9*a*, as shown in FIG. 7, to complete the flat-folded assembly of the carton.

To erect the flat-folded carton to usable form, FIGS. 8 and 9, it is merely necessary to apply pressure to the folded edges A and B, FIGS. 6 and 7, until the carton is squared up, and to engage the hook 22 of the flap 7*b* with the notch 23 of the bottom wall.

As thus set up it will be apparent that the combined partition and handle member extends medially longitudinally of the carton and its partition-forming portion produced by the elements 24 and 30, together with the flaps 7*a*, 7*a*′ and 7*b*, 7*b*′ to which they are adhesively connected, extends to the bottom wall of the carton and serves adequately to separate the rows of bottles at its opposite faces.

It will be noted, moreover, that, in the application of adhesive to parts to be joined during the flat-folding assembly of the blank, no adhesive is applied to the areas of the straps 11*a*, 11*a*′ and 11*b*, and 11*b*′, or to elements which are folded into contact with them. Hence, when the carton is squared up these straps are free to assume their functional positions between the side walls 3*a* and 3*b* and the opposite faces of the combined partition and handle member by hinging upon their folding scores 12*a*, 13*a*; 12*a*′, 15*a*; 12*b*, 13*b*; 12*b*′, 15*b*.

Obviously, when the hook 22 of the end wall structure is disengaged from the notch 23 of the bottom wall, the carton may be re-collapsed to flat-folded condition, if desired.

Due to the rigid assembly of the elements of the partition member, and its connection with the end wall flaps 7*a*, 7*a*′ and 7*b*, 7*b*′ which, in the erected carrier (FIGS. 8 and 9), form parts of the partition member, and due, also, to the rigid, multiple-reinforced nature of the handle member, the carrier is of extremely sturdy construction and serves well for carrying the relatively heavy load of bottled beverages or the like for which it is designed.

Moreover, in view of the fact that the carrier of the invention, while embodying a combined partition and handle member of full length and height, can be constructed from a sheet material blank of no greater area than that required for similar carriers which do not pro-

vide the partition element, and may be produced on automatic machinery of known type generally adapted for the manufacture and assembly of such last named carriers, the carrier of the invention has advantages of function and economy of production which are attractive to packagers of bottled goods.

Various changes and modifications are considered to be within the principle of the invention and the scope of the following claims.

What I claim is:

1. In a carrier carton formed from sheet material such as paperboard, a bottom wall, side walls extending upwardly from the longitudinal side edges of the said bottom wall, end wall elements joined to the opposite ends of said side walls and provided with complemental connecting flaps joined together medially of the bottom wall to unite said end wall elements in pairs at opposite ends of the bottom and side walls, handle means comprising two similar handle members joined in face-to-face relation and disposed medially of said side walls and bottom wall longitudinally thereof and connected in rigid assembly with said connecting flaps at opposite ends of the carrier, compartmentizing separator straps connecting said side walls and handle members, a partition member joined to said handle means and connecting flaps and extending from said handle means downwardly into proximity to said bottom wall, said partition member including a single panel integral at one of its ends upon a diagonal folding score with a connecting flap at one end only of the carrier, said panel being flat-folded upon said diagonal folding score and extending medially longitudinally between said side walls in vertical alignment with said handle means and being of a length spanning the space between and with its end edges fully interlapped with and secured to longitudinally opposed edge portions of the connecting flaps at opposite ends of the carrier, one of said handle members being provided with a supplemental partition reinforcing element vertically flat-folded against said handle member and longitudinally flat-folded upon itself and secured to said panel.

2. A sheet material flat blank for a carrier carton, said blank being provided with cuts and folding scores defining a substantially rectangular bottom wall, side walls joined to the longitudinal edges of said bottom wall, end wall sections joined to the opposite ends of said side walls, each of said end wall sections terminating in a connecting flap, said flaps adapted to be secured together in pairs at opposite ends of the carton formed from said blank, complemental handle members offstanding from the ultimate top edges of said side walls and severed therefrom by longitudinal cuts, separator straps hinged at their opposite ends to said handle members and side walls respectively on folding scores, a partition panel disposed between the ultimate bottom edges of two end wall sections at one end of said bottom wall and substantially completely filling the space therebetween and freed from said end wall sections and bottom wall by certain of said cuts, said panel being connected to the connecting flap of one of the adjacent end wall sections along a diagonal folding score and being foldable upon such score into flat-folded relation to the adjacent side wall with which the end wall section of its connecting flap is attached and being of a length to have its opposite end edges interlapped by and secured to the pairs of flaps at opposite ends of the erected carton, one of said handle members being provided with a supplemental partition reinforcing element defined from such handle member by a vertical folding score on which it may be flat-folded against said handle member and having a longitudinal folding score upon which it may be flat-folded upon itself.

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