April 23, 1963 W. J. WOLF 3,086,630

CARRYING CASE

Filed April 7, 1960

Fig. 1

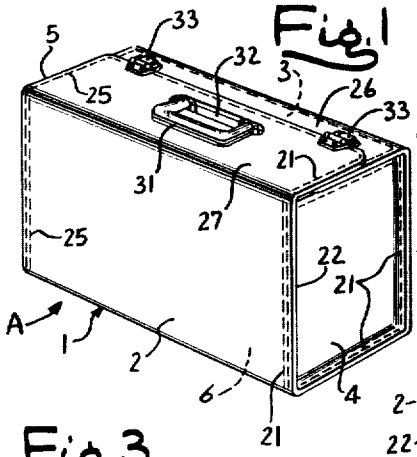


Fig. 2

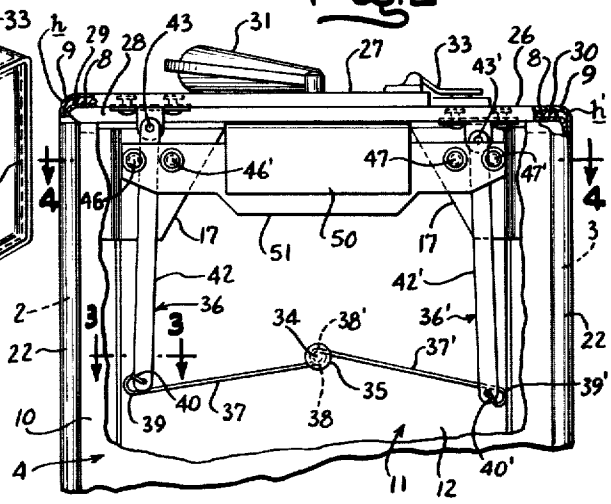
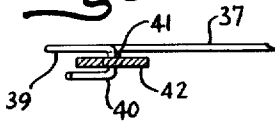


Fig. 3



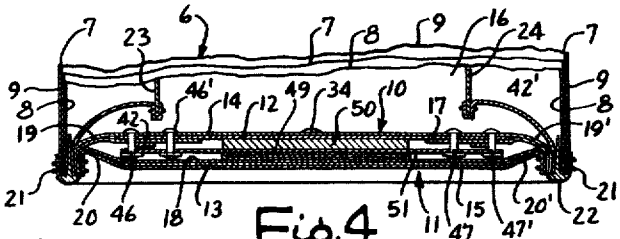


Fig. 4

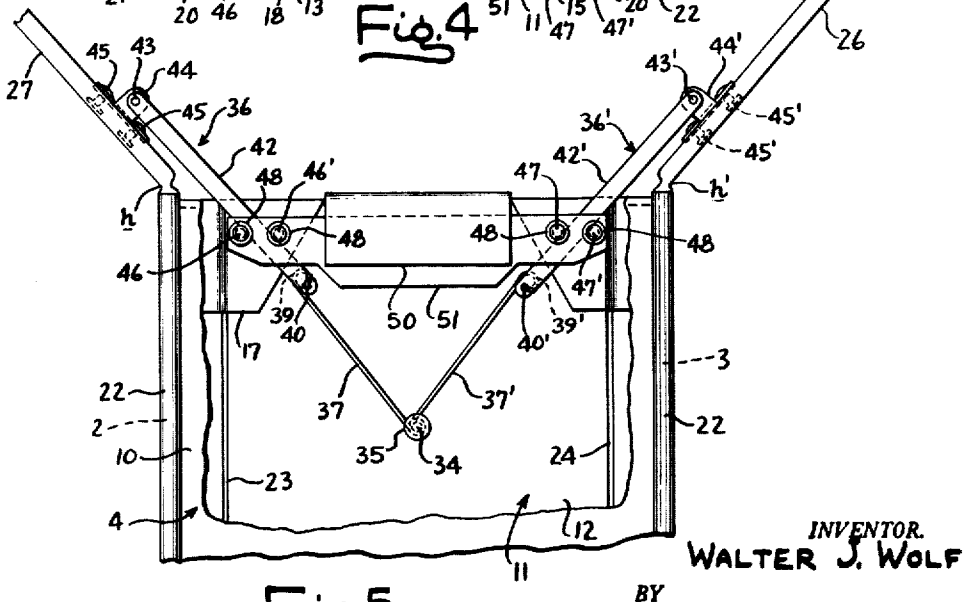


Fig. 5

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CARRYING CASE

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This invention relates to new and useful improvements in carrying cases.

One style of carrying case commonly manufactured and sold today is a type known as a sample or catalog case. Such a case usually consists of a rectilinear body formed by a plurality of side and bottom panels which are marginally secured together to form the walls of the case body. The walls each customarily include a cardboard stiffening ply to which is laminated on each side thereof a layer of leather, vinyl resin plastic, or other suitable covering material. In addition, two lid members, usually constructed in a manner similar to that of the side and bottom panels, are hingedly secured to the upper ends of a pair of opposite side walls so that the lid members may be quickly and conveniently swung opened and closed, as desired. The covering material on both sides of the lid members usually extends into the side wall upon which the lid members are mounted so that this covering material forms the hinge connection between the lid member and its associated side wall.

When either of the lid members is opened it is usually swung through an arc greater than ninety degrees so that the lid member projects upwardly at a small angle to the vertical and the center of gravity of the lid member lies outside of the base body. Furthermore, in the opened position the outer layer of covering material at the hinge connection is compressed and tends to buckle while at the same time the inner layer of covering material is placed in tension. The internal reaction forces in the covering material resulting from the tension and compression of the inner and outer layers of covering material tends to urge the lid member toward the closed position. Moreover, the lid member is relatively light in weight and these reaction forces at the hinge connection are frequently of a magnitude sufficient to overcome the gravitational force tending to hold the lid member open. Consequently, in carrying cases of the foregoing type the lid members are frequently unable to remain by themselves in the open position. This results in annoyance and inconvenience to the user who often desires to keep the lid members open for a limited period of time but who, nevertheless, must be constantly opening the lid members each time access to the interior of the carrying case is desired.

It is, therefore, a primary object of the present invention to provide a carrying case which includes a lid member hingedly secured to the case body and a mechanism cooperating with the lid member and case body for preventing the lid member from closing by itself after it has been moved to its open position.

It is also an object of the present invention to provide a carrying case of the type stated in which the case body and lid member are covered with flexible material and the flexible covering forms the hinge connection between one of the walls of the case and the lid member and, furthermore, wherein a major portion of the mechanism is concealed within one wall of the case which is adjacent to that wall upon which the lid member is hingedly mounted.

It is a further object of the present invention to provide a carrying case of the type stated in which the mechanism for holding the lid member open is self-releasing upon manually moving the lid member toward the closed position, thereby permitting the lid member to be easily

closed without the necessity of first releasing latches, catches, or the like.

It is another object of the present invention to provide a carrying case of the type stated in which the aforesaid mechanism is relatively inexpensive to construct and embody into the case.

The attainment of the above and further objects of the present invention will be apparent from the following specification taken in conjunction with the accompanying drawing forming a part thereof.

In the drawing:

FIG. 1 is a perspective view of a carrying case constructed in accordance with and embodying the present invention;

FIG. 2 is a fragmentary end elevational view of the case partly broken away and in section and showing the mechanism for holding the lid members open;

FIGS. 3 and 4 are fragmentary sectional views taken along lines 3—3 and 4—4, respectively, of FIG. 2; and

FIG. 5 is a view similar to FIG. 2 but showing the lid members in the open position.

Like reference numerals designate like parts throughout the drawing.

Referring now in more detail to the drawing which illustrates a preferred embodiment of the present invention, A designates a carrying case comprising a hollow case body 1 formed by marginally interconnected side and end walls 2, 3, 4, 5 and a bottom wall 6. Preferably, each of the walls 2, 3, 6 includes a cardboard reinforcing ply 7 and adhesively bonded on each side of the reinforcing plies 7 are inner and outer covering layers 8, 9 of leather, vinyl-resin plastic or other suitable flexible material.

The end wall 4 comprises inner and outer panels 10, 11 each having a cardboard reinforcing ply 12, 13 and a covering layer 14, 15 bonded thereto, the latter being of the same material as that of the covering layers 8, 9 previously described. As seen by reference to FIGS. 2 and 4 the covering layer 14 is presented toward the interior 16 of the case body 1 while the covering layer 15 is on the exteriorly presented surface of the reinforcing ply 13. Furthermore, the upper ends 17, 18 of the covering layers 14, 15 are wrapped around the upper margins of the reinforcing plies and bonded in place to provide a finished appearance for the upper edges of the panels 10, 11.

The laterally extending ends 19, 19', 20, 20' of the covering layers 14, 15 are secured to the margins of the side and bottom walls 2, 3, 6 in the manner well known in the art as for instance, by one or more lines of stitches 21 which form edge seams. If desired, a strip of plastic edging 22 may be secured within the seams by the stitches 21. Also, the interior 16 of the case body may be compartmentized by securing the ends of dividers 23, 24 in the edge seams. The other end wall 5 is also constructed of two panels which are similar to the panels 10, 11 and the wall 5 is secured to the margins of the side and bottom walls 2, 3, 6 through one or more lines of stitches 25.

Hingedly mounted on the upper ends of the side walls 2, 3 are lid members 26, 27 which, when in the closed position as shown in FIGS. 1 and 2, overlap and overlie the opening 28 into the interior 16 of the case body 1. As seen by reference to FIG. 2 the two lid members 26, 27 each have a cardboard reinforcing ply 29, 30 and the covering layers 8, 9 extend over and are secured to each side of the reinforcing plies 29, 30, whereby the covering layers 8, 9 form the hinge connections *h*, *h'* between the lid members 26, 27 and the side walls 2, 3. Conventionally, the lid member 26 has a handle 31 pivotally mounted thereon, and formed in the lid member 27 is a slot 32 through which the handle 31 projects when the lid members 26, 27 are closed. Also, the usual snap

locks 33 are provided on the lid members 26, 27 to secure the lid members 26, 27 together when they are closed.

Mounted on the inner panel 10 a substantial distance downwardly from the upper edge thereof, is a rivet 34, the shank of which lies between the panels 10, 11. The end of the rivet 34 is upset so as to secure a washer 35 thereon. A pair of articulated arms 36, 36' are pivotally secured to the rivet 34 and each arm projects upwardly between the panels 10, 11 for pivotal connection, one each with one of the lid members 26, 27. Each of the articulated arms 36, 36' has a lower part 37, 37' which may be fabricated of wire stock. One end of each lower part 37, 37' is bent in the provision of a loop 38, 38' which embraces the rivet 34 and forms a pivotal connection therewith. The other ends of the lower parts 37, 37' are also formed with loops 39, 39' and lateral fingers 40, 40', the latter projecting through holes 41 in the lower ends of each of upper parts 42, 42', of the articulated arms 36, 36'. Consequently, pivotal connections at 40, 40' are formed between the upper and lower parts of each articulated arm 36, 36'. The upper ends of the upper parts 42, 42' are pivotally secured by rivets 43, 43' to brackets 44, 44', the latter, in turn, being firmly mounted on the inside faces of the lid members 26, 27 by rivets 45, 45'.

Also mounted on the inner panel 10 downwardly from the upper edge thereof but upwardly from the rivet 34 are four rivets 46, 46', 47, 47'; the shanks of these rivets 46, 46', 47, 47' also project toward the outer panel 11 and lie in the space between the panels 10, 11. Furthermore, the ends of the rivets 46, 46', 47, 47' are upset to each hold a washer 48. The spacing of each pair of rivets 46, 46' and 47, 47' is substantially greater than the width of the upper arm parts 42, 42' whereby each of the upper arm parts 42, 42' is lengthwise movable between its associated pair of rivets 46, 46', 47, 47', and for purposes presently more fully appearing. Bonded or otherwise rigidly secured to the inside face of the reinforcing ply 13 is a fiberboard spacer 49 which maintains the upper margins of the panels 10, 11 spaced apart in the region between the rivets 46, 47', thereby providing clearance space between the panels 10, 11 for the upper arms parts 42, 42'. A flap 50 of covering material is turned over the upper edge of the spacer 49 and is stitched or otherwise secured to the inside face thereof.

Secured in place by the rivets 46, 46', 47, 47' is a temporary retainer strip 51 which has a part thereof underlying the flap 50. In the manufacture of the carrying case, the inner and outer panels 10, 11 are separately fabricated prior to stitching the panels and side walls together. Prior to such stitching, the inner panel 10 has the rivets 34, 46, 46', 47, 47' together with the articulated arms 36, 36' and brackets 44, 44' attached thereto. The strip 51 thus prevents the upper arm parts 42, 42' from becoming dislodged from between the rivets 46, 46', 47, 47' during handling of the panels 10 and while the case is being assembled.

When the lid members 26, 27 are closed the several parts of the case are in the position shown in FIGS. 1–4. However, when the lid members 26, 27 are swung to the fully opened position, the pivot connections at 40, 40' move from one side of the imaginary lines joining the pivot connections at 43, 34 and 43', 34 past "dead center" and slightly to the other side of these lines as shown in FIG. 5. In this position the opposite edges of the upper arm parts 42, 42' each abuts both of the rivets 46, 46', 47, 47' between which the respective upper arm parts lie, and the rivets 46, 46', 47, 47' constitute stops which limit further opening of the lid members 26, 27. Since the lid members 26, 27 are swung past the vertical position when fully opened, their centers of gravity will be outside the side walls 2, 3 and tend to keep the lid members 26, 27 open as shown. The reaction forces formed by the compression of the covering 9 and tension of the covering 8 at the hinge connections *h*, *h'* will normally tend to urge the lid members closed since the lid members are of insufficient weight to permit them to stay open by themselves. However, the reaction forces at the hinge connections *h*, *h'* are opposed by the resilient wire loops 39, 39' forming part of the articulated arms 36, 36', and the magnitude of such reaction forces will be insufficient to cause the pivot connections at 40, 40' to swing reversely past "dead center."

When it is desired to close either of the lid members 26, 27 it is merely necessary to urge them manually toward the closed position. The manual force need not be great since it will be apparent that a slight push on the lid members will exert a force thereon many times greater than the reaction forces at the hinge connections *h*, *h'*. When such manual force is applied to either lid member as, for example, the lid member 26, there is a component of force applied which is normal to the upper arm part 42' at the pivot point 43' and in a direction away from the lid member 26. The upper arm part 42' then begins to move causing the rivet 47 to impose a force on the upper arm part 42 in a direction opposite to that at the pivot point 43'. These two last-mentioned forces provide a couple which swings the pivot point at 40' reversely past "dead center," whereupon further movement of the lid member 26 returns it and the articulated arm 36' to the position shown in FIG. 2. During movement of the pivoted connections 40' in either direction past "dead center" the wire loop 39' may yield enough to prevent binding of the two parts of the articulated arm 36'. It will be apparent that the other lid member 27 and articulated arm 36 cooperate with the rivet 46' in a similar manner when the lid member 27 is shifted to the closed position.

In compliance with the requirements of the patent statutes I have herein shown and described a preferred embodiment of the invention. It is, however, to be understood that the invention is not limited to the precise construction herein shown, the same being merely illustrative of the principles of the invention. What is considered new and desired to be secured by Letters Patent is:

1. A carrying case comprising a plurality of interconnected walls defining a hollow body having an access opening therein, a lid member hingedly mounted on one of the walls adjacent to the opening and being swingable from a closed position overlying the opening to an open position in which the lid member is out of the position overlying said opening, and means for retaining the lid member in the open position, said means comprising an articulated arm having resilient means, said arm having one part pivotally secured to a wall which is adjacent to the wall upon which the lid is mounted and said arm also having an additional part pivotally connected to said one part, means pivotally connecting said additional part to the lid member, the pivot connection between the two parts of the arm lying on one side of the line between the pivot connections to the lid and wall when the lid is in closed position, and a pair of stops mounted on said last-mentioned wall and between which the additional part of the arm is lengthwise movable, said stops being spaced apart a sufficient distance so that when the lid approaches the fully opened position, the pivot connection between the two parts of the arm moves past the dead center position and to the other side of said line and the additional arm part abuts both of the stops, the resilient means in said fully opened position resisting the tendency of the lid member to shift by itself to the closed position.

2. A carrying case comprising a plurality of interconnected walls defining a hollow body having an access opening therein, a lid member hingedly mounted on one of the walls adjacent to the opening and being swingable from a closed position overlying the opening to an open position in which the lid member is out of the position

overlying said opening, said lid member and the wall upon which it is hinged having a covering of flexible material and the flexible covering forming the hinge connection between the two, and means for retaining the lid member in the open position, said means comprising an articulated arm having resilient means, said arm having one part pivotally secured to a wall which is adjacent to the wall upon which the lid is mounted and said arm also having an additional part pivotally connected to said one part, means pivotally connecting said additional part to the lid member, the pivot connection between the two parts of the arm lying on one side of the line between the pivot connections to the lid and wall when the lid is in closed position, and a pair of stops mounted on said last-mentioned wall and between which the additional part of the arm is lengthwise movable, said stops being spaced apart a sufficient distance so that when the lid approaches the fully opened position, the pivot connection between the two parts of the arm moves past the dead center position and to the other side of said line and the additional arm part abuts both of the stops, the resilient means in said fully opened position resisting the tendency of the lid member to shift by itself to the closed position.

3. In a portable case having a hollow open top body including a pair of adjacent walls and a lid member hingedly connected to one of the walls and adapted for movement to and from open and closed position across the opening in the body, an articulated arm having two parts pivotally connected together and including resilient means on one of said arm parts, one of said parts being pivotally connected to the other wall, means pivotally connecting the other part to the lid member, a pair of spaced elements on said one wall and between which said other part of the arm lies, said elements being spaced apart an amount sufficient to permit rocking movement of said other part of the arm between them about the pivotal connection of the two arm parts, said pivotal connection between the arm parts lying on one side of the line joining the other two pivotal connections when the lid member is closed and being movable to the other side of said line when the lid member is swung open, the tendency of the lid member to shift by itself to the closed position, and at least one of said elements constituting a stop for said other arm part to limit further opening of the lid member.

4. A portable case according to claim 3 wherein said one wall includes a pair of panels between which the arm

is movable and which substantially conceal the resilient means when the lid is in the open and closed positions.

5. A portable case according to claim 3 wherein the body has a covering of flexible material and the hinge connection of the lid member with the wall is formed by the covering material.

6. A portable case having a hollow body provided with an opening for access to the interior of said body, a lid member hingedly connected to the body and adapted for movement to and from open and closed positions across said opening, an articulated arm pivotally joined to the body and to the lid member, said articulated arm comprising at least two parts pivotally connected together, a pair of spaced elements on the body and between which the arm lies, said elements being spaced apart an amount sufficient to permit rocking and longitudinal movement of the arm between them, the pivotal connection between the arm parts lying on one side of the line that joins the pivotal connections of the arm with the body and lid member when the lid member is closed and being movable to the other side of said line when the lid member is swung open, resilient means forming a part of the articulated arm and resisting the tendency of the lid member to shift by itself to the closed position, at least one of said elements constituting a stop for the arm to limit further opening of the lid member, and, when manual force is applied to the lid member to close same, one of said elements imposing a force on the articulated arm in a direction to move said pivotal connection between the arm parts to said one side of the line that joins the pivotal connections of the arm with the body and lid member.

References Cited in the file of this patent

UNITED STATES PATENTS

380,493	Large	Apr. 3, 1888
512,101	Eastes	Jan. 2, 1894
739,451	Schwartz	Sept. 22, 1903
766,917	Terry	Aug. 9, 1904
829,385	Brennan	Aug. 28, 1906
1,343,347	Burton	June 15, 1920
1,593,746	Bolz	July 27, 1926
2,088,888	Wagner	Aug. 3, 1937

FOREIGN PATENTS

192,269	Germany	Oct. 30, 1907
4,106	Great Britain	1898