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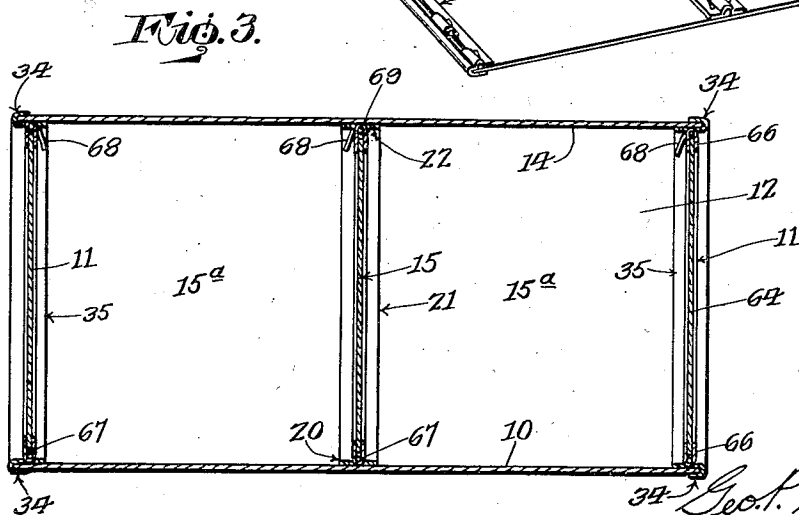
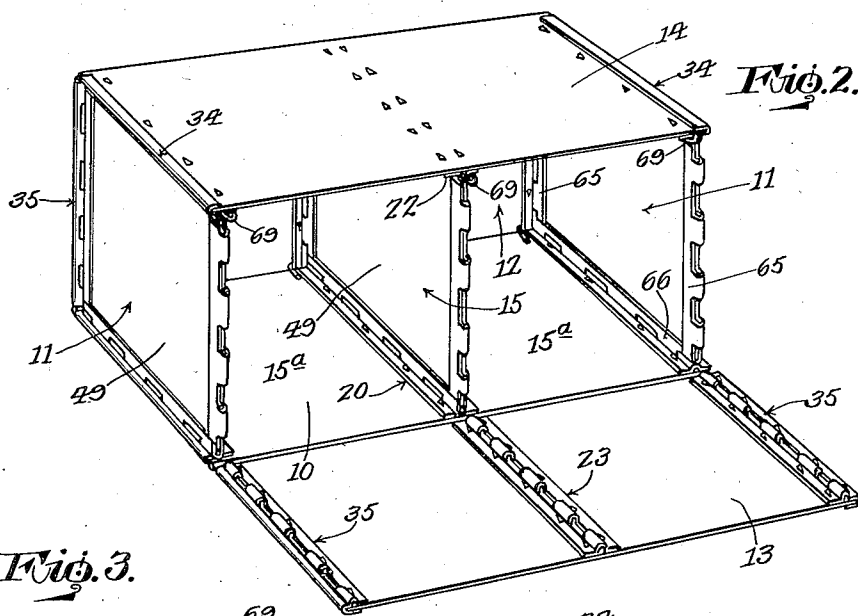
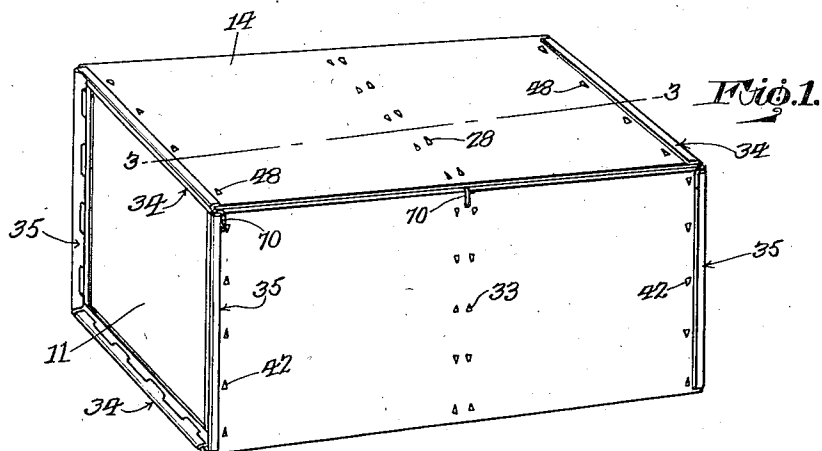
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2,024,075

SHIPPING CASE

Filed April 29, 1935

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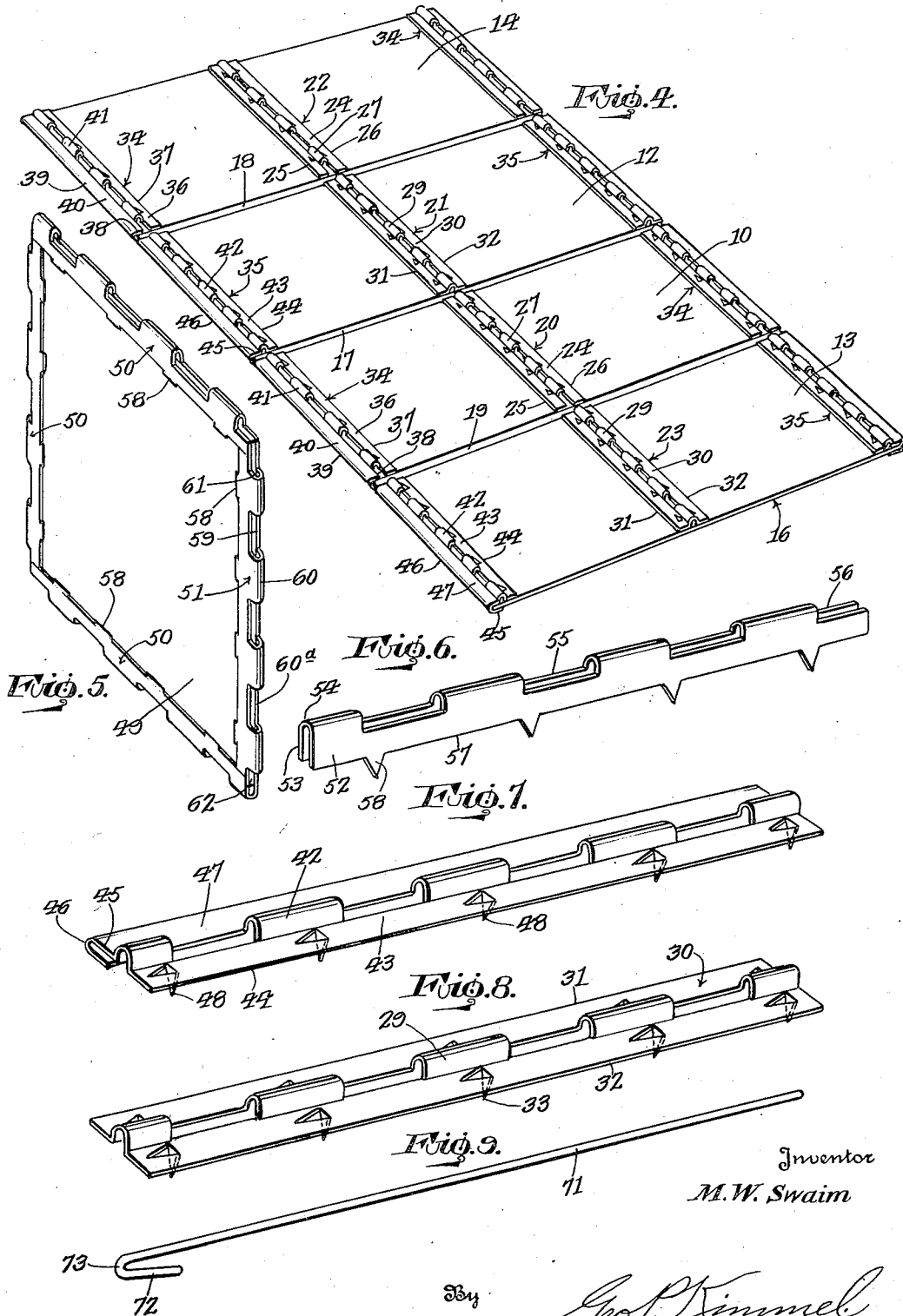
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UNITED STATES PATENT OFFICE

2,024,075

SHIPPING CASE

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6 Claims. (Cl. 229—23)

This invention relates to a shipping case, and has for its object to provide, in a manner as hereinafter set forth, a case of the class referred to, which after receipt by a consignee is capable of being conveniently opened, without damage thereto to permit of the contents thereof being quickly removed, used if desired by the consignee for shipment, or collapsed and folded in a compact manner and returned to the consignor to be used again for shipping.

A further object of the invention is to provide, in a manner as hereinafter set forth, a shipping case having the body thereof formed of light weight material, such as card board, and having the edges at the ends thereof reinforced for reducing distortion of said edges to a minimum.

A further object of the invention is to provide, in a manner as hereinafter set forth, a combined extendible and collapsible sectional shipping case including a set of removable locking elements for coupling the sections of the case together and for maintaining them in extended relation as well as latching the case, when extended closed.

A further object of the invention is to provide in a manner as hereinafter set forth, a combined extendible and collapsible sectional shipping case including a set of removable locking elements for coupling the sections of the case together and for maintaining them in extended relation, as well as latching the case, when extended closed, and with the sections of the case, when the latter is extended being so disposed as to conceal several of the locking elements.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a shipping case which is simple in its construction, strong, durable, extremely light in weight, thoroughly efficient in its use, capable of being conveniently extended for use, readily collapsed when desired, capable of having the parts thereof arranged in a compact manner when collapsed, re-usable and inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of such parts, and such combination of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations, and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a perspective view of the case when extended and closed,

Figure 2 is a like view with the front wall of the case extended to open position,

Figure 3 is a section on line 3—3, Figure 1,

Figure 4 is a perspective view of the bottom, rear wall, top and front wall forming element,

Figure 5 is a perspective view illustrating the form of the partition and one of the side walls of the case,

Figure 6 is a perspective view illustrating the form of one of the edge reinforcing and coupling members employed in connection with the partition and one of the side walls of the case,

Figure 7 is a perspective view illustrating the form of the combined side edges reinforcing and coupling members employed in connection with the front and rear walls of the case,

Figure 8 is a perspective view illustrating the form of the combined center reinforcing and coupling members employed in connection with the front and rear walls of the case, and

Figure 9 is a perspective view illustrating the form of the locking elements employed in connection with the coupling members.

The case includes a bottom 10, a pair of detachable side walls 11, a rear wall 12, a front wall 13, a top 14, and a detachable partition 15 which coacts with the said bottom, top and walls of the case to provide the latter with a pair of compartments 15^a. The said bottom, top and walls of the case consist of very light material, 30 preferably card board of suitable thickness.

The bottom 10, rear wall 12, front wall 13 and top 14 are integral with each other and formed from a foldable oblong web 16 provided in one face with transversely extending equi-spaced parallel semicircular scores 17, 18 and 19 which provide respectively a hinge between bottom 10 and rear wall 12, a hinge between rear wall 12 and top 14 and a hinge between bottom 10 and front wall 13. The top, bottom, rear and front walls are rectangular. The end walls and partition are square.

Secured to the transverse center of the inner faces of top 10, rear wall 12, front wall 13 and top 14 are combined reinforcing and coupling members 20, 21, 22 and 23 respectively. The members 20 and 22 are of like form and consist of a flat sectional body 24 formed of a pair of spaced parallel oblong thin metallic strips 25, 26 of the same length and width connected together 50 by a series of spaced parallel semi-oval shaped extensions 27 integral with the strips at the inner lengthwise edges of the latter. The extensions 27 are disposed at right angles with respect to the strips. The extension at one end of said 55

series has its outer end flush with corresponding end edges of the strips. The extension at the other end of the series has its outer end spaced inwardly from the other corresponding end edges of the strips. These latter have spaced portions thereof struck therefrom to provide each strip with a set of spaced triangular shaped fastener barbs 23 for anchoring the members 20 and 22 against the inner faces of the bottom and top of the case.

The members 21 and 23 are of like form and similar in construction to the members 20, 22, with this exception that both outer extensions of the series of extensions 29 of the member 21 or 23 are flush at their outer ends with the ends of the latter. Otherwise than as stated the members 21, 23 correspond to the members 20, 22. The strips of members 21, 23 which form the body 30 thereof (Figure 8) are designated 31, 32 and the fastener barbs at 33. The members 21, 23 are anchored by the barbs 33 against the inner faces of rear and front walls of the case.

The bottom 10 and top 14, each has anchored thereto a pair of oppositely disposed combined side edge rear forcing and coupling members 34 of like form. The rear wall 12 and front wall 13, each has anchored thereto a pair of oppositely disposed combined side edge reinforcing and coupling members 35 of like form.

Each member 34 consists of a flat sectional body 36 formed of an inner thin metallic strip 37 and an outer folded thin metallic strip 38 of U-shaped contour in transverse section and with the bends 39 of strip 38 forming an outer edge for body 36. The inner lengthwise edge of the outer fold 40 of the strip 38 opposes in parallel spaced relation the front edge of strip 37. The strips 37, 38 are of the same length and are connected together by a series of spaced parallel semi-oval shaped extensions 41 integral with strip 37 at its front lengthwise edge and integral with fold 40 at its inner lengthwise edges. The extensions 41 are disposed at right angles to the strips. The extensions at one end of the series of extensions 41 has its outer end flush with the rear ends of the strips 37, 38. The extension at the other end of the series of extensions 41 has its outer end spaced from the front ends of the strips 37, 38. The strip 37 has spaced portions thereof struck therefrom to provide each strip with a set of spaced fastener barbs 42 which are employed for anchoring members 34 to the inner faces and in reinforcing and protecting relation with respect to the side edges of bottom 10 and top 14.

Each member 35 is similar in construction to that of any one of the members 36, with this exception that both outer extensions of the series of extensions 42 of the member 35 have their outer ends flush with the ends of the latter. Otherwise than that as stated the members 35 corresponding in form to that of members 34. The strips of a member 35 which form the body 43 thereof (Fig. 7) are indicated at 44, 45, the bend in strip 45 at 46, the outer fold of strip 45 at 47 and fastener barbs on strips 44, 45 at 48. The members 35 are anchored to the inner faces of and in reinforcing and protecting relation with respect to the side edges of the walls 12, 13 by the barbs 47.

One of the end walls 11 and the partition 15 are of the form shown in Figure 5 and consist of a square wall forming member 49 provided with a pair of oppositely disposed upper and lower combined edge reinforcing and coupling members 50 overlapping its top and bottom edges and a pair

of oppositely disposed front and rear combined edge reinforcing and coupling members 51 overlapping its side edges. The members 50 are of like form. The members 51 are of like form. The members 50, 51 are formed from a folded thin strip of metallic material and each is of U-shape in transverse section. The length of members 50 is greater than that of the members 51 and they abut the ends of the members 51.

Each member 50 includes a pair of spaced parallel folds 52, 53 and a rounded bend 54 connecting the folds together. Spaced aligning portions of each fold and spaced aligning portions of the bend are cut out to form member 50 with a set of spaced rectangular notches 55. Each member 50 is cut out at one of its outer corners to provide a rabbet 56 having a horizontal and a vertical edge. Each member 50 has extending from the free lengthwise edge 57 of its fold 52 a series of spaced bendable fastener barbs 57 for anchoring it to the wall forming member 49. The rabbet 56 of the upper member 50 is arranged at the outer portion of the top edge of member 49 and has its vertical edge extending upwardly from the latter. The rabbet 56 of the lower member 50 is arranged at the rear portion of the bottom edge of member 49 and its vertical edge depends from the latter.

Each member 51 includes a pair of spaced parallel folds 58, 59 and a rounded bend 60 connecting said folds together. Spaced aligning portions of each mold 58, 59 and spaced aligning portions of the bend are cut out to form each member 51 with a set of spaced rectangular cutouts 60a. Each member 51 is cut out at each outer corner thereof to provide the rabbets 61, 62. Each member 51 has extending from the free lengthwise edges of its fold 58 a series of spaced bendable fastener barbs 63 for anchoring it to the wall forming member 49.

The other end wall 11 of the case includes a wall forming member 64, front and rear combined edge reinforcing and coupling members 65 corresponding in form and arrangement to that of members 51 and upper and lower combined edge reinforcing and coupling members 66 corresponding in form to the members 50, but are arranged in a different manner upon wall forming member 64 than members 50 are arranged with respect to member 49. The upper member 66 has its rabbet arranged at the vertical edge of the rabbet of member 65, which extends above the rear end portion of the top edge of member 64. The lower member 66 has its rabbet arranged at the vertical edges of the rabbet depending from the rear end portion of the bottom edge of member 64.

When the case is set up and before being closed, the side walls and partitions are arranged relative to the bottom, rear wall, front wall and top whereby the bottom, rear and top notches of the side walls will receive respectively the extensions 41 on bottom 10, the extensions 42 on rear wall 12 and the extensions 41 on top 14; the bottom, rear and top notches of the partition will receive respectively the extensions 27 on bottom 10, the extensions 29 on rear wall 12 and the extensions 27 on top 14; the front notches of the side walls will receive the extension 42 on the front wall 13; and the front notches on the partition will receive the extension 29 on the front wall.

The case includes bottom, rear, top and front sets of removable locking elements 67, 68, 69 and 70 respectively for detachably connecting the extensions to the combined edge reinforcing and coupling members 50 and 51 carried by the side

walls and partition. Each set consists of a pair of outer and intermediate locking elements. The locking elements are of like form and each consists of an elongated bar 71 having one end terminal portion bent in a manner to provide an offset handle 72 directed towards the other end terminal portion of the rod. The bend indicated at 73 constitutes an abutment.

The outer locking elements of the set 67 extend through members 34 on bottom 10 and the lower members 50 on the side walls for the purpose of locking the extensions 41 on bottom 10 to the lower combined edge reinforcing and coupling members 50 carried by the end walls, and the intermediate locking element of the set 67 extends through member 20 on bottom 10 and lower member 50 on partition 15 for locking the extensions 27 on bottom 10 to the lower combined edge reinforcing and coupling member 50 carried by the partition 15. The handle 72 of the elements 67 oppose the inner side faces of the side walls and one of the side faces of the partition 15. The bends 73 of element 67 about the rear ends of the lower members 50 and the members 20, 34 on bottom 10.

The outer locking members of the set 68 extend through the members 35 on rear wall 12 and through the rear member 51 on the side walls for locking the extensions 42 on rear wall 12 to the rear members 51 carried by the side walls, and the intermediate locking element of the set 68 extends through the member 21 on rear wall 12 and the rear coupling member on partition 15 for locking the extensions 29 on rear wall 12 to the rear member 51 carried by partition 15. The handles 72 of the elements of the set 68 oppose the inner face of the side walls and a side face of partition 15. The bends 73 of elements 68 about the upper ends of the rear members 51 and members 21, 35 on the wall 12. When the elements 68 are in locking position the side walls, partition and rear wall are connected together and arranged vertically. When the wall 12 is disposed vertically it conceals the bends 73 of elements 67 and prevents the rearward shifting of the latter. The forward shifting of elements 67 is prevented by the coaction of the bends 73 thereof with the rear of the ends of the lower members 50 and the members 20, 34 on bottom 10. The outer locking members of the set 69 extend through the member 34 on top 14 and the upper members 50 on the sidewalls for locking the extensions 41 on top 14 to the upper combined edges reinforcing and coupling members 50 carried by the side walls, and the intermediate locking element of set 69 extends through member 22 on top 14 and the upper member 50 on partition 15 for locking the extensions 27 on top 14 to the upper combined edge reinforcing and coupling member 50 carried by partition 15. The handles 72 of the elements 69 oppose the inner side faces of the side walls and a side face of the partition 15. The bends 73 of element 69 about the front ends of the members 22, 34 on top 14 and the front ends of the upper members 50 on the side walls and partition. The elements 69 when in locking position provide for the top 12 to be anchored upon the side walls and partition and conceal the handle of element 68 as well as prevent the upward shifting of the latter. The outer elements of the set 70 extend through member 35 on front wall 13 and through the front members 51 on the side walls for locking the extensions 42 on wall 13 to the front combined edges reinforcing and coupling members 51 carried by the side walls

and the intermediate locking element of set 70 extends through the member 23 on front wall 13 and the front member 51 on partition 15 for locking the extensions 29 on front wall 13 to the front combined edge reinforcing and coupling member 51 carried by partition 15. The elements 70 maintain the front wall 13 in a vertical position. The front wall 13 conceals the handle ends of the locking elements 69. The handles 72 of the elements 70 oppose the outer faces of the front wall 13 so that access may be conveniently had to them when it is desired to open or knock down the case. The bends 73 of the elements 70 about the top edges of the front wall 13. The latter is locked in upstanding position at three 15 points. The locking elements are to be of a size to be frictionally held when in locking position.

What I claim is:

1. A shipping case comprising a one-piece body providing a rectangular bottom, a rectangular rear wall hinged to said bottom, a rectangular top hinged to said rear wall and a rectangular front wall hinged to said bottom, removable end walls and a partition adapted to be encompassed by said body, coupling members of U-shaped cross section throughout and overlapping each edge of each end wall and said partition and formed with notches, said coupling members being continuous and projected from said edges, certain of said coupling members being of greater length than and extended laterally from the ends of the edges which they overlap, the other of the said coupling members corresponding in length to that of the edges which they overlap and have their ends about the inner side edges of the laterally extended coupling members, coupling members corresponding in length to and carried by said bottom, rear wall, top and front wall and provided with hollow extensions for seating in said notches, and a lower, a rear, an upper and a front set of locking elements coacting with said extensions and the coupling members on said end walls and partition for detachably securing said body to and in encompassing relation with respect to said end walls and partition.

2. A shipping case comprising a one-piece body providing a rectangular bottom, a rectangular rear wall hinged to said bottom, a rectangular top hinged to said rear wall and a rectangular front wall hinged to said bottom, removable end walls and a partition adapted to be encompassed by said body, coupling members of U-shaped cross section throughout and overlapping each edge of each end wall and said partition and formed with notches, said coupling members being continuous and projected from said edges, certain of said coupling members being of greater length than and extended laterally from the ends of the edges which they overlap, the other of the said coupling members corresponding in length to that of the edges which they overlap and have their ends about the inner side edges of the laterally extended coupling members, coupling members corresponding in length to and carried by said bottom, rear wall, top and front wall and provided with hollow extensions for seating in said notches, and a lower, a rear, an upper and a front set of locking elements coacting with said extensions and the coupling members on said end walls and partition for detachably securing said body to and in encompassing relation with respect to said end walls and partition, and certain of the coupling members carried by said bottom, rear wall, top and front wall having outwardly directed lateral

portions overlapping the end edges of said bottom and rear, top and front walls.

3. A shipping case comprising a one-piece body providing a rectangular bottom, a rectangular rear wall hinged to said bottom, a rectangular top hinged to said rear wall and a rectangular front wall hinged to said bottom, removable end walls and a partition adapted to be encompassed by said body, coupling members of U-shaped cross section throughout and overlapping each edge of each end wall and said partition and formed with notches, said coupling members being continuous and projected from said edges, certain of said coupling members being of greater length than and extended laterally from the ends of the edges which they overlap, the other of said coupling members corresponding in length to that of the edges which they overlap and have their ends about the inner side edges of the laterally extended coupling members, coupling members corresponding in length to and carried by said bottom, rear wall, top and front wall and provided with hollow extensions for seating in said notches and a lower, a rear, an upper and a front set of locking elements coacting with said extensions and the coupling members on said end walls and partition for detachably securing said body to and in encompassing relation with respect to said end walls and partition, and said bottom, rear wall, top and front wall having the side edges thereof overlapped by certain of said coupling members, and said end walls being inset with respect to the side edges of said coupling members having spaced inherent parts for anchoring them stationary to said body, partition and end walls.

4. A shipping case comprising a one-piece body providing a rectangular bottom, a rectangular rear wall hinged to said bottom, a rectangular top hinged to said rear wall and a rectangular front wall hinged to said bottom, removable end walls and a partition adapted to be encompassed by said body, coupling members of U-shaped cross section throughout and overlapping each edge of each end wall and said partition and formed with spaced notches, said coupling members being continuous and projected from said edges, certain of said coupling members being of greater length than and extended laterally from the ends of the edges which they overlap, the other of said coupling members corresponding in length to that of the edges which they overlap and having their ends about the inner side edges of the laterally extended coupling members, coupling members corresponding in length to and carried by said bottom, rear wall, top and front wall and provided with hollow extensions for seating in said notches, a lower, a rear, an upper and a front set of locking elements coacting with said extensions and the coupling members on said end walls and partition for detachably securing said body to and in encompassing relation with respect to said end walls and partition, said lower, rear and top sets

of locking elements overlapping an end of certain of said coupling members, said lower and rear sets of locking elements being concealed by said rear wall and top, said top set of locking elements being concealed by said front wall, and said front set of locking elements overlapping the outer lengthwise edge of the front wall.

5. In a collapsible shipping crate a one-piece body providing a bottom, a rear wall hinged to said bottom, a top hinged to said rear wall and a front wall hinged to said bottom, removable end walls adapted to be encompassed by said body, coupling members of U-shaped cross section anchored to and extended from each edge of each end wall and formed with spaced notches, one pair of opposed coupling members on an end wall and the partition abutting the other pair of opposed coupling members on an end wall and the partition, said coupling members having spaced inherent parts for anchoring them to said partition and end walls, coupling members anchored to the inner face of and overlapping the side edges of said bottom, rear wall, top and front wall and formed with hollow extensions seating in said notches, and a lower, a rear, an upper and a front set of locking elements coacting with said extensions and the coupling members on said side walls for detachably securing said body to and in encompassing relation with respect to said end walls.

6. A shipping case comprising a one-piece body providing a bottom, a rear wall hinged to said bottom, a top wall hinged to said rear wall and a front wall hinged to said bottom, removable end walls and a partition adapted to be encompassed by said body, coupling members of U-shaped cross section throughout and overlapping each edge of each end wall and each edge of said partition, said coupling members being continuous and projected from said edges, said members having their notches in the projected portions thereof, certain of said members being of greater length than and extended laterally from the ends of the edges which they overlap, the other of said members corresponding in length to that of the edges which they overlap and having their ends about the inner side edges of the laterally extending members, coupling members carried by said bottom, rear, top and front walls and provided with hollow extensions for seating in said notches, certain of the coupling members carried by said bottom, rear, top and front walls formed with outwardly directed lateral portions for overlapping the end edges of said bottom, rear, top and front walls, the said several members having spaced inherent parts for anchoring them to said body, end walls and partition, and a lower, a rear, an upper and a front set of locking members coacting with said coupling members for detachably connecting said body, end walls and partition together.

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