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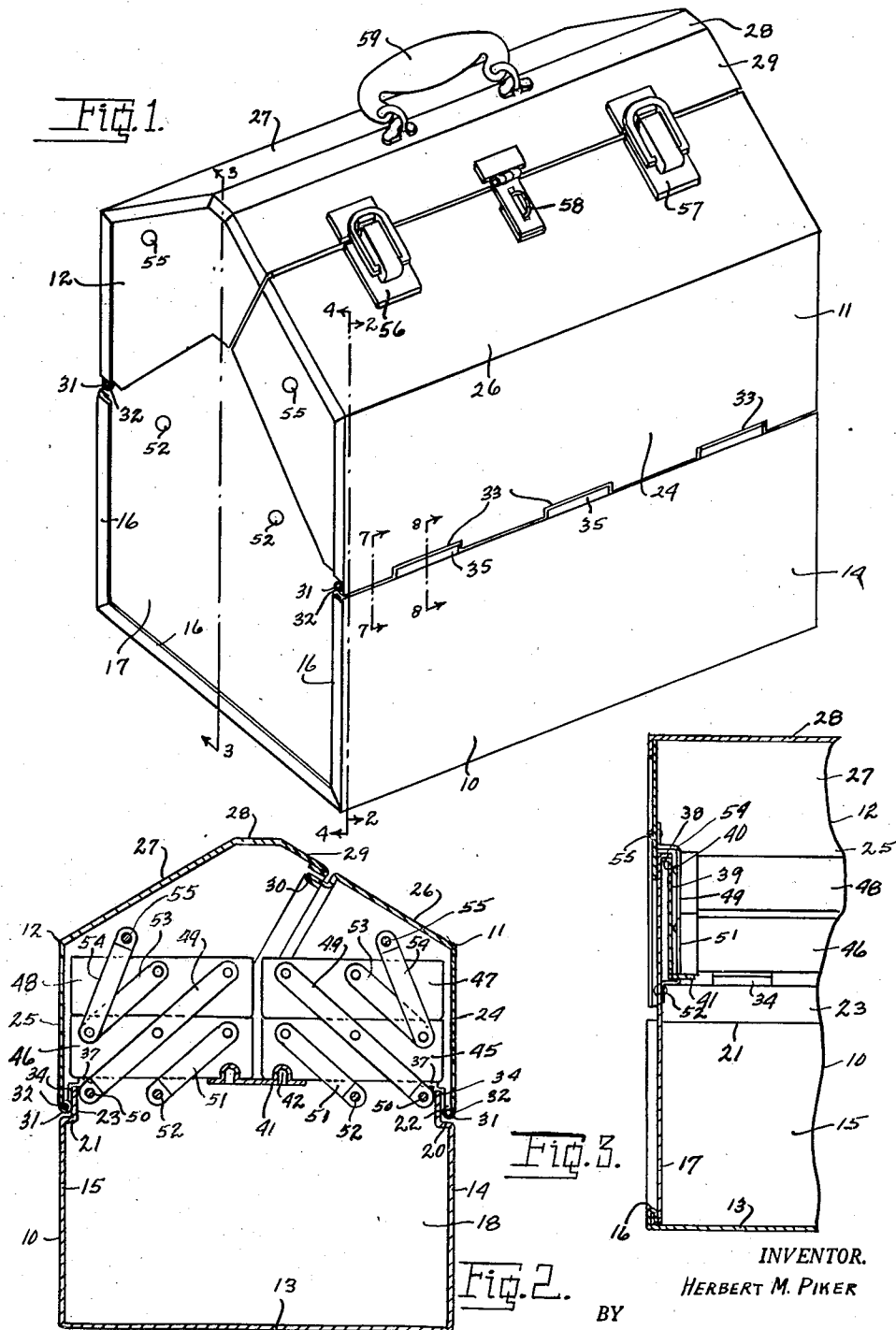
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2,374,037

METAL CARRYING CASE

Filed March 6, 1943

2 Sheets-Sheet 1



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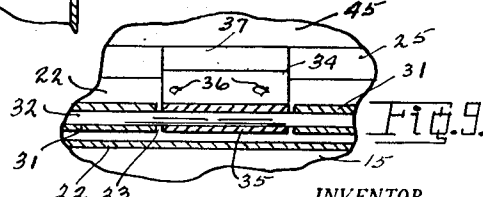
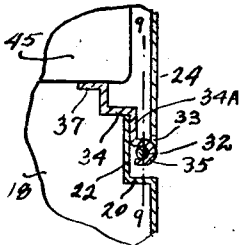
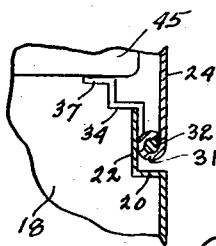
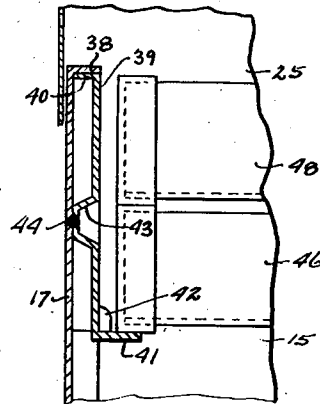
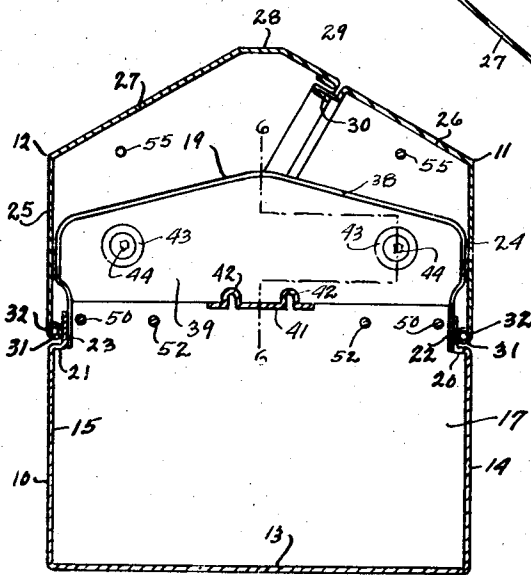
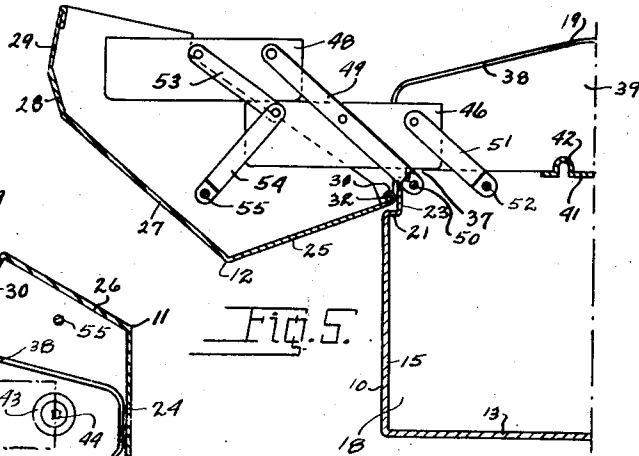
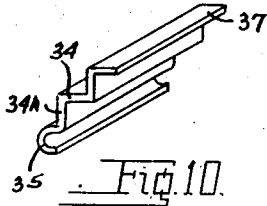
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METAL CARRYING CASE

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2 Sheets-Sheet 2



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METAL CARRYING CASE

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9 Claims. (Cl. 206—16)

This invention relates to improvements in metal carrying cases such as used for carrying tools and small parts from place to place in the installation and service of appliances.

In general carrying cases of the kind here disclosed are well known as to their important elements, configuration and utility. These carrying cases have been provided with a tray and more generally a plurality of trays so connected with the box and case and its movable cover as to be automatically laterally displaced with respect to the case upon the opening of the cover. The trays are generally referred to as "cantilever trays" due to the particular arrangement of links between the trays themselves and between the trays and case and cover. Carrying cases of the kind and type herein disclosed are relatively large requiring considerable material to produce same and adapted to carry and support a relatively heavy load. Several of the problems involved in the manufacture and production of the carrying cases include inexpensive yet practical means for supporting the trays when the case is closed as well as open, inexpensive yet practical and efficient operative mounting of the tray on the case and its cover and the general reorganization of the manufacture of a carrying case whereby lesser amount of material would be employed without sacrificing strength and utility.

It is an object of this invention to provide a simple but sturdy means for supporting nested cantilever trays both when the carrying case is closed and when it is opened.

Another object of this invention is the mounting of the cantilever trays to a carrying case and its cover in which the least amount of material and parts are employed consistent with efficient and sturdy construction.

It is also an object of this invention to provide a cantilever tray support which supports the trays in both of its operating positions nested or superimposed when the cover is closed and extended when the cover is open.

Other objects and advantages of the present invention should be readily apparent by reference to the following specification considered in conjunction with the accompanying drawings forming a part thereof and it is to be understood that any modifications may be made in the exact structural details there shown and described, within the scope of the appended claims, without departing from or exceeding the spirit of the invention.

In the drawings:

Fig. 1 is a perspective view of a carrying case embodying the improvements of this invention.

Fig. 2 is a vertical sectional view just behind one end of the case on line 2—2 on Fig. 1.

Fig. 3 is a fragmentary vertical sectional view centrally of the case on line 3—3 on Fig. 1.

Fig. 4 is a view similar to Fig. 2 taken in the opposite direction of said Fig. 2 on line 4—4 on Fig. 1.

Fig. 5 is a view of one-half of a carrying case showing the cover open and trays extended whereby access to the case proper and lower trays may be had.

Fig. 6 is an enlarged fragmentary sectional view through the end of the case and cover taken on line 6—6 on Fig. 4.

Fig. 7 is an enlarged sectional view illustrating particularly a hinge portion of the carrying case cover taken on line 7—7 on Fig. 1.

Fig. 8 is an enlarged sectional view taken through a plane behind that of Fig. 7 and particularly illustrating the hinge portion of the case proper taken on line 8—8 on Fig. 1.

Fig. 9 is a fragmentary longitudinal sectional view through the hinge of the case and cover taken on line 9—9 in Fig. 8.

Fig. 10 is a perspective view of a hinge member forming a detail of the invention.

Throughout the several views of the drawings similar reference characters are employed to denote the same or similar parts.

As illustrated in the drawings the carrying case comprises box proper 10, a front cover 11 and a rear cover 12. The box proper includes the bottom panel 13 and front and rear walls 14 and 15 integral with the bottom and bent substantially as illustrated in Figs. 2 and 4. Secured to the opposite ends of the front and back walls and the bottom, as by means of seams 16, are end walls 17 and 18. The end walls 17 and 18 have their upper edges inclined or peaked as at 19 and which peaked portions extend above the upper edges of the front and rear walls 14 and 15. The upper edges of the said front and rear walls 14 and 15 are offset respectively at 20 and 21 providing inward flanges 22 and 23 which lie behind the lower edges of the front and rear covers 11 and 12.

The front and rear covers 11 and 12 are respectively provided with a vertical portion 24 and 25 from which inclined top portion 26 and 27 extend toward one another with the rear cover top portion 27 terminating in a horizontal top portion 28 followed by a downwardly inclined top portion 29 which substantially meets there the inclined top portion 26 of front cover 11 thereby providing the case with a peaked or triangular appearing cover. The free end of the top portion 26 is offset as at 30 to underlie the adjacent free end of the top portion 29 whereby a substantially continuous cover is provided for the carrying case.

Each of the vertical portions of the covers is provided at its lower end with a head 31 which acts as a hinge part for the cover and receives therein a hinge pin or rod 32 which extends substantially the full length of the case. The said lower edge of the case vertical portions are cut

out at a plurality of points as illustrated at 33 in Figs. 1, 7 and 9. Disposed in said cut out portions 33 are hinge members 34 each having at its lower end a U shaped bead 35 which cooperates with the bead 31 of the covers and receives centrally thereof the hinge pin or rod 32. Each hinge member 34 is adapted to have its body portion 34A contact one of the case flanges 22 and 23 and is secured thereto by any desirable means, such for example spot welding 36 as illustrated in Fig. 9. The said hinge member is secured in such a position as to have the open end of the U bead or half bead 35 closed by the flange to which it is attached as clearly illustrated in Fig. 8. The hinge member 34 is clearly disclosed in Fig. 10 and offers a practical and economical hinge member for the conventional hinge member where a full bead is employed instead of the U bead 35. Each hinge member 34 is bent to overlie its box proper flange and project toward the center of the said box proper and is provided at its upper end with a ledge or flange 37 parallel to the bottom panel of the carrying case.

The upper end 19 of the box ends 17 and 18 is turned inwardly to provide a flange 38 which may in and of itself act as a reinforcement for said ends. In order to fully reenforce and strengthen the box ends use is made at each end of a liner 39 having a flange 40 which underlies the box end flange 38. The liner 39 extends downwardly to a point in the plane of the upper surface of the hinge members ledge or flanges 37 whereupon the liner, at its central point, is turned normal into the box to provide a flange 41. The flange 41, see Fig. 4, is a relatively short, transversely of the box, but does extend an appreciable distance on opposite sides of the vertical center of the box ends. In order to strengthen the flange 41, which has its upper surface in the same horizontal plane with the upper surface of the hinge members ledges of flanges 37, it is provided with a pair of raised portions or ribs 42. The end liners 39 are each provided with two or more depressions 43 causing the liners at these points to contact with the box end walls 17 and 18 and are then connected to one another by means of spot weld 44 extending therethrough.

Mounted on the end liner ledges 41, respectively on each side of the vertical center of the end walls are trays 45 and 46, which in turn have mounted thereon superimposed trays 47 and 48. The outer longitudinal edges of trays 45 and 46 are supported by the alined hinge members flanges 37 carried respectively by the front and rear walls 14 and 15. The trays 45-48 may be individually provided with partitions extending transversely or longitudinally thereof as desired and as is well known and therefore not illustrated in the drawings. From the foregoing it will be noted that the trays are supported along the outer edge particularly when the carrying case is closed, as illustrated in Fig. 2, as well as at their opposite ends.

The superimposed trays of each pair are pivotally connected to one another by a link 49 and through the link and pivot 50, at the lower offset end thereof the trays are pivotally connected directly to the end walls of the box proper. Each of the lower trays has pivotally connected thereto a second link 51 which through the pivot 52 in its offset lower end is likewise connected pivotally to the end walls of the box proper. Each of the upper trays has pivotally connected to it one arm 53 of a compound link, the other arm 54 of which is respectively pivotally connected by

a pivot 55 through its offset and to the end wall of the front and rear covers. This linkage is such that movement, for example, of the rear cover 12 from the closed position illustrated in Fig. 2 to the open position illustrated in Fig. 5 moves the trays from a superimposed position, of Fig. 2, to an extended position, see Fig. 5, and when in this position the trays are supported by the supporting ledge or flange 37 of the hinge members 34 carried by the box wall which they overlie. With the trays in their extended position complete access may be had to each of the trays, and to the interior of the box itself.

In order to hold the covers in a closed position the said front and rear covers have attached to their adjacent inclined top portions 26 and 29 the cooperative elements of the latches 56 and 57 which are standard devices and whose operation is well understood. To prevent unauthorized access to the interior of the carrying case any type of locking means, such as disclosed at 58, may be provided for this purpose. In order to conveniently permit carrying or transportation of the case it has attached to its horizontal top portion 29 a handle 59.

From the foregoing it will now be appreciated that there has been provided a sturdy carrying case in which the elements for constructing the same have been reduced to a minimum utilizing various elements of the case for double duty, such for example, a hinge member as the element simultaneously supporting the trays, a reinforcing inner liner providing a reenforced supporting ledge for the tray, and the end members of the box proper for hinge mounting of the tray links, all tending toward simplification of construction of the carrying case without weakening the same.

What is claimed is:

1. In a metal carrying case, a box proper having end and side walls, an offset at the upper end of one of said walls to provide a flange longitudinally thereof inwardly of the wall, a cover having its lower end at the wall offset with the flange inwardly thereof, a bead at the lower end of the cover, a hinge member carried by the box flange between said flange and cover and having a hinge passage in line with the cover bead, a hinge pin or rod passing simultaneously through the cover and hinge beads for hingedly connecting the cover to the box proper, a tray within the cover and pivotally connected to the cover and box whereby movement of the cover moves the tray from a position overlying the box to a position laterally displaced, and a supporting ledge integral with the hinge member overlying the box flange and extending toward the center of the box for supporting the tray in its box overlying and extended positions.

2. In a metal carrying case, a box proper having end and side walls, an offset at the upper end of one of said walls to provide a flange longitudinally thereof inwardly of the wall, a cover having its lower end at the wall offset with the flange inwardly thereof, a bead at the lower end of the cover, a hinge member carried by the box flange between said flange and cover and having a hinge passage in line with the cover bead, a hinge pin or rod passing simultaneously through the cover and hinge beads for hingedly connecting the cover to the box proper, a tray within the cover and pivotally connected to the cover and box whereby movement of the cover moves the tray from a position overlying the box to a position laterally displaced, a supporting ledge integral with the hinge member overlying the box flange and ex-

tending toward the center of the box for supporting the tray in its box overlying and extended positions, and a supporting ledge carried by the box end wall for supporting the tray when in a box overlying position.

3. In a metal carrying case, a box proper having side and end walls with said end walls extending above the side walls, a divided cover for the box proper hingedly connected thereto and each portion of said cover having side and end walls which when in closed position embrace the upper free ends of the box walls, a plurality of superimposed trays within said cover above said box, means for pivotally connecting said trays with the box and cover portions whereby movement of the cover portions extends the trays from their positions above the box, a member lining the extended portion of each end wall and secured thereto, and said members having their lower edges terminating adjacent the upper edges of the side walls, and projecting inwardly to form an integral supporting ledge on which rests the lowermost trays when in superimposed position.

4. In a metal carrying case, a box proper having side and end walls with said end walls extending above the side walls, a divided cover for the box proper hingedly connected thereto and each portion of said cover having side and end walls which when in closed position embrace the upper free ends of the box walls, a plurality of superimposed trays within said cover above said box, means for pivotally connecting said trays with the box and cover portions whereby movement of the cover portions extends the trays from their positions above the box, a liner for the extended portion of said end walls of the box, and a supporting ledge integral with the lower edge of each wall liner extending toward one another for supporting the trays when in superimposed position, and said hinge connection of the cover portions and box proper including a plurality of hinge elements carried by the box proper each including a ledge extending toward the center of the box for supporting the trays when in superimposed and extended positions.

5. In a metal carrying case of the class described the combination with a box proper having side and end walls wherein the end walls extend above the side walls, said end walls having their upper edges inclined from the center to the upper ends of the box side walls and with said end walls upper edges turned normal to the end walls to provide a reinforcing flange, of a strengthening liner for each end wall of a configuration corresponding to the configuration of the end wall above the side walls and having a flange along the upper and side edges of the liner of a depth equal to the end wall reinforcing flange and extending toward the end wall, said liner being secured in position relative to its side wall and a supporting ledge at the lower edge of the liner integral with and projecting into the box.

6. In a metal carrying case of the class described the combination with a box proper having side and end walls wherein the end walls extend above the side walls, said end walls having their upper edges inclined from the center to the upper ends of the box side walls and with said end walls upper edges turned normal to the end walls to provide a reinforcing flange, of a strengthening liner for each end wall of a configuration corresponding to the configuration of the end wall above the side walls and having a flange along the upper and side edges of the liner of a depth equal to the end wall reinforcing flange and ex-

tending toward the end wall, said liner being secured in position relative to its side wall and a supporting ledge at the lower edge of the liner integral with and projecting into the box, and reinforcing ribs in the liners and their supporting ledges at the juncture of said liners and supporting ledges.

7. In a metal carrying case of the class described the combination of a box having side and end walls with said end walls extending above the side walls, a member lining the extended portion of each end wall and secured thereto, and said members having their lower edges terminating adjacent the upper edges of the side walls, a divided cover having a section hingedly secured to the upper end of each side wall, a plurality of nested trays within the cover portions above the box, links connecting the trays directly to the box end walls at points below their liners and additional links for connecting the trays directly to the cover sections whereby movement of the cover sections through the links shifts the trays from their nested positions over the box to extended positions over the side walls of the box and an integral supporting ledge projecting inwardly from each lining member on which rests the lowermost trays when in nested position.

8. In a metal carrying case of the class described the combination of a box having side and end walls with said ends walls extending above the side walls, a strengthening liner for each end wall of an area substantially equal to the portion of the end wall which extends above the side wall and secured to said end wall, a divided cover having a section hingedly secured to the upper end of each side wall, a plurality of nested trays within the cover portions above the box, links connecting the trays directly to the box end walls at points below their liners, additional links for connecting the trays directly to the cover sections whereby movement of the cover sections through the links shifts the trays from their nested positions over the box to extended positions over the side walls of the box, and a supporting ledge integral with and at the lower edges of the end wall liners projecting toward one another in the plane of the bottom of the lower trays for supporting the trays when in a nested position.

9. In a metal carrying case of the class described the combination of a box having side and end walls with said end walls extending above the side walls, a strengthening liner for each end wall of an area substantially equal to the portion of the end wall which extends above the side wall and secured to said end wall, a divided cover having a section hingedly secured to the upper end of each side wall, a plurality of nested trays within the cover portions above the box, links connecting the trays directly to the box end walls at points below their liners, additional links for connecting the trays directly to the cover sections whereby movement of the cover sections through the links shifts the trays from their nested positions over the box to extended positions over the side walls of the box, a supporting ledge integral with and at the lower edges of the end wall liners projecting toward one another in the plane of the bottom of the lower tray for supporting the trays when in a nested position, and supporting ledges integral with the hinging means for the cover sections and projecting toward one another in the plane of the bottom of the lower trays for supporting the trays when in nested and extended positions.

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