

Jan. 7, 1958

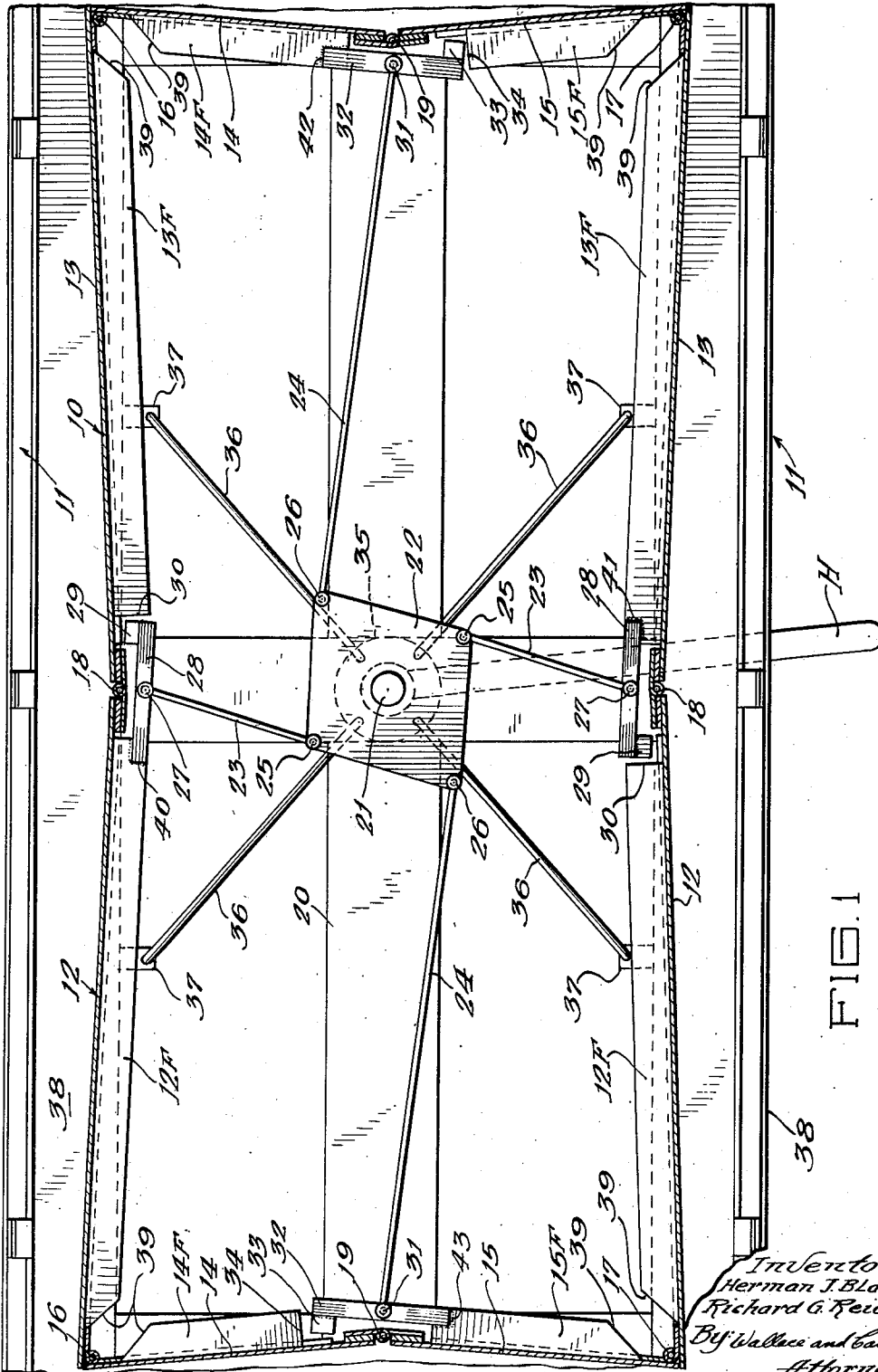
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2,818,627

FORMS

Filed April 7, 1955

3 Sheets-Sheet 1



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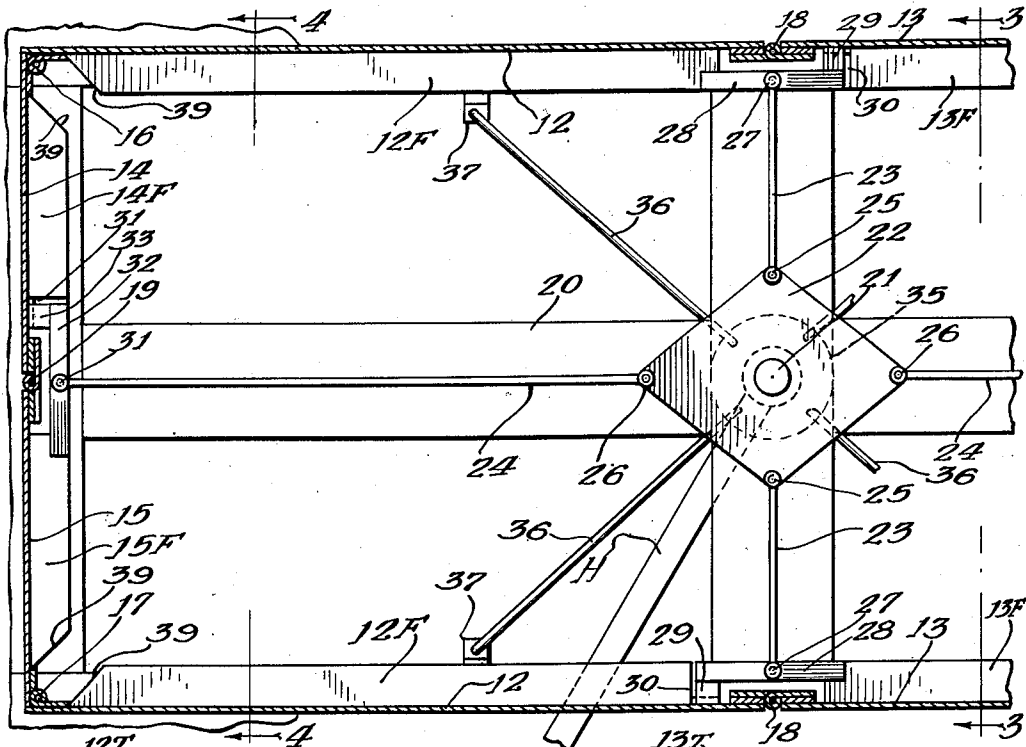


FIG. 2

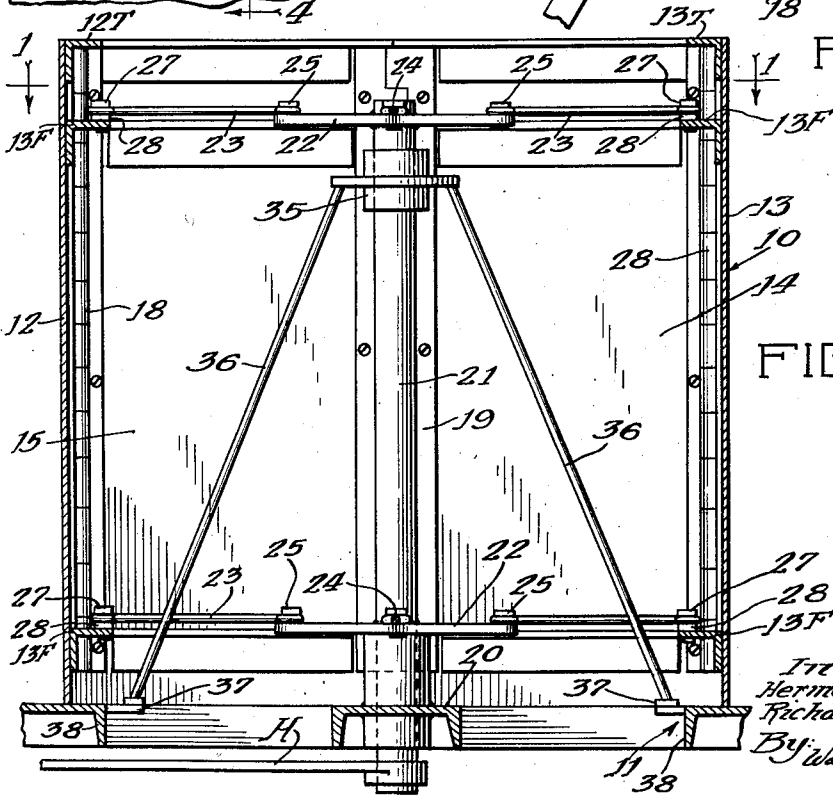


FIG. 3

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FIG. 4

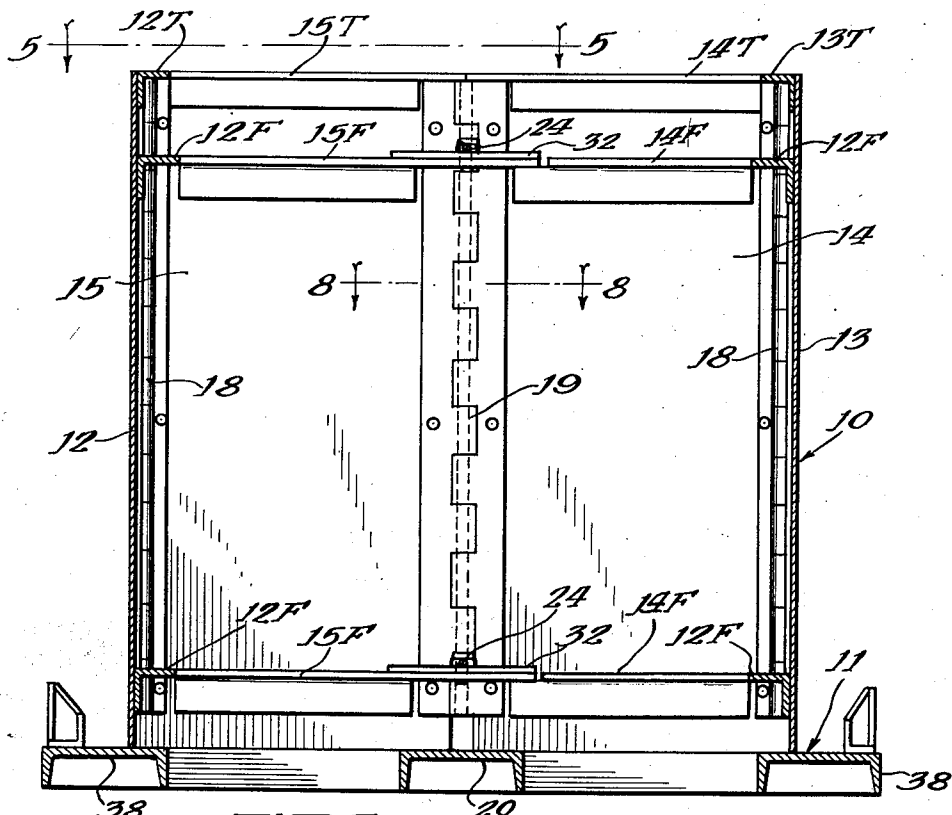


FIG. 5

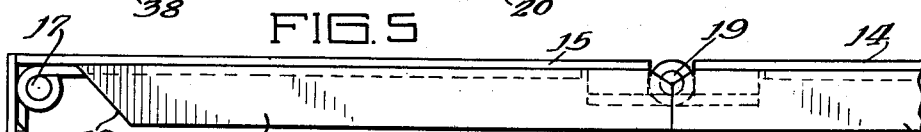


FIG. 6

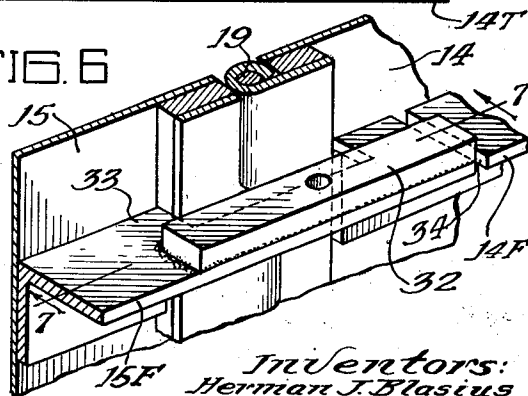


FIG. 7

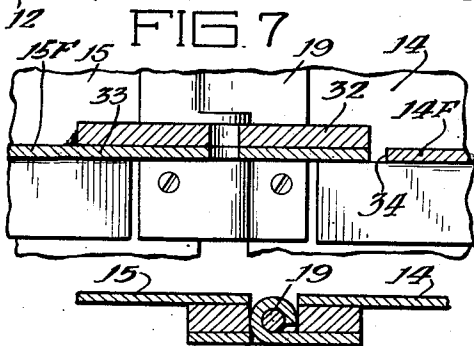


FIG. 8

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Application April 7, 1955, Serial No. 499,952

1 Claim. (Cl. 25—128)

This invention relates to a collapsible form for making concrete receptacles and, more particularly, to a collapsible burial vault form which may be used as the inner core or form in making a concrete burial vault or in making the inner asphalt component of a composite asphalt-concrete burial vault or like receptacle.

An object of the invention is to provide a new and improved collapsible inner core or form for making concrete receptacles, such as the box-like portion of concrete burial vaults, or component parts thereof, which is relatively simple and inexpensive in construction and simple and efficient in operation.

Another object of the invention is to provide a new and improved and relatively simple collapsible burial vault form or core which may be readily collapsed by a manually operated mechanism embodied therein and without the use of any power-operated devices or the like.

A further object of the invention is to provide in the new collapsible form unit a new and improved construction for moving the hingedly interconnected side wall sections and the hingedly interconnected end wall sections into inwardly extended or collapsed position and for forming the said hingedly interconnected side wall sections and the said hingedly interconnected end wall sections back into outwardly extended or effective and molding position.

Other objects will appear hereinafter.

Fig. 1 is a sectional plan view on line 1—1 in Fig. 3 showing the hingedly interconnected side wall sections and the hingedly interconnected end wall sections thereof in inwardly collapsed position;

Fig. 2 is a fragmentary sectional plan view of the new collapsible inner core or burial vault form, similar to Fig. 1, but showing the side wall sections and the end wall sections thereof in outwardly extended effective or molding position;

Fig. 3 is a vertical sectional view on line 3—3 in Fig. 2;

Fig. 4 is a vertical sectional view on line 4—4 in Fig. 3;

Fig. 5 is a fragmentary top plan view on line 5—5 in Fig. 4;

Fig. 6 is a fragmentary perspective view, partly in section, showing certain parts embodied in the construction of the burial vault form or core for moving the hingedly interconnected side wall sections and the hingedly interconnected end wall sections into and out of effective or molding position;

Fig. 7 is a fragmentary sectional view on line 7—7 in Fig. 6; and

Fig. 8 is a fragmentary sectional plan view on line 8—8 in Fig. 4.

The new collapsible inner core or form is adapted to be used with any suitable outer form (not shown), but which is adapted for use in making concrete receptacles, such as burial vaults, and an outer form being shown, for example, in our copending application, Serial No. 479,509, filed January 3, 1955.

A preferred embodiment of the new collapsible form or core, for use in making concrete burial vaults or like con-

crete receptacles, and for making the asphalt inner component of composite asphalt-concrete burial vaults, is illustrated in the drawings, wherein it is generally indicated at 10, and is shown as being mounted upon a suitable flat steel base 11, and includes side wall sections 12 and 13 and end wall sections 14 and 15 which are formed of suitable flat sheet metal stock. Each of the side wall sections 12 has a pair of inwardly extending angle iron flange members 13F attached thereto, on the inner side thereof, one adjacent the top and one adjacent the bottom thereof (Figs. 1, 2 and 4). These angle iron flange members 12F provide laterally inwardly extending and vertically spaced reinforcing flanges on the side walls 12. Similar inwardly extending reinforcing angle iron flange members 13F are provided on the inner sides of the side wall sections 13 (Figs. 1, 2 and 3). Likewise, the end wall sections 14 and 15 have similar laterally inwardly extending vertically spaced reinforcing angle iron flange members 14F and 15F, respectively, thereon (Figs. 1, 2 and 4).

The side wall sections 12 and 13 are hingedly interconnected, as at 16 and 17, to the end wall sections 14 and 15, respectively, as shown in Fig. 1.

The side wall sections 12 and 13 of each side wall are hingedly inter-connected with each other at their longitudinal centers, as at 18, and the end wall sections are similarly hingedly interconnected to each other at the longitudinal centers thereof, as at 19.

The base 11 of the new collapsible burial vault form or core 10 includes side rails 28 and a central and longitudinally extending portion or member 20 and, rotatably mounted thereon, centrally of the new collapsible form or core 10, is a vertically extending operating shaft 21 on which vertically spaced cam plates 22 are mounted adjacent the top and bottom of the form, as shown in Figs. 1, 2 and 3 of the drawings. Each of these cam plates 22 is in the form of a rhombus, in plan.

The vertically extending operating shaft 21 has a flanged sleeve 35 attached thereto adjacent the top thereof, and this flanged sleeve 35 has angularly extending brace rods 36 attached thereto at their upper ends, these brace rods 36 having their lower end portions attached to extensions 37 of the side rails 38 of the base 11. In this manner the vertical center operating shaft 21 is supported in its proper vertical position (Figs. 1, 2 and 3).

The operating mechanism for the new collapsible form or core 10 includes an upper pair and a lower pair of relatively short transversely extending push rods 23, each of which is pivotally connected at its outer end, as at 27, to a side wall pusher bar 28, and the inner end portion of each of these push rods 23 is pivotally connected, as at 25, to one corner portion of one of the rhombus-shaped cam plates 25.

The operating mechanism for the new collapsible inner core or form 10 also includes an upper pair and a lower pair of longitudinally extending push rods 24, each of which is pivotally connected at its inner end, as at 26, to one corner portion of one of the rhombus-shaped cam plates 22, and the outer end portion of each of these longitudinally extending push rods 24 is pivotally connected, as at 31, to an end wall pusher bar 32.

It will be noted by reference to Figs. 1, 2, 6 and 7 of the drawings that the laterally inwardly extending flange members 12F—13F on the side wall sections 12 and 13 and the inwardly extending flange members 14F and 15F on the end wall sections 14 and 15, respectively, terminate somewhat short of each other at their inner ends, for a reason which will be explained presently. Likewise, the outer end portions of the inwardly extending flange members 12F, 13F, 14F and 15F are beveled, as at 39 (Figs. 1 and 2) to permit movement of the side and end

roll sections of the form relative to each other at the corners thereof.

Thus it will be noted that one of the side wall pusher bars 28 in each of the top and bottom groups of pusher bars has one end portion welded or otherwise fixed, as at 40 (Fig. 1), to the upper surface of one of the laterally inwardly extending flange members 12F which is attached to one of the side wall sections 12 and the other side wall pusher bar 28 in each group of pusher bars has one end portion thereof welded, or otherwise secured, as at 41 (Fig. 1) to the upper surface of one of the flange members 13F. Each of these side wall pusher bars 28 has attached thereto at its other end an outwardly extending pusher arm 29. Each of these outwardly extending pusher arms 29 is adapted to abut the inner vertical surface of the adjacent vertical wall of one of the angle iron flange members 12F or 13F inwardly of the longitudinal inner end edge 30 of the adjacent side wall flange member 12F or 13F (Fig. 1).

Similarly, one of the end wall pusher bars 32 in each group of pusher bars has one end portion welded, or otherwise fixed, as at 42, to the upper horizontal surface of one of the laterally inwardly extending flange members 14F of one of the end wall sections 14 and each of these end wall pusher bars 32 has attached thereto at its other end an outwardly extending pusher arm 33 which is adapted to engage the inner vertical surface of one of the flange members 15F on one of the end wall sections 15, inwardly of the longitudinal inner end 34 thereof (Figs. 1, 6 and 7).

Similarly, the other end wall pusher bar 32 in each group of pusher bars has one end portion thereof welded, or otherwise secured, as at 43, to the horizontal surface of one of the flange members 15F and each of the latter two end wall pusher bars 32 has an outwardly extending pusher arm 33 attached thereto at its opposite end (Figs. 1, 2, 6 and 7).

An operating handle H is attached to the lower end portion of the vertically extending operating shaft 21, and this operating handle H projects laterally to one side of the form or core 10, as shown in Figs. 1 and 2 of the drawings.

The side wall sections 12 and 13 have laterally inwardly extending cover plate-supporting flanges 12T and 13T welded or otherwise secured thereto at the top thereof, and similar cover plate-supporting flanges 14T and 15F are welded or otherwise secured to the end wall sections 14 and 15, at the top thereof (Fig. 4).

In the use of the new collapsible form or core 10 the same may be arranged in position of use upon a suitable base 11 and a suitable outer form or mold (not shown) may be arranged thereon outwardly of the inner core or form 10, such an outer core or form being shown, for example, in our aforesaid copending application, Serial No. 479,509, filed January 3, 1955.

Likewise, a suitable cover plate (not shown) may be removably mounted, in any suitable manner, on the cover plate-supporting flanges 12T—13T—14T and 15T.

The hingedly interconnected side wall sections 12 and 13 and the hingedly interconnected end wall sections 14 and 15 may then be arranged in expanded or effective and molding position, as in Fig. 2, and a concrete receptacle, such as the box-like receptacle portion of a concrete burial vault, or the asphalt inner core of a composite asphalt-concrete burial vault, molded therein, in a manner well understood in the art.

However, after the molding operation, and after the concrete or the asphalt, as the case may be, has set or hardened to a desired extent, and it is desired to strip the new inner core or form 10 from the molded receptacle body, this may be accomplished by manipulating the handle H and the vertical operating shaft 21 from the position in which the parts are shown in Fig. 1, thereby hingedly collapsing the side wall sections 12 and 13 and

the end wall sections 14 and 15 into inwardly collapsed position, as shown in Fig. 1.

During this operation the vertical operating shaft 21, cam plates 22, push rods 23 and side wall pusher bars 28 act, through the welded connections 40 and 41 of the side wall pusher bars 28 with the side wall flanges 12F and 13F, respectively, and the hinge connections 18, to pivot the side wall sections 12—13 inwardly about their hinged inter-connections 18. At the same time, the vertical operating shaft 21, cam plates 22, push rods 24, and end wall pusher bars 32 act, through the welded connections 42 and 43 of the end wall pusher bars 32 with the end wall flange members 14F and 15F, respectively, and the end wall sections 14 and 15 and their hinge connections 19, to pivot the end wall sections 14 and 15 about their hinged inter-connections 19 so as to hingedly collapse the end wall sections 14 and 15 inwardly. In this manner the new inner core or form 10 is collapsed inwardly, thereby enabling it to be readily stripped from the concrete or asphalt box-like receptacle portion of a concrete burial vault, or like receptacle, or from the asphalt inner core of a composite asphalt-concrete burial.

However, when it is desired to expand the new inner core or form 10 back into extended or effective and molding position, as in Fig. 2, this may readily be accomplished by manipulating the operating handle H, shaft 21, cam plates 22, push rods 23 and 24, and pusher bars 28 and 32 from the position in which these parts are shown in Fig. 1 into the position in which they are shown in Fig. 2.

During this operation the pusher bars 28 and attached pusher arms 29 act through their welded connections 40 and 41 with the side wall flange members 12F and 13F, respectively, and through the hinge connections 18, to expand the side wall sections 12 and 13 back into effective or molding position, and when the parts reach this position the side wall pusher bars 28 engage the vertically extending portions of the other angle iron flange members 12F and 13F to retain the side wall sections 12 and 13 in extended and effective position. At the same time, the end wall pusher bars 32 and attached pusher arms 33 act, through their welded connections 42 and 43 with the horizontal portions of the end wall flange members 14F and 15F, respectively, and through the hinge connections 19 between the end wall sections 14 and 15, to expand the end wall sections 14 and 15 outwardly into extended or effective position, and when the end wall sections 14 and 15 reach extended position the pusher arms 29 and 33 bear against the vertical surfaces of the adjacent flange members 12F—13F and 14F—15F to retain the side wall sections 12—13 and the end wall sections 14—15 in extended position until it is desired again to collapse the new form inner vault.

It will thus be seen from the foregoing description, considered in conjunction with the accompanying drawings, that the present invention provides a new and improved inner form or core for making the box-like receptacle portion of a concrete burial vault, or the asphalt inner component of a composite asphalt-concrete burial vault or like receptacle, and has the desirable advantages and characteristics, and accomplishes its intended objects, including those hereinbefore pointed out, and others which are inherent in the invention.

We claim:

A collapsible form for molding a box-like receptacle of concrete or like material comprising upright side walls each including a pair of hingedly interconnected side wall sections, end walls each including a pair of hingedly interconnected end wall sections with the hinges for all of said walls being disposed on the inner sides thereof so as to present substantially smooth outer wall surfaces, and manually operable means for manipulating the said side wall sections and the said end wall sections into and out of collapsed position and into and out of extended or coplanar relationship about their hinged interconnections, said manually operable means including a vertically extending operating shaft arranged centrally within said

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form, vertically spaced horizontally extending cam plates carried by said operating shaft, each of said side wall sections and each of said end wall sections having a pair of vertically spaced laterally inwardly horizontally extending reinforcing flange members mounted on the inner surface thereof, a pair of side wall pusher bars each having one end portion rigidly attached to one of the said reinforcing flange members on one of said side wall sections at the inner end of said one side wall section, a pair of end wall pusher bars each having one end portion rigidly attached to one of the said reinforcing flange members on one of said end wall sections at the inner end of said one end wall section, push rods radially arranged about said cam plates, each of said pusher rods being pivotally interconnected at its radially outer end to one of said pusher bars and being pivotally inter-

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connected at its radially inner end to one of said cam plates, said pusher bars extending across and spanning the hinged interconnections between said side and end wall sections and being spaced inwardly therefrom, and each of said pusher bars having a laterally outwardly extending pusher arm arranged thereon at its other end portion so that each pusher bar and arm straddles an associated hinge to engage the adjacent one of said side or end wall sections on the inner surface thereof.

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