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COLLAPSIBLE CORE FORM

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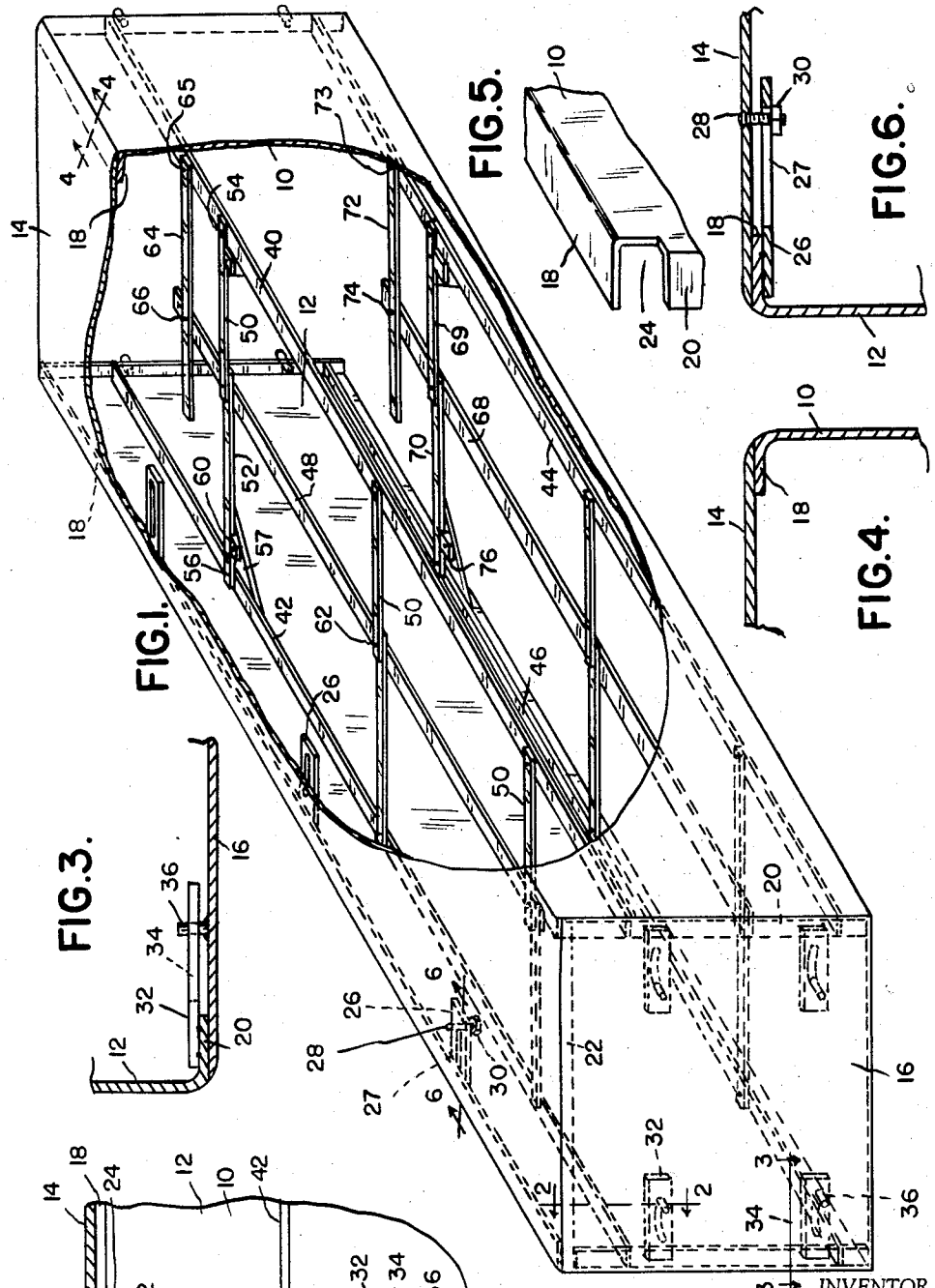

FIG. 1.

FIG. 5.

FIG. 6.

FIG. 4.

FIG. 3.

FIG. 2.

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COLLAPSIBLE CORE FORM

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The present invention relates to a collapsible form, and more particularly, to a form designed to be an internal form in the casting of a crypt or the like.

It is an object of the present invention to provide a collapsible inner form comprising a pair of side plates movable toward and away from each other, in combination with means for moving said side plates from a separated vertical operating position to a collapsed position in which the side plates are relatively closer together and are inclined from vertical planes to occupy less overall height.

It is a further object of the present invention to provide a collapsible form as described in the preceding paragraph, in combination with a top plate normally supported by the side plates in operating position and loosely connected thereto to permit relative approach and separation between said side plates and to cause inclination of said side plates to move said top plate downwardly.

It is a further object of the present invention to provide a collapsible form as described in the foregoing, in combination with an end plate of less height than said side plates and connected thereto by means effective to elevate said end plate upon approach between said side plates.

It is a further object of the present invention to provide a collapsible form as described in the preceding paragraph, in combination with actuating means effective to product simultaneous approach between the side plates, downward movement of the top plate, and upward movement of said end plate.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawing, illustrating a preferred embodiment of the invention, wherein:

Figure 1 is a perspective view of the form with parts broken away.

Figure 2 is a fragmentary section on the line 2—2, Figure 1.

Figure 3 is a fragmentary section on the line 3—3, Figure 1.

Figure 4 is a fragmentary section on the line 4—4, Figure 1.

Figure 5 is a fragmentary perspective view of a corner of a side plate.

Figure 6 is a fragmentary section on the line 6—6, Figure 1.

The collapsible form is intended as the inner form of a pair of nested forms adapted to be used in pouring a casting, such for example as a concrete casting. The specific form illustrated herein is adapted to be used in pouring a crypt and it is made collapsible so that after the concrete has set, the inner form may be collapsed to smaller dimensions than in its extended operative position and withdrawn from the completed casting.

In general terms the form comprises a pair of side plates, a top plate, and an end plate. The top plate rests on the upper edges of the side plates. The side plates are movable inwardly toward each other to an inclined position in which their upper edges are at a lower position than when the side plates are vertical. Means are provided interconnecting the top portions of the side plates and the top plate so that upon downward movement of the top portions of the side plates the top plate is moved downwardly. Connections are also provided between the side plates and end plate effective to elevate the end plate slightly when the side plates are moved inwardly so that the end plate will clear the bottom of the crypt or the support on which it was formed.

Referring now to the drawings, the collapsible form comprises side plates **10** and **12**, a top plate **14**, and an end plate **16**. The upper edge of the side plates **10** and **12** are turned inwardly to provide horizontally extending flanges **18** upon which the top plate **14** rests as best seen in Figures 4 and 5. Similarly, the end portions of the side plates **10** and **12** are also turned inwardly to provide the flanges **20**.

In like manner, the top plate **14** is provided at the ends thereof with downwardly turned flanges **22**. In order to accommodate the downwardly turned flanges **22** at the ends of the top plate **14** the corner portions of the side plates **10** are cut away as indicated at **24** in Figure 5.

Means are provided to establish a loose connection between the top portions of the side plates **10** and **12** and the top plate **14** so that when the side plates are inclined inwardly, the top plate **14** is positively moved downwardly. This means includes brackets **26** having elongated slots **27** welded or otherwise rigidly secured to the underside of the flanges **18** which are provided at the top edge portions of the side plates **10** and **12**. The top plate **14** is suitably apertured to receive bolts **28** which extend through the slots **27** in the brackets **26**. The elongated slot provides a loose connection which permits the upper edge portion of each side plate to move inwardly but nuts **30** carried by the lower end of the bolts **28** engage the underside of the brackets **26** and the heads of the bolts will provide positive means for pulling the top plate **14** downwardly.

The end plate **16**, as best seen in Figure 1, is of somewhat less height than the side plates. In order that inward movement of the side plates may slightly raise the end plate into a position of clearance, brackets **32** are provided which extend inwardly from the inner side of the flanges **20** at the ends of the side plates **10** and **12**. The brackets **32** may be welded to these flanges as best indicated in Figure 3. The brackets are provided with elongated inclined camming slots **34** and welded or otherwise secured to the inner surface of the end plate **16** are pins **36** which are received in the slots. Thus, as the side plates are moved inwardly the end plate is moved slightly upwardly so that it will clear the floor as the collapsible form is moved out of the casting.

Means are provided for moving the plates between collapsed position and extended operating position. This means, as illustrated in Figure 1, comprises bars **40** and **42** welded or otherwise rigidly secured to the inner surfaces of the side plates **10** and **12** adjacent the upper portion thereof. A second set of bars **44** and **46** are rigidly secured as by welding to the inner surfaces of the side plates **10** and **12** adjacent the bottom edges thereof. A first actuating bar **48** is provided substantially midway between the bars **40** and **42** and is connected thereto by three sets of links each comprising a link **50** and a link **52**. The link **50** is pivoted to the bar **40** as indicated at **54**, and the link **52** is pivoted to the bar **42** as indicated at **56**. Gusset plates **57** are provided to which stop blocks **60** are welded or otherwise secured to determine the extended or operative position of the form. The inner ends of the links **50** and **52** are pivoted to the intermediate actuating bar **48**, as indicated at **62**. An operating lever **64** is provided which is pivoted as indicated at **65** to one of the bars **40** or **42** and which is pivoted as indicated at **66** to the actuating bar **48**.

A second or lower actuating bar **68** is provided intermediate the bars **44** and **46** and is connected thereto by a

plurality of sets of links each comprising a link **69** and a link **70** corresponding respectively to the upper links **50** and **52**. Again, an operating lever **72** is provided which is pivoted as indicated at **73** to one of the bars, as for example the bar **44**, and which is pivoted at **74** to the lower actuating bar **68**. Again, rigid abutment blocks **76** are provided to determine the position of the links **69** and **70** when the form is fully extended.

From the foregoing it will be observed that the operating lever **64** is effective to move the actuating bar **48** toward the open end of the form and thus to cause the upper portions of the side walls **10** and **12** to move inwardly. In like manner, the lever **72** may be operated to move the bottom portions of the side walls inwardly. It will be observed that the linkage system comprising the bar **48**, the links **50** and **52**, and the lever **64**, is entirely independent of the system comprising the bar **68**, links **69** and **70**, and lever **72**. Accordingly, the side plates **10** and **12** may be moved inwardly to an inclined position by more movement of one of the levers **64** and **72** than of the other. The inclined portions of the side plates **10** and **12** will of course cause them to occupy less space vertically and since the lower edge of the plates is supported, it will have the effect of causing the upper edge portions thereof to move downwardly. This downward movement of the upper edge portions of the side plates **10** and **12** is employed through the medium of the brackets **26** and bolts **28** to cause corresponding downward movement of the top plate **14**.

It may be mentioned at this time that considerable force may be required to move any one of the plates out of engagement with the surface of the casting because of some tendency for the plates to adhere and also because the cast surface is in such intimate contact with the plate that initial separation after setting of the casting is opposed by atmospheric air pressure.

It will of course be appreciated that the elongated slots **34** are provided with sufficient clearance with respect to the pins **36** as to permit the required inclination from the vertical of the side plates **10** and **12**.

Attention is also directed to the fact that, as best seen in Figure 4, the width of the top plate **14** is somewhat less than the spacing between the outer surfaces of the side plates **10** and **12** when they are in extended operating position. This means that when the side plates are moved inwardly, the lateral edges of the top plate have clearance with respect to the side surfaces at the interior of the casting. Similarly, as best seen in Figure 1, the height of the end plate **16** is somewhat less than the normal vertical height of the side plates **10** so that upward vertical movement of the end plate **16** is permitted to clear the floor or support, without interfering with the undersurface of the top of the casting. In like manner, as seen in Figure 3, the width of the end plate **16** is somewhat less than the spacing between the outer surfaces of the side plates **10** and **12** so that the end plate may be withdrawn through the open end of the casting without engaging the inner surfaces of the side walls thereof.

The drawing and the foregoing specification constitute a description of the improved collapsible form in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A collapsible inner form comprising relatively movable generally vertical side plates, a general vertical end plate of less height than said side plates, and a generally horizontal top plate, actuating means interconnecting upper and lower portions of said side plates to move said side plates inwardly from an outer vertical position to an inner inclined position in which the upper edge portions of said side plates are moved downwardly, and cam means directly connecting said end plate and side plates operable to raise the end plate slightly upon inward movement of said side plates.

2. A collapsible inner form comprising relatively movable generally vertical side plates, a generally vertical end plate of less height than said side plates, and a generally horizontal top plate, actuating means interconnecting upper and lower portions of said side plates to move said side plates inwardly from an outer vertical position to an inner inclined position in which the upper edge portions of said plates are moved downwardly, means directly interconnecting the upper edge portions of said side plates and said top plate operable to move said top plate downwardly upon inward movement of said side plates to the inner inclined position, and cam means directly connecting said end plate and side plates operable to raise the end plate slightly upon inward movement of said side plates.

3. A collapsible form comprising a pair of side plates movable toward and away from each other from an operating position in which said plates are vertical and spaced apart a maximum amount and a collapsed position in which said plates are closer together and inclined to reduce their overall vertical dimension, actuating means connected to said side plates to move said plates between said operating and collapsed positions, an end plate of less height than said side plates located beyond the ends of said side plates, cam means connecting said side plates to said end plate and operable to raise said end plate in a clearance position upon inward movement of said side plates.

4. A collapsible form comprising side plates, an end plate and a top plate, said end plate being of less height than said side plates, and manually operable means for moving said side plates inwardly to an inclined clearance position, said means comprising a first lever actuated linkage connecting the top portions of said side plates and a second lever actuated linkage connecting the lower portions of said side plates, said linkages being independently operable to provide for inclining said side plates in collapsed position to move the top portions of said side plates downwardly, direct connections between top portions of said side plates and said top plate to cause downward movement of said top plate upon the aforesaid inward movement of said side plates, and cam means connecting said side plates and said end plate to cause upward movement of said end plate on inward movement of said side plates.

5. A collapsible form comprising separate generally vertical side and end plates, and a horizontal top plate, linkage connected only to said side plates and operable to move said side plates toward and away from each other and to incline said side plates inwardly, cam means interconnecting said side plates and said end plate to effect limited vertical movement of said end plate upon movement of said side plates toward each other, said side plates having top edge portions, said top plate having side edge portions overlying the top edge portions of said side plates, and means directly connecting the top edge portions of said side plates to the side edge portions of said top plate.

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