Oct. 7, 1958 W. BAST ET AL 2,854,725

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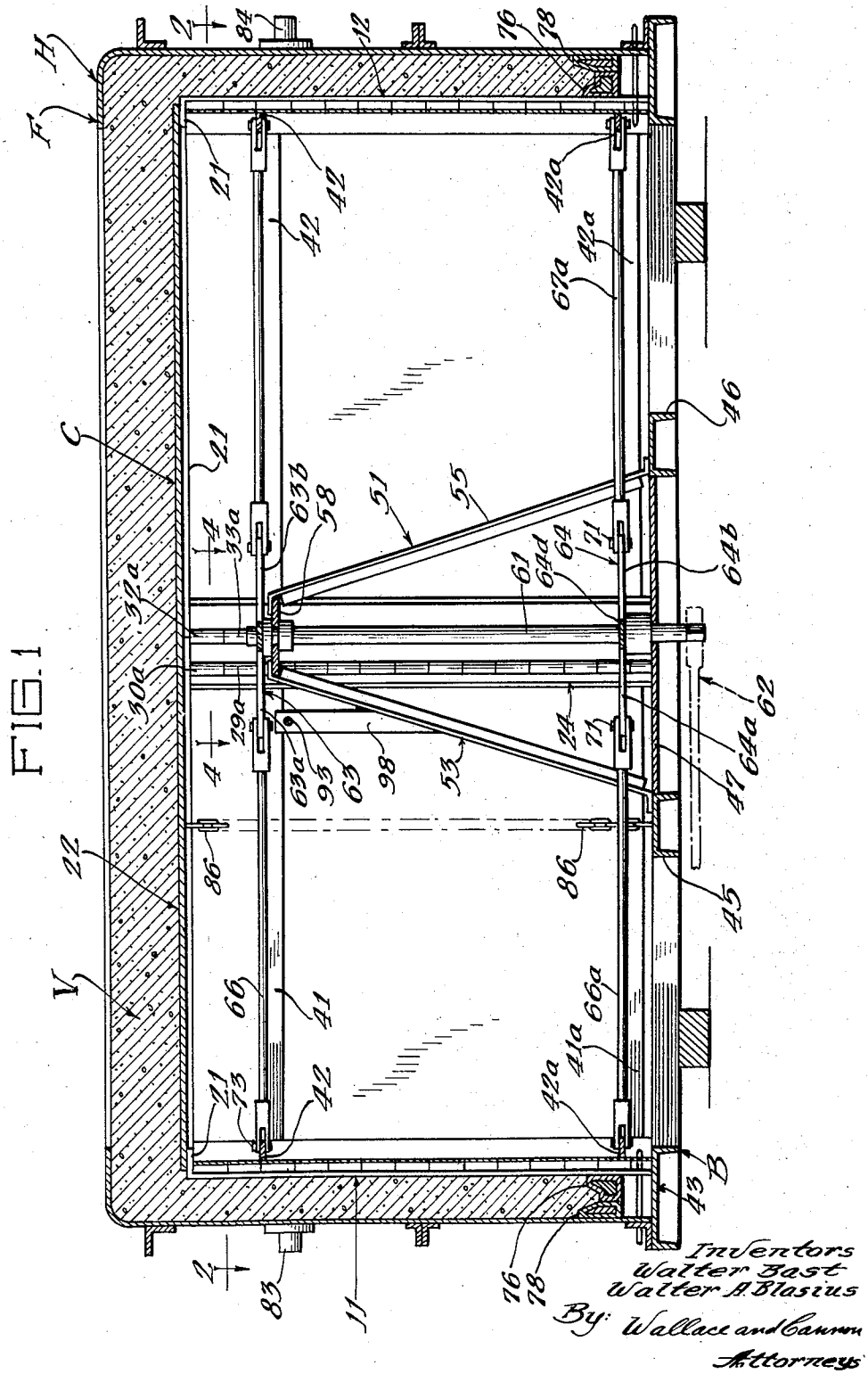


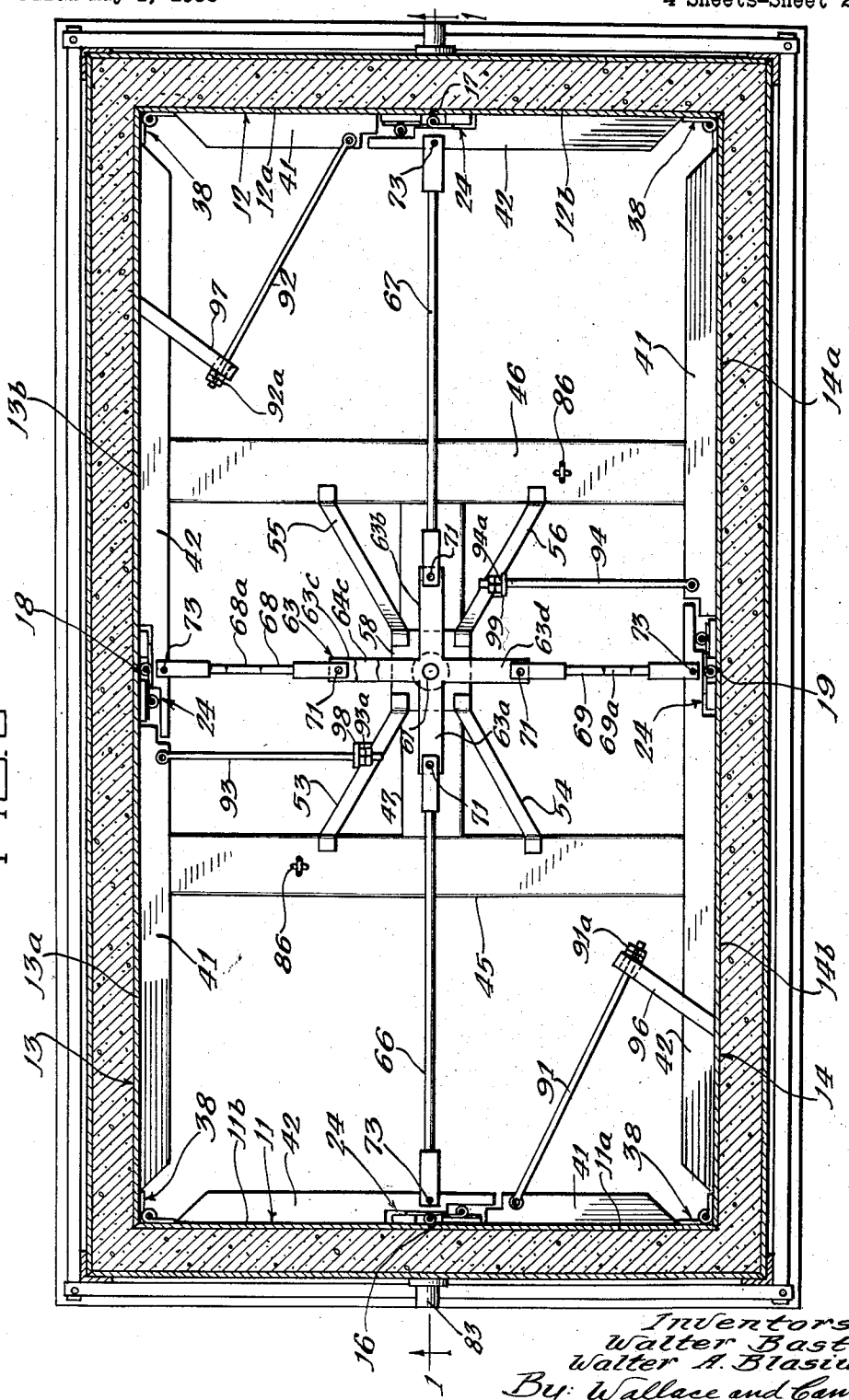
FIG. 1

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FIG. 2



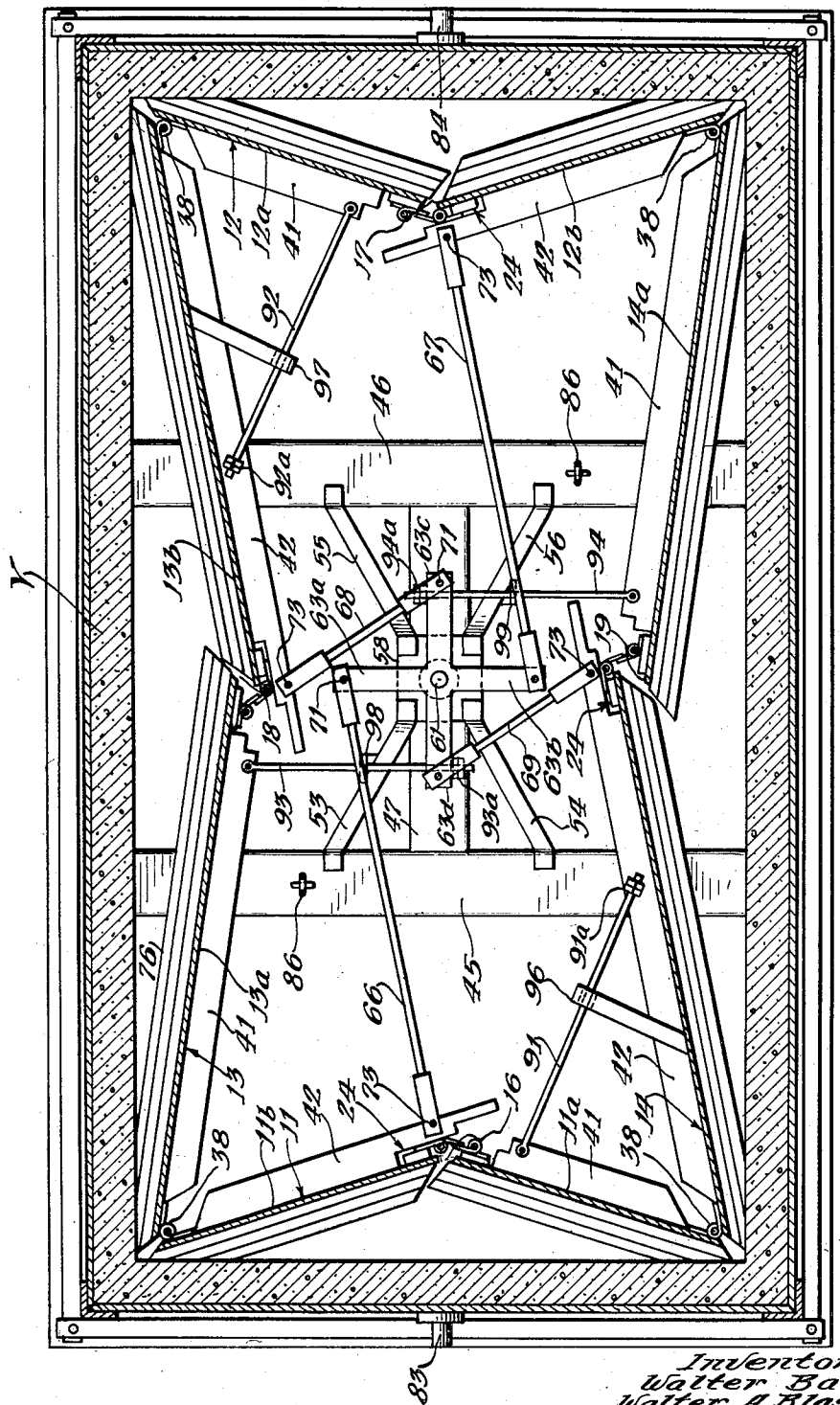
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FIG 3



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FIG. 4

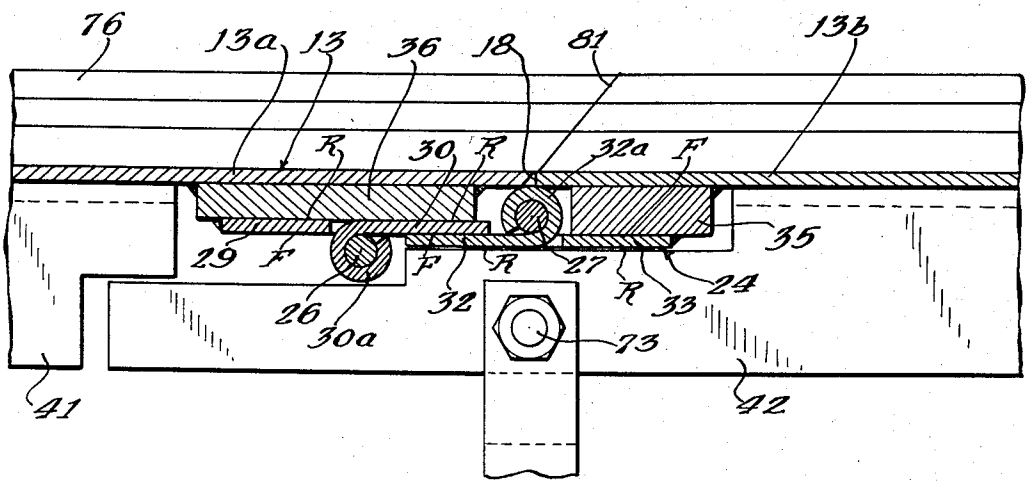
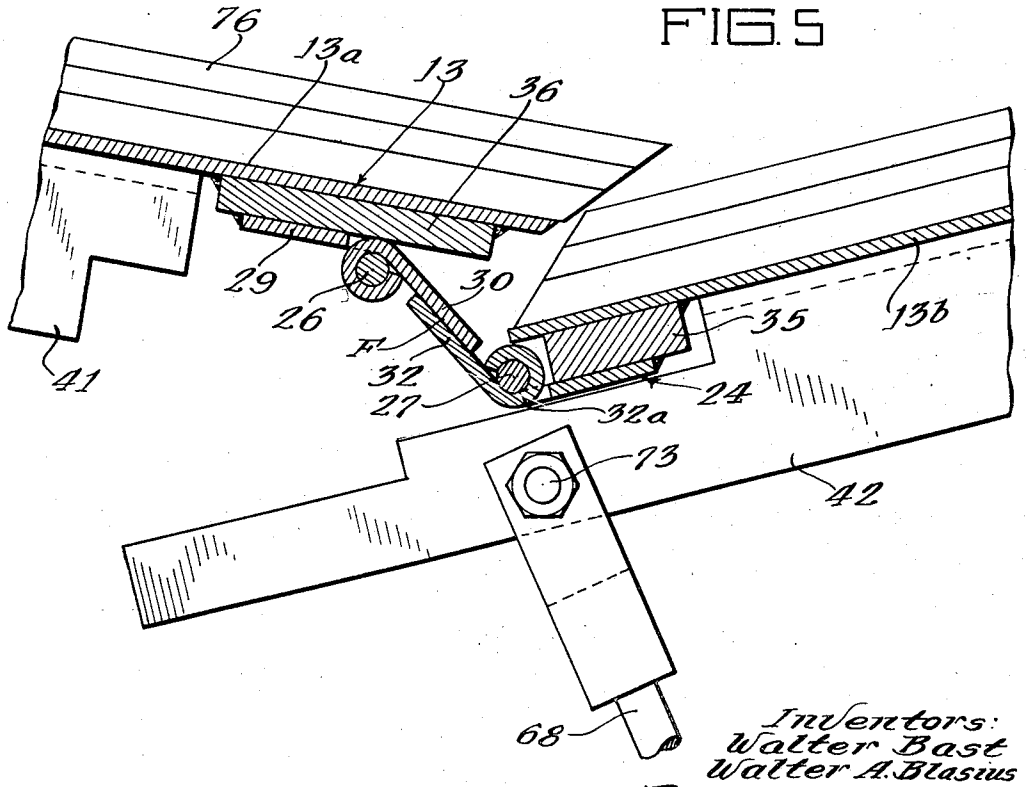


FIG. 5



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2,854,725

CORES

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Application May 1, 1956, Serial No. 581,994

2 Claims. (Cl. 25—128)

This invention relates to cores and, more specifically, to cores of the type particularly well adapted for use in molding-forms for burial vaults, septic tanks, hollow blocks and the like.

It will be understood that reference hereinafter to burial vaults, and the like, is merely by way of illustration and not by way of limitation and that forms embodying the principles of our invention may be constructed and used for forming other articles without departing from the purview of our invention.

It is an object of our invention to afford a core, of the aforementioned general type, embodying walls which may be moved relative to each other in a novel and expeditious manner.

Another object is to enable a core to be contracted and expanded in a novel and expeditious manner.

Another object is to afford a novel core which embodies a novel hinged construction.

A further object of our invention is to afford a novel core wherein side walls thereof are hinged intermediate their ends in a novel and expeditious manner.

Yet another object of our invention is to afford a novel core embodying side walls which are hinged to each other and intermediate their ends in a novel and expeditious manner.

A further object is to provide a novel core of the aforementioned type which is relatively simple and easy to operate.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the accompanying drawings, which, by way of illustration, show a preferred embodiment of the present invention and the principles thereof and what we now consider to be the best mode in which we have contemplated applying these principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

In the drawings:

Fig. 1 is a longitudinal sectional view of the core embodying the principles of our invention and showing the core mounted in operative position in a form for molding burial vaults;

Fig. 2 is a sectional view taken substantially along the line 2—2 in Fig. 1;

Fig. 3 is a sectional view similar to Fig. 2 but showing the parts of the core in different operative position;

Fig. 4 in a detail sectional view taken substantially along the line 4—4 in Fig. 1; and

Fig. 5 is a detail sectional view similar to Fig. 4, but showing the parts in different operative position.

To illustrate the preferred embodiment of our invention, a core C, embodying the principles of our invention, is shown in the drawings mounted on a base B, within an outer housing or shell H, of a form F for making a burial vault box V.

The core C is substantially rectangular in shape, Figs. 1 and 2, and embodies two end walls **11** and **12**, and two side walls **13** and **14**. The walls **11**—**14** are transversely split throughout their width, intermediate the ends thereof, along lines **16**, **17**, **18**, and **19**, respectively, to thereby divide the walls **11**—**14** into two end portions **11***a* and **11***b*, **12***a* and **12***b*, **13***a* and **13***b*, **14***a* and **14***b*, respectively. Flanges **21** project inwardly from the upper end portions of the walls **11**—**14**, and a substantially rectangular shaped top wall **22** is loosely mounted on the flanges **21**, Fig. 1.

The split lines **16**—**19** in the side walls **11**—**14** extend across the width of the walls **11**—**14** perpendicularly to the length thereof. The split lines **16**—**19** are preferably triangular in cross section, Figs. 2 and 4, being so shaped that the inner end of the end portions **11***b*, **12***b*, **13***b* and **14***b* of the walls **11**—**14** are square, and the inner ends of the end portions **12***a*, **13***a* and **14***a* are tapered or beveled inwardly. With this formation of the split lines **16**—**19** it will be seen that when the opposite end portions of the walls **11**—**14** are disposed in alignment with each other, the outer faces of the walls **11**—**14** present substantially smooth surfaces, the inner ends of the opposite end portions of the walls **11**—**14**, respectively, being disposed in abutting relation to each other at the outer faces of the walls **11**—**14**.

Four hinges **24** are mounted on the inner faces of the walls **11**—**14**, Figs. 1, 2, 4, and 5, with each of the hinges **24** disposed in overlying relation to a respective one of the split lines **16**—**19**, in position to hingedly connect together the opposite end portions of the side walls **11**—**14**, respectively. The hinges **24** are each identical in construction, Figs. 1 and 2, and, as best seen in Fig. 4, each comprises a double-hinge having two hinge pins **26** and **27** disposed in spaced parallel relation to each other. Two substantially flat hinge plates **29** and **30**, having collars or eyes **29***a* and **30***a*, respectively, Figs. 1 and 4, formed on one end thereof are mounted on the hinge pin **26** with the pin **26** extending through the collars **29***a* and **30***a* which are disposed in stacked relation relative to each other. Similarly, two substantially flat hinge plates **32** and **33**, having eyes or collars **32***a* and **33***a*, respectively, Figs. 1 and 4, formed on one end thereof, are mounted on the hinge pin **27** with the pin **27** extending through the collars **32***a* and **33***a* which are disposed in stacked relation to each other. The hinge plates **29** and **30** are disposed on the pin **26** in such position that they normally are disposed in alignment with each other, and the hinge plates **32** and **33** are similarly disposed on the hinge pin **27**, Fig. 4.

Each of the hinge plates **29**, **30**, **32** and **33** has two oppositely disposed faces F and R, Fig. 4, the collars **29***a*, **30***a*, **32***a* and **33***a* projecting laterally from the faces F of the hinge plates **29**, **30**, **32** and **33**, respectively. The faces F of the hinge plates **30** and **32** are disposed in juxtaposition to each other and are secured in such position by suitable means such as, for example, welding, to thereby secure the hinge plates **29**, **30**, **32** and **33** of each double hinge unit **24** together and thereby afford a hinge unit which is pivotable about both of the pins **26**—**27**, with the pins **26** and **27** projecting laterally from opposite sides of the hinge unit **24**.

The hinge unit **24** which is secured to the side wall **13**, Fig. 4, has its hinge plate **33** secured to a spacing block **35** by suitable means such as, for example, welding, with the face F of the hinge plate **33** disposed in juxtaposition to one face of the spacing block **35**. The spacing block **35** is secured to the inner face of the end portion **13***b* of the side wall **13** by suitable means such as welding with the face of the block **35**, opposite to the face to which the hinge plate **33** is secured, disposed in juxtaposition

to the inner face of the end portion 13*b*. The spacing block 35 is disposed in spaced relation to the split line 18, and is preferably of such thickness that the collars 32*a* and 33*a* are disposed in laterally abutting engagement with the inner face of the end portion 13*b* of the side wall 13 at the split line 18.

The hinge plate 29 is likewise connected to another spacing block 36 by suitable means such as welding, with the face R of the hinge plate 29 disposed in juxtaposition to one face of the block 36. The block 36 is secured to the inner face of the end portion 13*a* of the side wall 13 by suitable means such as welding, with the face of the block 36, opposite to the face to which the hinge plate 29 is secured, disposed in juxtaposition to the inner face of the end portion 13*a*. The block 36 is disposed in spaced relation to the split line 18, and is of such thickness that when the end portions 13*a* and 13*b* of the side wall 13 are disposed in alignment with each other, the hinge pin 26 is supported in such position relative to the hinge pin 27 that the hinge plates 29 and 30 are disposed in alignment with each other and the hinge plates 32 and 33 are similarly disposed in alignment with each other.

The other hinges 24 are mounted in the same manner on the side walls 11, 12 and 14, respectively, Figs. 1 and 2.

The side walls 11—14 are normally disposed in straight upright position, with the opposite ends of the walls 11 and 12 disposed in abutting engagement with the adjacent ends of the walls 13 and 14, Fig. 2. The ends of the walls 11—14 are beveled inwardly so that the junction between the adjacent walls 11—14 presents a substantially smooth outer surface.

The end portions of the walls 11 and 12 are pivotally connected to the adjacent end portions of the walls 13 and 14 for swinging movement inwardly and outwardly relative to each other by hinges 38 mounted on the inner faces of the walls 11—14, each of the hinges 38 being disposed in a respective corner of the core C, Fig. 2. The hinges 38 are of the single-pin type, with the pin thereof disposed inwardly of the side walls 11—14.

A pair of elongated braces 41 and 42 made of suitable material such as, for example, angle irons, are mounted on each of the walls 11—12, with the braces 41 and 42 of each pair disposed in longitudinal alignment with each other. The pairs of braces 41 and 42 extend across substantially the entire length of the respective walls 11—14, terminating at their outer ends in spaced relation to the adjacent hinges 38. The braces 41 are mounted on the end portions 11*a*, 12*a*, 13*a* and 14*a* and terminate at their inner end portions in spaced relation to the hinges 24. The braces 42 are mounted on the end portions 11*b*, 12*b*, 13*b* and 14*b* and are notched at their inner end portions to overlie the adjacent respective hinges 24, Fig. 2.

The base B, Figs. 1 and 2, preferably embodies a substantially rectangular shaped outer frame 43 having two transversely extending cross braces 45 and 46 between which a centrally disposed, longitudinally extending brace 47 is disposed. An upwardly projecting supporting stand 51 is mounted on the cross braces 45 and 46, Figs. 1 and 2, the supporting stand 51 having two legs 53 and 54 projecting upwardly and inwardly from the cross brace 45, and two legs 55 and 56 projecting upwardly and inwardly from the cross brace 46. A top plate 58 is mounted on the supported by the upper end portions of the legs 53—56, and a substantially vertically disposed shaft 61 extends through and is journalled in the plate 58. The shaft 61 projects downwardly from the plate 58 and extends through and is also journalled in the brace 47. The lower end portion of the shaft 61 is formed in a square shape, Fig. 1, so that a suitable tool such as, for example, a crank 62 may be applied thereto for rotating the shaft 61 for a purpose which will be discussed in greater detail presently.

Two spiders 63 and 64, each having four substantially equally spaced, outwardly projecting legs, 63*a*—63*d* and 64*a*—64*d*, respectively, Figs. 1 and 2, are mounted on and secured to the shaft 61 for rotation therewith. The spider 63 is disposed on the upper end portion of the shaft 61, above the plate 58, and the spider 64 is disposed at the lower end portion of the shaft 61, above the brace 47. The shaft 61 is preferably disposed in position wherein it is positioned directly between the split lines 18 and 19 and the split lines 16 and 17.

Four straight, elongated links 66, 67, 68, and 69 are pivotally secured at their inner end portions by pins 71 to respective legs 63*a*—63*d* of the spider 63, and are secured at their outer end portions by pins 73 to the braces 42 on the walls 11—14, respectively. The links 66—69 are preferably of such length and are so disposed in the core C that when the walls 11—14 are disposed in normal straight position, the links 66 and 67 are disposed in alignment with each other and with the split lines 16 and 17, and the links 68 and 69 are disposed in alignment with each other and the split lines 18 and 19.

Pairs of braces 41*a* and 42*a* are mounted on the lower end portions of each of the walls 11—14 in substantially parallel relation to the braces 41 and 42, respectively. The braces 41*a* and 42*a* are identical to the braces 41 and 42, respectively, and are disposed in the same relative position to the lower end portions of the hinges 24 as are the braces 41 and 42 relative to the upper end portions thereof.

Four straight elongated links 66*a*, 67*a*, 68*a* and 69*a* are connected at their inner end portions to the spider 64 by pins 71 and to the inner end portions of the braces 42*a* on the walls 77—14, respectively, in parallel relation to the links 66—68, respectively, Figs. 1 and 2.

Elongated molding strips 76 are mounted on the lower end portions of the outer faces of the walls 11—14 in substantially horizontally extending position.

In a typical operation of a form embodying our novel core C, the core C may be mounted on a suitable base such as the base B in normal operative position such as shown in Figs. 1 and 2, and a suitable outer shell or housing, such as the housing H may then be mounted in operative position outwardly of the core C and in position to define, with the core C, an area into which material for forming a receptacle such as the box V of a burial vault, may be poured. When so positioned, the molding strips 76 on the core C are disposed in abutting engagement with molding strips 78 secured to the inner face of the housing H in parallel relation to the adjacent molding strips 76. The molding strips 76 and 78 define the bottom surface of the mold afforded by the form F.

The molding strips 76 on each of the walls 11—14 are split throughout their width along lines 81 which project outwardly for the split lines 16—19 of the walls 11—14, respectively, in alignment with the beveled inner edges of the end portions 11*a*, 12*a*, 13*a* and 14*a*, respectively, of the walls 11—14, Fig. 4. The split lines 81 are so formed that when the walls 11—14 are disposed in normal vault-forming position, the end portions of each molding strip 76 are disposed in closely abutting engagement with each other to thereby afford a substantially smooth upper surface at the joint therebetween.

It will be seen that with this construction, with the spiders 63 and 64 and the links 66—69 and 66*a*—69*a* disposed in normal position, as shown in Figs. 1 and 2, the side walls 11—14 of the core C are disposed in normal operative position wherein the end portions of each wall are disposed in alignment with each other. By mounting the crank 62 on the lower end portion of the shaft 61, and rotating the shaft 61 in a clockwise direction as viewed in Fig. 2 through approximately one-eighth of a turn from the position shown in Fig. 2 to the position shown in Fig. 3, the links 66—69 and 66*a*—69*a* are pulled in inwardly by the spiders 63 and 64. This movement of the links 66—69 and 66*a*—69*a* is effective to pivot the

walls **11**—**14** of the core C inwardly around the hinges **24** and **28** to thereby shrink the core C laterally and longitudinally inwardly away from the box V.

It will be seen that during the initial movement of the links **66**—**69** and **66***a*—**69***a*, the double hinges **24** permit the inner ends of the end portions **11***b*, **12***b*, **13***b* and **14***b* of the walls **11**—**14** to move inwardly substantially directly away from the inner ends of the end portions **11***a*, **12***a*, **13***a* and **14***a*, respectively, to thereby afford an initial clearance between the inner ends of the end portions **11***a*—**14***a* and the inner ends of the end portions **11***b*—**14***b*. The double hinges **24** likewise permit the inner ends of the opposite end portions of the respective molding strips **76** to initially move relative to each other in this same manner. After this initial movement of the walls **11**—**14** and the molding strips **76**, the hinges **24** continue to be pivoted about both pins **26** and **27** thereof so that the end portions **11***b*—**14***b* of the walls **11**—**14** and the end portion of the molding strips **76** attached thereto may be swung inwardly around the hinges **28** from the position shown in Figs. 2 and 4 into the position shown in Figs. 3 and 5.

With the core C in the collapsed position shown in Figs. 3 and 5, the outer shell H and the box V may be raised upwardly from the core C. Such raising of the outer shell H and the box V may be accomplished by suitable means such as, for example, a hoist, not shown, suitably engaged with the shell H such as, for example, by being connected to trunnions **83** and **84** projecting outwardly from the opposite end walls of the housing H. During this lifting of the box V from the core C the top plate **22** may be pulled from engagement with the inner face of the box V by suitable means such as chains **86**, Figs. 1 and 2, connected to the top plate **22** and the base B, Figs. 1 and 2, and thereby permit the top plate **22** to fall downwardly on to the flanges **21**.

After the outer shell H and the box V have thus been raised completely off from the core C, the shaft **61** may be turned by the crank **62** in a clockwise direction from the position shown in Fig. 3 to the position shown in Fig. 2 to thereby move the walls **11**—**14** back out into normal vault-forming position. To limit the outward movement of the walls **11**—**14**, rods **91**, **92**, **93**, and **94** are attached to the brace members **41** on the walls **11**—**14**, respectively, Fig. 2. The outer end portions of the rods **91** and **92** are pivotally connected to the brace members **41** on the walls **11**—**12**, respectively, and the inner end portions thereof extend through abutment members **96** and **97** mounted on and projecting inwardly from the brace members **42** on the walls **14** and **13**, respectively. The rods **91** and **92** extend through openings formed in the abutment members **96** and **97** with a loose fit so that they may move longitudinally therethrough during the aforementioned movement of the walls **11**—**14** relative to each other. Stop members, in the form of nuts **91***a* and **92***a* are mounted on the inner end portions of the rods **91** and **92** and may be adjusted into position wherein, when the walls **11** and **12** have moved from collapsed position back out into normal vault-forming position, the stop members **91***a* and **92***a* engage the abutment members **96** and **97** to thereby prevent further outward movement of the walls **11** and **12**.

The outer end portions of the rods **93** and **94** are similarly pivotally attached to the brace members **41** of the walls **13** and **14**. The inner end portions of the rods **93** and **94** project through abutment members **98** and **99** which are mounted on and project upwardly from the legs **53** and **56**, respectively, Figs. 1 and 2, of the stand **51**. Stop members **93***a* and **94***a*, in the form of nuts, are

mounted on the inner end portions of the rods **93** and **94** and are engageable with the abutment members **98** and **99** when the walls **13** and **14** have moved outwardly into normal vault-forming position.

From the foregoing it will be seen that we have afforded a novel core for burial vault forms, and the like, wherein the parts thereof are constituted and arranged, and are operable in a novel and expeditious manner.

Also it will be seen that we have afforded a novel hinged core wherein the molding surfaces are substantially smooth when the walls thereof are disposed in normal position.

Thus, while we have illustrated and described the preferred embodiment of our invention, it is to be understood that this is capable of variation and modification, and we therefore do not wish to be limited to the precise details set forth, but desire to avail ourselves of such changes and alterations as fall within the purview of the following claims.

We claim:

1. A core for a molding form comprising a plurality of elongated substantially upright walls, each of said walls being pivotally connected at the outer ends thereof to an adjacent wall thereby connecting the walls together in end-to-end relationship to form a closed structure, each of said walls being split across its width intermediate the outer ends of the wall to define two adjacent inner ends and dividing each wall into two separable portions, one inner end of each of said walls having a substantially square configuration and the adjacent inner end of the associated wall being beveled inwardly to define a split line being substantially triangular in cross section, the outer faces of the inner ends of the two portions of each wall being normally disposed in abutting engagement with each other, hinges pivotally connecting one separable portion of each of said walls to the other separable portion of the same wall, each of said hinges comprising two hinge plates normally disposed in parallel relation to each other, each of said plates being connected to a respective one of said portions of said wall, a central hinge plate between said two plates and normally disposed in parallel relation to said two plates, and two parallel hinge pins pivotally connecting said two plates to opposite edge portions of said central plate, said pins being disposed on opposite sides of the plane of said central plate, and means connected to said walls and projecting therefrom for simultaneously swinging said walls on said first mentioned hinges and said other hinges inwardly and outwardly relative to each other.

2. Apparatus as defined in claim 1 including elongated molding strips mounted on the outer face of the bottom portions of said walls in end-to-end relation to each other, each of said molding strips on each of said walls being split intermediate its length along a line substantially in alignment with the beveled inner end of the wall on which said strip is mounted and with the end portions of each of said strips disposed in abutting engagement with each other to afford a substantially smooth upwardly facing surface.

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