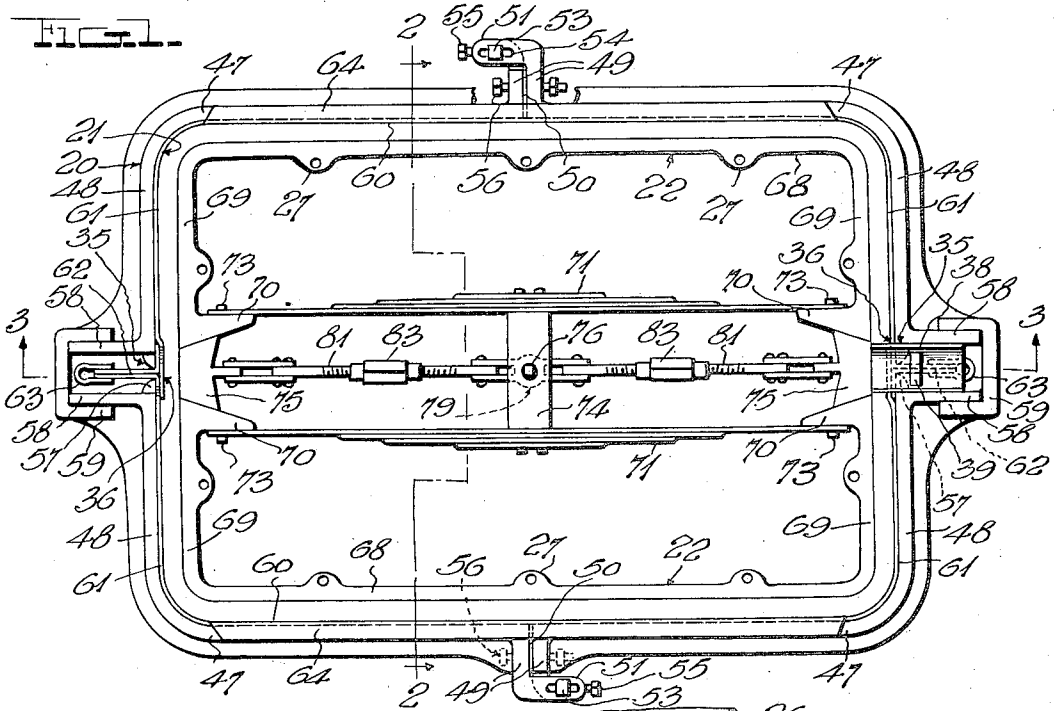
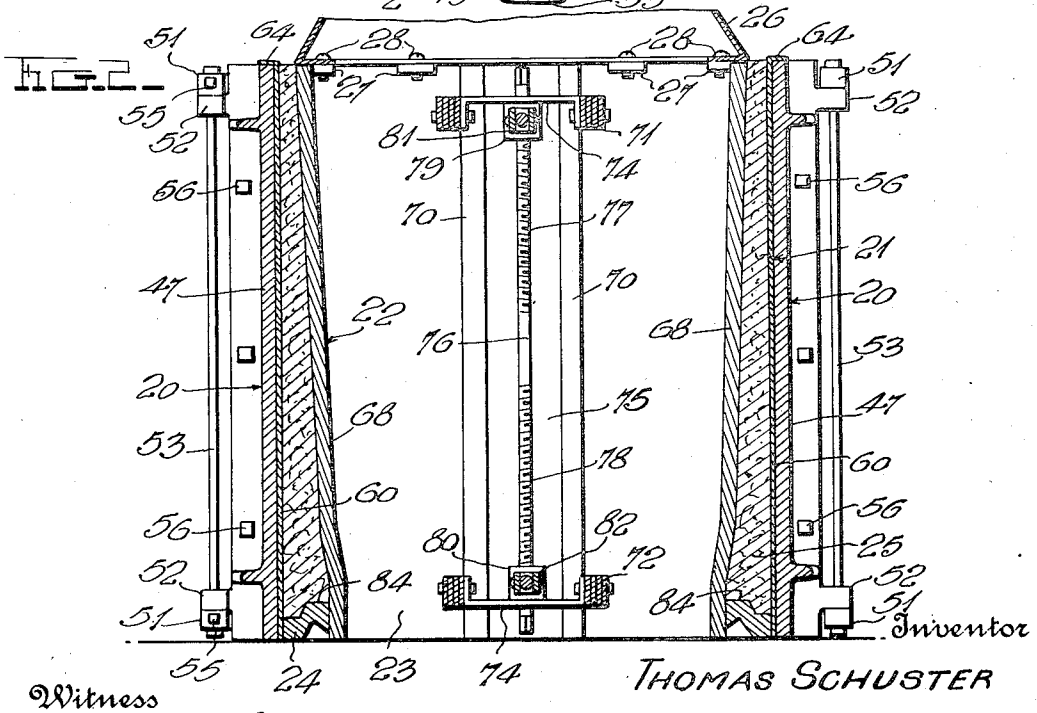
March 3, 1936. T. SCHUSTER 2,032,637

CONCRETE METER BOX MOLD

Filed March 2, 1935 3 Sheets-Sheet 1





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CONCRETE METER BOX MOLD

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FIG. 3

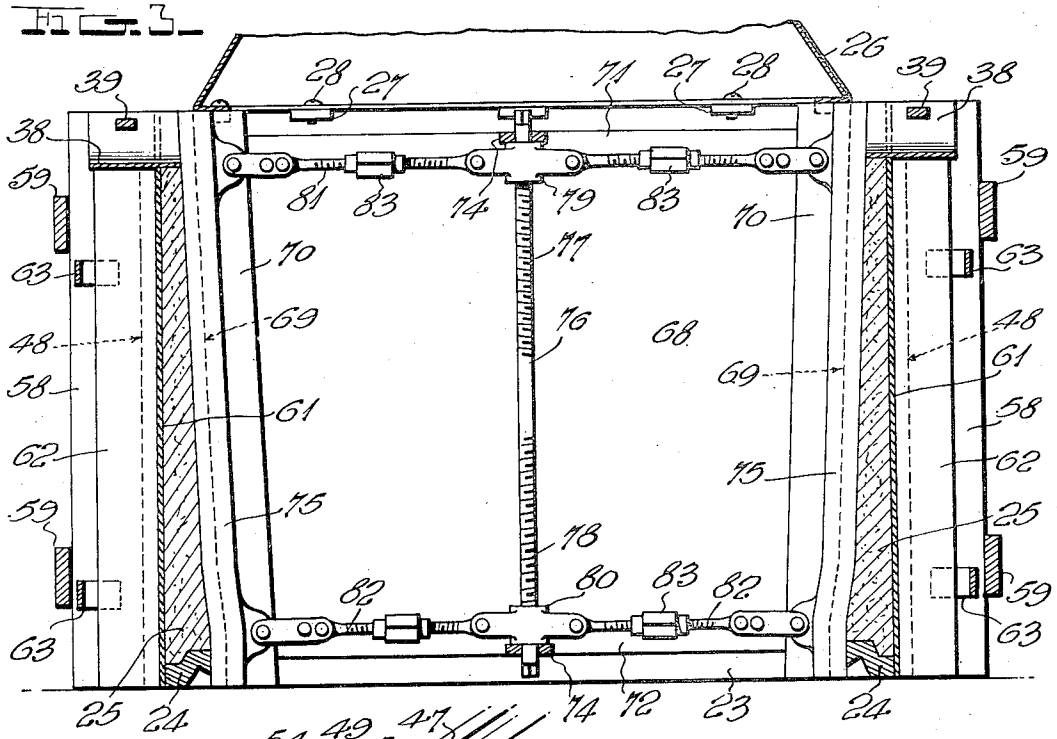
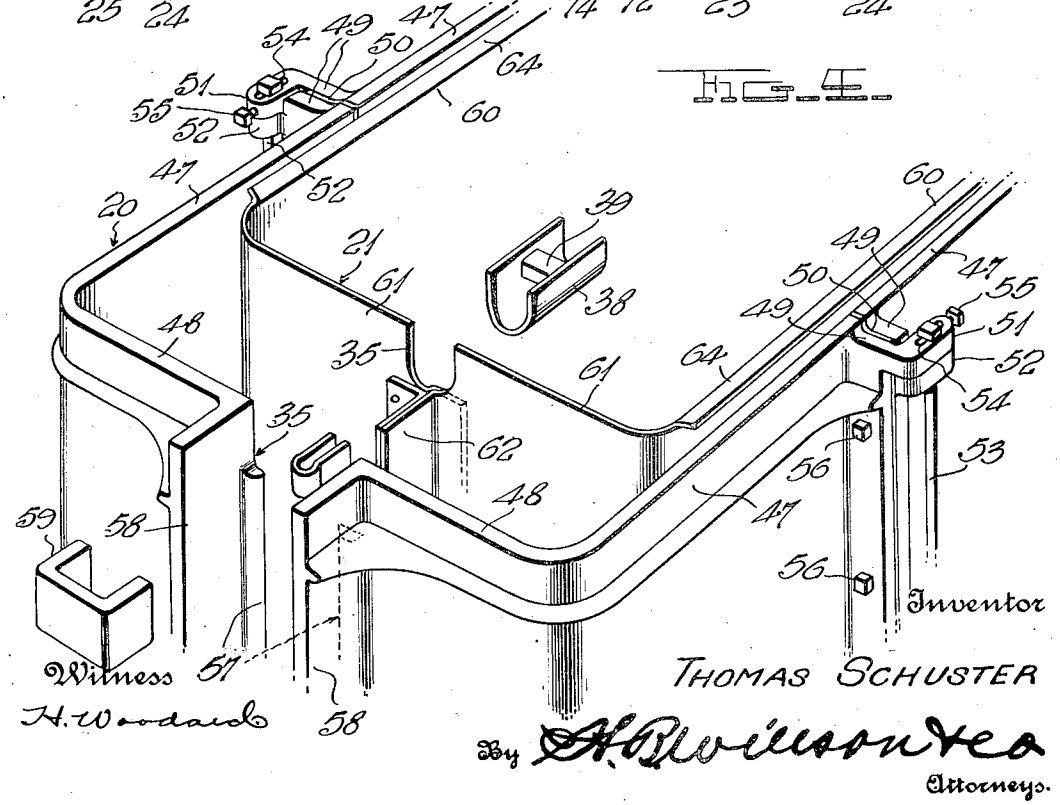


FIG. 4



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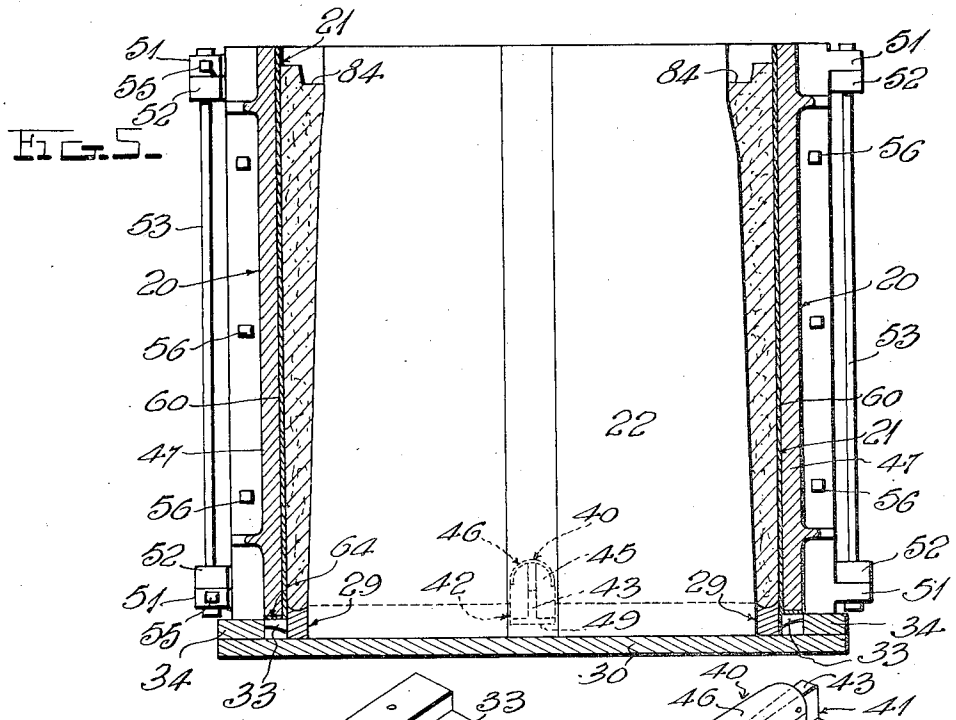


Fig. 5.

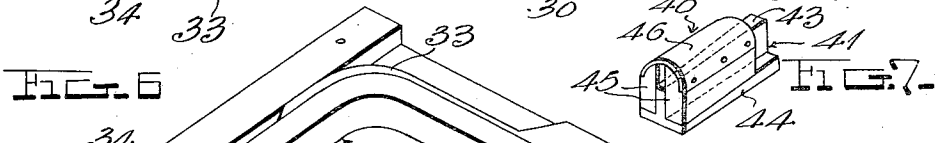


Fig. 7.

Fig. 6.

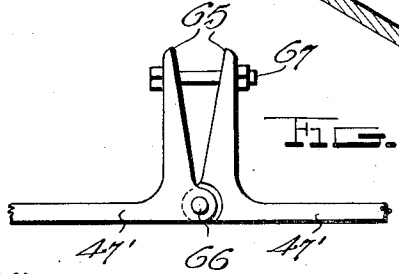


Fig. 8.

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CONCRETE METER BOX MOLD

Thomas Schuster, Phoenix, Ariz.

Application March 2, 1935, Serial No. 9,119

8 Claims. (Cl. 25—130)

The invention relates to a new and improved mold designed primarily for use in the formation of concrete boxes for housing underground meters, although the invention is not restricted to this particular field of use.

The mold herein disclosed is of a type in which damp concrete to form the side wall of the meter box is tamped between a sectional mold wall and a contractible core, a pallet being provided to shape the end of the wall which is molded between the lower ends of said mold wall and said core.

One object of the invention is to provide a novel sectional sheet metal inner wall which holds the molded box wall after the core has been withdrawn and the main mold wall removed, overcoming liability of injuring said box wall while it is being carried on the pallet to a point at which it is to dry, said inner wall being left on the molded wall until the concrete has set, if desired.

A further object is to provide a novel and advantageous relation of the outer and inner sectional mold walls allowing the outer wall to be removed without disturbing the inner wall which is to remain in place until later.

Further objects are to provide novel and advantageous hinged connecting means between sections of the outer mold wall; to provide an improved pallet; to make novel provision whereby two notches may be formed in the box wall through which to pass pipes or conduits; and to provide a unique expansible and contractible core.

With the foregoing and minor objects in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Figure 1 is a plan view of a mold constructed in accordance with the invention.

Figure 2 is a transverse sectional view on line 2—2 of Fig. 1.

Figure 3 is a longitudinal sectional view on line 3—3 of Fig. 1.

Figure 4 is a fragmentary disassembled perspective view.

Figure 5 is a transverse sectional view showing the mold used in an inverted position.

Figure 6 is a sectional perspective view showing the pallet frame and base used when the mold is inverted to the position shown in Figure 5.

Figure 7 is a detail perspective view of the core member used when employing the mold as in Fig. 5, to form pipe or conduit openings in the meter box.

Figure 8 is a fragmentary top plan view showing a different form of hinge construction which may be used for the outer mold.

In the drawings above briefly described, **20** denotes an outer rigid mold wall, **21** has reference to an inner sheet metal mold wall, and **22** refers to an expansible and contractible core. The mold walls and the core may be used with either end up. When used as shown for instance in Figs. 2 and 3, the contracted lower end **23** of the core **22** fits within a pallet frame **24** which is used to shape the portion of the box wall **25** which is formed between what is then the lower end of the core and the walls **20** and **21**. The inner wall **21** lies directly against the peripheral edge of the pallet frame **24**, the outer wall **20** lies snugly against said inner wall **21**, and with the parts so assembled, the damp concrete is tamped in place. This concrete is guided into the space between the mold walls and core, by a sheet metal hood **26** secured to what is then the upper end of said core, said end being provided with lugs **27** to which the hood is bolted at **28**.

When the mold walls and the core are used with the other end up as seen in Fig. 5, a different pallet frame **29** is employed, a supporting base **30** being provided for said frame. This frame comprises side bars **31** and end bars **32** joined thereto, the upper sides of said side and end bars being preferably concave as shown. The ends of the frame **29** are provided with horizontal outwardly projecting flanges **33** upon which the mold walls **20** and **21** rest, the lower sides of these flanges being spaced upwardly from the lower side of the frame so that the fingers may be inserted between said flanges and the support **30** when lifting the pallet frame and the molded wall thereon.

The core **22** fits within the frame **29** and rests on the support **30**, and the mold walls **20** and **21** rest upon the flanges **33**. After molding of the box wall, the core is contracted, and the outer wall **20** is removed, the pallet frame **29** with the molded box wall held in place by the inner mold wall **31**, being then carried to the desired point. The wall **21** may now or later be removed from the molded wall, as desired.

To hold the frame **29** in place upon the support **30** and to receive the side walls of the mold wall **20** when the latter is being removed, said support **30** is provided with cleats **34** on its upper side, having their upper surfaces flush with the upper surfaces of the flanges **33**.

It is necessary to form two notches through the molded box wall, through which to pass pipes or conduits for connection with the meter. To accomplish this, it is necessary to use core members extending from the core **22** across the molding space between this core and the mold walls **20** and **21**. As a preferred way of positioning these core members, I provide the walls **20** and **21** with notches **35** and **36** respectively. When the mold is used as shown in Figs. 1 to 4, channel-shaped sheet metal core members **38** are positioned in the notches **35** and **36** and are expanded into tight engagement with the walls of said notches by pressing or driving small blocks or the like **39** into said core members. When using the mold with its other end up as seen in Fig. 5, the expansible channel-shaped core members **40** and a double wedge **41** therefor, are employed, the end bars **32** of the pallet frame **29** being notched at **42** to receive said core members and wedges. Each wedge **41** is provided with a vertical wedge **43** which spreads the core member **40** laterally, and is provided also with a horizontal wedge **44** which lifts the core member **40** snugly into the upper ends of the notches **35** and **36**. The two wedges **43** and **44** are unitarily connected with each other. The core member **40** may well be formed from two blocks **45** of wood, connected at their upper ends by an arched sheet metal plate **46**.

While various constructions may be provided for the outer mold wall **20**, two have been selected for illustration. In Figs. 1 to 5, said wall comprises four side wall sections **47** and four end wall sections **48**, each side wall section **47** being integrally joined to the adjacent end wall section **48**. The adjacent ends of the side wall sections **47** are provided with integral outwardly projecting flanges **49** between which shims **50** may be placed or from which they may be removed to slightly vary the length of the mold wall **20** when using a relatively thick or comparatively thin inner wall **21**. The flanges **49** are provided with hinge knuckles **51** and **52** pivotally connected with each other by a pintle **53** which is preferably in the form of a bolt. The knuckles **51** are slotted at **54** to allow the pintle **53** to slide when shims **50** are inserted or removed, and set screws **55** are threaded through said knuckles **51** to limit the sliding movement of said pintle.

Two or more bolts **56** pass through the flanges **49** to support the shims **50** and to limit the outward swinging of the side wall sections **47** when the outer mold wall is being removed from the molded article. When these sections **47** are swung inwardly into alignment with each other, the flanges and shims abut to hold them in such alignment.

Laterally projecting vertical flanges **58** are formed integrally with the end wall sections **48**, said flanges having vertical "pinch edges" or ribs **57** on their inner sides. These flanges may be relatively secured by any preferred means, for instance, by the yokes **59**, to hold the sections of the outer mold wall **20** in assembled relation for use.

The inner mold wall **21** comprises two U-shaped sections each consisting of a side wall **60** and two end wall sections **61**, there being one of said sections **61** at each end of each side wall **60**. The end wall sections **61** overlap each other somewhat and these overlapped ends are provided with vertical outwardly projecting flanges **62** which are held tightly together by spring metal clips **63** or any other preferred means. When the mold is assembled for use, the flanges **62** extend outwardly between the "pinch edges" or ribs **57** and are tightly held between said edges or ribs, so that the end wall sections **61** of the inner wall **21** will remain tightly against the end wall sections **48** of the outer wall **20**. The side walls **60** of the inner walls **21** lie against the side wall sections **47** of the outer wall **20** and they are preferably stiffened somewhat by providing their upper edges with longitudinal flanges **64**.

After forming the box wall **25**, the yokes **59** are removed and the outer wall **20** may then be easily removed from the inner wall. Either before or after doing this, preferably before, the core **22** is contracted and removed. Now, with the molded article and the inner mold wall **21** supported by the pallet, the latter is lifted and said pallet, article and wall are carried to a point at which the article is to dry. During such carrying, the wall **25** is protected against injury by the light mold wall **21** and if desired, this wall may be left upon the article until the concrete has set. Then, by removing the clips or the like **63**, the mold wall **21** may be easily sprung from the molded article, leaving the latter intact.

In Fig. 8, side wall sections **47'** for the outer mold wall, are shown, said sections being provided with integral, outwardly projecting arms **65** adjacent the hinge **66** which connects said wall sections **47'**. A stop bolt **67** passes through the outer ends of the arms **65** to insure alignment of the wall sections **47'** with each other when assembling the mold for use, the arms **65** being then in diverging relation with each other as shown. When the wall sections **47'** are outwardly swung during removal of the mold, the arms **65** strike each other and limit the outward swinging of said sections.

The core **22** which is illustrated more particularly in Figs. 1, 2 and 3, includes two vertical side walls **68** and four end wall sections **69**, there being one of these end wall sections integrally joined to each end of each side wall **68**. The inner edges of the end wall sections **69** are provided with integral vertical flanges **70** which project to the interior of the core, said flanges preferably diverging toward the center of said core as shown. Two upper and two lower longitudinal springs **71** and **72** respectively extend horizontally between the end wall sections **69** and are secured by screws or the like **73** to the remote sides of the flanges **70**. The central portions of these springs are secured to transverse plates or other tie members **74**. The springs are preferably of the type commonly used on vehicles and they are employed to contract the core. When the core is in contracted position, the springs are bowed away from each other but when the two halves of the core are spread apart to their operative positions, the springs are substantially straight. In moving from bowed form to substantially straight form, the springs exert an outward pressure upon the end wall sections **69** and spring said sections outwardly to some extent, said sections being held in their outwardly sprung positions, while the article **25** is being molded. When the springs **71** and **72** are permitted to contract the core to allow removal of the latter, said springs return from their substantially straight positions to their bowed positions and in so doing, they inwardly spring the end wall sections **69** to a slight extent from the molded wall **25**, facilitating removal of the core without injuring said molded wall.

For spreading the two halves of the core to operative position, I provide wedges **75** between the adjacent flanges **70**, and operating means for said

wedges, said operating means being mounted upon the tie members **74**. In the present showing, a vertical manually rotatable screw **76** is rotatable in bearing openings in the tie members **74**, said screw having oppositely threaded portions **77** and **78** with which nuts or collars **79** and **80** are engaged. Upper links **81** connect the upper nut or collar **79** with the upper ends of the wedges **75**, and similar links **82** connect the lower nut or collar **80** with the lower ends of said wedges. The links may be of extensible and retractible nature if desired, turnbuckles **83** being shown for varying their lengths. When the screw **76** is turned in one direction, the nuts or collars **79** and **80** are moved toward each other, thereby inwardly sliding the wedges **75** and allowing the springs **71** and **72** to contract the core. When screw **76** is turned in the other direction, the collars or nuts **79** and **80** are moved away from each other, causing the links **81** and **82** to outwardly force the wedges **75**, expanding the core to its operative position.

It will be seen from the foregoing that novel and advantageous provision has been made for carrying out the objects of the invention, and while the details disclosed may be considered as preferred, variations may of course be made within the scope of the invention as claimed.

The meter box wall **25** is used in the position in which it is shown in Fig. 5. A concrete base may be formed if desired upon which to rest the wall, or after setting the wall in the ground, a quantity of concrete may be poured into its lower end portion to form a bottom for the meter box. A suitable cover (not shown) is of course provided to rest upon the ledge **84** of the wall. This ledge in Fig. 2 is formed by the pallet frame **24**. In Fig. 5, it may be formed in any suitable way.

I claim:

1. A concrete mold comprising a continuous outer rigid wall, and a continuous sheet metal inner wall lying against the inner side of said outer wall, said outer wall consisting of sections and releasable means for holding them in assembled relation, said inner wall also consisting of sections and means independent of the aforesaid means for holding them in assembled relation, whereby said inner wall may remain around the molded article after removal of the outer wall and may be later removed; sections of said inner wall being provided with outwardly projecting portions extending between sections of said outer wall to the exterior of the latter, said means for holding said inner wall sections in assembled relation being engaged with said outwardly projecting portions and being located at the exterior of said outer wall.

2. A concrete mold comprising an inner continuous sheet metal wall formed from two one-piece U-shaped sections having outwardly projecting flanges at their ends, means removably securing said flanges together, an outer rigid wall formed of sections lying against the outer sides of said inner wall sections, said outer wall sections having pinch portions at their ends between which said flanges are tightly held, and means removably securing said outer wall sections in assembled relation.

3. A concrete mold comprising an inner continuous sheet metal wall formed from sections having outwardly projecting flanges at their ends, means removably securing said flanges against each other, an outer rigid wall formed of sections lying against the outer sides of said inner wall sections, said outer wall sections having pinch portions at their ends between which said flanges are tightly held, and means removably securing said outer wall sections in assembled relation.

4. A concrete mold comprising an inner continuous sheet metal wall formed from sections having outwardly projecting flanges at their ends, means removably securing said flanges together, an outer rigid wall formed of sections lying against the outer sides of said inner wall sections, said outer wall sections being provided with outwardly projecting flanges at their ends disposed in laterally spaced relation with the flanges of said inner wall sections, vertical ribs on the inner sides of said flanges of said outer wall sections between which said flanges of said inner wall sections are tightly clamped, and means engaging said flanges of said outer wall sections for holding the latter in assembled relation.

5. In a concrete mold, a wall comprising four right angular sections jointly forming two side walls each vertically divided into two sections and two end walls each vertically divided into two sections, the contiguous ends of said side wall sections being provided with laterally projecting vertical flanges between which shims may be placed to increase the length of the mold, said flanges being provided at their outer edges with hinge knuckles, pintles passing through and pivotally connecting said hinge knuckles, certain of said knuckles having slots in which said pintles may slide to allow requisite separation of said flanges when shims are inserted between said flanges to increase the length of the mold, and set screws threaded through said slotted knuckles to limit the extent of sliding of said pintles in said slots.

6. In a concrete mold, a core, a wall surrounding and spaced from said core, said wall having a notch, a laterally expansible channel-shaped core member received in said notch and extending to said core, and means within said channel-shaped core member for expanding it to tightly fit said notch.

7. In a concrete mold, a core, a wall surrounding and spaced from said core, supporting means on which said core and wall rest, the lower end of said wall being formed with a notch, a transversely arched expansible core member received in said notch, one wedge upon which said core member rests, said wedge resting on said supporting means and being adapted to upwardly force said core member against the upper end of said notch, and a second wedge within said core member for expanding the latter against the sides of said notch, the two wedges being unitarily connected.

8. In a concrete mold, a pallet frame consisting of horizontal side and end bars joined to each other at their ends, a core whose lower end is surrounded by said frame, and a wall whose lower end surrounds said frame, said frame being provided with horizontal flanges upon which said wall rests, said flanges being spaced upwardly from the lower side of the frame to serve as handles when lifting said frame and a molded article thereon.

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