United States Patent

[11] 3,632,078

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[21] Appl. No. **814,978**
[22] Filed **Apr. 10, 1969**
[45] Patented **Jan. 4, 1972**

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Continuation-in-part of application Ser. No. 751,307, Aug. 8, 1968. This application Apr. 10, 1969, Ser. No. 814,978

[54] **CONCRETE FORM**
8 Claims, 13 Drawing Figs.

[52] **U.S. Cl.** **249/183,** 249/32, 249/63, 249/176
[51] **Int. Cl.** **B29r 1/12,** B28b 7/30, B28b 7/34
[50] **Field of Search** ..... 249/18, 19, 13, 28, 31, 32, 35, 63, 64, 65, 66, 29, 145, 83, 175, 176, 177, 183, 184, 185, 186; 25/121, 128.1, 131 CP, 131 P, 131.5 A, 131.5 C, DIG. 24; 18/19 F

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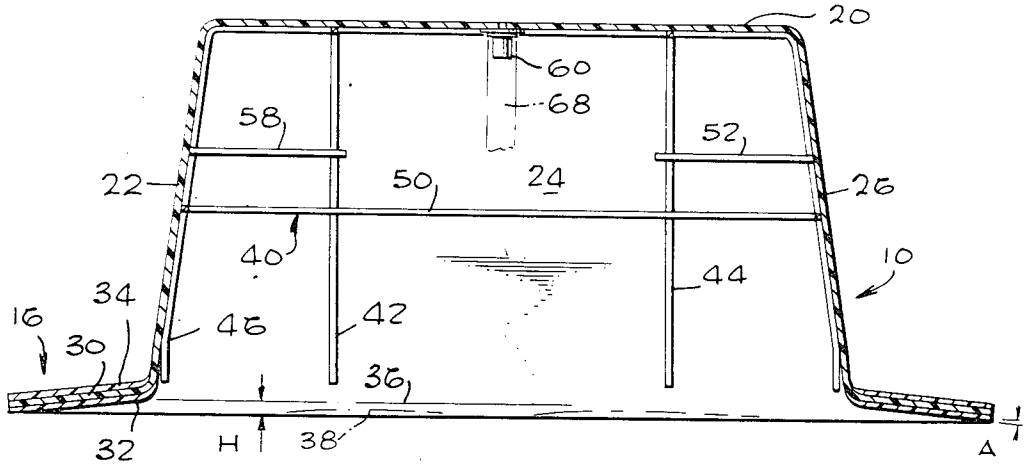
Primary Examiner—J. Howard Flint, Jr.
Attorney—Lindenberg, Freilich & Wasserman

ABSTRACT: A pan-shaped structural concrete form wherein the top and each side of the pan is internally braced by a framework of metal tubes, some of which serve as hand holds for removal of the pan. In pans with flanges, the flanges are of flexible construction and are molded with a definite angle from the horizontal, so they become horizontal when the pan is turned upside down and pressed down by the weight of concrete. Other pans without flanges employ a locked-in rubber strip at the bottom to form a seal with the construction deck on which the pans are laid.



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SHEET 1 OF 3

Fig. 1

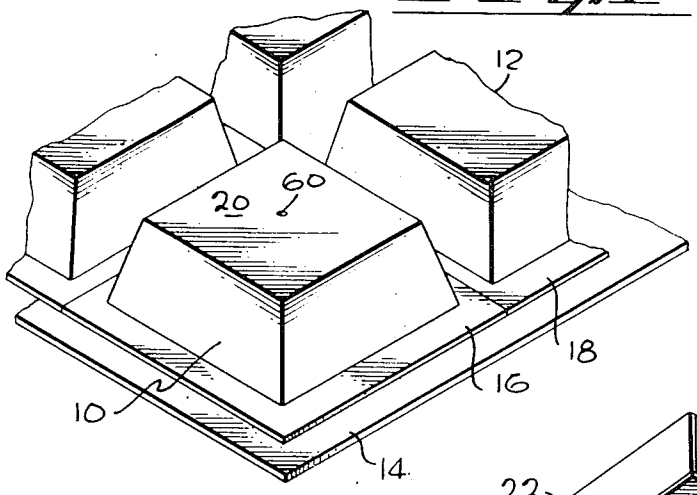


Fig. 5

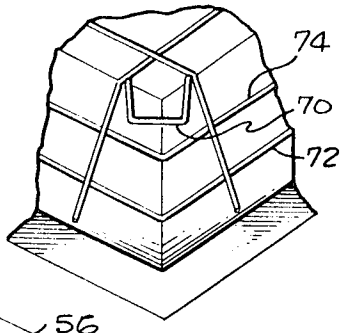
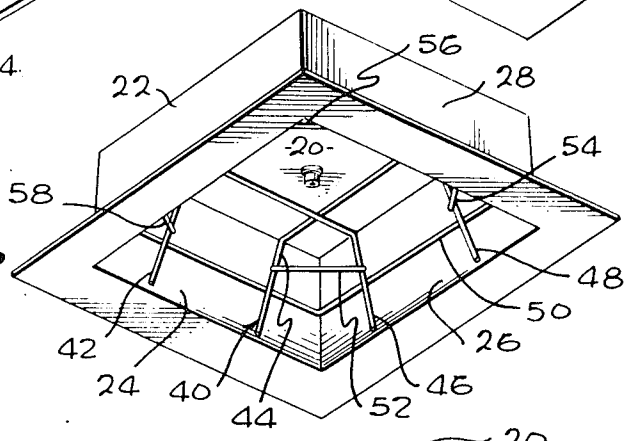


Fig. 2



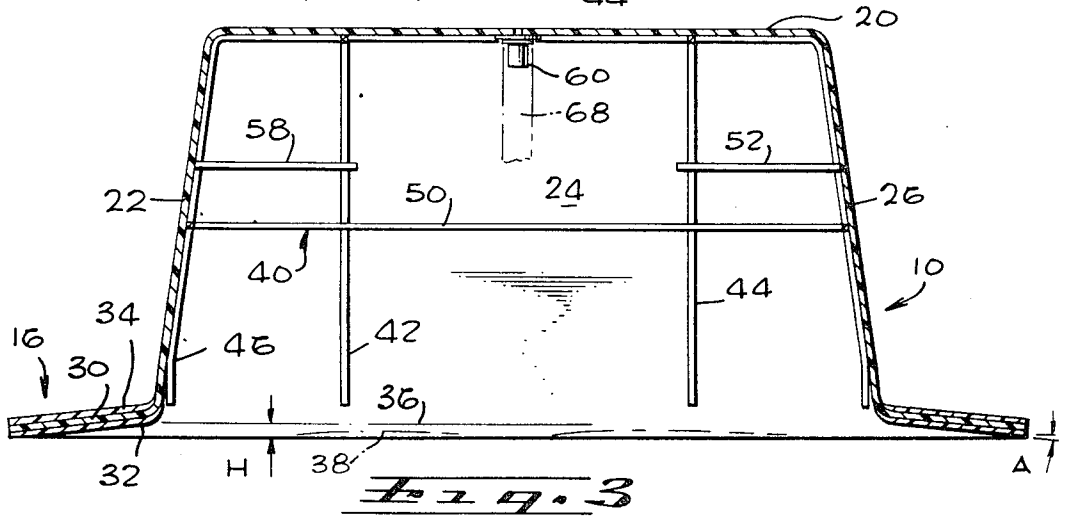


Fig. 3

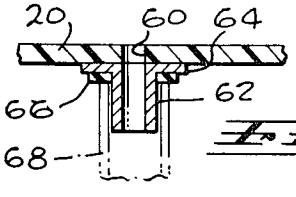


Fig. 4

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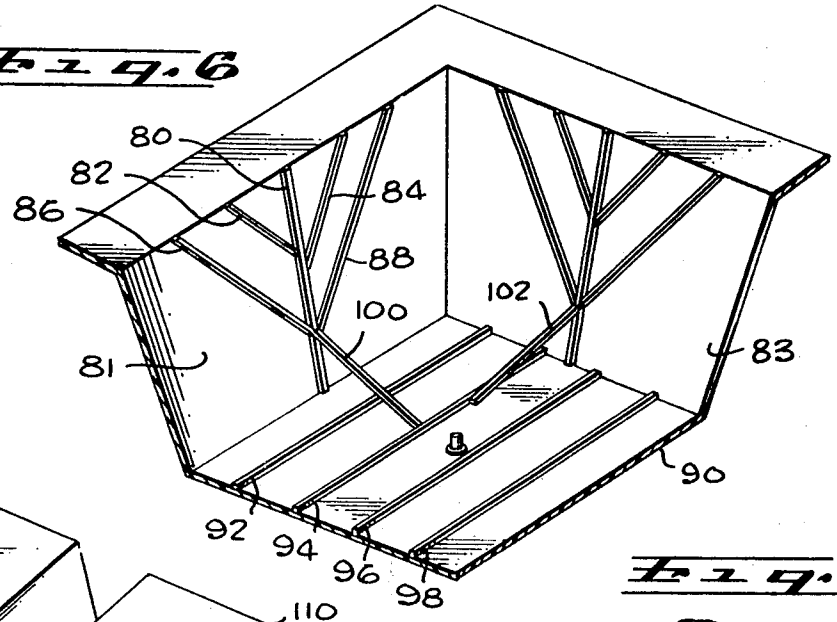
Fig. 6



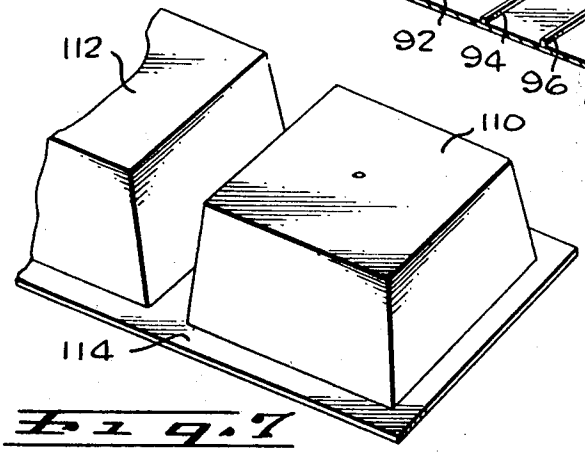
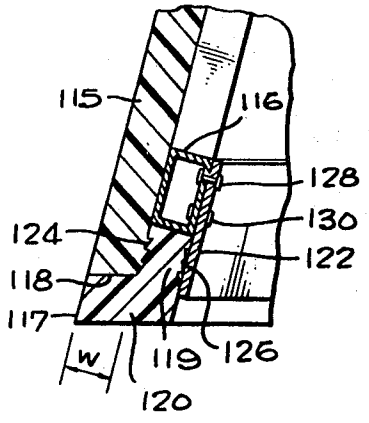


Fig. 7

Fig. 9



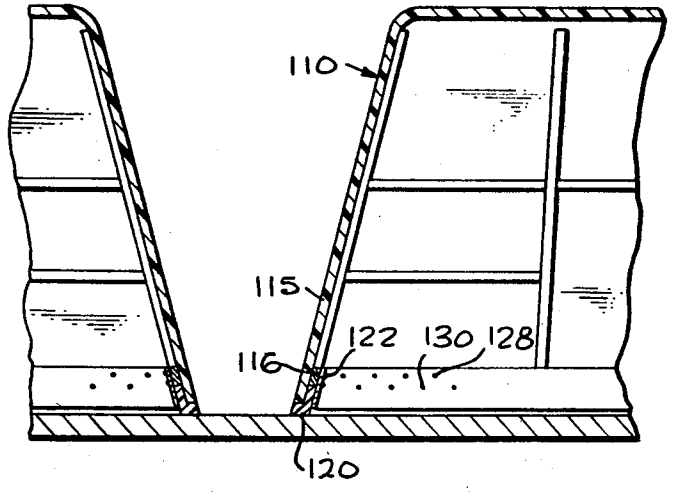


Fig. 8

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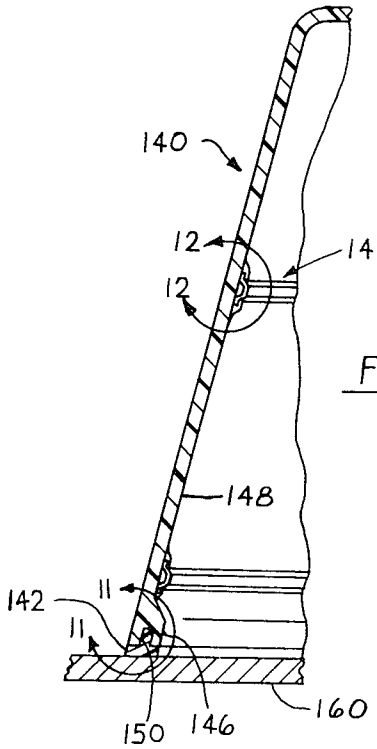

FIG. 10

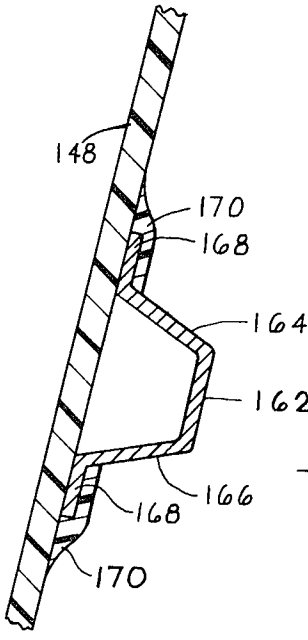

FIG. 12

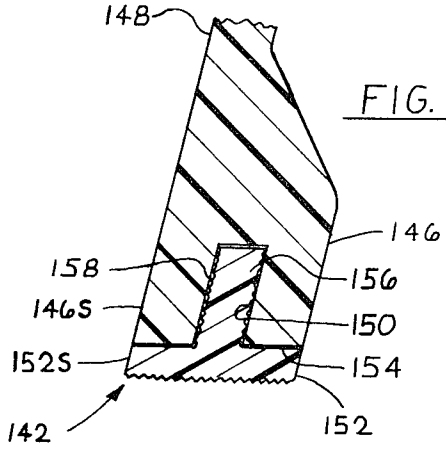

FIG. 11

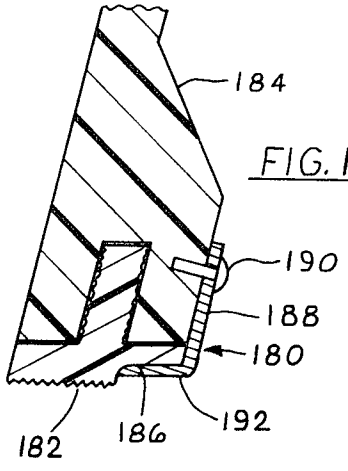

FIG. 13

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CONCRETE FORM

CROSS-REFERENCE TO RELATED APPLICATION

This is a continuation-in-part of patent application Ser. No. 751,307 by Steven S. Dashew filed Aug. 8, 1968.

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to concrete forming apparatus.

2. Description of the Prior Art

Structural concrete is often formed as a floor with integral beams thereunder. This is often accomplished by building a wooden deck and placing numerous pans upside down on the deck. Concrete poured on the forms to a height above the top of the pans provides the concrete floor, with the concrete between the sides of adjacent pans forming the supporting beams. After the concrete sets, the wooden deck is disassembled and the pan-shaped forms are removed from beneath the floor for reuse.

The pan-shaped forms are generally constructed with a fiber glass foundation material or base of mat construction with binders which are of a polyester resin system that is thermosetting to enable low-cost production. The mat construction of the base allows it to absorb a high percentage of resin, resulting in high stiffness. Most polyester resin systems suitable for high production undergoes high shrinkage curing. The shrinkage is not uniform, and generally results in warped flanges so that at least portions of the flanges are not horizontal when the pan is laid on a horizontal deck. If the flange is not horizontal, it will not line up with the flange of the pan laid adjacent to it on the deck. As a result, the bottom of the formed concrete beam will have two levels on opposite sides of the line where the flanges meet. In exposed architectural concrete, appreciably different concrete levels are not acceptable, the accepted difference generally being substantially less than one-sixteenth inch. In addition, two different levels of the flanges may allow concrete to seep in between the flanges.

The warping of flanges can be held substantially constant by using a very slow cure cycle and close controls on the amount of catalyst and fiber glass used. In this case, the forming die can be counterwarped so that the resulting flange is flat and horizontal. However, close controls on the material and slow cycling greatly increases the manufacturing costs. A low-cost method for producing pan-shaped concrete forms with flanges that accurately abut one another would substantially facilitate architectural concrete formation.

While forms with accurately produced flanges would be useful, even lower cost construction sometimes would be possible if flangeless pans could be used. The beams then would be formed by the space between the pans. However, the flanges serve the function of stiffening the sidewalls and it has been difficult to provide rigidity without flanges. It has been proposed to construct pans with the flanges turned in, and with rubber strips glued to the bottom of the inturned flanges to support them on the deck. However, the rubber strips would be readily torn off in use. Means for providing rugged flangeless pans with stiff sidewalls would be of great use in concrete construction.

The pan-shaped forms are generally internally braced by a plywood frame. Typically, the brace has five sheets of plywood, one lying against each of the four sides and against the top. In addition, a plywood cross extends between opposite sides, the edge of the cross lying against the top face. The plywood brace is heavy, being on the order of 50 pounds for a pan which is approximately 1 ½ feet high and 4 feet long on each side. In addition, the plywood is expensive and tends to rot, and in many instances the cross portion has a large depth which limits stackability. An improved internal brace for a pan form would also contribute to low-cost concrete construction.

After the concrete which has been poured on the pans is set and the plywood or other flooring is removed, the pans must be pulled down from the concrete floor. The pans generally

tend to stick to the concrete, and this bond is broken by forcing air between the concrete and the pan. Normally, this is accomplished by providing a small hole through the top of the pan, which is plugged up when concrete is poured on the pan. To remove the pan, the tape or other plug is removed and a hose coupled to an air compressor is held against the hole. Air rushing through the hole deflects the top of the pan downwardly and shoves down the pan about an inch. The pan is then pulled out by hand. In this method of removal, it is found that much of the air leaks out around the pipe rather than passing through the hole, preventing pan removal in difficult cases. In addition, the hole is found to quickly wear to an enlarged diameter which can prevent even moderate sealing of it to the air hose.

OBJECTS AND SUMMARY OF THE INVENTION

One object of the present invention is to provide a form for architectural concrete, which can be more economically produced.

Another object is to provide a form for architectural concrete which is easy to remove from the set concrete.

In accordance with the present invention, a pan-shaped form for architectural concrete is provided which can be produced at low cost. The pan utilizes internal bracing which comprises a flat two-dimensional framework of tubes or other beam members disposed against each internal face. The framework provides strong and light bracing for each face of the pan to guard against damage. The bracing framework also includes diagonal members which extend across the hollow inside of the pan at a height which is close to the face of the pan. These diagonal members serve as hand holds for removing the pans, and as means for preventing the pans from locking into each other when they are stacked for storage or shipment.

In one embodiment of the invention which utilizes a pan with flanges, the pan is formed so that when it is used, the flanges extend at a downward angle. When the pan is laid on the plywood or other construction deck, the pan rests on the perimeter of its flange. However, when concrete is poured thereon, the weight of the concrete combined with that of the pan, pushes down the pan so that the flanges are forced to a horizontal position in engagement with the plywood decking and the perimeter of the flanges of adjacent pans abut one another.

In order for the flanges to bend to the horizontal, they must have a certain degree of flexibility. The flexibility is realized by utilizing a high ratio of fiber glass to resin in the flange portion of the pan. Thus, a type of fiber glass base is used for the flange which has a relatively small proportion of open space, such as 55 to 65 percent. As a result, the resin which fills up this open space constitutes a relatively small percentage of the flange volume, and the flexibility of the flange is substantially enhanced. In addition, a more flexible type of resin may be used in the flange portion.

In another embodiment of the invention, a flangeless pan is provided. The pan employs a rubber strip positioned along the bottom edge of the sidewalls to provide a good seal between the pan and the deck on which it rests. In order to hold the rubber strip in place, one form of flangeless pan includes a tube which runs along the inside of the sidewall just above the bottom. A holding strip is fastened to the tube to form a receiving slot between the strip and pan. A portion of the rubber strip is received in this slot to lock into pace and prevent its accidental removal. The tube which runs along the bottom of the pan serves to brace the sidewall of the pan and eliminates the need for a flange. In another form of flangeless pans, the lower edge of the sidewalls are thickened, and a slot is cut in the thickened edge to receive a rubber strip upon which the pan is supported.

In order to facilitate removal of the pans, a short pipe or nipple is molded into the top face of the pan, the nipple being directed down into the inside of the pan. The nipple receives an airhose to facilitate its proper placement and to aid in

establishing a seal around the hole. This results in higher air pressures being established between the pan and the set concrete. The nipple also guards against enlargement of the hole and therefore prolongs the life of the pan.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of pan-shaped concrete forms with flanges, showing their manner of use;

FIG. 2 is a bottom perspective view of a form of FIG. 1;

FIG. 3 is a sectional side view of the pan of FIG. 2;

FIG. 4 is a partial sectional view of the nipple assembly of the pan of FIG. 2;

FIG. 5 is a partial perspective view of a pan constructed in accordance with another embodiment of the invention, which utilizes a different bracing bar;

FIG. 6 is a partial perspective view of a pan constructed in accordance with still another embodiment of the invention, which utilizes a different bracing framework configuration;

FIG. 7 is a perspective view of flangeless pans, showing their manner of use;

FIG. 8 is a partial sectional elevation view of the pans of FIG. 7;

FIG. 9 is a partial sectional elevation view of a pan of FIG. 7;

FIG. 10 is a partial sectional elevation view of a flangeless pan constructed in accordance with yet another embodiment of the invention;

FIG. 11 is a more detailed view of area 11—11 of FIG. 10; and

FIG. 12 is a more detailed view of area 12—12 of FIG. 10.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates a pair of pan-shaped concrete forms 10 and 12 in position on a deck 14, the forms being of the type which has outwardly directed flanges. In the construction of a concrete floor with a waffle underside, a large number of such pans are utilized. After a plywood construction deck 14 is built, a large number of the forms are placed on the deck with the flanges such as flanges 16 and 18 abutting one another. Concrete is then poured on the forms until it completely fills the area between adjacent forms and is at a height above the top faces 20 of the forms. After the concrete has set, the deck 14 is removed. The forms are then removed by pulling them down from beneath the concrete floor.

In the placement of the forms on the deck, it is important that the flanges accurately abut one another, with the outer edges of the flanges lying against the deck 14. If one of the flanges is angled upwardly, the bottom of the resulting concrete beam will display two levels, which is often unacceptable. In fact, if one of the flanges is warped too high, concrete can seep beneath it and form concrete protrusion from the bottom of the beams. In accordance with the present invention, the form is constructed to assure that the outer ends or perimeter of the flanges lie against the deck 14, rather than above it.

As shown in FIGS. 2 and 3, the pan has a body comprising a top or upper face 20 and four sides 22, 24, 26, and 28 extending in a substantially or generally downward direction from the top, that is, with a greater vertical directional component than a horizontal directional component. The flange 16 extends around the perimeter of the body. The body is constructed of a mat fiber glass material impregnated with resin. The mat material includes fiber glass strands which are not oriented in particular directions. Thus, the strands lie in an irregular manner, resulting in a high proportion of empty space between fibers. Such material can absorb a high proportion of resin, resulting in a rigid construction. The flange 16 also has a mat fiber glass construction at an inner layer 30 thereof, the mat generally being a continuation of the fiber glass mat within the body. However, reinforcing layers 32 and 34 which lie on either side of the inner layer do not have a usual mat base. Instead, they have a fiber glass base of woven roving, so that the strands are oriented in particular directions, generally two perpendicular directions.

The reinforcing layers 32 and 34 comprise fiber glass strands in the form of a woven cloth, the cloth being impregnated with resin in the same manner as the inner layer 30. The woven roving of the reinforcing layers results in a small proportion of empty space, and therefore a smaller proportion of resin in the finished product. The higher fiber glass to resin ratio results in a substantially more flexible material. As a result, the flange 16 has a high flexibility. The layers 32 and 34 preferably comprise at least 35 percent fiber glass by volume, (and generally less than 45 percent) so that they contain less than 65 percent resin after impregnation. This may be compared with the inner layer 30 and the body, which have a base of mat fiber glass which typically occupies a volume ranging from 20 to 25 percent of the layer, with the rest of the volume occupied by resin.

In accordance with the present invention, the form 10 is constructed so that after curing (i.e., after the warping occurring during the curing cycle) the flange 16 is oriented at an average predetermined angle A from the horizontal. The flange generally will have a waviness, and the angle A is chosen to locate the flange perimeter a height H from the level of the perimeter 36 of the body. The height H is chosen so that it exceeds the maximum amplitude of waviness to be expected. For example, the flange portion at 38 has a waviness which brings it close to the level 36 of the body perimeter. Thus, the warping downwardly (downward with respect to the position of use) of the flange assures that all of the flange positions will lie below the level of the pan perimeter 36.

When the pan is used in the manner shown in FIG. 1, it rests on the perimeter of the flange. However, when concrete is poured on the form, the weight of concrete on the upper face 20 and sides of the body pushes the body down so that its perimeter, which has the level shown at 36, tends to move down until it touches the deck 14. Due to the relatively high flexibility of the flange 16, resulting from the woven roving used in the reinforcing layers, the perimeter layer 36 can readily reach the deck and the flange achieves a flat horizontal configuration. In particular, all portions of the outer perimeter of the flanges, including those with high waviness, are assured of lying against the deck. The resulting concrete floor is assured of having beams which appear uniform and without defects as seen from below.

The pan-shaped form 10 has an internal bracing comprising a framework of metal tubes 40 which lie in facewise adjacency against each of the four sides and against the upper face of the form. The tubular framework comprises a pair of tubes 42 and 44 which extend along the side 24, across the face 20, and across the opposite side 28. Another pair of tubes 46 and 48 extend in a similar manner from the side 26 across the face 20 and across the opposite side 22. A horizontal tube 50 extends horizontally along the four sides. At the points where the tubes cross one another, one of the tubes is continuous while the other tube is cut and its end welded to the first tube. The resulting tubular framework strengthens the form to prevent breakage, yet is relatively light in weight.

In order to bracket the sides against each other, four diagonal braces 52, 54, 56, and 58 are provided. Each brace extends between the tubular framework which is adjacent sides of the form, and is tied to the sides at points spaced from the corner where the sides intersect. The diagonal braces, which extend diagonally across the inner hollow within the form brace the sides against each other. The use of the diagonal braces strengthens the form with a relatively small additional weight. The entire tubular bracing system is substantially lighter than the plywood sheets used in prior art forms wherein a sheet was laid against each side and face and as a cross to brace the sides.

The diagonal braces 52 through 58 are positioned away from the top face 20 a distance of about one-third the height of the form. When the forms are to be transported, they can be stacked, one upon the other, in an efficient manner and

without the likelihood of binding into one another. The diagonal braces limit the depth within which one form can enter the hollow part of another, to assure that binding does not occur and the forms are therefore not difficult to separate. However, approximately two-thirds of the height of each form can be filled by another form, so that many forms may be stacked in a relatively low height, for ease in storage and shipment.

The diagonal bracing members **52** through **58** provide another important advantage in that they facilitate removal of the forms after the concrete is set. Even after the bond is broken between the forms and the set concrete, the forms are often still difficult to remove. The cross braces provide handholds for workmen to grasp in pulling down on the forms. This greatly facilitates the application of downward force by the workmen, and the carrying of the form thereafter. Generally, only two of the bracing members are required to provide for handholds.

The removal of the form from set concrete is accomplished by first blowing air through the hole **60** at the center of the upper face **20** which is more clearly shown in FIG. **4**. The air breaks the bond between the surface of the concrete and the fiber glass form and shoves down to form about an inch. The form is then pulled down by hand. In order to facilitate the blowing of air through the hole **60**, a nipple **62** is provided which has a flange portion **64** that lies about the hole **60** and is bonded to the upper face **20** of the form. A rubber washer **66** is positioned on the side of the flange opposite the top face **20**. The nipple **62** serves as a homing device for receiving an air-hose that carries the pressured air which passes through the hole **60**. The rubber washer **66** provides an air seal between the end of the hose and the hole **60** to prevent leakage of air.

Generally, relatively high pressure such as 200 pounds per square inch are applied, by means of a flexible hose that ends in a metal tube or wand shown at **68**. The nipple **62** receives the end of the wand while the washer **66** provides a substantially airtight seal to prevent the leakage of air about the end of the wand. This enables the application of high pressures through the hole **60** because of the prevention of leakage. The flange **64** also serves to strengthen the walls of the hole **60** to prevent its enlargement, thereby extending the lifetime of use of the pan. It may be noted that a long cylindrical plug is generally inserted through the nipple **62** to plug up the hole **60** and prevent the seepage of concrete therein. The plug is removed from the nipple prior to the blowing of air through the nipple. When air is blown through the hole **60**, the center portion of the upper face, which is free of the tubular bracing, can deflect downward, and thereby facilitate the entrance of air to break the bond.

Tubular framework which braces the inside of the form can be constructed in a number of ways. FIG. **5** illustrates another embodiment of the invention wherein a U-shaped brace **70** is provided instead of a diagonal brace. The U-shaped brace provides a member for grasping by the hand to pull out the form from the set concrete, and also aids in stacking of the forms for storage. However, it does not provide the bracing action of the diagonal braces shown in FIG. **2**, and is useful only where the form is otherwise noted that the form is of greater height than those described above, and therefore two horizontal tubes **72** and **74** are provided for internal bracing.

FIG. **6** illustrates still another embodiment of the invention wherein each of the four sides of the pan, such as the side **81**, are braced by a tube **80** which extends substantially vertically, and by four angled tubes **82**, **84**, **86**, and **88** which extend between positions along the tube **80** and the bottom of the sidewall. The face **90** is reinforced by four parallel tubes **92**, **94**, **96**, and **98**. The reason for the four parallel tubes is to provide a minimum unsupported space on the face, to reduce the chance of puncture by workmen who walk on the face of the pan after the pans are laid but before the concrete is poured thereon. Diagonal bracing members **100** and **102** are shown which extend between bracing members on the face **90** and the almost vertical members on the sidewalls **81** and **83**. Additional diagonal bracing members are utilized in the same manner to brace the other two sidewalls which are not shown in the figure. The diagonal members **100** and **102** serve as handholds and as means that prevent binding of the pans into one another when they are stacked.

FIG. **7** illustrates the use of flangeless pans **110** and **112** in forming a floor with concrete beams. The bottom of the beams are formed by the plywood construction deck **114** at the area between the pans. This provides an important advantage in concrete work, of eliminating the need for smoothing out the mold line formed by abutting flanges, which is necessary in many cases where the beams are exposed. It may be noted that even if such mold lines are eliminated by grinding, the ground-away concrete areas have a different texture than the molded areas and the results are not entirely pleasing.

The flangeless pan **110**, shown in greater detail in FIGS. **8** and **9**, is constructed with a tubular reinforcing network along the sides in the same manner of the pans described above. However, it includes an additional tube **116** which runs along the inside of the sidewall **115** a short distance above the bottom edge **118** of the pan. A sealing strip **120** of rubber or the like of L-shaped cross section has a seal portion that runs along the bottom edge **118** of the sidewalls. The sealing portion has a width W along the base **117** of the L cross section that is substantially equal to the thickness of the sidewall **115**. The sealing strip has a linking portion **119** that extends upwardly along the inside of the sidewall A rectangular strip **122** of metal or other stiff material is attached to the tube **116** and overhangs the locking portion of the sealing strip **120**. The sealing strip is therefore locked in place between the sidewall and the retaining strip **122**. The sealing strip **120** is provided with serrations on the sides **124** and **126** of the locking portion, which lies adjacent to the sidewall and retaining strip respectively. The serrations further help to lock in the rubber strip.

The tube **116** serves to firmly brace the bottom of the sidewall, eliminating the need for a flange to brace it. In addition, the tube provides a place for fastening the retaining strip **122**. The sealing strip **120** is firmly locked in place and is unlikely to be pulled off even in the usual rough handling accorded to the concrete forming pans. The retaining strip is fastened to the tube by two rows of rivets **128** and **130**.

The use of the locked-in rubber sealing strip with a flangeless pan is preferably employed with a reinforcing structure for the sidewalls **115** of elongated metal members such as the tubes shown in the figures. If a wood sheet were used, the bottom of the wood sheet generally must be impregnated with resin to prevent splitting of the end. The impregnating generally leaves an uneven bottom surface which prevents firm seating of the sealing strip **120**.

FIGS. **10**, **11**, and **12** illustrate another embodiment of the invention in which the form **140** employs a gasket or sealing strip **142** which is easy to install and replace, and which employs a bracing structure **144** using structural members of hat-shaped cross section. The bottom portion **146** of the sidewall **148** is built up to provide with an extra thickness os it is generally more than twice as thick as the portions of the sidewall immediately above it, and a deep groove **150** is cut in it for receiving the sealing strip. The sealing strip, which is constructed of elastomeric material, includes a base portion **152** which is substantially as wide as the bottom portion of the sidewall and which rests against the lower edge **154** thereof. It also includes a leg portion **156** extending upwardly from about the middle of the base into the groove **150**, the leg portion being about as wide as the groove. Serrations **158** are formed in the strip on each side of the leg to help retain it in the groove, and on the bottom of the base to resist movement of the base on the construction deck **160**.

The bottom portion **146** is formed by adding fiber glass or other material to the inner side of the form to build it up, the form then being allowed to set. Then the form is removed from the mold and the groove **150** is formed therein with a routing tool. The router is guided from the outer surface of the

side 148, so it is moved while it is maintained at a predetermined spacing from the outer surface 146S of the bottom portion. Although the thickness of the bottom portion 146 generally will vary, the outer surface 146S is regular since it contacts the mold in which the fiber glass form is molded. The sealing strip 142 is then installed in the groove, glue sometimes being used to further secure it in place.

The foregoing manner of construction assures accurate placement of the sealing strip so the outer side 152S is aligned with the outer surface 146S of the bottom portion 146 of the form. It also assures secure retention of the strip, since the width of the groove 150 and of the sealing strip leg 156 can be closely controlled with ease. Close control is possible because the width of a routing tool is accurately known, and the sealing strip can be formed by extrusion through a die. Neither the form nor the strip have to be reworked to provide a proper fit. This is helpful in factory production, and even more so for field repairs when the sealing strip wears out and has to be replaced. The thickness of the bottom portion 146 does not have to be closely controlled, which makes production much easier, and the relative simplicity of the apparatus increases its reliability.

The bracing structure 144, which is shown in detail in FIG. 12, is constructed with hat-shaped members having a top 162, sides 164, 166, and flanges 168 extending sidewardly away from each other from the bottom of the member sides. The members are attached to the fiber glass sides by holding layers 170 of resin-impregnated fiber glass that cover only the flanges and the immediately adjacent portions of the fiber glass form sides. This assures firm attachment of the structural members to the fiber glass sides without requiring fiber glass to be placed over the entire member, as is often required in the case of flangeless structural members such as tubes, although fiber glass can be placed over the entire hat-shaped members if desired. This design and manner of fastening saves on the amount of fiber glass required, is easier and more quickly performed, and results in thinner walls at the structural members which increases the stackability of the forms. In constructing the forms with a built-up bottom portion 146, the bracing framework 144 is generally installed prior to building up the bottom portion 146, so it can pass more easily into the form.

FIG. 13 illustrates still another embodiment of the invention wherein an overhanging retaining member 180 is included to better hold a sealing strip 182 to the form side 184. The sealing strip has a recessed inner portion 186, and the retainer member has a portion 188 attached by fasteners 190 to the form body and an overhanging portion 192 received in the sealing strip recess.

Although particular embodiments of the invention have been described and illustrated herein, it is recognized that modifications and variations may readily occur to those skilled in the art, and, consequently it is intended that the claims be interpreted to cover such modifications and equivalents.

What is claimed is:

1. Apparatus for disposal against a generally horizontal deck to form concrete or the like comprising:

a body having a top portion and sides depending therefrom, in a substantially downward direction, said sides having lower end portions with bottom edges;

sealing strip means including a base portion disposed against said bottom edges of said sides, said base portion having an outer surface which is substantially flush with said lower end portion of said body sides when said base portion is in a substantially undeformed state, and a leg portion extending in a generally upward direction from said base portion, said leg portion having inner and outer sides; and

means on said body forming substantially vertical grooves with sides closely engaging both said inner and outer sides of said leg portion of said sealing strip means, whereby to resist removal of the strip when shifted in any direction on the deck.

2. The apparatus described in claim 1 wherein:

said body is formed of resin-impregnated material with said lower end portions thicker than portions of said sides above them; and

said means forming substantially vertical grooves comprises walls forming slots in said bottom edges.

3. The apparatus described in claim 1 wherein:

said lower end portions of said sides are of a variable width between their inner and outer surfaces and

said means forming substantially vertical grooves comprises walls forming grooves in said bottom edges at a substantially constant distance from the outer surfaces of said lower end portions.

4. The apparatus described in claim 1 wherein:

said sealing strip means comprises elastomeric material of substantially L cross section forming said base and leg portions, when said sealing strip means is in an undeformed state.

5. Apparatus for forming concrete over a deck type of support comprising:

a pan-shaped body with an upper face and side faces depending therefrom for disposal of their lower ends on said support, said faces forming an inner hollow and said side faces angled from the vertical to spread outwardly;

frameworks of elongated structural members disposed in facewise adjacency to a plurality of said faces to leave the narrowest width of said inner hollow at the lower portion thereof greater than the external width of the top of the body, so that the upper portion of one body can be received in the lower portion of another body for stacking; and

at least two narrow elongated members fixed rigidly in place and extending at a substantially constant distance from said upper face within said inner hollow, said members having portions spaced from said side faces, whereby to facilitate stacking and to provide handholds for removal from set concrete.

6. The apparatus defined in claim 5 wherein:

said elongated members extend diagonally between positions on adjacent faces of said body which are spaced from the intersection of said adjacent faces.

7. Apparatus for forming concrete over a deck type of support comprising:

a body constructed of resin-impregnated material having an upper face, and having side faces depending from said upper face for disposal of their lower ends on said support;

frameworks of elongated structural members disposed in facewise adjacency to a plurality of said faces, said structural members including outwardly directed flanges disposed against said faces; and including

holding strips of resin impregnated material extending over said flanges and adjacent areas of said faces, with the resin in said strips merging into the resin in said body, to hold said members in place.

8. Apparatus for forming concrete comprising:

a pan-shaped form having an upper face and side faces depending therefrom;

a bracing framework of elongated members in facewise adjacency to said upper face; and

means defining a hole in said upper face, at a position thereon spaced from said elongated members thereon by a plurality of diameters of said hole, and a downwardly extending nipple about said hole for communicating with an air pipe, whereby to facilitate flexing of the portion of said upper face about said hole.

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