Nov. 10, 1936. H. RUSSELL 2,060,246

FORM FOR MAKING CONCRETE CASTINGS

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Fig. 1

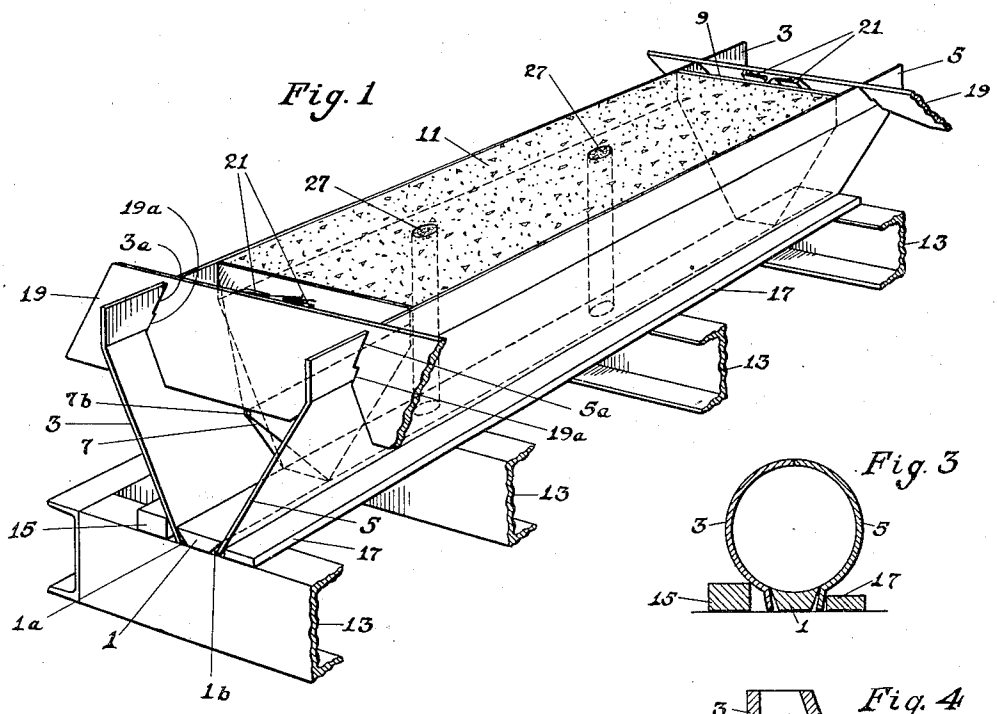


Fig. 3

Fig. 4

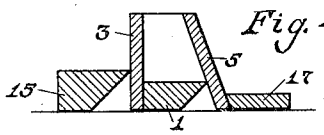


Fig. 2

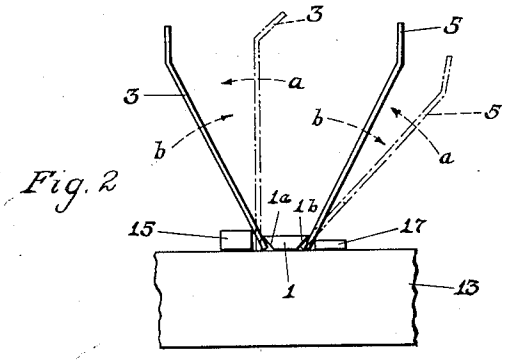
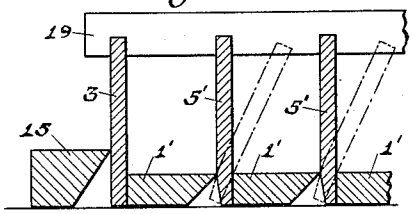
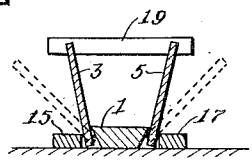


Fig. 5



HAROLD RUSSELL
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Fig. 9



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Fig. 6

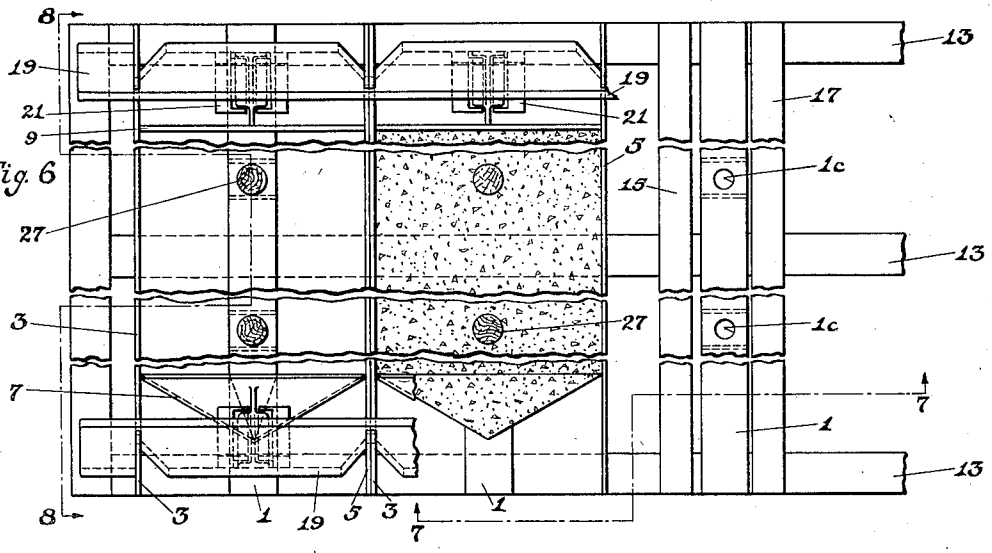


Fig. 7

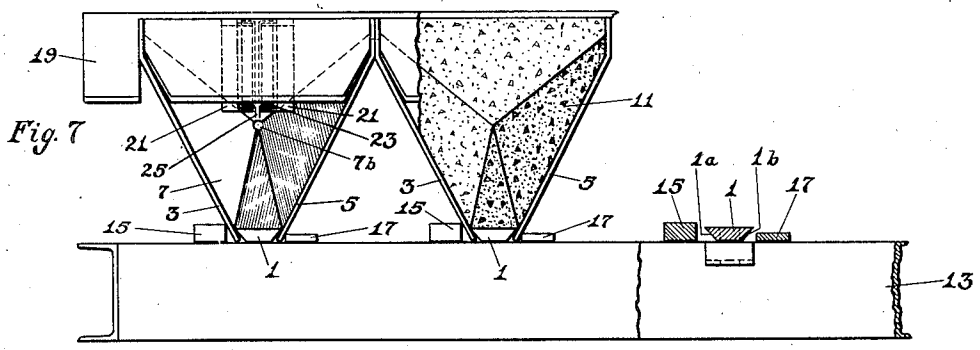
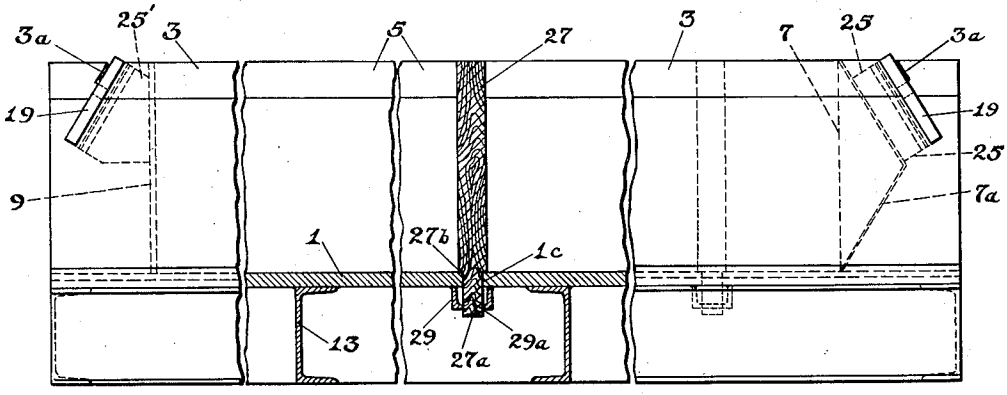


Fig. 8



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FORM FOR MAKING CONCRETE CASTINGS

Harold Russell, Boston, Mass.

Application July 29, 1932, Serial No. 625,731

3 Claims. (Cl. 25—121)

This invention relates to improvements in forms for making concrete castings.

It is among the objects of the invention to provide a form which may be made entirely of metal having novel means for determining the positions of the form walls and for removably locking these said walls in place. It is a feature of the invention that the several walls can be assembled without the aid of any wedges, ties, bolts, nuts and other small elements now commonly used. It is another feature of the improved form that certain of the wall elements can be removed from the casting in a lateral direction and thus enable the casting itself to be moved laterally away from the remaining wall elements. This avoids any damage to the casting during its separation from the form and minimizes the wear on the latter. It is an important feature of the improved form that each integral unit may be duplicated side by side indefinitely thus enabling a multiplicity of castings to be made simultaneously. And because of the novel manner of assembling the forms they may be easily and quickly disassembled, when a large number of castings are made, in the same way as when one casting is formed. The accomplishment of these objects and the attainment of other advantages will be more fully appreciated as the detailed description develops.

In the accompanying drawings are shown the preferred mode of applying the principles of my invention but this is merely illustrative and it is intended that the patent shall cover by suitable expression in the appended claims whatever features of patentable novelty exist in the invention disclosed.

In the drawings:

Figure 1 is a perspective of a typical form embodying the invention;

Figure 2 is an end view of certain elements;

Figures 3 and 4 are similar views in section showing modifications of the bottom and side wall elements and the positioning bars;

Figure 5 is another similar end elevation showing how a single side wall element may be employed for adjacent castings;

Figure 6 is a plan of a series of forms like Figure 1;

Figure 7 is an end elevation of the series, partly in section as on line 7—7 of Figure 6;

Figure 8 is a longitudinal elevation, partly in section on line 8—8 of Figure 6; and

Figure 9 shows another modification.

Referring more particularly to the drawings, the particular embodiment of the invention shown comprises a bottom element 1, side wall elements, 3, 5 and end wall elements 7, 9. These, when assembled as shown, and filled with concrete 11, produce a concrete post such as is now being extensively used along highways as parts of a cable fence. It is of course to be understood that the particular shape of casting shown is purely illustrative and that innumerable other shapes could be cast by simply providing wall elements of proper configuration as suggested in Figures 3 and 4.

The bottom element 1 is attached, as by welding, to a series of channel bars 13 extending transversely of the element. The side edges 1*a* and 1*b* of the bottom element are undercut so as to converge toward each other as clearly seen in Figure 2. In proper spaced relation to the bottom element, on both sides thereof, are positioning bars 15 and 17 which coact with the bottom element to position the side wall elements 3, 5 of the form. The bar on one side of the bottom element is higher than the latter, while the other bar is lower. Accordingly, when the bottom edge of a side wall element is placed in the space between the bottom element and one of its coacting bars, as indicated in dot and dash outline in Figure 2, and then moved toward the higher of the two (as suggested by the arrows *a*) it will make line contact with the top edges of the two and thus its position will be determined. Conversely either side wall element can easily be removed by first swinging it in the opposite direction (arrows *b*) and then lifting it from the space between the bottom element and the respective positioning bar.

When the side wall elements are thus positioned, they are held in place by locking bars 19 which extend transversely across the ends, having notches 19*a* into which the upper portions of the side walls engage, there being complementary notches 3*a* and 5*a* in the latter into which the plate portion of locking bar enters. Preferably these locking bars are inclined at an angle to the longitudinal axis of the form, as seen in Figures 1 and 5, and each is provided on its inner face with L-shaped lugs 21 which together define a T-shaped slot 23. Into this slot may be slipped a T-bar 25, 25' to which is attached an end wall element of such shape that its bottom and side edges make suitable contact with the bottom and side wall elements. In the particular case illustrated, the end wall element 7 is cupped having converging faces 7*a* meeting at a central point, where preferably a small vent hole 7*b* is provided. The other end wall element 9 is shown as a flat

plate and so disposed with respect to its T-bar support that when the latter is slipped down into the T-shaped slot, the said end plate stands vertically upright from the bottom element between the side wall elements.

The unit form is now completely assembled. Preferably before pouring the concrete therein, the inner surfaces of the form are wiped with an oiled swab. No particular care need be exercised in this wiping because if an excess of oil is deposited on the form faces it readily drains to the bottom and escapes between the bottom element and the lower ends of the side walls **3** and **5**, the line contact between them making such escape of the oil entirely feasible. This line contact however is ample to prevent escape of the concrete. In the particular post illustrated, holes must be provided for the bolts that are to support the cables of the fence, and so before pouring in the concrete mixture, wooden pins **27** are set in the form at predetermined locations. The bottom element is provided with a hole **1***c* and below is attached a piece of channel bar **29** having a similar hole **29***a* in alignment with the first said hole. Both holes are smaller than the body of the wooden pin so that the reduced end **27***a* of the latter will pass through the holes until a shoulder **27***b* on the pin brings up against the bottom element. These pins should be well wetted before use, so that they will have become swelled. This insures their contraction as the casting dries out and enables them to be readily removed when the post is finally set up. The projecting end **27***a* of the pin can be snapped off at its shoulder when the casting is separated from the form.

This separation is a feature of the invention as it can be accomplished without inverting the form and hitting it, as is now common practice, to cause the casting to drop out. The locking bars **19** are merely slipped upward thus freeing them from the notches of the side wall elements and also from the T-bars **25**, **25'** of the end wall elements. The side wall element whose edge lies between the bottom element **1** and the lower positioning bar **17** can be swung laterally away from the casting and lifted clear. The end walls **7**, **9** can next be lifted laterally from the casting and the casting itself can be lifted from the bottom and remaining side wall element **3**. Thus the removal of the casting is accomplished without the slightest damage to itself or to the elements of the form. The latter can now be reassembled and another casting made.

Figures 6 to 8 show how a series of castings can be poured and allowed to harden simultaneously. The bottom element and the positioning bars are duplicated at proper intervals along the base channels and duplicate side wall and end wall elements are used. Extended locking bars (suggested by the broken ends in Figure 1) are provided having a series of notches for engaging the closely adjacent side wall elements.

In assembling the series, the side walls beginning at the left, as in Figure 6, are all placed in their positions as determined by their respective bottom elements and positioning bars. Then the extended locking bars are applied to the several side wall elements to lock them all together after which the end wall elements are slipped into place. After the dowel pins **27** are inserted, if such be used, a traveling pourer can be passed over the forms to fill each to their brim. In taking out the casting dismantling of the forms is begun by removing the locking bars and then beginning at the right a side wall element and the end wall elements are first removed, the casting lifted out and the last side wall element removed. This is continued until all the castings are clear of the form.

Due to the peculiar shape of the post chosen for illustration, it is necessary to use two side wall elements for each casting, but it is to be understood that if two castings were to have identical or corresponding side walls, a single side wall element could be used between adjacent castings. This is illustrated in Figure 5, where the positioning bar **15'** is shown undercut and bottom wall elements **1'** serve as such and as positioning bars as well. Here the posts to be cast have vertical parallel side walls and so only a single side wall element **5'** is needed between adjacent castings. The lower end of this side wall is tapered so that it may be slipped into the space provided between adjacent bottom elements. This space as clearly seen in Figure 5 is defined by a vertical side face on one bottom element and an undercut face on the other. The wall elements can be inserted and removed at the angle indicated by the dot and dash outlines and swing to or from their vertical position.

It is to be noted that the relative movement between the wall elements and the casting is always a lateral movement, thus avoiding entirely the undesirable side movements that characterize the forms now in common use. No locking pins or wedge keys are needed and no hand tools are required to assemble or disassemble the form. And the latter does not have to be inverted and beaten to cause the casting to drop out. The castings produced are uniform in shape and finish and substantially free of oil discoloration. And the saving of time, due to the features of construction which make assembling and disassembling a rapid performance, is considerable.

In a single unit form it may be preferable to remove both side walls before disturbing the casting. This can be done by the relation of bottom element **1** and positioning bars **15**, **17** shown in Figure 9. The bars are both of less height than the bottom element and so each side wall element can be inserted as suggested in dotted outline and swung generally upward to the positions determined by their engagement with the edges of the bottom element and their respective positioning bar. Both are then held in their positions by the locking bar **19**.

I claim:

1. A form for making concrete castings comprising, in combination, a bottom element; a positioning element arranged adjacent the bottom element and forming therewith a continuous uninterrupted channel; and a side wall element having a bottom edge insertable in said channel; the top adjacent edges of the bottom and positioning elements being at different elevations and one of the adjacent faces of said bottom and positioning elements being undercut from its top edge so that the side wall element when inserted in said channel can be swung laterally toward and from a position determined by its engagement with the said top edges of the bottom and positioning elements.

2. A form for making concrete castings comprising, in combination, an extended bottom element; a positioning element extending parallel thereto and spaced therefrom to form a channel; the adjacent top edges of said elements being at different elevations and the face of one of said elements being undercut to provide a diverging space between the elements; and a side wall ele-

ment adapted to have its bottom edge inserted in said channel and swung laterally thereabout to engage the aforesaid adjacent top edges and be thereby positioned with respect to the bottom element.

3. A form for making concrete castings comprising, in combination, a bottom element; a positioning element arranged parallel to the bottom element having its adjacent top edge at a different elevation from the adjacent top edge of the bottom element; one of the adjacent faces of said elements being cut back from its said top edge to form a continuous channel diverging downward from said top edges; and a side wall element insertable in said channel and capable of being moved into engagement with said top edges whereby its casting forming position is determined.

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