APPARATUS FOR USE IN FORMS FOR CONCRETE

James E. Person, 1822 E. Main, Auburn, Wash. 98002
and Robert E. Person, 9002 Fruitland Ave., Puyallup, Wash. 98371

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ABSTRACT OF THE DISCLOSURE

This disclosure is for apparatus for making forms for concrete. It comprises a combination of a drawbar and shoes for drawing closer together adjacent panels and also for drawing closer together opposed panels so as to make a more substantial and a better form for receiving concrete.

An object of this invention is a provision of an apparatus for use in making forms for receiving wet and uncured concrete, and which apparatus can be easily applied to the forms; to provide such an apparatus of a forthright and simple construction; to provide such an apparatus wherein nails are not required for the apparatus to function properly; to provide such an apparatus which is rugged and durable; to provide such an apparatus which can be used numerous times without damage or noticeable show of wear; and, to provide such an apparatus which can be manufactured and sold at a low cost.

These and other important objects and advantages of the invention will be more particularly brought forth upon reference to the accompanying drawings, the detailed specification of the invention and the appended claims.

In the drawings:

FIGURE 1 is a side elevational view of the use of such apparatus for positioning two adjacent panels in a concrete form;

FIGURE 2, taken on line 2—2 of FIGURE 1, is a lateral cross sectional view of a wall using the apparatus and which wall has concrete between panels;

FIGURE 3, taken on line 3—3 of FIGURE 1, is a cross sectional view illustrating a detail of construction of the apparatus and;

FIGURE 4 is a side elevational view illustrating a modified form of the apparatus which may be employed for positioning three wall panels in a form for a concrete wall.

In the formation of a concrete wall it is necessary to make forms for receiving the wet and uncured concrete. One of the ways of making these forms is to use sheets of plywood. For example the plywood may be 4" x 4' or 4' x 8', to name a few. The thickness of the plywood may be a half inch or three-quarter inch depending upon the structure. It is to be realized that the panels are sufficiently braced against lateral movement. One of the ways to brace the panels is to drive two by fours into the ground so as to prevent the lateral movement of the panels. Further, there are spacer blocks between the panels so as to achieve the desired thickness of wall.

In the formation of the forms for receiving the wet concrete in the past it has not been possible to draw tightly together the adjacent edges of the plywood panels. As a result with the pouring of the wet concrete into the forms some of the concrete in the form of a mixture of sand, cement and water spread between the edges of the adjacent panels. Upon drying there is formed a ridge. While the removal of the forms from the concrete wall this ridge is readily noticeable on the wall. If the wall is to be used for finished purposes or is to be painted so as to be more decorative it is necessary to remove the ridge either by scoring with sandpaper, a brick or other suitable abrasive means.

With this in mind we have invented an apparatus which can be readily used for drawing together adjacent panels in a concrete form so as to have the edges of the panels bearing tightly against each other. In this manner it is not possible for a ridge of concrete to form as there is no void or open space for the mixture of cement, sand and water to flow between the plywood panels.

In FIGURE 1 there is illustrated a concrete form 10. This form ten comprises two plywood panels 12 and 14. The plywood panel 12 has a vertical edge 16. The plywood panel 14 has a vertical edge 48. It is seen that the edges 16 and 14 are adjacent to each other about each other. Also, in FIGURE 1 it is seen that the invention 20 is of sufficient length to overlap the adjacent edges 16 and 18 and also to extend a sufficient distance across the panels 12 and 14.

The invention 20 comprises a drawbar 22 which is essentially a flat plate. On the upper edge of the drawbar 22 there is a stiffener bar 24 at right angles to 22. With reference to FIGURE 3 in conjunction with FIGURE 1 it is seen that the plate 22 has an upwardly inclined slot 26. There is welded to the outer surface of the plate 22 a shoe 28. The shoe 28 is of well-known construction and has been used for many years in making forms for receiving wet concrete. The shoe 28 may be welded at 30 to the front face of the plate 22. As is well known the shoe 28 has an inclined bearing surface 32 and a slot 34.

The slot 34 overlies the slot 26 in the flat plate 22. Also, at the lower end of the shoe 28 or the lower end of the inclined ledge 32 and the slot 34 there is an enlarged opening 36. In FIGURE 1 it is seen that there are two spaced apart slots 26, two spaced apart shoes 28 with slots 34. The spaced apart slots 26 and 34 are not parallel to each other but converge toward each other upon going from the lower edge 38 of the plate 22 toward the stiffener bar 24.

In FIGURE 2, taken on line 2—2 of FIGURE 1, there is illustrated a lateral vertical cross sectional view of a concrete wall with forms intact. As the panels, drawbar 20 and shoe 28 are the same, the same reference numerals will be used for the articles on both sides of the wall 40 but the articles on the left side of the wall will be referred to with a prime number. It is seen that there is a plywood panel 12, a drawbar 20, and a shoe 28 integral with the drawbar. Further, on the left side of the wall there is a plywood panel 12', a drawbar 20', and a shoe 28'. As is a usual custom in the making of forms for a concrete wall there is a tie rod 42 having two enlarged circular ends 44 and 44'. With respect to FIGURES 1 and 3 it is seen that the shoes 28 may be placed over the tie rod 42 with the ends 44 and 44' passing through the opening 36 in the lower end of the shoe. Then, a person may push on the stiffener bars 24 and 24' so as to drive the drawbars 20 and 20' and the shoes 28 and 28' downwardly. It is seen that by driving the drawbars 20 and 20' downwardly that the panels 12 and 14 are drawn together so that the shoe 28 may have a snug fit between the edges 16 of the panels 12 and 18 of the panel 14. Likewise, it is similar for a panel 12' and a panel 14'. Further, as is well known with the use of shoes the panels 12 and 12' are forced close together as the slides 32 are directed upwardly and outwardly. After the edges of the panels have been brought together to have a snug and tight fit then the concrete 46 may be poured between the panels 12 and 12' to form the concrete wall.

In FIGURE 4 there is illustrated a modified drawbar 50. It is seen that this drawbar 50 is of sufficient length to overlap the edge of a first panel 52, a second panel 54
3. An apparatus according to claim 1 and comprising:
(a) a first shoe having a third slot;
(b) a second shoe having a fourth slot;
(c) said first shoe being attached to the plate with the third slot aligned with the first slot; and,
(d) said second shoe being attached to the plate with the fourth slot aligned with the second slot.

4. An apparatus according to claim 1 and comprising:
(a) said first means being of sufficient length to overlap the edges of three panels;
(b) said first slot being near a first end of the first means;
(c) said second slot being near a second end of the second means;
(d) a third slot between the first and second slots; and,
(e) with the centerlines of the first and second slots being extended to intersect said angle between the centerlines being less than 90°.

5. An apparatus according to claim 4 and comprising:
(a) a first shoe having a fourth slot;
(b) a second shoe having a fifth slot;
(c) a third shoe having a sixth slot;
(d) said first shoe being attached to the first means with the fourth slot aligned with the first slot;
(e) said second shoe being attached to the first means with the fifth slot aligned with the second slot; and,
(f) said third shoe being attached to the first means with the sixth slot aligned with the third slot.

6. A combination of panels in concrete forms and an apparatus for drawing together the edges of said panels, said combination comprising:
(a) a first panel;
(b) a second panel;
(c) said first panel and said second panel having adjacent edges;
(d) a first tie rod in the first panel;
(e) a second tie rod in the second panel;
(f) said apparatus comprising a drawbar;
(g) said drawbar being of sufficient length to overlap the adjacent edges of the first and second panels;
(h) a first slot and a second slot in the drawbar;
(i) said first slot mating with the first tie rod and said second slot mating with the second tie rod;
(j) each of said slots having a first end for receiving a tie rod and a second end; and,
(k) the distance between the second ends of the first slot and the second slot being less than the distance between the first ends of the first slot and the second slot.

7. A combination according to claim 6 and comprising:
(a) a third panel;
(b) said second panel and said third panel having adjacent edges;
(c) a third peg in the third panel;
(d) said drawbar being of sufficient length to overlap the adjacent edges of the first and second panels, and the adjacent edges of the second and third panels; and,
(e) said third slot mating with the third peg.

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J. SPENCER OVERHOLSER, Primary Examiner.

J. S. BROWN, Assistant Examiner.

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