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SPACER AND TIE FOR CONCRETE FORMS

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2 Claims. (Cl. 25—131)

The invention relates to spacers and ties for concrete forms.

One object of the invention is to provide an improved combined tie and spreader which is simple and inexpensive in construction and efficient in operation.

Another object of the invention is to provide an improved spacer and tie formed of a flat strip of metal, the central portion of which is formed to avoid air spaces in the area of the concrete immediately beneath the tie.

Other objects of the invention will appear from the detailed description.

The invention consists in the several novel features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawing: Fig. 1 is a perspective of a portion of a form for a concrete wall embodying the invention. Fig. 2 is a transverse section. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a transverse section on line 4—4 of Fig. 2. Fig. 5 is a plan view of one end of the combined tie and spacer showing the tongues before bending thereof.

The combined spacer and tie is formed of a flat strip or strap 6 of metal of uniform width throughout its length and of sufficient length to extend through the form and provide projecting ends for holding the boards *a*, *a'* which constitute the sides of the form. Inwardly of each of its ends, the strip 6 is sheared through on three parallel lines 7*a*, 7*b*, 7*c*, and on a transverse line 7*d* which connects one end of the two outer slots 7*a*, 7*b*, and intersects the corresponding end of the central slot 7*c*. This forms a pair of tongues 8 and 9 attached at one end to and integral with the strip 6, arranged side-by-side or transversely contiguous, and which are separately bendable transversely to the plane of said strip. One tongue of each pair is bent upwardly substantially at right angles to the plane of the strip to form a spacer for the form-board *a* above the tie, and the other tongue is bent downwardly substantially at a right angle to form a spacer 9 for the form-board below the tie. This forms a central opening 8*a* in the strip, and leaves the side or longitudinal marginal portions continuous or interrupted which is advantageous in handling the devices. This provides an inexpensive and simple spacer and tie strip with integral tongues bent in opposite directions to serve as spacers for form-boards above and below the tie, and in which the tongues are transversely contiguous or side-by-side so they can be bent by simple dies.

The central portion 10 or that portion between

the spacing tongues at one end and those at the other is bent so it is arched transversely or of general V-shape in crosssection, as at 11, to impart to the strip the necessary stiffness against transverse flexing. Preferably the vertex of the portion 10 is disposed on the top of the tie and the corresponding grooved portion below. The inclined sides of the arched portion 11 serve to deflect the concrete while it is being poured into the mould. The groove formed by the angular cross-section is comparatively shallow, so that the concrete will flow into it around the sides of the strip 6. A hole 12 is formed in the vertex of the central portion 10 of the strip to prevent the formation of an air pocket below the strip. The slots, resulting from the bending of the tongues 8 and 9 from the strip 6, permit the concrete to fill the space under the portions of the tie adjacent the form-boards. In concrete construction it is of importance to avoid spaces which permit moisture to seep into the wall after it has been erected, and these moulds provide a tie which effectively prevents the formation of such spaces.

The portions of the strip 6 which extend outwardly beyond the spacer tongues are left flat to fit between the boards of the form. Each of said ends is provided with a pair of slots 13 and 14 adapted to receive a suitable wedge 15 by which the form-boards above and below the tie can be locked or secured against spreading and against the adjacent spacer tongues. Slots 13 and 14 are provided so that boards of different thicknesses may be secured by the wedges against the spacer tongues. When the wall has been completed, the wedges are removable so the boards can be removed. Then the marginal portions of the strip at the outer ends of the slots 8*a* are cut off, which will separate the tongues from the portions of the strip embedded in the concrete, so the tongues can be removed from the outer faces of the concrete.

The invention exemplifies a combined spacer and tie which is formed of a single strip of metal of uniform width shaped to form integral spacer tongues and with slots adapted to receive wedges for holding the form against the spacing tongues, and in which the spacer tongues at each end are disposed transversely contiguous of each other and deflected from the central portion of the strip, leaving the metal along the side edges intact or continuous so that the side-edges of the strip will be smooth.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended

claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. As a new article of manufacture, a tie and spreader for a concrete form comprising a flat strip of sheet metal having adjacent one of its ends a pair of outstruck integral tongues projecting above and below the strip respectively and in the same vertical plane and adapted to fit directly against one side of superjacent and subjacent boards of the form and to serve as spacers for the boards, said tongues consisting of longitudinally extending transversely contiguous portions attached at one end to the strip and sheared from the central portion of the strip so as to leave a central slot with continuous and uninterrupted longitudinal side edges on the strip and bent in opposite directions from the strip,

and means associated with the ends of the strip for holding the form against spreading.

2. As a new article of manufacture, a tie and spreader for a concrete form comprising a strip of sheet metal having adjacent each of its ends a pair of outstruck integral tongues projecting above and below the strip respectively in the same vertical plane and adapted to fit directly against the inner faces of superjacent and subjacent boards of the form and to serve as spacers for the boards, each pair of tongues consisting of longitudinally extending transversely contiguous portions attached at one end to the strip and sheared from the central portion of the strip so as to form a central slot and leave uninterrupted longitudinal side edges on the strip and bent to extend in opposite directions from the strip, and means associated with the ends of the strip for holding the form against spreading.

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