July 14, 1953 F. BILLINGS 2,644,997

WALL FORM

Filed April 16, 1952 2 Sheets-Sheet 1

Fig. 1.

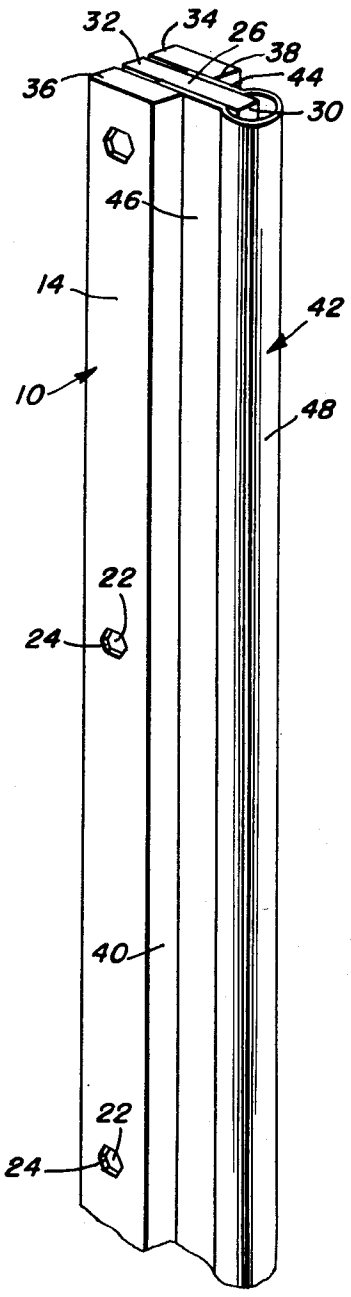


Fig. 2.

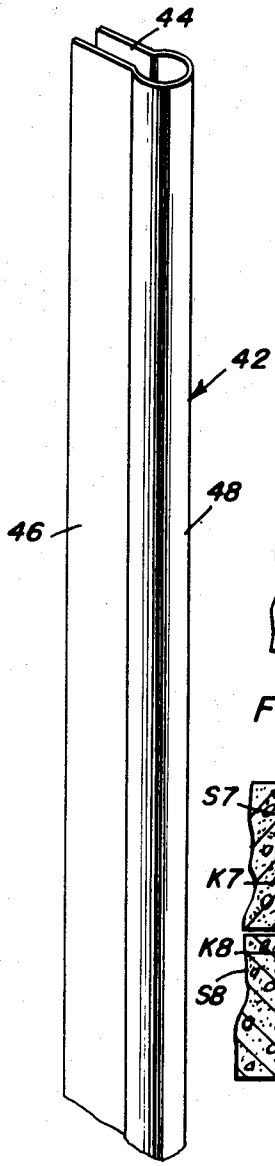


Fig. 8.

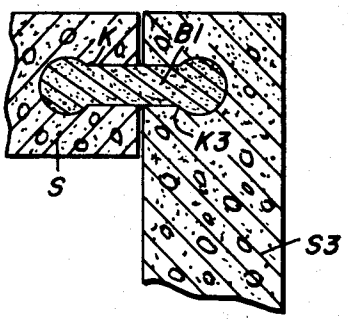


Fig. 9.

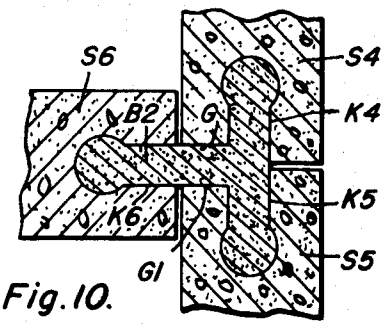
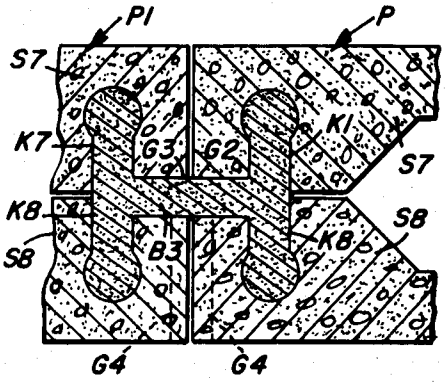


Fig. 10.



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WALL FORM

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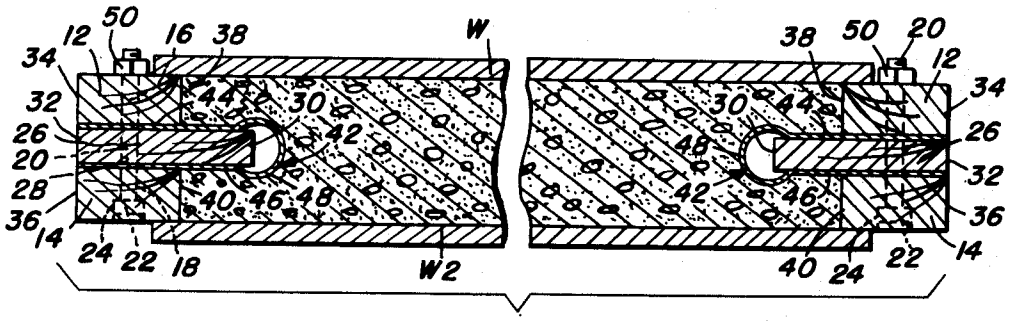


Fig. 3.

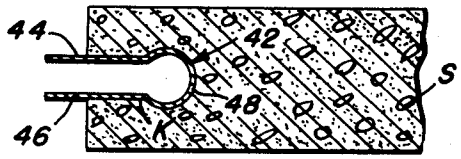


Fig. 4.

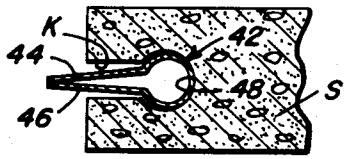


Fig. 5.

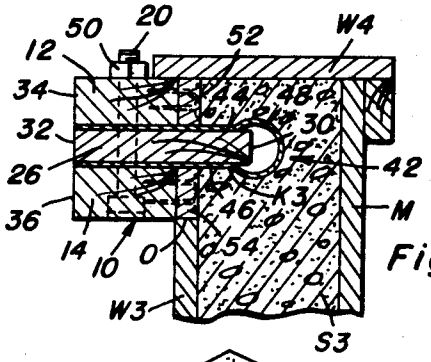


Fig. 7.

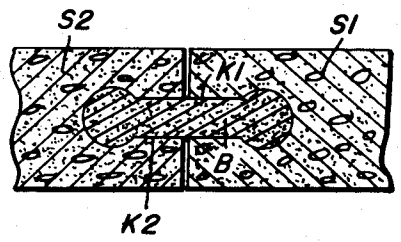


Fig. 6.

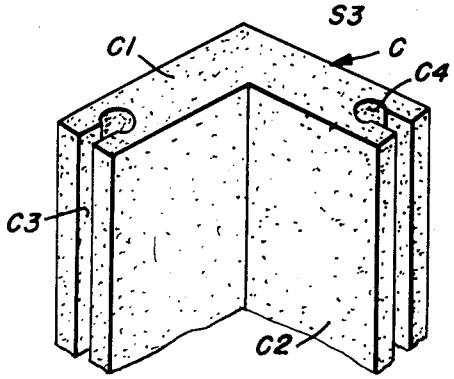


Fig. 11.

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WALL FORM

Frank Billings, Montesuma, Ind.

Application April 16, 1952, Serial No. 282,587

2 Claims. (Cl. 25—131)

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This invention relates to new and useful improvements in wall forms and the primary object of the present invention is to provide a wall form including a key-forming mold element so constructed as to provide an elongated keyway in a wall so that adjacent walls may be tied together by a binding material poured into the keyways thereof.

Another important object of the present invention is to provide a key-forming mold element including a plurality of juxtapositioned strips that are clampingly secured together and which hold a resilient channel that will extend between a pair of walls to form a keyway in one side of or in an edge of a wall formed by pouring a cementitious material between the walls.

A further object of the present invention is to provide a key-forming mold element for wall forms adapted to form keyways in wall sections, so that wall sections may be joined to form an exterior wall; an exterior wall having a partition; a corner wall; and/or a wall of panel construction.

A still further aim of the present invention is to provide a key-forming mold element of the aforementioned character that is simple and practical in construction, strong and reliable in use, inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the key-forming mold element;

Figure 2 is a perspective view of the channel forming part of the mold element;

Figure 3 is a horizontal sectional view of a wall-form showing the mold elements incorporated therein and forming keyways in the vertical edges of a wall;

Figure 4 is a fragmentary horizontal sectional view similar to Figure 3 but showing the mold element removed with the channel still engaged with the formed wall;

Figure 5 is a view similar to Figure 4 but showing the flanges of the channel forced together in order to permit the channel to be removed from the keyway formed in the wall section;

Figure 6 is a horizontal sectional view showing the manner in which two wall sections are joined;

Figure 7 is a horizontal sectional view showing the manner in which the mold element is applied to a wall form in order to provide a keyway in one side face of a wall section;

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Figure 8 is a fragmentary horizontal sectional view showing the manner in which two relatively perpendicular wall sections are joined;

Figure 9 is a fragmentary horizontal sectional view showing the manner in which two outer wall sections are joined to each other and to a partition wall section;

Figure 10 is a fragmentary horizontal sectional view showing the manner in which two walls, of panel construction, are joined together; and,

Figure 11 is a fragmentary perspective view of a corner wall section formed by using a pair of the mold elements, as shown in Figure 1, in conjunction with a corner mold.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents the key-forming mold element generally, comprising a pair of elongated rigid strips 12 and 14 which are equal in length, thickness and width. The strips 12 and 14 are provided with longitudinally spaced apertures 16 and 18, and the apertures 16 are in registry with the apertures 18 to receive bolts 20 having heads 22 that are received in countersinks 24 provided in the outer faces of strip 12, at the outer ends of the apertures 16.

An elongated rigid rib element 26 constitutes a part of the key-forming mold element 10. The rib element 26 is of a length substantially equal to the length of the strips 12 and 14, however the rib element is thinner but wider than the strips, as shown best in Figure 3. The rib element is provided with a plurality of longitudinally spaced apertures 28 that accommodate the bolts 20 and these apertures 28 are so located with respect to the inner and outer vertical edges 30 and 32 of the rib element that the outer edge 32 of the rib element will be flush with the outer edges 34 and 36 of the strips 12 and 14 while the inner edge 30 of the rib element projects well beyond the inner edges 38 and 40 of the strips 12 and 14.

The key-forming mold element 10 is also provided with a resilient, elongated channel 42 having a pair of spaced parallel leg portions 44 and 46 that are joined by an arcuate web portion 48 whose sides project laterally outwardly from the outer sides of the leg portions.

Leg portions 44 and 46 straddle the inner edge 30 of the rib element 26 and the edge 30 is partially positioned in the curved web portion 48 as shown in Figure 3. The leg portions 44 and 46 also contact the inner faces of the strips 12 and 14 and are clamped against the rib element and the strips as nuts 50 on the bolts 20 are tightened to retain the strips, rib element and channel in juxtaposition.

In practical use of the present invention, a pair of the key-forming rib elements 10 are used in conjunction with a pair of spaced parallel vertical walls W and W^2 with the elements 10 partially slipped between the walls W and W^2 so that the outer faces of the strips 12 and 14 rest against the inner faces of the walls W and W^2. Suitable means is employed for connecting the walls W and W^2 to clampingly retain the mold elements 10 between the same.

The bottom of the elongated hollow mold formed by the elements 10 and the walls W and W^2 is closed by suitable means so that the member may retain a cementitious material poured into the open top of the mold member. The cementitious material is allowed to harden, after which the nuts 50 are loosened and the strips 12, 14 and rib element 26 are pulled away from the walls W and W^2. The walls W and W^2 are also removed from the formed panel or wall section S leaving only the channels 42 engaged with the wall section S, as shown in Figure 4.

The flanges 44 and 46 are then bent into engagement with each other, as shown in Figure 5, so that the channels 42 may be withdrawn from the vertical keyways K formed in the vertical side edges of the wall section S.

The two wall sections S^1 and S^2 formed in the above manner are disposed in coplanar relation, with the keyway K^1 and one vertical edge of section S^1 being in registry with the keyway K^2 in one vertical edge of the section S^2 and with the edges of the sections S^1 and S^2 abutting each other, as shown in Figure 6. A suitable binder B is then poured in the registering keyways K^1 and K^2 and joins the sections S^1 and S^2.

Figure 7 shows how the key-forming mold element 10 may be used to form a vertical keyway K^3 in one side face of a wall section S^3. In this illustration, the vertical filler strips 52 and 54 are secured to the edges 38 and 40 of the strips 12 and 14 by fasteners or the like.

The mold member M is formed with a slot or opening O in one of its vertical side walls W^3 to receive the element 10 with the strip 54 engaging the edge of the opening O and with strip 52 engaging the inner face of the end wall W^4 of the mold member. The inner faces of the strips 52, 54 are flush with each other and the inner face of wall W^3.

Concrete poured in the mold member M will harden after which the mold member is disassembled and the element 10 removed to form the keyway K^3.

The wall section S^3 may then be tied to a wall section S disposed perpendicular thereto by placing the keyway K in registry with keyway K^3 and filling the keyways with a binder B^1, as shown in Figure 8.

Figure 9 shows how two wall sections S^4 and S^5, formed with keyways K^4 and K^5, may be joined to a partition wall S^6 having a keyway K^6. The edge of the partition wall S^6 having the keyway K^6 overlaps the abutting edges of the sections S^4 and S^5 and grooves G and G^1 are formed in the inner faces of the sections S^4 and S^5 to form communication between the registering keyways K^4 and K^5 and the keyway K^6.

A suitable binder B^2 is then poured into the keyways K^4, K^5, K^6 and grooves G and G^1 to join the partition wall S^6 to the wall sections S^4 and S^5 and the wall sections S^4 and S^5 together.

Figure 10 shows a joint between panels of a wall structure wherein the panels P and P^1 are each composed of inner and outer wall sections S^7 and S^8.

Sections S^7 and S^8 are formed like the wall section S^3 in order to include the vertical keyways K^7 and K^8. The keyways of the sections of panel P are in registry with each other and the keyways in the sections of the panel P^1 are also in registry with each other. The edges of the panels P and P^1 abut, as shown in Figure 10, and registering grooves G^2 and G^3 are formed in the abutting edges to form communication between the keyways of the panels.

A suitable binder B^3 is placed in the keyways to join the sections of each panel and to join the panels. Additional registering grooves G^4 may be provided in the sections S^8 of the panels P and P^1, whereby a partition wall may be tied into the panels in a manner similar to that shown in Figure 9.

Figure 11 shows a corner for a panel wall that is formed by using two of the elements 10 in conjunction with a pair of angulated mold walls. The corner C will be provided with relatively perpendicular portions C^1 and C^2 whose outer vertical edges have keyways C^3 and C^4 formed therein for joining with keyways of wall sections such as S.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention, the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having thus described the invention, what is claimed as new is:

1. A form for concrete wall members, said form comprising an elongated open-ended hollow member having spaced side walls and removable end pieces, each of said end pieces being composed of two strips having inner edges received between said side walls, a rib element clamped between each pair of strips, said rib elements projecting inwardly beyond the inner edges of the strips, and a resilient channel about the inner edges of the rib elements and having their flanges clamped between the rib elements and the strips.

2. As a new article of manufacture, a device for forming a keyway in a wall and adapted to constitute a part of a wall form, said device comprising a pair of elongated strips of uniform width, length and thickness; a rib element disposed between the strips and having an edge projecting outwardly beyond the edge of each strip, a resilient channel receiving the said edge of the rib element therein, the flanges of said channel being disposed between the rib element and the strips, and fasteners joining the strips and clamping the rib element and the flanges of the channel between the strips.

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