Nov. 15, 1932. H. C. RIESBOL 1,888,181

CONCRETE BUILDING FORM

Filed May 11. 1929 2 Sheets-Sheet 1

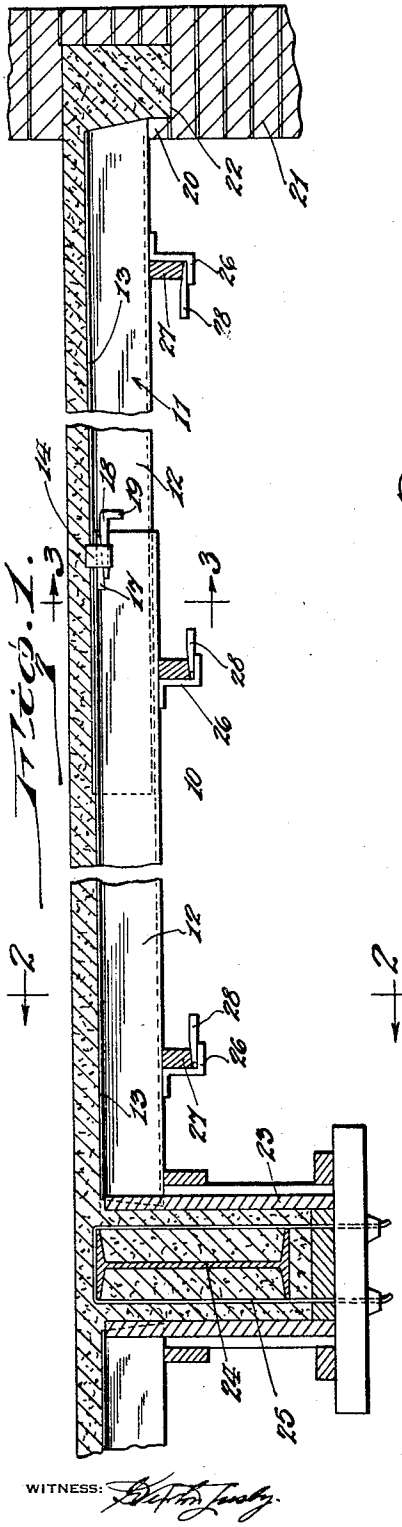


Fig. 1.

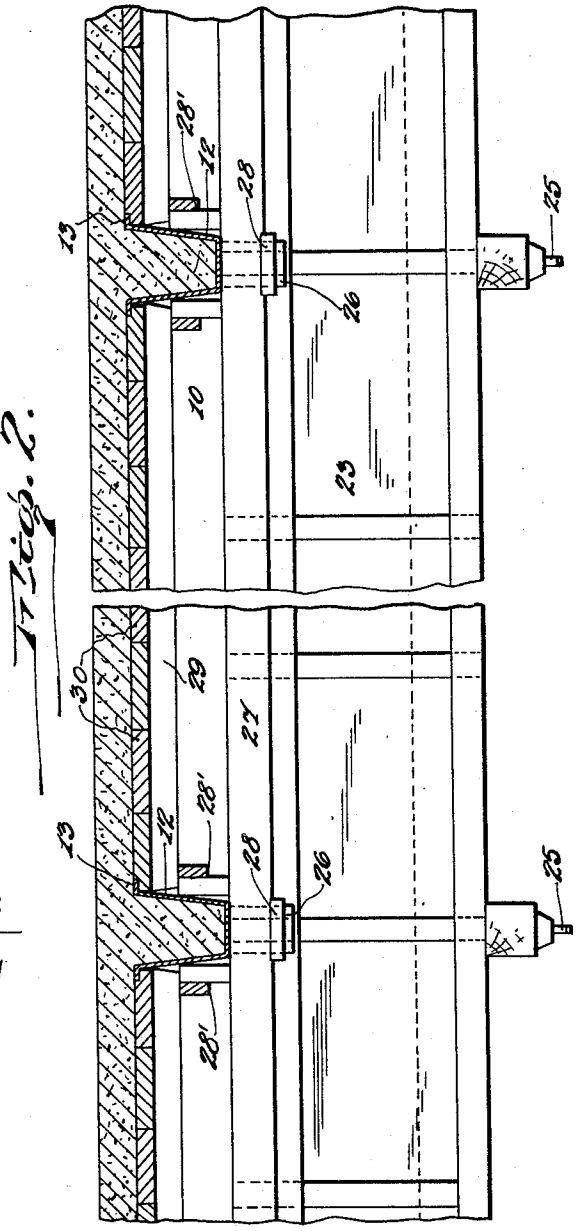


Fig. 2.

WITNESS:

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Fig. 3.

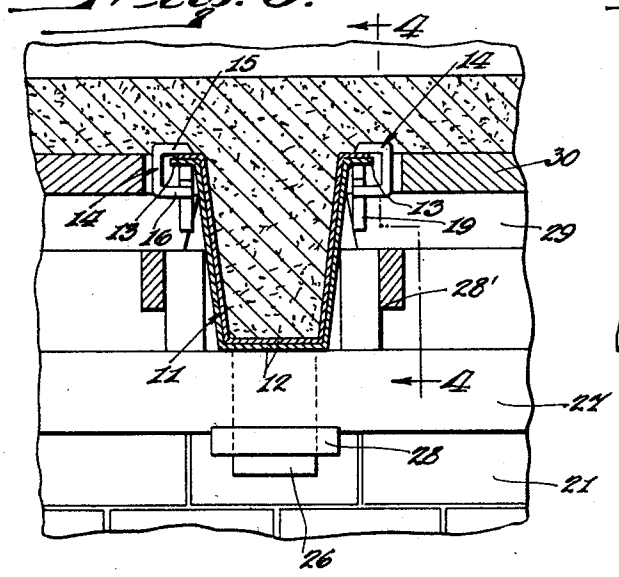


Fig. 4.

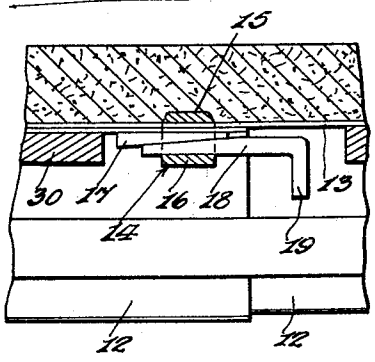
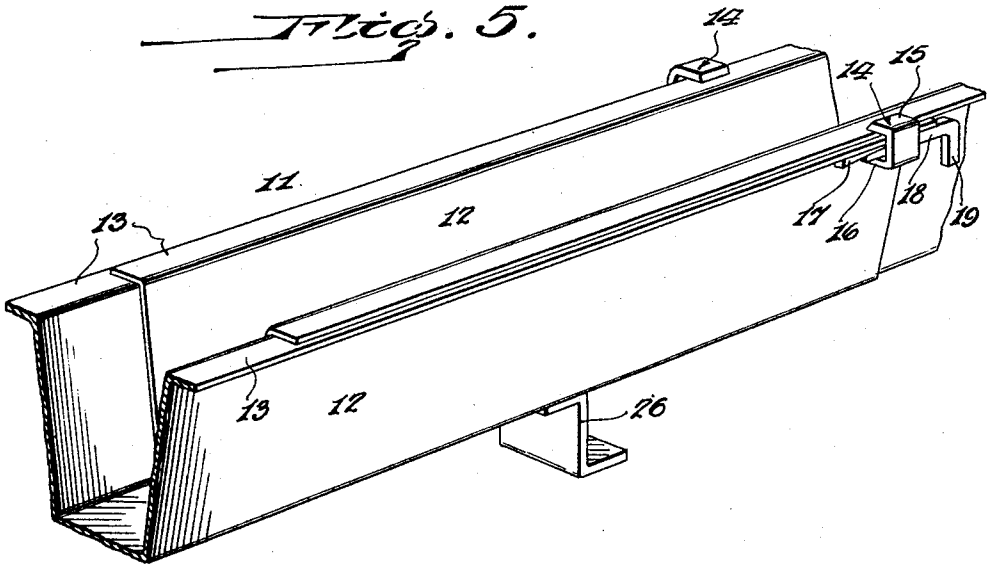


Fig. 5.



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UNITED STATES PATENT OFFICE

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CONCRETE BUILDING FORM

Application filed May 11, 1929. Serial No. 362,251.

This invention relates to impovements in concrete building forms and has particular reference to a form for molding floors of the beam joist type.

Heretofore in the construction of molding monolithic concrete floors, it has been the practice to either construct the forms of wood, or of steel tile. The wood forms have proven expensive due to the large quantity of lumber to be used which had to be cut to meet the requirements of a particular job and which was useless for further use. Skilled labor was also required in the erecting of these wood forms which greatly increased the cost of construction. The standard metal or steel tile forms surpassed the wood forms but many objections are found in their use, among which is the necessity of constructing supports and decking of wood lumber for supporting and fastening the metal forms to hold them in position until the concrete is poured and has set and fully hardened. This supporting structure and decking necessary for steel tile is expensive because it requires a great amount of wood lumber one and one-half to three board feet per square foot of floor; this requires a great amount of labor to erect and remove.

The primary object of my invention is to provide a floor form for floors of the beam joist type, made of telescoping sections adjustable to the desired length and which sections may be securely locked in an adjusted position to span the space between a pair of girders or supports, the sections being of such size and metal of such thickness which are sufficiently strong as to be capable of safely supporting the load imposed upon them although they are only seated at their outer ends on the supporting girders or other supports, and may have no intermediate support at the joint. This ordinarily eliminates the necessity of most of the usual supporting structure and decking necessary for steel tile as used in present standard practice.

A further object of the invention is the provision of a pair of channel members of U-shape in cross section, which are arranged in telescoping relation for adjustment to span between two spaced girders of different distances or any distance within range of channel members telescoping length, and which girder members indirectly support the floor form in a novel manner so that the channel members and the parts of the floor form may be easily removed from a set concrete floor and used over and over again.

A still further object of the invention is to form a smooth and more perfect beam than with steel tile of present practice which are of short lengths with numerous laps; also to provide a form that is more flexible than present steel tile forms for making different spacing of concrete beam joists; also in the erection of a steel skeleton building with floor beam joists, the erection of the floor forms may proceed so rapidly that several floors of form work may be built above the floor where the concrete is being poured.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claims, and are illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical sectional view through concrete floor structure showing my invention in use.

Figure 2 is an enlarged vertical transverse sectional view on the line 2—2 of Figure 1.

Figure 3 is an enlarged vertical transverse sectional view on the line 3—3 of Figure 1.

Figure 4 is a detail vertical sectional view on the line 4—4 of Figure 3.

Figure 5 is a fragmentary prospective view

of the telescoping ends of the channel form members.

Referring to the drawings by reference characters, the numeral 10 designates my improved concrete floor form in its entirety which includes spaced metal form units 11, each of which comprises a pair of identical channel members 12—12 of any desirable length. Each channel member is of substantially U-shape in cross section and has horizontal flanges 13 extending outwardly from opposite sides thereof. In use, the channel members 12 telescope each other at their inner ends to provide a lapped joint between them. The lapped end of one channel member snugly fits within the lapped end of the other channel member and by sliding the members longitudinally with respect to each other, the length of the unit may be adjusted to bridge a space of a given distance.

For securing the lapped ends of the two channel members in adjusted position, I provide a single clamping means which comprises a pair of C-shaped clamp members 14, each of which engages the overlapping flanges 13 on one side. The clamp members are applied adjacent the inner end of the outer channel members with one of their jaws 15 flat against the flanges 13 of the inner channel member while the other jaws 16 are in spaced relation to the flanges 13 of the outer channel member. Wedges 17 and 18 are inserted between the jaws 16 and spaced flanges 13, the said wedges being inserted from opposite sides of the clamp. The lower wedges 18 are provided with downturned handle portions 19 by which they may be applied or removed.

In the several figures of the drawings, I have shown my form in use with one end of the sectional unit 11 resting upon a brick 20 of a brick wall structure 21 and extending into a recess 22 provided therein. The other end of the unit 11 is supported by the wooden form 23 enclosing a structure I-beam 24. The wooden form 23 is suspended in spaced relation to the I-beam by wire hangers 25 in the usual manner.

Welded or otherwise secured to the underside of the channel members at suitable spaced distances are Z-brackets 26 which support beams or liners 27 which bridge the space between the undersides of the channel members to hold the channel members in rigid position. Wedges 28 are inserted between the beams 27 and the lower horizontal flanges of the Z-brackets to secure said liners in position to span the form units 11. Crossing the beams 27 abutting opposite sides of the channel form units are wood beams 28′ which support the ends of spaced wood beams 29 which bridge the space between the form units. Wood planks 30 are supported by the beams 29 to provide a continuous flat support between the form units for forming the concrete floor slab as clearly shown in Figure 2 of the drawings. Although wood planking 30 has been shown in the drawings, sheet metal plates or self centering metal laths may be substituted therefor, if desired.

It will be understood that a concrete floor form erected as shown and described provides a rigid structure and the floor may be molded by pouring the concrete thereon and evenly spreading the same thereover. The concrete of course fills the form units 11, recess 22 and wooden form 23 and covers wood planks 30. The form units 11 mold the concrete beams of the floor which have their support or bearing at their opposite sides and which in turn support the concrete floor when fully set and the forms have been removed.

To remove the form units 11, it is only necessary to remove or crumble the brick 20, remove the wedges 17 and 18 and slide the telescoping channel members with respect to each other, it being understood that the wedges 28 and beams 27 have been previously removed.

From the foregoing description, it will be seen that the telescoping channel members 12—12 are securely joined to support the concrete load, with the outer end of each channel member supported by the building walls or other end supports, there being no support required to support the channel members at the telescopic clamped joint. The form units may be erected and taken down in a minimum time and by unskilled workmen, thus reducing the cost of construction of concrete floors of the beam joist type.

While I have described what I deem to be the most desirable embodiment of my invention, it is obvious that many of the details may be varied without in any way departing from the spirit of my invention, and I therefore do not limit myself to the exact details of construction herein set forth nor to anything less than the whole of my invention limited only by the appended claims.

What is claimed as new is:

1. A building form structure including a plurality of rows of spaced pairs of telescoping channel members of substantially U-shape cross section, flanges extending from opposite sides of said channel members, the flanges of the telescoped portion of said channel members lying one against the other, C-clamps engaging the overlying flanges to secure said channel members in adjusted position, horizontal beams for holding said rows of telescoping channel members rigid, brackets carried on said channel members for supporting said beams, and means removably engaging said beams and said brackets.

2. A building form including a plurality of spaced rows of overlapping channel members having lateral flanges, said channel members in telescopic relation, removable

clamps engaging the overlapping flanges of said telescoping channel members to form a self-supporting beam form, slab forming members between said rows of overlapping channel members and brackets on said channel members for removably supporting a horizontal beam for holding said channel members rigid and for supporting said slab forming members.

In testimony whereof I hereby affix my signature.

HENRY C. RIESBOL.