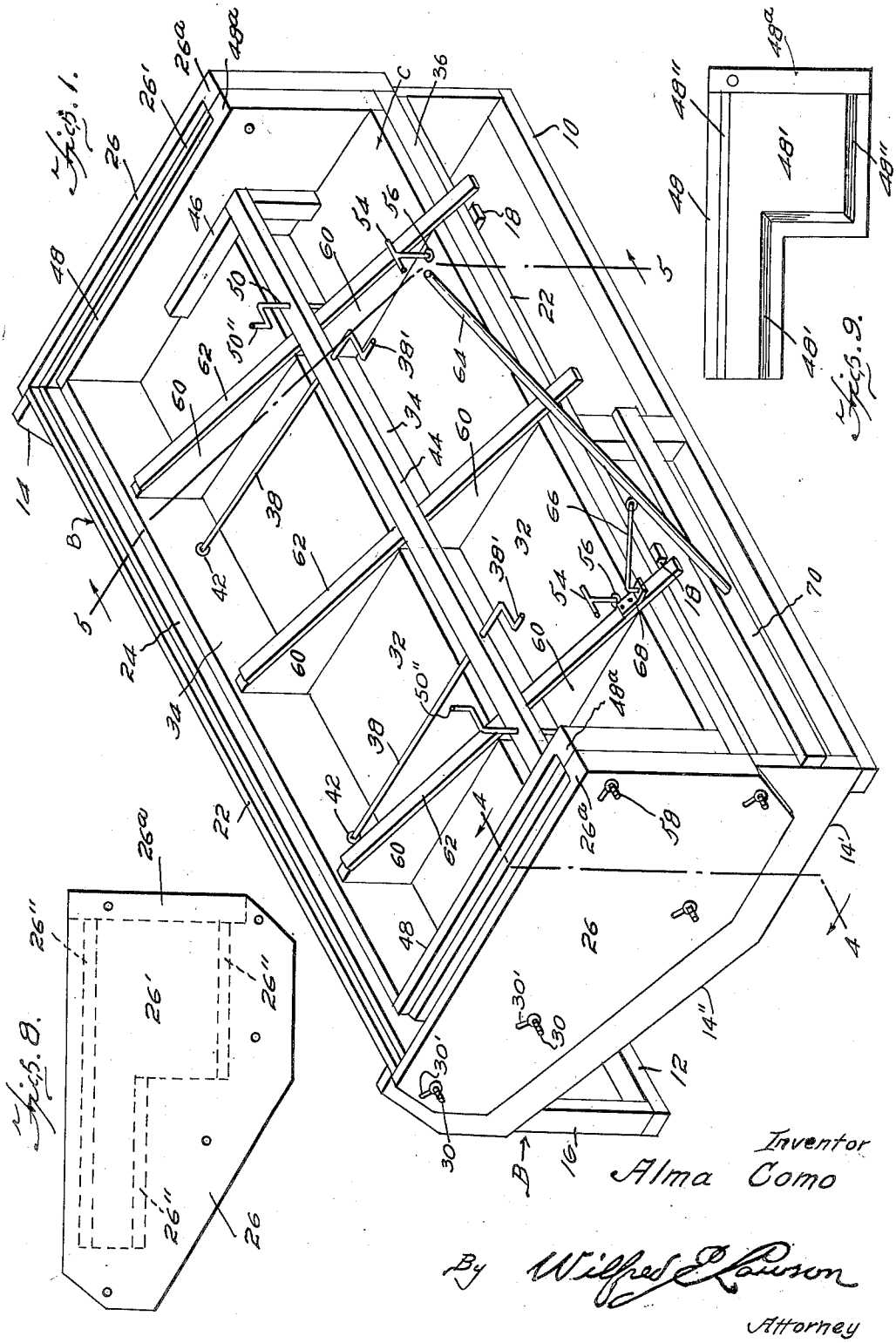
Sept. 22, 1953 A. COMO 2,652,614

MOLD FOR MAKING CONCRETE STEPS

Filed Oct. 3, 1949

3 Sheets-Sheet 1

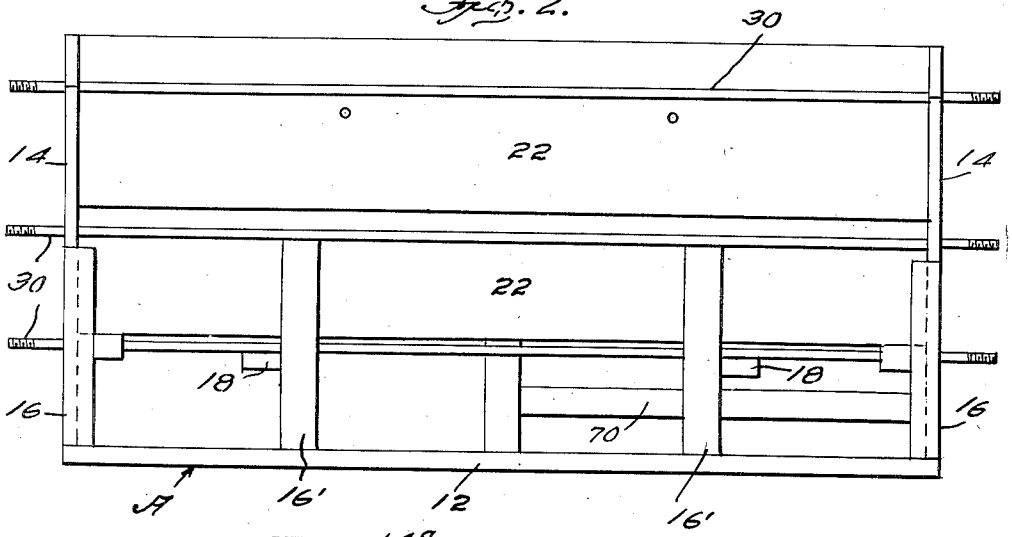


Sept. 22, 1953 A. COMO 2,652,614

MOLD FOR MAKING CONCRETE STEPS

Filed Oct. 3, 1949 3 Sheets-Sheet 2

Fig. 2.



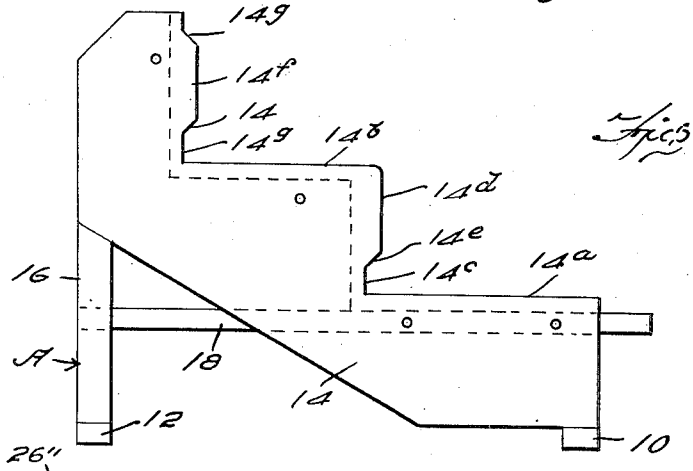


Fig. 3.

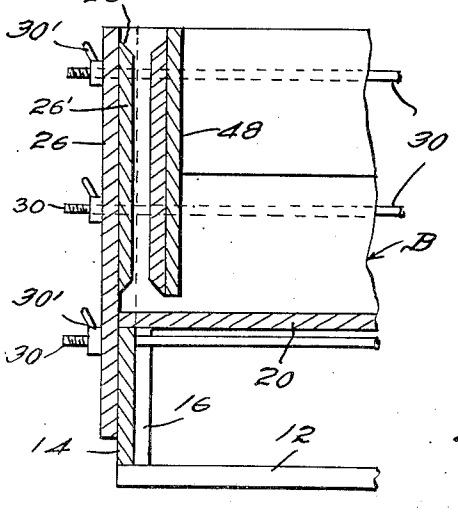


Fig. 4.

Inventor
Alma Como

By Wilfred L. Lawson
Attorney

Sept. 22, 1953 A. COMO 2,652,614

MOLD FOR MAKING CONCRETE STEPS

Filed Oct. 3, 1949 3 Sheets-Sheet 3

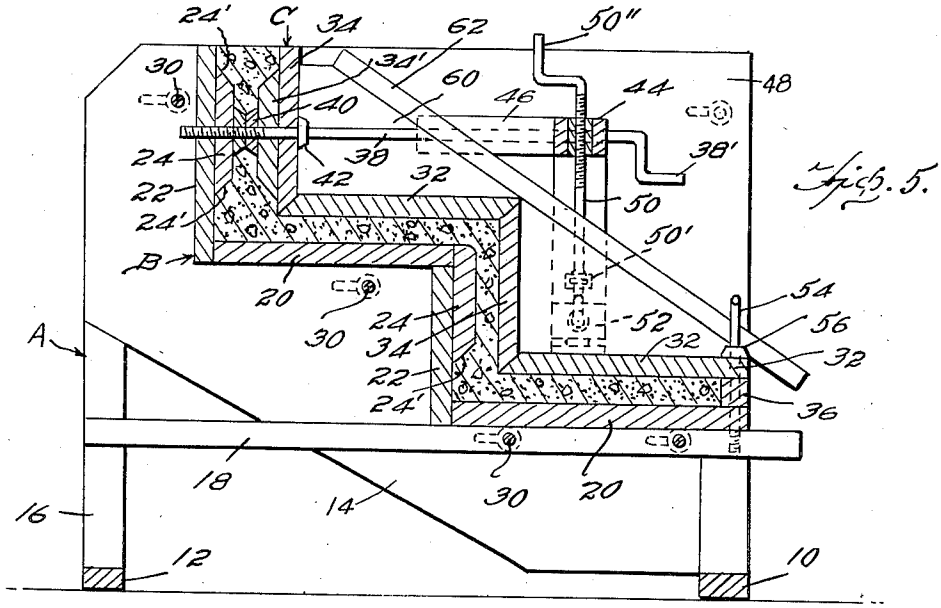


Fig. 5.

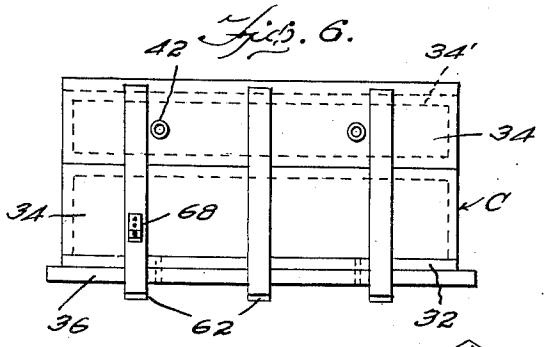


Fig. 6.

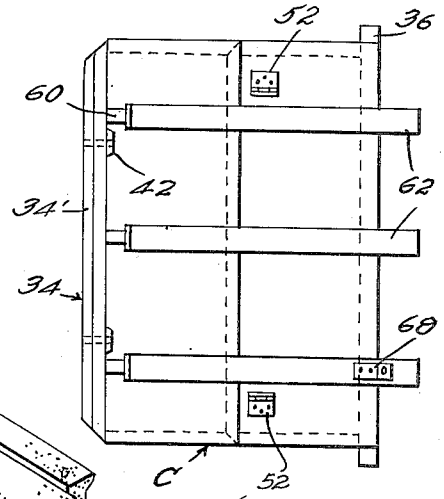


Fig. 7.

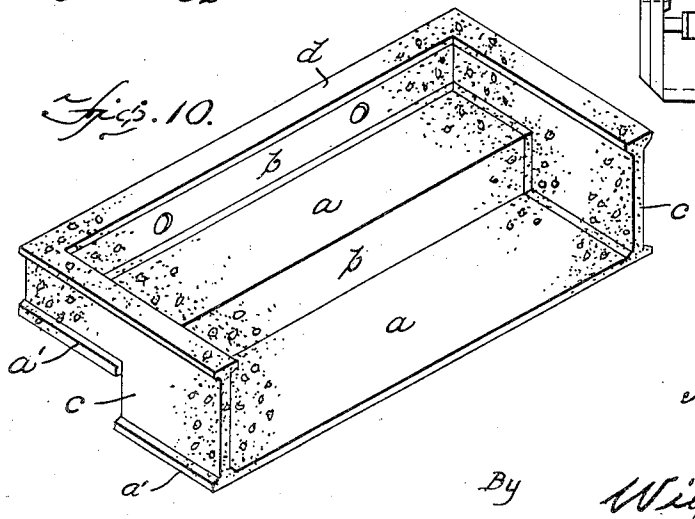


Fig. 10.

Inventor
Alma Como

By Wilfred Lawson
Attorney

Patented Sept. 22, 1953

2,652,614

UNITED STATES PATENT OFFICE

2,652,614

MOLD FOR MAKING CONCRETE STEPS

Alma Como, Sulphur, La.

Application October 3, 1949, Serial No. 119,231

4 Claims. (Cl. 25—118)

1

This invention appertains to a mold for making concrete steps, and has for its principal object to provide one of a comparatively simple and inexpensive construction for casting portable concrete steps as a unit and in a manner that no finishing of the same is required after the removal of the same from the mold.

Another object has to do with the provision of a mold which has the advantage that it is made up in separable sections to allow for the comparatively easy separation of the sections for the removal of the casting with the least possible danger of damaging the same in any way, and a step unit may be cast with any number of treads and of any desired length by varying the size of the mold accordingly.

With the foregoing and other objects and advantages of equal importance in view, the invention resides in the certain new and useful combination, construction, and arrangement of parts, as will be hereinafter more fully described, set forth in the appended claims, and illustrated in the accompanying drawings:

Figure 1 is an isometric view of a preferred embodiment of the mold, in accordance with my invention;

Figure 2 is a rear side elevation of the bottom section;

Figure 3 is an end elevation of the base section;

Figure 4 is a fragmentary vertical and longitudinal section taken on the line 4—4 of Figure 1, looking in the direction of the arrows;

Figure 5 is a vertical transverse section taken on the line 5—5 of Figure 1, looking in the direction of the arrows and showing material filling the form;

Figure 6 is a front elevation of the top section of the mold as it appears when removed from the bottom and base sections;

Figure 7 is a top plan view of the aforesaid top section;

Figure 8 is an outside elevational view of one of the removable end walls and showing the beveled edged panel, in broken lines, on the inner face thereof;

Figure 9 is an inside elevational view of one of the end walls of the top section and the beveled edged panel on the outer face of the same; and,

Figure 10 is an isometric view of a finished step unit as it appears from the underside when removed from the mold.

Referring to the drawings, wherein like characters of reference denote corresponding parts throughout the several views, the mold is generally comprised in a base section A, and bottom

2

and top sections B and C, and the same may be constructed or wood of metal, or a combination of those materials.

The base section A is comprised in a supporting frame made up of front and rear parallel footing strips 10 and 12 and end connecting members 14 in the form of walls, each having the forward end portion 14' of its lower edge horizontally disposed and secured to an end of the front footing strip 10 and its rear end portion 14'' upwardly inclined and supported on a leg 16, rising from the complemental end of the rear footing strip 12. The top edge of each of the end walls 14 is cut away to provide lower and upper horizontally disposed portions 14a and 14b, respectively, and vertically disposed portions 14c; the lower one of the latter portions having an offset portion 14d, with its lower end beveled, as at 14e, while the upper one of those horizontal portions has a like offset portion 14f, with its lower and upper ends beveled, as at 14g.

The bottom section B is of a stepped formation and is comprised in lower and upper tread top forming members 20 adapted to be supported at their ends on the horizontal edge portions 14a and 14b, of each of the end walls 14, and vertical riser face forming members 22; the lower of the tread portions 20 being supported between its ends on horizontal transverse bars 18, which are secured at their rearwardly directed ends to intermediate legs 16', rising from the rear footing strip 12. Each of the riser face members 22 has a cleat 24 secured on its inner face, the cleat on the lower member having its top edge flush with the top surface of the upper tread top forming member and its lower edge spaced above the lower tread top forming member and beveled, as at 24', while the cleat on the upper riser face member has its top edge spaced below the like edge of this member with its lower edge spaced above the upper tread top forming member and both of said edges beveled, as best shown in Figure 5. These cleats 24 are abutted at their ends against the inner faces of the adjacent offset portions 14d or 14f.

Associated with the bottom section B are separable end walls 26, which are to be clamped against the outer sides of the end walls 14, of the base section A, by means of a series of tie rods 30 extending lengthwise of the mold, through apertures formed in the end walls 26 and 14, which rods have their outer ends screw threaded to receive fly nuts 30'; the lowermost pair of the rods also passing through apertures formed in the forwardly directed ends of the transverse

bars 18 to afford support to the same and to the lower of the tread members, while another of the rods extends beneath the upper of the tread top forming members and still another in rear of the upper of the riser back members 22, as also shown in Figure 5.

The top section C is also of a stepped formation and is comprised in lower and upper tread underside or bottom forming members 32 and riser back face forming members 34, which, when placed in position relatively to the bottom section B, has its tread and riser members spaced from the corresponding members of the latter. The inner side of the upper one of the riser members 34 is provided with a cleat 34' which is identical to the cleat 24, on the inner side of the upper riser member 22, of the bottom section B, and spacedly opposed thereto. Extending along the under side of the front edge portion of the lower one of the tread members 32 is a spacer strip 36 which rests on the top side of the front edge portion of the lower one of the tread members 20, of the bottom section B, to support the forward side of the top section C, while the rear side of the latter section is supported on a pair of spaced tie rods 38, which have their rearwardly directed ends screw threaded through apertured bosses 42, provided on the front side of the upper of the riser members 34. Spacing collars 40 are carried by the tie rods 38 and are interposed between the cleats 24 and 34' on the opposed sides of the riser members 22 and 34, to lend uniformity to the thickness of the concrete to be introduced between the bottom and top sections B and C to form the step unit. The forward ends of the tie rods 38 are supported in a bar 44 extending lengthwise of the mold between supporting brackets 46, secured on the inner sides of end walls 48, at the opposite ends of the top section C, which walls are equally spaced from the separable end walls 26 and uniformly so with respect to the spacing of the other parts of the top section relatively to the corresponding parts of the bottom section. Forwardly of the bar 44, the ends of the tie rods 38 are angularly bent in the form of cranks 38', to facilitate the manipulation of the same. Further support is provided for the top section C, by means of a pair of vertically disposed tie rods 50 which are screw threaded downwardly through the bar 44, at one side of each of the tie rods 38, and have their lower ends each connected with an angled bracket 52, secured on the upper side of the lower of the tread members 32; each of the tie rods 50 being in two parts, below the bar 44, interconnected by a swivel 50' to allow for turning movements of the upper part relatively to the latter through which it is screw threaded; the upper part having its free end, above the bar, angularly bent in the form of a hand crank 50'' to facilitate its manipulation. The forward edges of the lower one of the bottom and top tread members 20 and 32, together with the spacer strip 36, are secured together and to the forward ends of the transverse bars 18, by means of a pair of crank screws 54; apertured bosses 56 being provided on the upper side of the tread member 32 for the screw threaded engagement of the crank screw therewith.

The opposed sides of the end walls 26 and 48, of the bottom and top sections B and C, respectively, are provided with identical stepped panels 26' and 48', which are opposed when the sections are in assembly, and have the bottom and top horizontal edges thereof beveled, substantially as shown in Figures 8 and 9, the bevels of the panels 26' being designated 26'' and those of the panels 48' designated 48''. The forward vertical edges of these end walls 26 and 48 are oppositely thickened, as at 26*a* and 48*a*, respectively, for the spacing apart of the walls and the panels thereon; the thickened portions being either integrally formed, or in the form of strips secured thereto. The forward upper corners of the end walls 26 and 48 are secured together by crank screws 58, which pass through the abutted spacing portions 26*a* and 48*a*, to that end.

Rising from each of the tread members 32, of the top section C, are aligned pairs of spaced, forwardly sloping members 60, substantially triangular in form, to the top sloping edges of each pair a handling bar 62 is secured, the forward ends of the same projecting beyond the front side of the mold, to provide hand grips by means of which the top section C may be loosened from the concrete, after it has set, and lifted therefrom, after the tie rods and crank screws, employed to secure the top section in place, have been manipulated to free the latter from the bottom section B. To further aid in loosening the top section C from the concrete, a lever 64 is connected by a link 66 to a bracket 68, mounted on one of the projecting ends of the handling bars 62, to function as a pry to such end; a cross bar 70 being provided on the front side of the base section A against which the lever can fulcrum to obtain the requisite leverage.

In use, with the bottom and top sections B and C assembled on the base section A in the manner as hereinbefore described, a concrete mixture is poured into the mold through the open top thereof, until it can be leveled off with the top edges of the rear side and end walls of the sections B and C, following which, the concrete is allowed to set. When a sufficient setting of the concrete is assured, the end walls 26 and 48 will be removed upon the removal of the fly nuts 30' from the tie rods 30, the withdrawal of the tie rods 38 from the bosses 40, and the separation of the tie rods 44 from the brackets 52; the end walls 26 being withdrawn from the ends of the tie rods 30 and the end walls 48, together with the bar 44 and its supporting brackets 46, withdrawn in a forward direction, upon the removal of the crank screws 58. With the removal of the end walls 26 and 48, and of the crank screws 54 from the bosses 56, the top section C will be loosened by a manipulation of the hand lever 64 and lifted from the concrete and from within the bottom section B; the bevels provided on the several cleats and panels allowing for the easy removal of the top section C, without damage to the step unit, which can now be removed from the bottom section of the mold.

As shown in Figure 10, the step unit, consisting of upper and lower treads *a*, upper and lower risers *b*, side walls *c*, and flanged footing *d*, is cast upside down, in order to properly form the flanged footing *d* and, at the same time, allow for the aforesaid easy removal of the unit from the mold, without damage to the unit. Thus, when the step unit is put to use, it is inverted from the position illustrated and rests upon the flanged footing *d*, which extends along the bottom of the lower of the riser *b* and along the bottom of the side walls *c*. Also, the use of the bevels on the panels, provides for the forming of the projecting end portions *a'*, of the treads *a*.

Having thus fully described a preferred embodiment of my invention, it is to be understood

that the words that I have used are words of description rather than of limitation and that changes within the purview of the appended claims may be made, without departing from the true scope and spirit of the invention in its broader aspects.

What I claim is:

1. A mold for making a concrete step unit, comprising a base section having end walls of a stepped formation, a stepped bottom section having the ends of its tread forming portions removably supported on the horizontal edges of the step formations of said end walls, other end walls for said stepped bottom section removably secured against the outer sides of the end walls of said base section and the ends of said tread forming portions, a top section removably supported in overlying relation with respect to said stepped bottom section and spaced therefrom, and still other end walls for said top section and removably supported thereon in spaced relation with respect to said other end walls.

2. The invention as defined in claim 1, with the said bottom and top sections comprised in complemental tread and riser members disposed in uniformly spaced relation and the said end walls of said sections likewise spaced from each other, and cleats on the opposed sides of the upper of said riser members and of said end walls and having the top edges of the same similarly beveled to form projecting edge portions at the ends of said tread forming portions and a flanged footing about the bottom side of an inverted finished step unit.

3. The invention as defined in claim 1, with

tie rods extending lengthwise of the mold for securing the end walls of said bottom section in place, certain of said tie rods underlying the tread members of said bottom section to lend support thereto, and other vertically and transversely disposed tie rods for securing said top section in its spaced relation with respect to said bottom section.

4. The invention as defined in claim 1, with spaced transverse bars carried by said base section and extending beneath said bottom section intermediate its ends and in supporting contact with the bottom side of the lower of the tread portions of the latter section, tie rods extending lengthwise of the mold for securing the end walls of said bottom section in place, certain of said tie rods underlying the lower of the tread portions of said bottom section and engaged with said transverse bars, and other means for adjustably securing said top section in its spaced relation with respect to said bottom section.

his
ALMA × COMO.
mark

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,153,462	Stubblefield	Sept. 14, 1915
1,360,890	Cooper	Nov. 30, 1920
1,497,058	Barriball	June 10, 1924
1,574,636	Suiter	Feb. 23, 1926
2,281,698	Kogl	May 5, 1942
2,353,676	Kogl	July 18, 1944
2,389,397	Zimmerman	Nov. 20, 1945