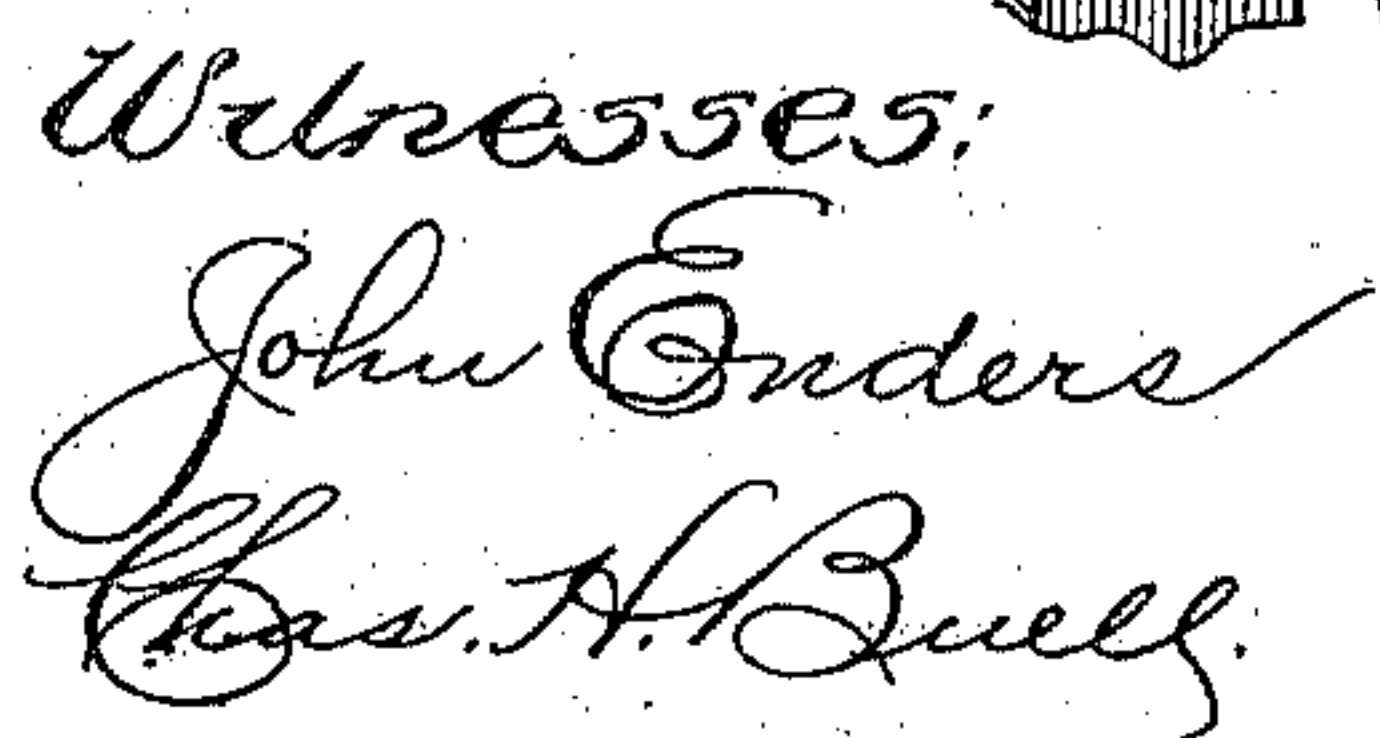


951,477.

2 SHEETS--SHEET 2.



Inventor
Andrew Languist.
By Robert Catherwood
Atty. 44

UNITED STATES PATENT OFFICE.

ANDREW LANQUIST, OF CHICAGO, ILLINOIS.

FORM FOR CONCRETE.

951,477.

Specification of Letters Patent.

Patented Mar. 8, 1910.

Application filed November 28, 1908. Serial No. 464,945.

To all whom it may concern:

Be it known that I, ANDREW LANQUIST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Forms for Concrete, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to forms for temporarily supporting concrete and analogous composition floors while setting and hardening.

The principal object of the invention is to provide a strong, simple and economical device of this character, having capacity for adaptation to a variety of areas and conditions in construction work, requiring very little cutting of lumber in adapting it to different jobs, readily assembled and taken apart for convenient removal by unskilled labor, and which shall not require horses or other supports from below, but shall derive its support from above, thereby dispensing with costly underpinning, brazing and shoring and permitting other workmen to proceed above and below it. Heretofore it has been customary to support the form in which the plastic floors are held, until they set and become firm, by a large number of wooden supports from below, which necessarily require skilled labor and a large quantity of lumber, entailing great expense and interfering with or preventing work on all floors at the same time. Moreover, lumber which is cut for main supports to fit particular places cannot be used again.

It is the object of this invention to overcome these difficulties.

In the accompanying drawings, I have shown a device embodying my invention in one of its preferred forms.

Figure 1 is a top plan view, showing in particular the method of supporting the form on the steel girders, floor beams or other cross supports of one floor of a building; Fig. 2 is a cross-section taken on line 2 of Fig. 1; and Fig. 3 is a cross-section on line 3 of Fig. 1.

In the drawings, I have shown my invention assembled for laying a floor between two girders or floor supports, indicating the method of continuation so that it will be readily understood that the invention is adapted to any area having spans of this

character so that my stools and planking may be supported.

A, A' indicate the floor supports or steel girders of the building.

B indicates a stool or chair for holding planks or boards, adapted to fit snugly over the top of the beams A, A' and constructed preferably of metal. The stool or chair B is constructed of two side plates 4, and 5, bolted near the middle to a cross channel-iron 6, so that it has an upper recess 7 and on the bottom of plates 4 and 5 similar lower recesses 8. The size of the lower recesses 8 is sufficient to allow the stool to snugly fit over or straddle the top of the girders A, A'.

The different stools B are set in parallel lines at intervals astraddle of the beams, the upper recess 7 being adapted to afford a rest for the planks *p* laid edgewise substantially at right angles to the beam from one recess 7 in one stool to another corresponding aligned recess 7 in a stool on the adjacent girder, and so on, until the entire area is lined off. One of the advantages in using these stools over securing the upper planks directly upon the floor supports or steel girders, is that the stools hold the planks up above the top of the cement, leaving a clear space for troweling and finishing the floor.

Where convenient the ends of the planks adjacent to the bounds of the area may be supported by the walls or otherwise rigidly supported. Suspending rods 9 are then inserted between the planking *p* at intervals over the area to be laid in concrete wherever it is desired to have a point of support for the form.

Each suspending rod 9 passes through an opening in a small channel-grip 10 which overlies the upper edges of the planks with downwardly projecting flanges 11 adapted to prevent the planks from falling or slipping apart, and the nuts 12 are screwed on to threads on the upper end thereof to temporarily lock the rods, grips and planks together.

On the lower end of the rods, channel-grips 10^a, similar to channel-grips 10, but with upwardly projecting flanges 11^a, are adjustably locked on the rods 9 by nuts 12^a screwed on to the threaded lower ends of the rods. In these channel-grips 10^a, are laid edgewise and parallel to the planking *p* above them the lower set of supporting planks 13 extending between adjacent floor beams. This construction gives a very simple, easy and reliable adjustment.

To bed in the steel girders or floor supports, the planks 13 are sawed off at the ends at an angle inclined outwardly from top to bottom. On the top of these planks is laid the flooring F which constitutes a bed or false bottom, on which the concrete is spread. In forming the necessary trough around the girders I provide a pair of metal plates $c\ c'$, on the opposite side of each floor support, having outwardly projecting flanges c^2, c^3 along their upper edges which overlie and are supported upon adjacent edges of the flooring F. The plates are extended across the form and provided with vertical series of holes $d\ d'$, bolts d^2 being secured in the holes $d\ d'$ by suitable bolts and nuts. Upon these bolts are laid planks 14 which form the trough bottom, for embedding the steel girders or floor supports A A' in the concrete. The method of forming this trough is more particularly shown and described in my Patent No. 842,566, of January 29, 1907.

The flooring F which constitutes the bed or false bottom is laid at right angles to the lower planks and parallel to the steel beams A, A'. The upper planks are laid out of alinement in stools B so as to pass each other or overlap at the ends, a construction which provides the form with a certain adaptability and obviates the need for sawing the planks to fit different spans. The number of suspending rods 9 used will, of course, vary according to the span and weight of concrete used. It will also be seen that my construction lends itself readily to adjust the planks by turning the nuts on the bolts to level or even up the surface of the bed F and permits the use of fewer planks in the upper and lower series where desired. The drawings show two planks on either side of each rod 9, which will give a very strong foundation, but where such strength is not required blocks may be used in lieu thereof in the channel-grips 10 and 10^a to take the place of some of the planks. It may also be found advantageous to obtain a certain adjustment by using blocks 15 between the nuts 12 and the channel-grips 10, or between the nuts 12^a and the channel grips 10^a. When the planks above and below have been locked onto the steel girders by means of the stools, rods and nuts, and the flooring, laid on the lower planks, leveled by the various adjustments described, the concrete is laid. As soon as it has set the nuts are removed, the rods slipped out, the holes in the concrete, through which they have passed, patched or filled in and the upper and lower planks p and 13, stools B, flooring F and plates $d\ d'$ removed.

I am aware that many modifications of my invention will suggest themselves to those skilled in the art and I do not wish to be understood as limiting myself to the preferred form shown and described, but

What I claim is:—

1. In a form for temporarily supporting concrete, a bed or false bottom, chairs or stools having seats adapted to hold planks laid edgewise and legs notched at the bottom to straddle the girders of buildings, planks, the opposite ends whereof are adapted to rest in oppositely disposed seats, and means adapted to be inserted at any point between adjacent planks, for supporting the said bed or false bottom.

2. The combination of chairs or stools having seats and legs and adapted to be slipped over the floor supports of a building, planks adapted to span the distance between said supports and rest in the seats of said chairs or stools, said chairs or stools being adapted to allow said planks to be laid edgewise within them with the adjacent planks out of alinement and overlapping the bed for concrete and means for suspending said bed below said planks.

3. In a form for supporting hardening concrete temporarily, a false bottom or bed, chairs or stools, each comprising side pieces and a cross seat intermediate the ends of said side pieces rigidly secured thereto, supporting planks held therein upon said cross seats and locked about the opposite sides of rods, rods extended upward through said bottom or bed, adapted to support the same, supports adapted to be removably secured to the steel girders of a building, and means for locking them, with capacity for adjustment to the upper ends of said rods substantially as described.

4. The combination of chairs or stools having notches adapted to straddle the girders of buildings and seats to hold planks laid edgewise thereon, planks adapted to span the space between said supports and rest in oppositely disposed seats of said chairs, a bed or false bottom for temporarily supporting hardening concrete and means adapted to be inserted at any point between adjacent planks for supporting said bed or false bottom.

5. In a form for temporarily supporting hardening concrete, a bed or false bottom, chairs or stools having seats adapted to hold planks laid edgewise and legs notched at the bottom to straddle the girders of buildings, planks, the opposite ends whereof are adapted to rest in oppositely disposed seats, means adapted to be inserted at any point between adjacent planks for supporting said bed or false bottom, and means for adjusting said supporting means longitudinally substantially as described.

6. In a form for temporarily supporting concrete floors while setting, chairs or stools, each consisting of side plates and a cross seat secured to said side plates intermediate of their tops and bottoms, and notches on the bottom of each of said side plates

forming a lower recess between them adapted to straddle a girder of a building.

7. In a form for temporarily supporting concrete floors, notched chairs or stools each
5 comprising side pieces and a cross seat intermediate the ends of said side pieces and adapted to straddle the girders of a building, lower planks adapted to have a bed or temporary floor for concrete laid upon them,
10 upper planks adapted to be laid in the seats of said chairs or stools, means for suspending said lower planks from said upper planks and adjusting means for varying the distance at different points between said
15 upper and lower planks.

8. In a device of the class described, stools or chairs, each adapted to straddle the

girders of a building having an upper recess or seat adapted to hold edgewise supporting planking, and legs notched at the
20 bottom to straddle the girders at right angles to said seats, said legs being of substantially greater length than the depth of said seats, whereby said stools may be placed
25 in horizontal alinement and planking laid in said seats with ends overlapping for the purposes described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ANDREW LANQUIST.

Witnesses:

ROBERT CATHERWOOD,
ELSIE WAGNER.