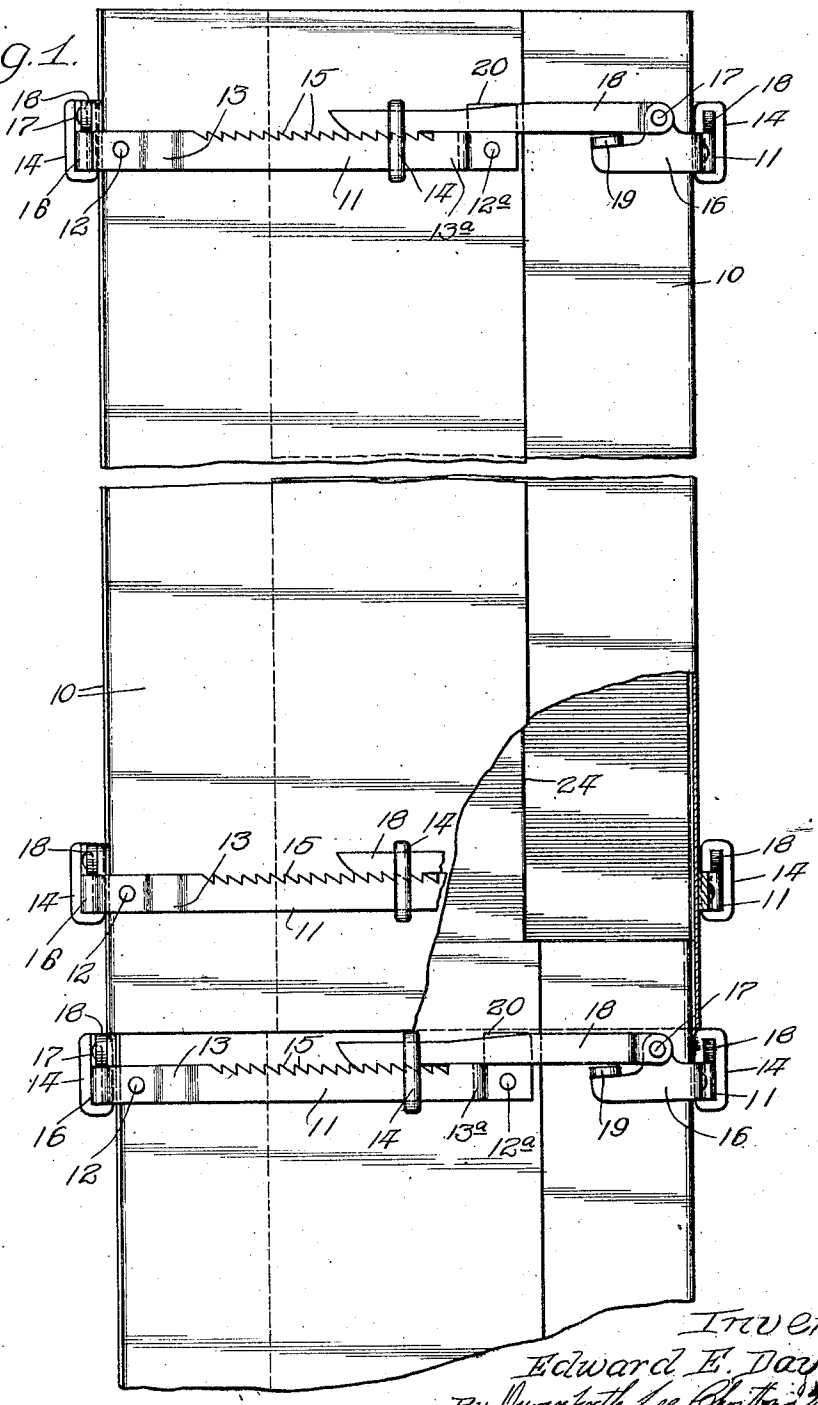
Oct. 19, 1926. 1,603,748

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COLUMN FORM

Filed April 23, 1925 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

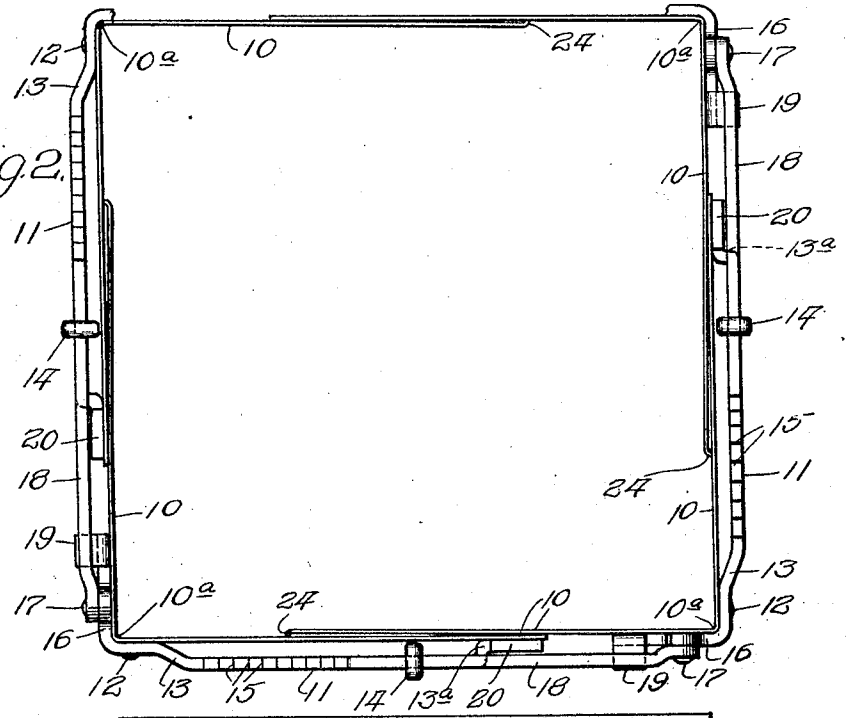
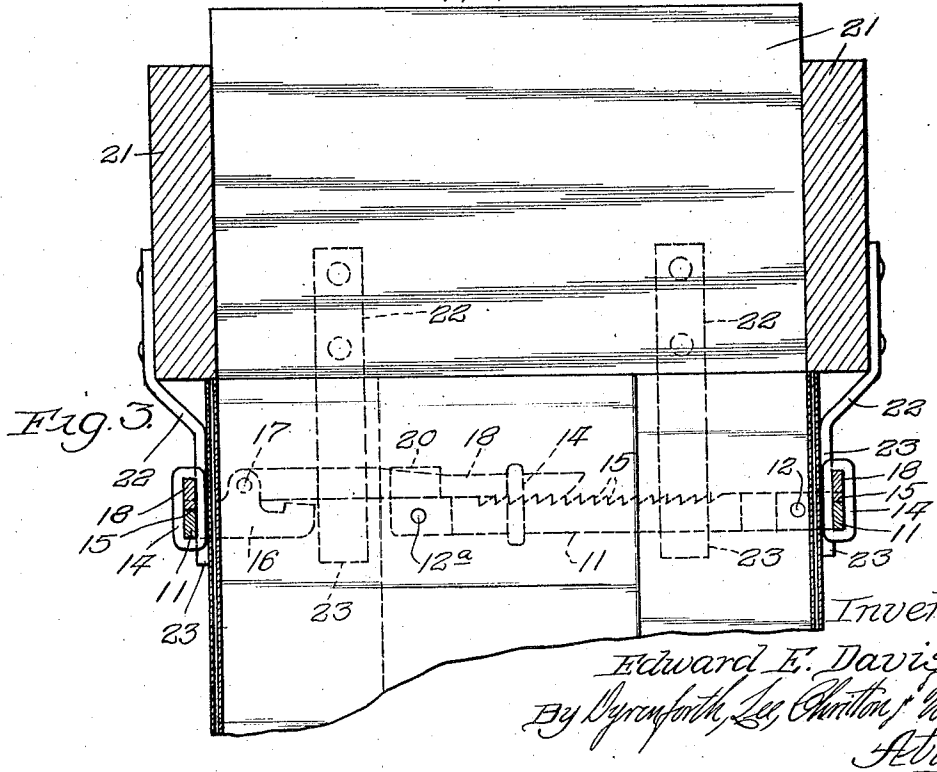


Fig. 3.



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Patented Oct. 19, 1926. 1,603,748

UNITED STATES PATENT OFFICE.

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COLUMN FORM.

Application filed April 23, 1925. Serial No. 25,302.

This invention relates to improvements in column forms and more especially to a device adapted for molding or forming columns made out of concrete or like substances. A column of solid concrete or cement may be formed, or such reinforcing bars, or the like, as desired, may be embedded therein.

The form also may be used for covering or surrounding a steel girder or post with concrete. The form is so composed of sections that it may be placed around a steel post or pillar after the same is in place in a building and the concrete then poured in the form so as to completely surround or embed the steel post in concrete.

My improved form is so constructed that it is adjustable in size so that it may be accommodated to steel posts of different dimensions in order to give the desired thickness of concrete covering. It is so made that the sections of the form may readily be put together and separated and removed after the concrete has set. It is also so made that besides being adjustable to form columns of varying thickness, it is adapted to mold columns of varying lengths.

In connection with the invention, are improved clamping devices adapted to hold the various sections of the form together.

Another feature of the invention is the provision of means for forming the upper end of a column to fit connecting cross girders and the like. Frequently the cross girders are connected to the steel post at the top at varying heights, so that in forming the concrete column it is necessary to have a form having the upper ends of its sides varying in height. With my improved column form it is possible to vary the heights of the different sides at the upper ends as desired.

Another feature of my invention is the provision of means for making the various sections of the form tight so that there will be substantially no leakage of concrete therebetween.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention shown in the accompanying drawings, Figure 1 is a view in side elevation, partly in section, Fig. 2 is a top plan view, and Fig. 3 is a vertical sectional view of the upper end showing the means for making the different sides of the form at the upper end of varying heights.

Briefly stated, in general, the improved form comprises four vertical angle plates, made of sheet metal or other suitable material, adapted to be set together with their edges overlapping in order to form a hollow vertical member square in cross section. Four clamps are provided at the top and bottom in order to hold the four sections together. These clamps are provided with teeth permitting of different adjustments in order to make the form the desired size in cross section. Each clamp comprises a pair of notched bars, one mounted on each section. One of the bars is firmly mounted and the other is pivotally attached at one end. The teeth of the two bars are engaged in order to give the desired adjustment, and the two bars are held together by a loop which is slid over the overlapping ends of the bars.

The form is made extensible vertically by telescoping one set of angle plates on another, the upper set being arranged outside of the lower set and adapted to rest on the upper clamps of the lower set.

I will now describe the invention more in particular.

10 indicates an angle plate preferably formed of sheet metal having a longitudinal vertical centrally arranged bend or crease as indicated by 10^a so that the two portions to either side of the crease lie at right angles to each other. These angle plates may be of any length desired. In making a form, a set of four of these angle plates are placed together with their edges overlapping as shown in Figs. 1 and 2. The extent of the overlap of the sides of these angle plates determines the size of the cross section of the form. Clamps are provided to hold the sections together. As many sets of clamps as desired may be provided. If the sections are not too long, ordinarily a set of clamps at the upper and the lower ends will be sufficient. If desired, however, as many intermediate clamps may be used as is necessary to give the requisite strength and rigidity. The clamp consists of a stationary toothed bar 11 joined to the section in any suitable manner as, for example, by means of the rivets 12 and 12^a. The bar 11 is provided with an offset at 13 and 13^a so that its portion between such offsets will stand away a

short distance from the side of the angle plate in order to permit the sliding thereon of the loop 14. The upper edge of this offset portion is provided with the teeth 15. One end of the bar 11, as indicated by 16, is carried around the bend or crease 10^a in the angle plate 10 and provided with a pivot pin 17 carrying the swinging bar 18 provided with teeth on its lower edge adapted to engage with the teeth 15 on the upper edge of an adjacent bar 11. The extreme end of the bar 11 beyond the pivot pin 17 has an outwardly bent portion 19 serving as a stop to limit the downward swinging of the bar 18. The other extreme end of the bar 11 adjacent the rivet 12^a is provided with an upward extension or lug 20 serving as a spacer or filler between the side of the angle plate 10 and the swinging bar 18 in order to stiffen the construction when the clamp is engaged. In setting up the form, the four sections are arranged to give the desired cross sectional area, the swinging clamp bars 18 are then lowered so that their teeth will engage with the teeth 15 on the stationary bars 11, and the loops 14 are slid over the two bars in order to hold the teeth in engagement.

In order to increase the height of the form, two or more sets of sections may be telescoped together as shown in Fig. 1. It will be noted that there is one set of four sections of angle plates 10 telescoped over another set below. When so telescoped, the lower ends of the upper set may rest on the clamps at the upper end of the lower set as shown in Fig. 1.

The sides of the form at the upper end may be extended different heights to fit varying heights of cross girders, by putting on the sides flat boards having their inner surfaces flush with the inner surfaces of the form. Three of these boards are shown in Fig. 3 as indicated by 21, 21. These boards are adapted to be held in position by providing each one with two depending bars or legs 22, the lower ends of which, as indicated by 23, are adapted to stick under the clamp bars at the upper end of the form.

The vertical edge of each angle plate section on the inside is bent outwardly slightly so that when the sections are in place these inner edges, as indicated by 24, are forced tightly against the outer overlapping walls and make a tight joint therewith, thus preventing the escape of material from the form while soft.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible in view of the prior art.

What I claim as new, and desire to secure by Letters Patent, is:

1. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, the extreme vertical edges of the sections being bent toward the overlapping faces of adjoining sections, and clamping means adapted to hold said sections together in various adjustments.

2. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, the extreme vertical edges of the inner overlapping faces being bent outwardly toward the overlapping faces of adjoining sections, and clamping means adapted to hold said sections together in various adjustments.

3. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a stationary toothed bar on one section, and a swinging toothed bar on an adjoining section, the teeth on the swinging bar adapted to be brought into engagement with the teeth on the stationary bar when the adjoining sections are in adjusted relation to each other, and means for holding said bars with said teeth in engagement.

4. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a stationary toothed bar on one section, and a swinging toothed bar on an adjoining section, the teeth on the swinging bar adapted to be brought into engagement with the teeth on the stationary bar when the adjoining sections are in adjusted relation to each other, and means for holding said bars with said teeth in engagement, said holding means comprising a loop adapted to be slid over both of said bars when the teeth are in engagement.

5. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a stationary clamp bar attached to one section having an offset portion spaced away from the face

of the section and provided with teeth on its upper edge and a swinging bar pivotally attached to an adjoining section having teeth on its lower edge adapted to engage with the teeth on the upper edge of said other bar, and means for holding said bars with their teeth in engagement.

6. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a bar attached to a section and extending along one side, around the bend or crease in the section and a short distance on the adjoining side of the same section, said bar having an offset portion spaced away from the face of the angle plate and provided with teeth on its upper edge, and carrying pivotally mounted on the short end beyond the crease in the angle plate a swinging bar having teeth on its lower edge adapted to engage with the teeth on the upper edge of an adjoining bar.

7. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a stationary bar having the major portion of its length extending along one side of an angle plate and spaced away therefrom, and the minor portion of its length bent around the crease of the angle plate and lying on the adjoining face thereof, the end of said stationary bar adjacent said minor portion of its length carrying pivotally mounted thereon a swingable bar having teeth on its lower edge adapted to engage with the teeth on the upper edge of the major portion of an adjoining stationary bar.

8. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a stationary bar having the major portion of its length extending along one side of an angle plate and spaced therefrom and having the minor portion of its length lying against the adjacent face of said angle plate, teeth in the upper edge of the major portion of said clamp bar, a swingable toothed clamp bar pivotally attached to said stationary bar near its end adjacent said minor portion, and an outwardly bent stop formed at said last mentioned end of said stationary bar to limit the downward swinging of said swingable bar.

9. A column form comprising four angle plate sections adapted to be placed together with their sides overlapping to form a hollow member, square in cross section, and clamping means adapted to hold said sections together in various adjustments, said clamping means comprising a stationary clamp bar provided with teeth attached to one section and a swingable clamp bar attached to an adjoining section and provided with teeth adapted to engage the teeth in the stationary bar, said bars being spaced away from the faces of the angle plates, and a lug formed on one end of the stationary bar adapted to lie between the swingable bar and the face of an adjacent angle plate section to space the same therefrom.

10. A column form comprising a set of four angle plate sections adapted to be placed together with their sides overlapping to form a hollow vertical member, square in cross section, clamping means adapted to hold said sections together in various adjustments; a second set of four angle plate sections adapted to be placed together with their sides overlapping to form a hollow vertical member, square in cross section, and clamping means adapted to hold said sections together in various adjustments; said second mentioned set of sections adapted to be telescoped over said first mentioned set to extend the length of said form; the bottom ends of said first mentioned sections adapted to rest upon the clamping means of said first mentioned sections.

Witness my hand and seal this 21st day of April, A. D. 1925.

EDWARD E. DAVIS. [L. S.]