W. M. VENABLE.

COLUMN FORM.

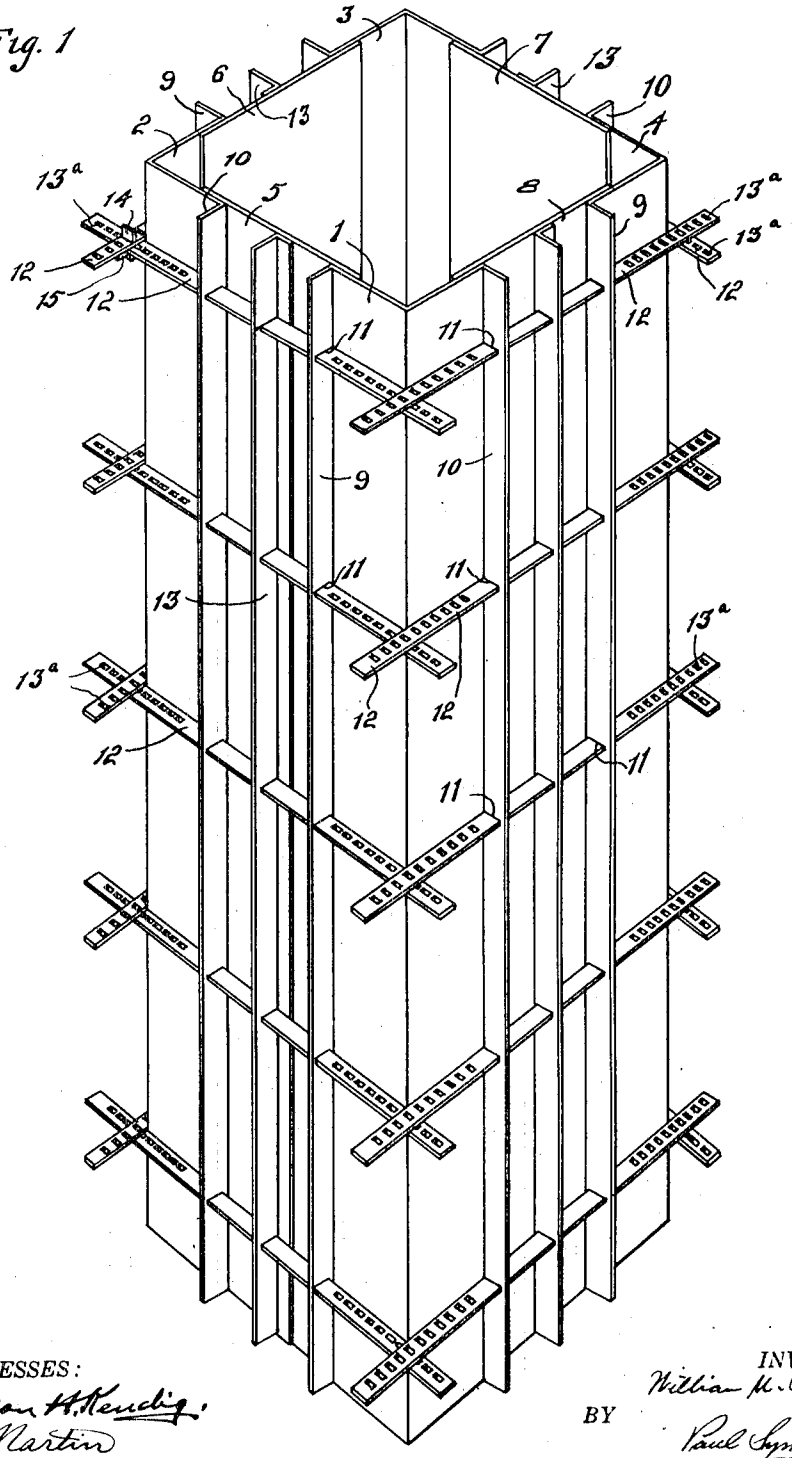
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1,114,946.

Patented Oct. 27, 1914.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

Fig. 2

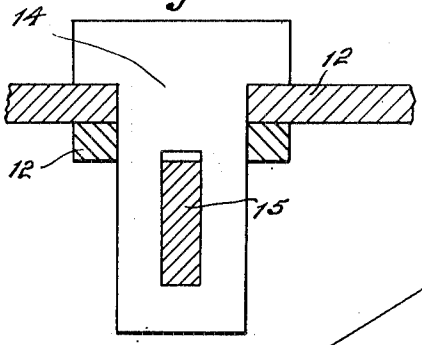


Fig. 3

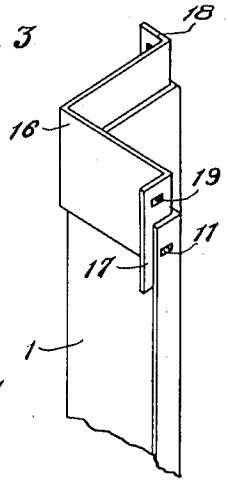


Fig. 4

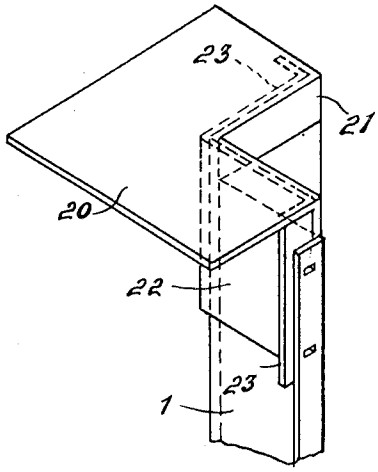
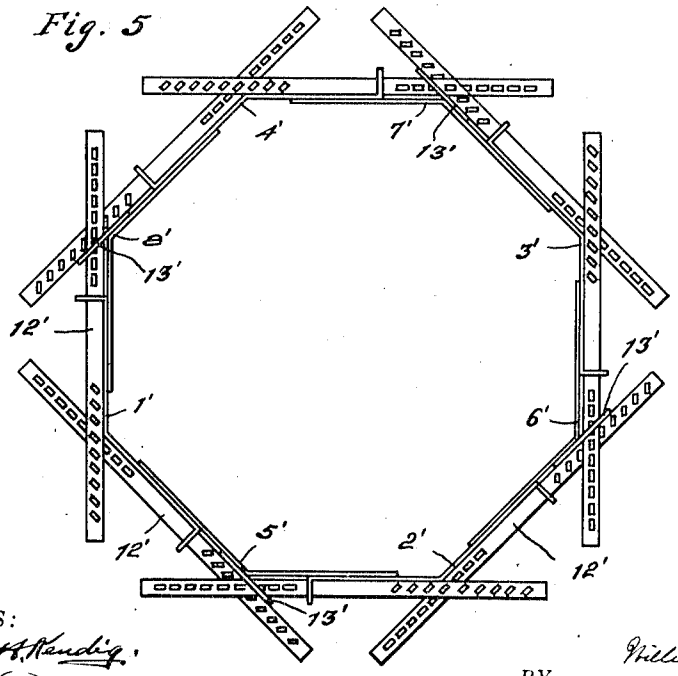


Fig. 5



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COLUMN-FORM.

1,114,946. Specification of Letters Patent. Patented Oct. 27, 1914.

Application filed February 17, 1912. Serial No. 678,214.

To all whom it may concern:

Be it known that I, WILLIAM M. VENABLE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Column-Forms, of which the following is a specification.

The invention relates to forms for use in the production of concrete columns. It has for its primary objects; the provision of an improved type of column form which adjustable in size may be used in the formation of columns of widely varying dimensions; the provision of a form of relatively light construction which shall have a maximum degree of stiffness; the provision of a form requiring a minimum number of fastening devices and which may be very easily assembled and disassembled; and the provision of a form in which the parts will nest for storage or shipment, thus occupying a relatively small amount of space and being protected from injury. Certain embodiments of the invention are illustrated in the accompanying drawings, wherein—

Figure 1 is an assembled view in perspective, showing my improved column form, Fig. 2 shows in enlarged section the means whereby the ends of the overlapping securing bars are held in position, Fig. 3 is a perspective view showing the means whereby the corner sections of the mold may be secured together in alinement, Fig. 4 is a perspective view of the column head for the top of the column, and Fig. 5 is an end view of a modified form of column mold wherein the mold has eight sides instead of four sides.

As indicated in Fig. 1, the form is composed of four corner sections, 1, 2, 3, 4, and four sections 5, 6, 7, 8, which lie intermediate the corner sections, the corner sections being all alike, and the intermediate sections being all alike. The sections comprising the form are all composed preferably of sheet metal, and the corner sections are each provided with two outwardly turned flanges 9 and 10, such flanges being slotted as indicated at 11, in order to receive the securing bars 12. The intermediate sections 5, 6, 7, and 8 are also each provided with a stiffening angle 13 whose outwardly projecting flange is perforated to receive the securing bars 12, and whose other flange is spot welded or riveted to the plate with which it contacts. The securing bars overlap at their ends as indicated in the drawing, each end being provided with a series of perforations 13^a, which register with each other at the overlapping ends and are adapted to be secured together by the device indicated in Fig. 2. The holding device as indicated in Fig. 2 consists of a flat V-shaped bolt or member 14 slotted at one end to receive the holding wedge 15.

Inasmuch as the intermediate members 5, 6, 7, and 8 overlap the corner members or sections, and the holding bars 12 are provided with a series of openings, the form has a very considerable range of adjustment. The form may be decreased in size until the flanges 9 and 10 engage the stiffening angles 13 on the intermediate plates, and may be expanded in size until the edges of the sections 5, 6, 7, and 8 barely overlap the edges of the corner sections. The ribs 9 and 10 on the corner sections and the flanges 13 upon the intermediate sections serve to give the structure such stiffness that relatively light sheet metal may be employed. The bars 12, which may be spaced as closely as desirable, give a large amount of rigidity to the structure, and serve to prevent any distortion which otherwise might occur, due to the use of the light sheet metal. A plurality of the corner sections 1, 2, 3, and 4 may be nested together for storing or shipment, thus giving great compactness and preventing them from being dented or injured in shipment. It will also be noted that the number of fastening devices required is limited, and that such fastenings are of such a character as to permit a rapid engagement or disengagement. The apparatus may be cheaply constructed, the parts being merely sheared, punched and bent by automatic machinery and all riveting being dispensed with where the ribs 13 are secured to the plates by welding.

The perforations 11 preferably do not extend clear to the outer edge of the flanges 9 and 10, and 13, as otherwise the sections would not be held against movement in both directions, by the securing bars 12, but it will be understood that my invention is not limited to the use of perforations which extend only partially through the flanges, as in some cases it might be found desirable to extend the perforations clear through the

flanges. It will also be understood that the invention is not limited to the kind of stiffening ribs shown on the plates 5, 6, 7, and 8, nor to the number of ribs, such number being dependent upon the width of the plates and the character of the work. Various other means might also be employed for securing the ends of the bars 12 adjustably together, without departing from the invention which contemplates any and all means whereby this adjustment may be secured.

In Figure 3 is illustrated a means whereby the corner sections may be secured together end to end, such means comprising a lap plate or angle 16 which overlaps the opposing ends of the sections, and is provided with a pair of outturned flanges 17 and 18 provided with perforations 19 adapted to register with the perforations 11 and receive the securing bars 12. The securing bars extending through the registering perforations 11 and 19 serve to maintain the lap plate 16 rigidly in position. The lap plate 16 may be of such length as to constitute an extension member in some cases, the corner sections not abutting in such cases, or if desired the lap plate may be dispensed with and the corner sections merely overlap, thus providing an adjustable connection between the corner sections.

Fig. 4 illustrates a cap member or column head for use at the top of the column. This column head comprises a plate 20 having a flange 21 which fits the upper edge of the corner section 1. To the rear face of the flange 21 is welded a plate 22 having the flanges 23 and fitting the outer surface of the corner section 1. The flanges 23 are provided with perforations registering with the perforations 11 in the flanges of the member 1, and the securing means are adapted to pass through these registering portions and so hold the column head rigidly in position. It will be seen that this column head may be adjusted vertically, although in such cases the flange 21 would abut the end of the corner section 1 only in the position shown.

Fig. 5 illustrates the application of the invention to a column having more than four sides. In such structure the members 1′, 2′, 3′ and 4′ correspond to the corner members 1, 2, 3, and 4, in the structure of Fig. 1, and the members 5′, 6′, 7′, and 8′ correspond to the members 5, 6, 7, and 8 in the construction of Fig. 1. The intermediate members 5′, 6′, 7′, and 8′ are provided with stiffening ribs in the form of the flanges 13′. These flanges 13′ are perforated as are also the outturned flanges of the sections 1′, 2′, 3′, and 4′, and securing bars 12′ pass through theses flanges and support the various sections of the form in precisely the same manner that the securing bars 12 in the structure of Fig. 1 support the various sections in such structure. It will be seen that the invention is applicable to columns having any desired number of sides.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent, is the following:

1. A column form comprising corner members of sheet metal angular in cross section and having outwardly turned perforated stiffening flanges extending longitudinally of the members; sheet metal form members intermediate the corner members also provided with outwardly turned perforated stiffening flanges extending longitudinally of the form members; securing bars extending slidably through the perforations in all of said flanges; and releasable means for securing the ends of the bars together.

2. A column form comprising corner members of sheet metal angular in cross section and having their edges outturned forming stiffening flanges and provided with perforations; sheet metal form members intermediate the corner members having outwardly turned perforated stiffening flanges; securing bars extending slidably through the perforations, and means for securing the ends of the bars together.

In testimony whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

WM. MAYO VENABLE.

Witnesses:
LETITIA A. MYERS,
ARCHWORTH MARTIN.