J. KAHN.

BUILDING CONSTRUCTION.

APPLICATION FILED AUG. 23, 1915.

1,192,209. Patented July 25, 1916.

Fig. 1.

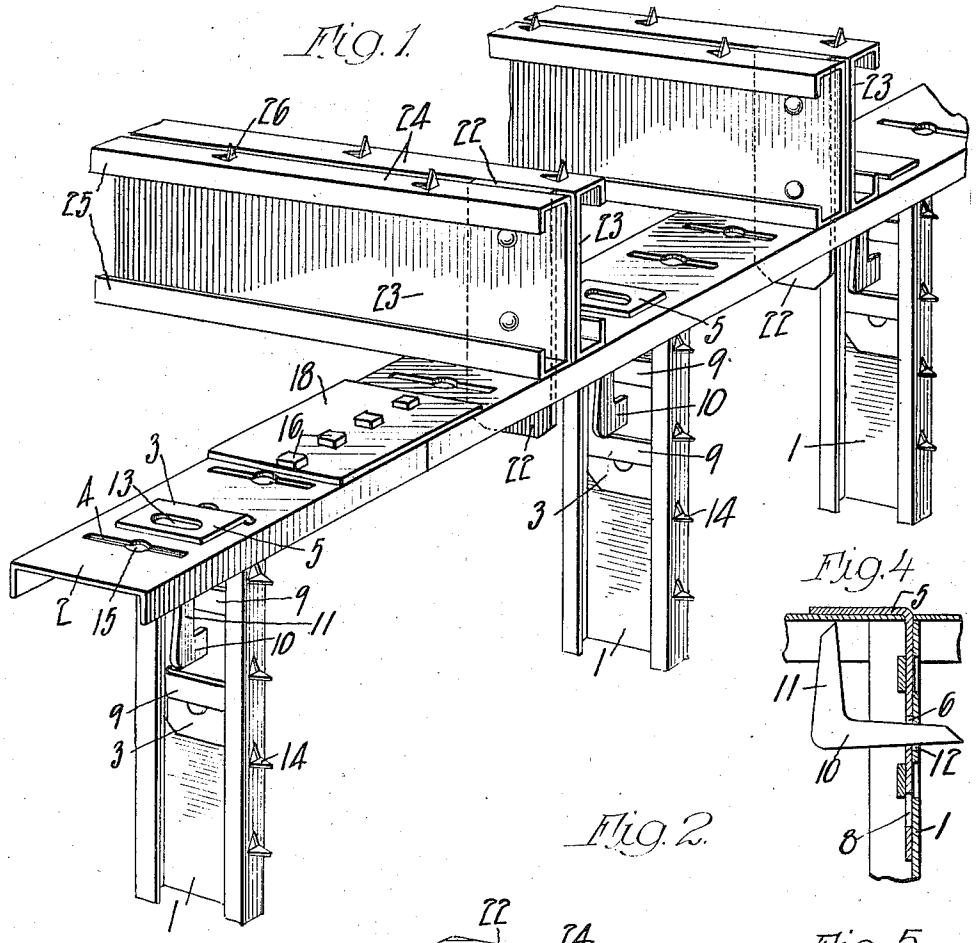


Fig. 4.

Fig. 2.

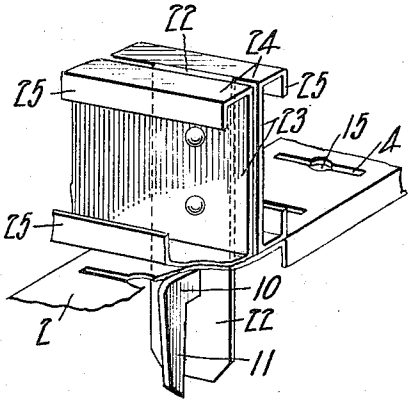


Fig. 3.

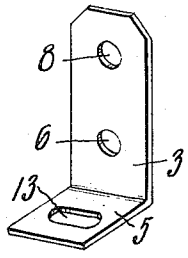
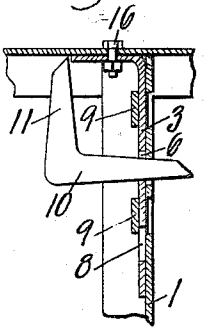


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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BUILDING CONSTRUCTION.

1,192,209. Specification of Letters Patent. Patented July 25, 1916.

Application filed August 23, 1915. Serial No. 46,800.

To all whom it may concern:

Be it known that I, JULIUS KAHN, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented a new and useful Building Construction, of which the following is a specification.

This invention relates to metal building structures, and among its important features is a cap plate having transverse slots of special shape arranged at intervals through which different connectors may be passed, whereby the various parts with which the cap plate is to be joined may be assembled in an expeditious and interchangeable manner.

It also consists in a floor beam or joist having a perforated tongue arranged to pass through any desired one of the slots together with a wedge for securing the beam in position on the cap.

It further consists in the details of construction shown, described and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing a preferred embodiment of my invention. Fig. 2 is a fragmentary perspective view, parts being broken away, showing the manner of wedging the floor beam or joist to the cap plate. Fig. 3 is a perspective view of a connector for joining the cap plate to the studs. Fig. 4 is a vertical section through the cap plate and adjacent end of the stud when assembled as shown in Fig. 1. Fig. 5 is a similar view when the parts are assembled in another way.

Similar reference characters refer to like parts throughout the several views.

In the embodiment of the invention shown, pressed metal channel shaped studs 1 are joined to the channel shaped cap plate 2 by means of connectors 3 that pass through any desired one of the row of spaced transversely extending slots 4 formed in the cap plate. The connectors, which include the end portions 5 bent at substantially right angles to the body thereof, are perforated at 6 and 8 and pass through between the spaced stirrups 9 and the remainder of the stud, and are secured in place by a two-armed wedge 10, one arm 11 of which is sharpened and bites into the lower face of the cap. The other arm is tapered and passes through the perforation 6 in the connector and through a perforation 12 between the stirrups on the stud, whereby a wedging or toggle action is secured and the parts are firmly clamped together. The ends 5 of the connectors are slotted transversely at 13. Tangs 14, struck from the studs, form means for attaching metal lathing of any desired type.

Each of the slots 4 has an enlarged (preferably circular) portion 15 through which bolts 16 may be passed to secure splice plates 18 in position. The bolts 16 may also be passed through the portions 15 for other purposes, for example, the ends 5 of the connectors may be arranged beneath the cap and the bolts slipped through the slots 19 therein (Fig. 5), and since the portion 15 is symmetrical with respect to the center line of the beam, it makes no difference which end of the latter is turned in a given direction. The slots 4—15 are also arranged to receive flat perforated tongues 22 that extend upwardly between and are riveted to the webs 23 of a floor beam, preferably formed of pressed sheet metal channel sections placed back to back and including the flanges 24 which terminate in in-turned supplementary flanges 25. These beams extend crosswise of the building in the usual way and may have portions of their upper flanges struck out to form tangs 26 by which metal reinforcing for concrete slabs (not shown) may be readily attached. The floor beams are secured in place by driving the tapered arm of the wedge through the perforation below the cap as shown in Fig. 2.

The construction described is of particular importance because of its cheapness, because it allows wide ranges of interchangeability and adjustment of the various parts with respect to one another in assembling, whereby structures of different shape may be formed from standard members, and because of the ease and security with which the individual joints may be assembled.

Various changes may obviously be made in the details of construction without departing from the spirit of the invention; and I do not, therefore, wish to be limited otherwise than as indicated by the subjoined claims.

I claim:—

1. In a building structure, a metal floor beam support including a flat portion having a plurality of spaced transverse slots, a

metal floor beam having its end resting on the support, said floor beam including a flat depending perforated tongue rigid with the rest of the beam and adapted to pass through any desired slot, and a wedge passing through the perforation in the tongue, said wedge engaging the lower side of the slotted flat portion of the floor beam support, whereby the floor beam is rigidly clamped in position.

2. In a building structure, a metal floor beam support including a flat portion having a plurality of spaced transverse slots, a metal floor beam having its end resting on the support, said floor beam including a pair of channel bars secured together back to back and a flat perforated tongue interposed between the channel bars and depending therefrom, said tongue being adapted to pass through any desired slot, and a wedge passing through the perforation in the tongue, said wedge engaging the lower side of the slotted flat portion of the floor beam support, whereby the floor beam is rigidly clamped in position.

3. In a building structure, a plurality of metal studs, a metal cap plate supported on the upper ends of the studs, said cap plate having a plurality of transverse slots, connectors passing through some of the slots for securing the cap plate and the studs together, and a metal floor beam resting on the cap plate between a pair of the studs, said floor beam having a perforated tongue which projects through one of the slots, and a wedge passing through the tongue and engaging with the lower surface of the cap plate for clamping the floor beam to the cap plate.

4. In a building structure, a metal stud, a metal cap plate supported on the upper end of the stud, said cap plate having a plurality of transverse slots arranged symmetrically about the longitudinal central line thereof, a flat connector secured to the stud and passing through one of the slots, a floor beam resting on the upper surface of the cap plate, said floor beam having a depending perforated tongue passing through another of the slots and wedge means passing through the perforation in the tongue and engaging the lower surface of the cap plate for securing the floor beam in position, the arrangement being such that the stud and floor beam may be interchanged with respect to the slots through which the connector and the tongue respectively pass.

5. In a building structure, two flat-sided metal members intersecting each other, the first member having a plurality of transverse slots including enlarged portions intermediate their ends, the second member having a stirrup formed thereon near its end, a flat connector passing through the stirrup, said connector having a perforated end bent at right angles to the remainder thereof, the arrangement being such that the connector may either be passed through any desired one of the slots or may be placed with its bent end on the side of the first member nearest the second member and secured in position by passing a bolt through the hole in the connector and the enlarged portion of the corresponding slot, and a wedge passing through the connector for forcing the members together.

6. In a building structure, a metal stud, a metal cap plate supported on the upper end of the stud, said cap plate having a plurality of transverse slots arranged symmetrically about the longitudinal central line thereof, the slots including enlarged portions intermediate their ends, a transverse stirrup struck from the stud near its end, a flat connector passing through the stirrup, said connector having a perforated end bent at right angles to the remainder thereof, the arrangement being such that the connector may either be passed through any desired one of the slots or may be placed with its bent end beneath the cap plate and secured thereto by passing a bolt through the hole in the connector and the enlarged portion of the corresponding slot, and a wedge passing through the connector for forcing the members together.

In testimony whereof I sign this specification.

JULIUS KAHN.