Jan. 15, 1935. S. F. MIOTON 1,988,389

METALLIC BUILDING CONSTRUCTION

Original Filed Jan. 6, 1933

Fig. 1.

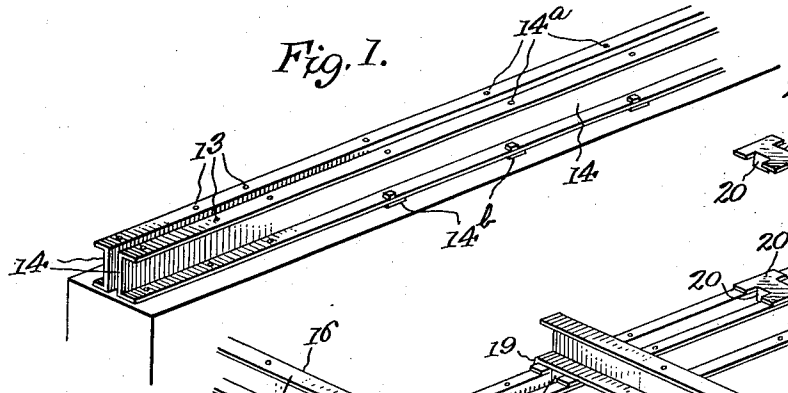


Fig. 3.

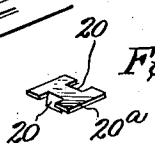


Fig. 2.

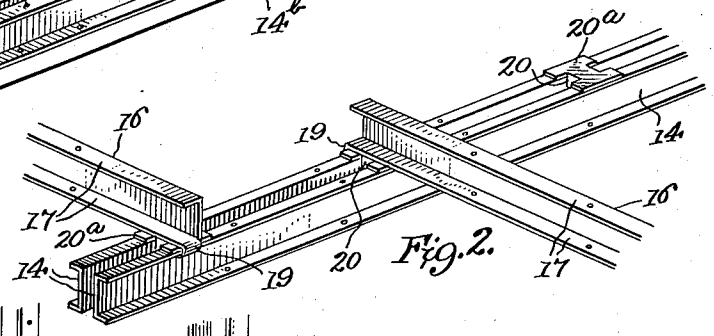


Fig. 4.

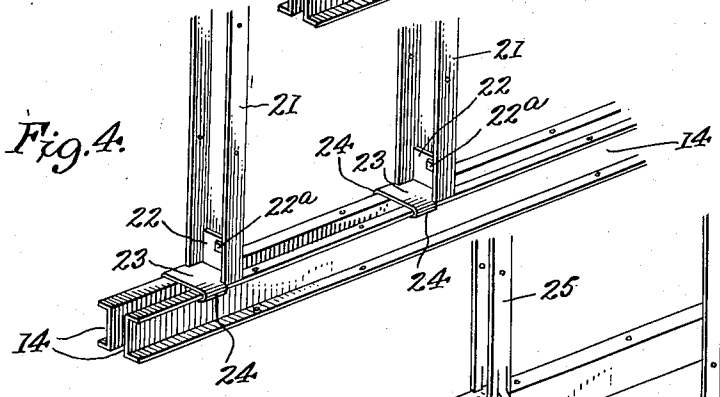


Fig. 5.

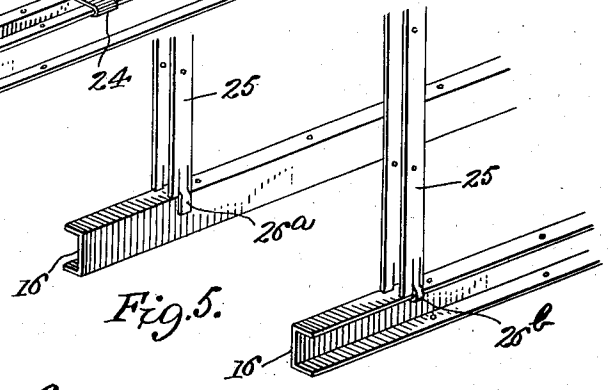
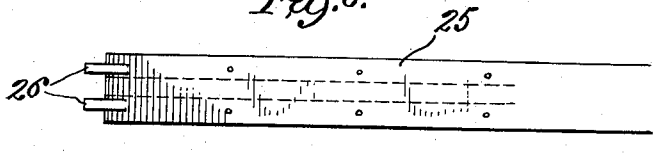


Fig. 6.



Inventor

S. Fitzhugh Mioton

By Wilkinson & Mawhinney

Attorneys.

Patented Jan. 15, 1935 1,988,389

UNITED STATES PATENT OFFICE

1,988,389

METALLIC BUILDING CONSTRUCTION

Sidney Fitzhugh Mioton, New Orleans, La.

Original application January 6, 1933, Serial No. 650,539. Divided and this application January 2, 1934, Serial No. 704,983

1 Claim. (Cl. 189—36)

The present invention relates to metallic building construction, and more particularly to the structural frame work of buildings which may be more or less fire-proof in construction.

This application is a division of application Serial No. 650,539 filed January 6, 1933, and relates more particularly to the joint construction of the building frame.

An object of the present invention is to provide standard building construction units which may be used in desired numbers and assembled in various ways to produce large or small houses or buildings.

Another object of the present invention is to provide improved means for securing the units together in various combinations and which admits of the comparatively easy knocking down of the structure comprising the units, and which when set up will provide a frame work which may be permanent; crack-proof and rigid; wherein the fire risk is diminished to a minimum and repairs negligible; wherein the cost of construction of building is reduced over the present standard steel construction; and wherein the parts may be quickly joined in assembled position.

The invention further aims at the provision of improved means for so joining the structural units as to meet the requirements of any architectural plans as to dimension, size and distribution usual in residences or dwellings.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claim appended hereto.

In the drawing, wherein like symbols refer to like or corresponding parts throughout the several views:

Figure 1 is a detail perspective view of a sill with its lower flange bolted to a foundation.

Figure 2 is a like view showing two joists resting at their ends on the sill and with interposed plates between the joists and the sill.

Figure 3 is a detail perspective view of the plate shown in Figure 2.

Figure 4 is a fragmentary perspective view of the connection between the lower ends of two studs and a supporting sill.

Figure 5 is a similar view of the connection between a pair of two small studs and their respective supporting joists, and

Figure 6 is a fragmentary plan view of the blank from which the studs to Figure 5 may be constructed.

Referring now to the drawing showing the improved joint construction of a building frame, and first to Figure 1, the sill 14 is composed of a pair of spaced channel rails with their flanges directed outwardly in opposite horizontal directions, and with their webs sufficiently spaced apart to allow its total width to correlate with that of all of its structural connections.

One of the objects of having this space between sill components is to allow for the free passage of service pipes, cables, braces, etc.

The adjacent ends of the sill components are similar and have series of openings or bolt holes 13 punched in their flanges to receive the bolts of the building frame.

Along the intervening surfaces of these flanges, bolt holes or openings 14*a*, are punched at desired intervals to receive the anchor bolts from the foundation, as shown by bolts 14*b*.

These openings are punched in both flanges of the sill components to insure tying locations for bracing elements on that surface of the sill which is not bolted to the foundation.

These openings are similarly placed in both of the channel flanges to avoid confusion when assembling on a job.

Figure 2 shows a joist 16 which comprises a channel rail which has at its end a portion of one of its flanges 17 and a corresponding portion of its web 18 so sheared off as to provide a tongue 19 projecting from the other flange 17. The tongue 19 is adapted to be bent under or clinched to the outer flange of the sill 14 on which the joist 16 rests, as shown in Figure 2. This connection of the tongue 19 may be spot welded if desired.

Holes may be punched at intervals in the joist flanges 17 to receive any elements that might be used to secure desired material to the flanges.

Be it particularly noted that when weight bearing partitions are used where an ordinary sill 14 does not exist, two joists 16 may be so placed in relation to each other as to simulate and act in lieu of a sill 14, as shown in Figure 1, and are capable of receiving studs and their connecting members as does an ordinary sill.

Figure 3 illustrates a plate 20*a* formed as shown in the drawing and of suitable thickness and is intended to be placed on the sill 14 at a joist location to receive the joist thereon: two angled portions 20 are stamped and bent down from the opposite edges of the plate 20*a* and are of a width equal to that of the space intervening between the sill components and which are intended to project therebetween to insure against a lateral movement of the plate

and also to reinforce the sill components against bending and to maintain their parallelism when joist tongue 19 is bent or clinched to the sill flange.

It is obvious that whenever a joist 16 lies close to a post which is connected by the connecting member 11 to its sill 14, as in hallways and the like, the joist 16 must rest directly on a portion of the connecting member 11 and therefore would be out of level with other joists unless plates 20*a* were used under the other joists to insure a common level.

Reference will now be made to the stud or upright 21 shown in Figure 4. As both ends are similar only one end is shown.

The stud 21 comprises a channel rail whose web is suitably punched near its end to register with a similar opening punched in a sill connecting member 22, Figure 4, to receive a tie bolt 22*a*, or the connection may be made by welding or other desired manner.

At intervals along the flanges of the stud 21 openings are provided for the reception of fastening elements which may be used to secure material or the like to the lateral surfaces of the stud.

The stud-sill connecting member 22 comprises an angle iron whose main leg lies between the flanges of the stud and whose leg 23 extends outwardly from between the flanges of the stud 21 and is of increased width therebeyond.

This wider portion of the angle iron 22 is of such width as to sufficiently extend beyond the lateral edges of the sill and insure enough metal so projecting as to allow of its being bent or clinched to the flanges of the sill and hold the stud in abutting relation thereto.

Both ends of the stud 21 are similarly connected except that the projections shown by 24 in Figure 4 are bent or clinched on the lower flanges of the sill when used to connect the upper end of a stud.

Figure 5 shows the small studs or uprights 25 consisting of channel rails proportioned to the width of the joists 16 upon which they are mounted.

These studs 25 are constructed from the blank shown in Figure 6 and have projections 26 used as shown in Figure 5 where projection 26*a* bears against the web of joist 16 and projection 26*b* is clinched to the upper flange of joist 16 after the studs 25 have been properly located, and the projections may be welded to the joist if desired. These studs 25 are intended for non-weight carrying partitions, enclosing for instance clothes closets and the like.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claim.

I claim:

In building construction, a sill comprising a pair of spaced apart channel rails, a seating plate disposed across the upper edges of the spaced rails and having downturned tongues intermediate its edges engaging between the rails to hold the plate from shifting, and a joist having an end engaging across said plate and provided with a longitudinally projecting tongue integral therewith rolled downwardly over the edge of said plate and the flange of the adjacent channel rail for locking the plate and the joist to the sill.

SIDNEY FITZHUGH MIOTON.