G. J. SCHADE.

METAL REINFORCEMENT FOR METAL REINFORCED CONCRETE FLOORS, &c.

APPLICATION FILED MAR. 5, 1909.

946,987. Patented Jan. 18, 1910.

Fig. 1.

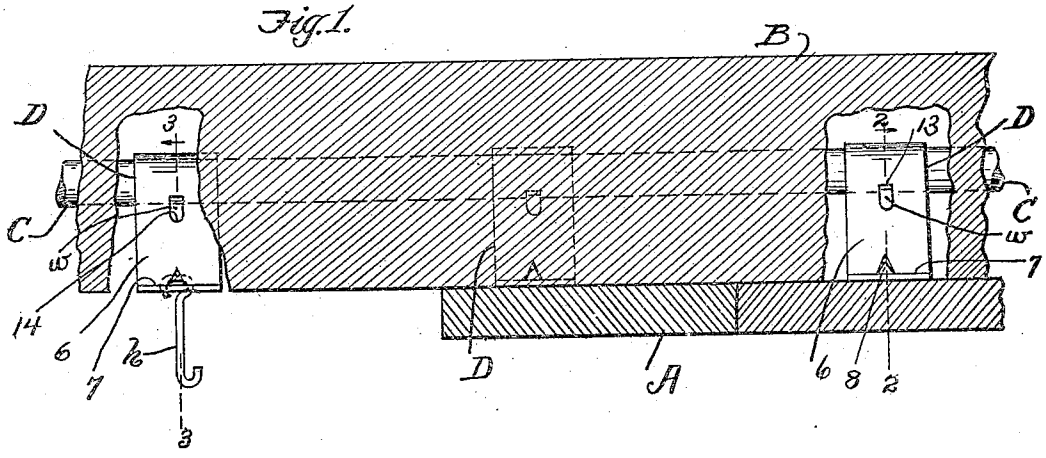


Fig. 2.

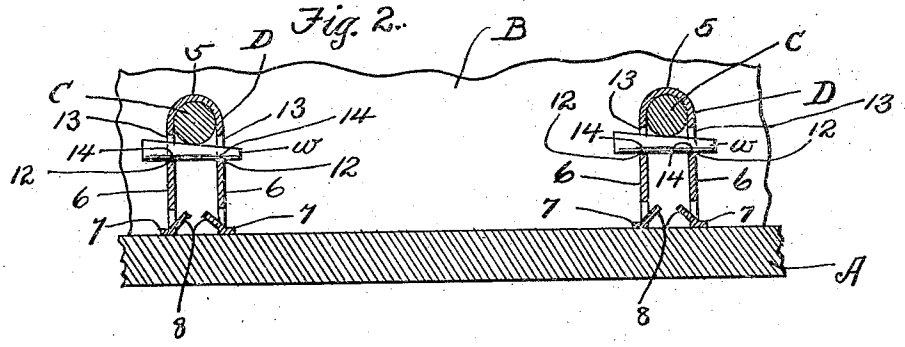
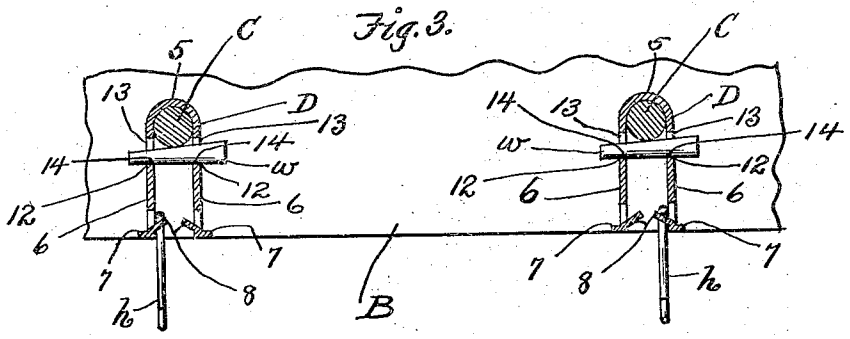


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE J. SCHADE, OF SANDUSKY, OHIO.

METAL REINFORCEMENT FOR METAL-REINFORCED CONCRETE FLOORS, &c.

946,987. Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed March 5, 1909. Serial No. 481,477.

To all whom it may concern:

Be it known that I, GEORGE J. SCHADE, a citizen of the United States of America, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Metal Reinforcement for Metal-Reinforced Concrete Floors, &c.; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to improvements in metal reinforcement for metal-reinforced concrete floors or other objects which are laid or arranged substantially in a horizontal plane.

The primary object of this invention is to provide a metal rod which is to be arranged substantially in a horizontal plane with a plurality of chairs spaced longitudinally of the rod and to form each chair of an inverted-U-shaped metal piece which straddles the rod from above and has a central portion embracing the upper side of the rod and two end members or legs which are arranged at opposite sides respectively of and extend below the rod, which legs are also arranged to rest upon a floor temporarily laid next below the space which is to receive the metal-reinforced concrete floor comprising my metal reinforcement, and are provided with means whereby the rod is clamped upwardly against the inner side of the central portion of the said chair without displacing or incurring any movement laterally of the legs.

Another object is to provide at least one of the legs of each chair with a member instrumental in supporting a hook or hanger or other means employed in attaching, to the metal-reinforcement of the metal-reinforced concrete floor, a metal ceiling or covering for the under side of the said floor.

With these objects in view, and to the end of realizing other advantages hereinafter appearing, this invention consists in certain features of construction, and combinations of parts, hereinafter described, pointed out in the claims, and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is a vertical section taken through a metal-reinforced concrete floor having a metal reinforcement embodying my invention, and portions of the concrete are shown broken away in this figure to more clearly show my improved chair employed in holding a reinforcing rod of the said floor a suitable distance above a floor temporarily laid below the space which is to receive the concrete floor, and a portion of the temporary floor is also shown removed in this figure. Fig. 2 is a vertical section on line 2—2, Fig. 1, looking in the direction indicated by the arrow. Fig. 3 is a vertical section on line 3—3, Fig. 1, looking in the direction indicated by the arrow.

Referring to the drawings, A indicates a temporary floor upon which a metal-reinforced concrete floor is to be formed, and B indicates the concrete or cementitious material of the said metal-reinforced concrete floor. The metal reinforcement of the said metal-reinforced concrete floor comprises any suitable number of laterally spaced substantially parallel rods C which are embedded in the concrete B and arranged substantially horizontally. The rods C, when, as shown, they form a portion of the metal reinforcement of a metal-reinforced concrete floor, are secured at the ends (not shown) to walls, columns or beams of a building comprising the said floor.

My invention consists essentially in improved means for holding each rod C elevated above the temporary floor A a suitable distance preparatory to the embedding of the said rod and rod-holding means in the layer of concrete compacted on the said floor to complete the formation of the metal-reinforced concrete floor. The means employed for holding each rod C elevated above the temporary floor A a suitable distance preparatory to the embedding of the said rod in the concrete compacted on the said floor preferably comprise chairs D spaced longitudinally of the rod and consisting respectively of an inverted-U-shaped sheet-metal piece which straddles the rod from above and has a central arched portion 5 embracing the upper side of the rod

and two end members or legs 6 and 6 which are arranged substantially vertically and parallel at opposite sides respectively of and extend below the rod. The legs 6 are not only provided at their lower ends and externally with laterally and outwardly projecting flanges 7 which strengthen the legs and enlarge the bearing of the legs upon the floor A and prevent the legs from cutting into the said floor and from projecting below the said floor when the latter is removed after the completion of the metal-reinforced concrete floor, but preferably each leg is provided at its inner side and preferably next above its flange 7 with a laterally inwardly and upwardly projecting lug 8 which (see Figs. 1 and 3) is instrumental in supporting a hook or hanger *h* which may be employed in attaching, to the under side of the metal-reinforced concrete floor when the temporary floor has been removed, a metal ceiling or other covering for the said side of the metal-reinforced floor, said hanger or attaching device *h* being applied through a hole (not shown) bored in the concrete floor from below. The lugs 8 of the legs 6 constitute hanger-hooks therefor and are preferably formed by striking inwardly portions of the said legs centrally between the side edges of the legs and next above the flanges 7 of the legs.

Each leg of each chair is provided adjacent the lower portion of the rod C straddled by the said chair with a hole 12 extending laterally through the leg from a point a suitable distance below the lowermost surface of the rod upwardly, and the hole 12 in at least one and preferably in each of the legs of the said chair extends upwardly, as at 13, above the said surface. Preferably the upwardly facing lower walls or bottoms of the holes 12 in both legs of each chair are arranged substantially in the same horizontal plane and form upwardly facing seats 14 for a wedge *w* which extends through the said holes and across the under side of the rod supported by the said chair and is driven into place and clamps the rod upwardly against the inner side of the arched central portion of the chair and thereby effectually locks the rod to the chair.

By the construction hereinbefore described it will be observed that the wedge *w* when driven into place positively secures the rod to the chair and at the same time renders lateral displacement or movement of the said legs impossible and thereby insures a proper bearing of the flanges 7 with the floor A. It will be observed therefore that the legs of my improved chair have means whereby the rod is clamped upwardly or locked against the under or inner side of the central portion of the chair without incurring any displacement or movement laterally of the legs, and consequently the flanges 7 of the legs are retained in proper position relative to the floor.

What I claim is:—

1. In metal reinforcement for metal-reinforced concrete construction, the combination, with a rod which is to be arranged substantially horizontally, of a chair comprising a sheet metal piece which straddles the rod from above and has a central portion engaging the upper side of the rod and two legs arranged at opposite sides respectively of and extending below the rod, each leg having a hole extending laterally therethrough and arranged adjacent the lower portion of the rod, and a wedge consisting of a piece independent of the chair and engaging the aforesaid holes and the under side of the rod and clamping the rod against the under side of the central portion of the aforesaid sheet metal piece.

2. In metal reinforcement for metal-reinforced concrete construction, the combination, with a rod which is to be arranged substantially horizontally, of a chair straddling the rod from above and consisting of a sheet metal piece which extends over the rod and has two legs arranged at opposite sides respectively of and extending below the rod, one of said legs being provided with a laterally and upwardly projecting lug forming a hanger-hook, and means whereby the chair is locked to the rod.

3. In metal reinforcement for metal-reinforced concrete construction, the combination, with a rod which is to be arranged substantially horizontally, of a chair straddling the rod from above and consisting of a sheet-metal piece which extends over the rod and has two legs arranged at opposite sides respectively of and extending below the rod, one of said legs being provided with a laterally projecting member forming a support for a hanger, and means whereby the chair is locked to the rod.

4. In metal reinforcement for metal-reinforced concrete construction, the combination, with a rod which is to be arranged substantially horizontally, of a chair straddling the rod from above and consisting of a sheet metal piece which extends over the rod and has two legs arranged at opposite sides respectively of and extending below the rod, each leg being provided at its lower end with a laterally projecting flange, and at least one of the legs being provided above the said flange with a laterally and upwardly projecting lug forming a hanger-hook, and means whereby the chair is locked to the rod.

5. In metal reinforcement for metal-reinforced concrete construction, the combination, with a rod which is to be arranged substantially horizontally, of a chair straddling the rod from above and consisting of a sheet metal piece which extends

over the rod and has two legs arranged at opposite sides respectively of and extending below the rod, one of said legs being provided at its inner side and near its lower extremity with a laterally inwardly and upwardly projecting lug forming a hanger-hook, and means whereby the chair is locked to the rod.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

GEORGE J. SCHADE.

Witnesses:
C. H. DORER,
B. C. BROWN.