H. C. BALDRY.

STAIR STRUCTURE.

APPLICATION FILED NOV. 13, 1911.

1,069,596. Patented Aug. 5, 1913.

Fig. 1.

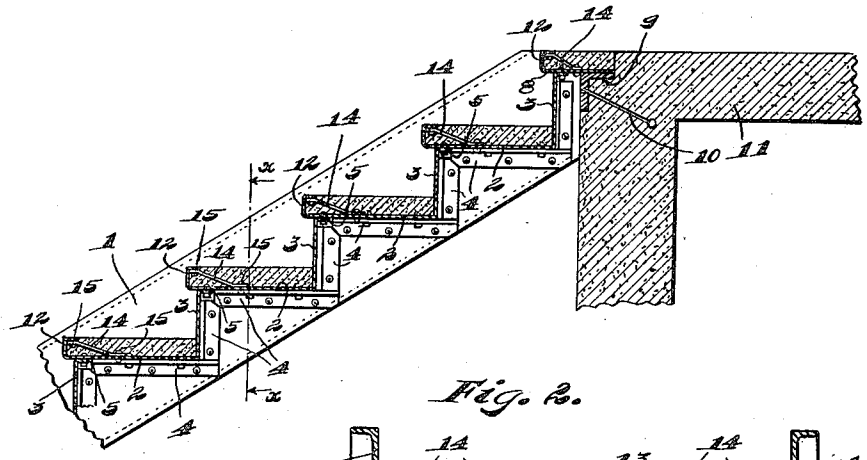


Fig. 2.

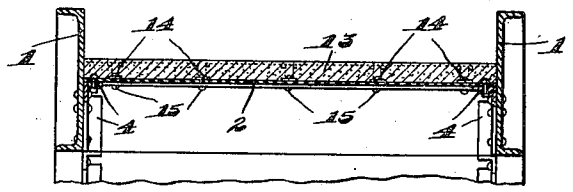
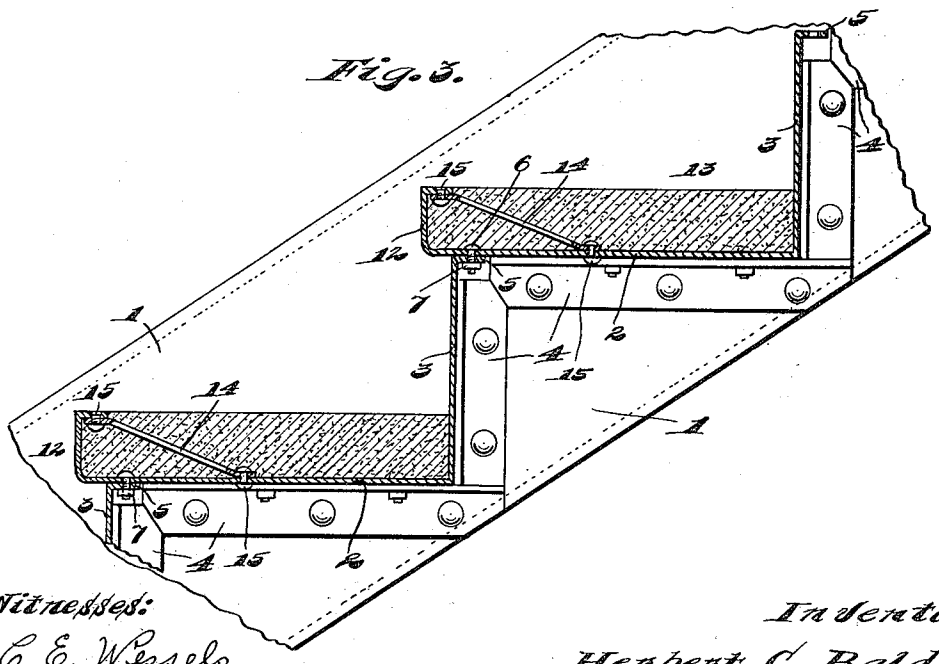


Fig. 3.



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UNITED STATES PATENT OFFICE.

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STAIR STRUCTURE.

1,069,596. Specification of Letters Patent. Patented Aug. 5, 1913.

Application filed November 13, 1911. Serial No. 660,102.

To all whom it may concern:

Be it known that I, HERBERT C. BALDRY, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Stair Structures, of which the following is a specification.

My invention relates to stair structures and more specifically to that class thereof in which the structure is formed of a metallic framework and concrete or cement tread portions.

The object of my invention is the production of a stair structure of the character mentioned which may be readily and quickly assembled and which will be economical in construction and efficient in use.

Other objects will appear hereinafter.

With these objects in view my invention consists in the combination and arrangement of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which—

Figure 1 is a vertical section of a stair structure embodying my invention, Fig. 2 is a section taken on substantially line *x*—*x* of Fig. 1, and Fig. 3 is an enlarged detail section of the structure.

The preferred form of construction as illustrated in the drawing comprises metallic stringers 1 which are of the usual channel form as shown. Extending between the adjacent sides of the stringers 1 are the stair members each of which is formed of a single piece of sheet metal which comprises a horizontal tread portion 2 and an upright riser portion 3, said portions 2 and 3 being secured, preferably bolted, to angle irons 4 which are permanently secured, as by riveting, to the inner sides of the channels 1.

Formed at the upper edge of each of the riser portions 3 is a flange 5 which engages against the under side of the portions 2 of the stair member next above, the arrangement being such that the portions 2 project slightly beyond the corresponding portions 3 as clearly shown. The flanges 5 are secured to the adjacent portions by means of bolts 5 and nuts 7, said portions being correspondingly perforated to accommodate said bolts. The riser portion 3 of the uppermost stair member is similarly connected to a plate 8 which is permanently secured to an angle iron 9 the latter being secured, as by anchors 10, to the porch or other concrete structure 11 in conjunction with which the stair is employed.

Formed at the forward edge of each of the portions 2 and the plate 8 is a nosing channel 12 which serves, as is well known, as a protection for the front edge of the concrete tread 13 which is formed upon the upper side of each of the portions 2 and the plate 8, the concrete or other plastic material used being applied as shown after completion of the metallic framework.

It is customary in the construction of stairs of this class to wait until the entire building, which is in the course of construction, is completed before the concrete portions 13 of the stairs are poured into position, the workmen being permitted to use the stairs in the partially completed condition that is without the concrete or cement tread portions. It has been found that, in the using of the stair structures while in this condition, the nosing channels 12 are frequently bent out of position or dented, the metal not being heavy enough to withstand the rough wear to which same is subjected during this usage. In order to prevent this injury I have provided in each stair member a plurality of reinforcing bars 14 which are connected at their forward extremities with the upper edge portions of the nosing channels and which are connected at their rearward extremities to the adjacent horizontal portions 2 of the stair members. With this provision the nosing channels will be sufficiently reinforced to withstand the wear and the rough usage to which the same are subjected in partially finished condition obviating the possibility of injury in the manner above set forth. Also with this provision, the upper edges of the channels will be securely maintained in proper position in the completed stair structure, all possibility of the same being bent out of proper position being thereby eliminated.

A stair structure of the construction set forth is durable and economical and the same may be constructed expeditiously and at a low cost.

While I have illustrated and described the preferred construction for carrying my invention into effect this is capable of variation and modification without departing from the spirit of the invention. I, there-

fore, do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

In a stair structure, the combination of a metallic plate having a horizontal tread portion and an upright riser portion; a rearwardly and horizontally extending perforated connecting flange at the upper edge of said upright portion; a nosing channel provided at the forward edge of said horizontal portion; and means for reinforcing said channel, said means comprising a plurality of spaced bars permanently connected at their forward ends to the under side of the upper edge of said channel, said bars projecting rearwardly and downwardly from said upper edge of said channel and being permanently connected at their rearward ends to the upper side of said horizontal plate portion, there being perforations in said horizontal plate portion adjacent the forward edge thereof for registration with the perforations in the connecting flange of the stair next below, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HERBERT C. BALDRY.

Witnesses:
JOSHUA R. H. POTTS,
HELEN F. LILLIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."