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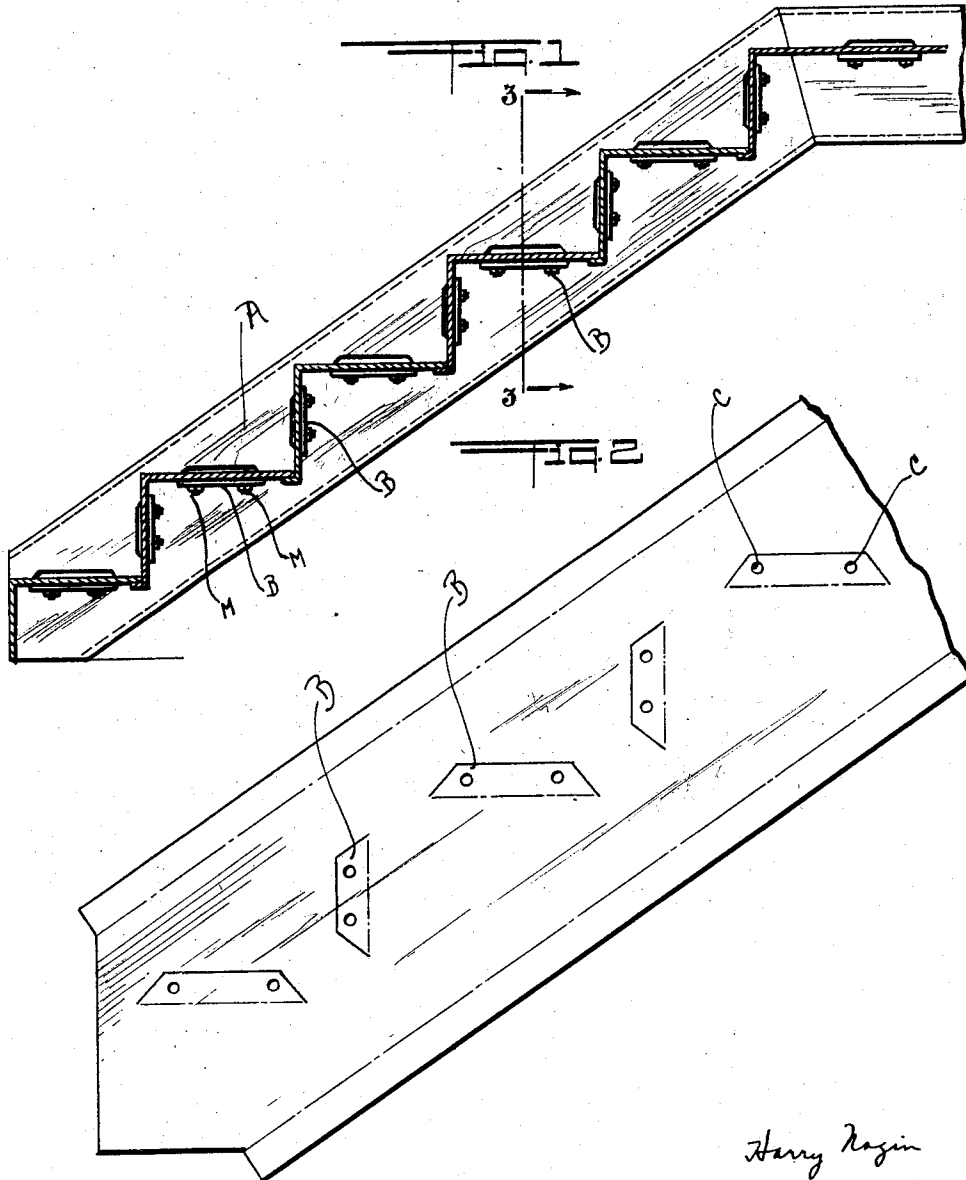
H. NAGIN

1,568,568

STAIR CONSTRUCTION

Filed Dec. 4, 1924

2 Sheets-Sheet 1



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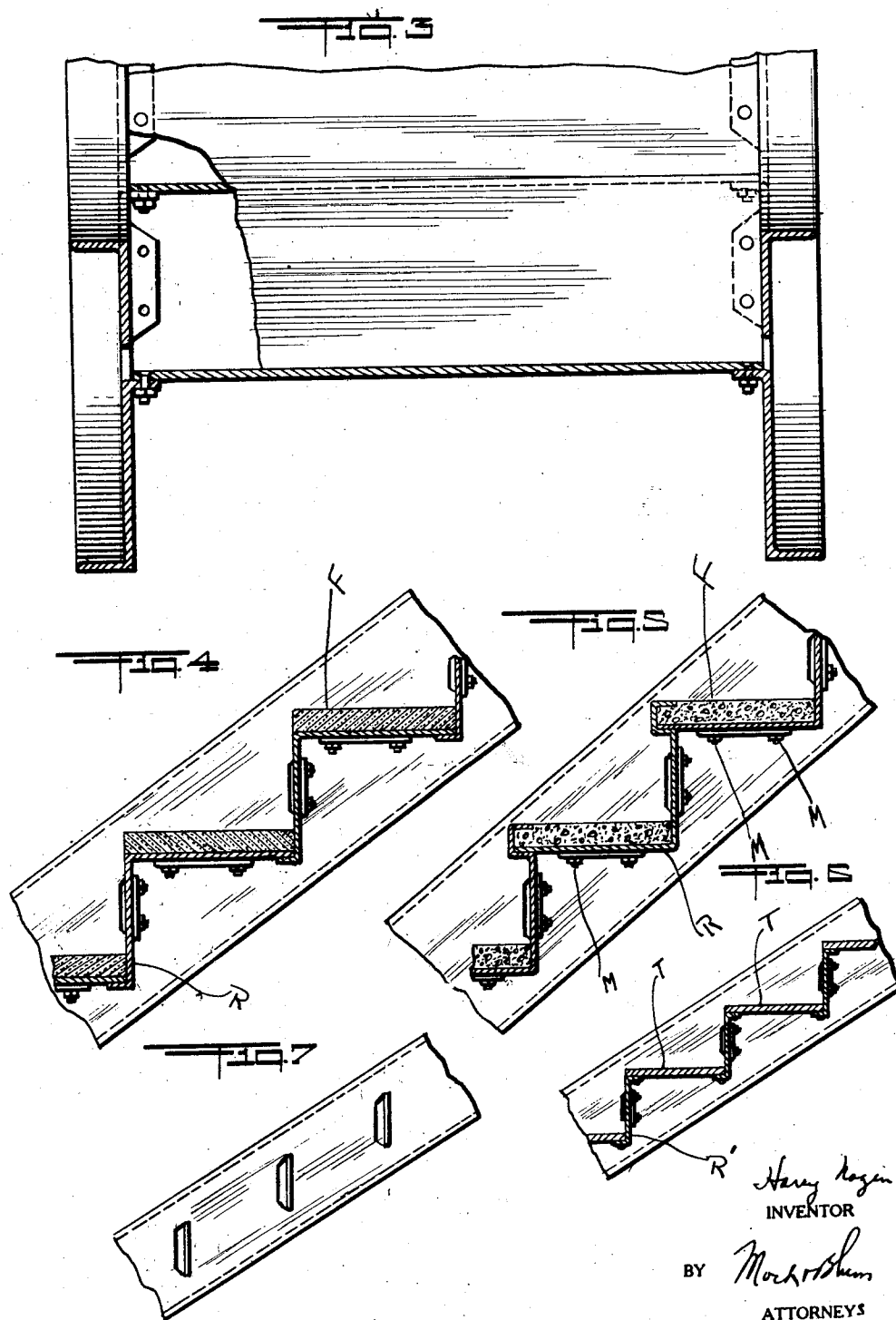
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2 Sheets-Sheet 2



## UNITED STATES PATENT OFFICE.

HARRY NAGIN, OF BROOKLYN, NEW YORK.

## STAIR CONSTRUCTION.

Application filed December 4, 1924. Serial No. 753,769.

*To all whom it may concern:*

Be it known that I, HARRY NAGIN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Stair Construction, of which the following is a specification.

This invention relates to an improved metal stair construction and a method of producing same.

A particular object of the invention is to produce a metal stair with a minimum number of parts, which will be strong, economical to manufacture and permanent.

Another object of the invention is to produce a metal stair in which the main girders or strings thereof shall have supporting members for the treads and risers formed integrally therein.

Further objects of the invention will be apparent from the appended specification and drawings.

In the drawings,

Fig. 1 is a side view of my improved stair with the risers and treads in place.

Fig. 2 is a perspective view of the string or girder used in my improved stair construction.

Fig. 3 is a sectional view along the line 3—3 of Fig. 1.

Fig. 4 is a sectional view of my improved stair having a riser and tread in one piece.

Fig. 5 is a modified form of the construction shown in Fig. 4 with the part of the riser covering and protecting the cement-flooring of the stair.

Fig. 6 is another modification showing separate risers and treads, in this figure the independent riser being designated as R'.

Fig. 7 is a side view of a plate showing the manner in which the outside string or girder may be protected so as to cover the holes formed in said strings or girders.

A indicates a string or girder which is the basis of my improved metal stair construction and integrally from which the supports for the individual risers and treads are formed by stamping or other suitable means. These supports are made by slitting the string A as shown in the drawing and then bending the slit portion at right angles to the plane of the string. Each of these supports B has the holes C formed therein in which the

bolts to support the risers and treads engaged before the members B are stamped from the string.

It will be apparent from Fig. 2 of the drawing that it is necessary to stamp the individual members B at right angles to each other in the form shown so as to provide the proper supports for the successive risers and treads.

It has heretofore been customary in the art of metal stair construction to bolt angle irons to the strings or girders and then to fasten the risers or treads to these angle irons. One of the difficulties with this form of construction was that the bolts holding the angle irons to the string had a tendency to loosen, thus impairing the strength and permanency of the stair.

This is entirely obviated by my improved construction in which practically only two main elements are necessary. One, a string having integrally formed therein, supports for the risers and treads and two, a riser and tread which may be formed in one or two pieces as desired.

In the drawing the one piece riser and tread is designated R, the individual treads as T. These are bolted to the supporting members B by the bolts M. In practice, it is customary to put a cement or concrete flooring F over the metal tread and in Fig. 4 this flooring is shown directly over the tread and in Fig. 5 the riser extends partly over the flooring.

In Fig. 7 is illustrated a method of covering the holes formed by members B. A metal plate somewhat smaller than the string A is put over the string A and may be retained in place by any suitable means.

Having thus described my invention, what I claim is:

1. A stair girder made of a single sheet of metal, having trapezoidal members integrally formed therein at equal intervals to serve as supports for a series of risers and treads, said trapezoidal members being successively at right angles to each other.

2. A stair girder made of a single sheet of metal, having trapezoidal members integrally formed therein at right angles to the plane of said girder to serve as supports for a series of risers and treads, said trapezoidal members being successively at right angles

to each other and flanges at right angles to the surface of said girder at the edges thereof and integral therewith.

3. A stair girder made of a single sheet  
5 of metal having trapezoidal members integrally formed therein to serve as supports for a series of risers and treads, said trapezoidal members being at right angles to the

plane of said girder, and perforations in said trapezoidal members adapted to receive 10 the connecting members for said risers and treads.

In testimony whereof I hereunto affix my signature.

HARRY NAGIN.