

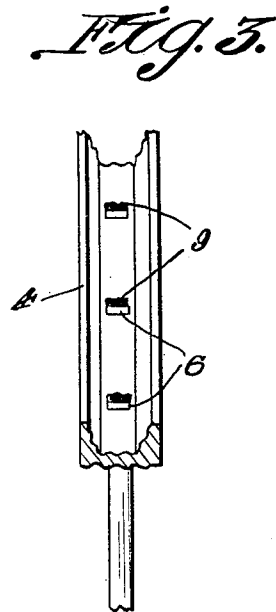
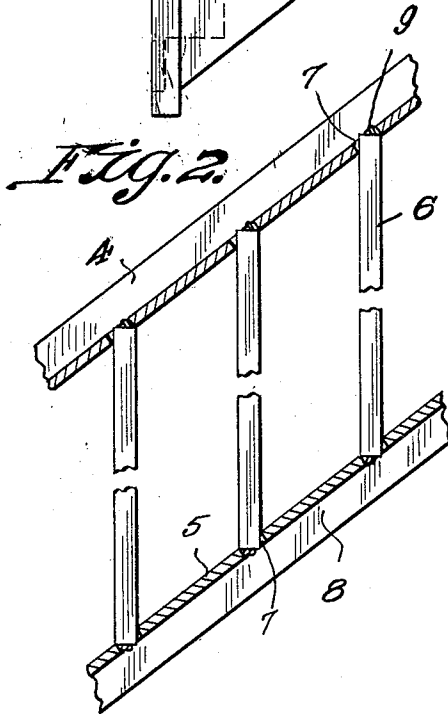
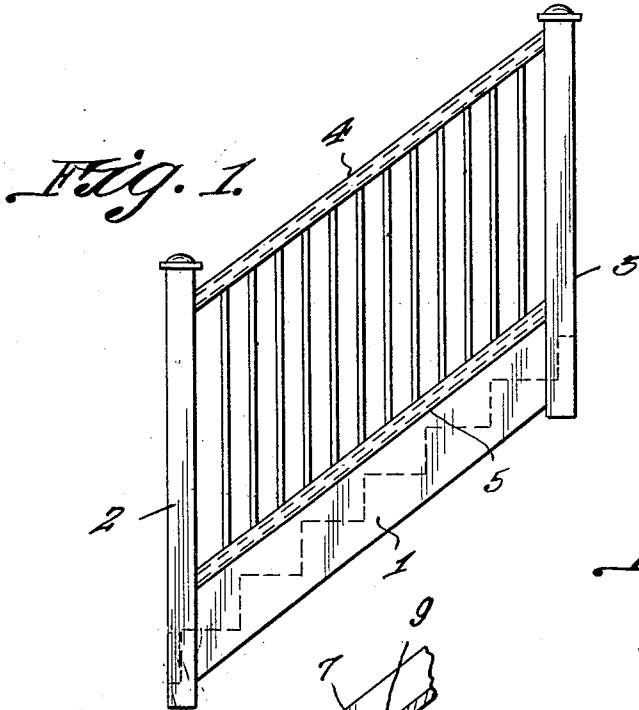
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J. WINSTON

1,796,175

METAL STAIR CONSTRUCTION

Filed July 10, 1929



Les Fajon
WITNESS:

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METAL-STAIR CONSTRUCTION

Application filed July 10, 1929. Serial No. 377,247.

My present invention has reference to a method of constructing metal stairways in an easier, more efficient and more economical manner than is ordinary.

In carrying out my invention it is my purpose to produce a metal stairway rail in which the balusters and top and bottom railings are produced on a quantity basis and then assembled and welded together to fit any stairs, regardless of the rake of such stairways.

It is also my purpose to produce a metal stairway railing of members that comprise the rails and the balusters, the said rails being punched to provide the same with rectangular openings, the balusters being cut in desired lengths from a square bar or bars and to form the stair railing of the proper pitch to fit any stair by placing the top and bottom bars and balusters in a welding jig, that is adjusted to the pitch of the stairs in connection with which the railing is to be used, two of the opposite corners of the balusters being partly received through the rectangular openings and the remaining opposite corners of the balusters contacting with the opposite walls provided by said openings and the ends of the balusters received through the openings being welded to the railings.

It is a still further object to produce a metal stairway rail in which the upper and lower rails comprise channeled members that have their inner portions punched to provide the same with rectangular openings for the reception of the ends of roughly cut cross sectionally square balusters whose said ends are welded to the rails, and wherein the channeled portion of the upper rail affords a seat for the reception of a wooden rail cap and the lower channeled member provides for the reception for the upper edge of the stair stringer.

I attain the foregoing and other objects which will present themselves by a construction, combination and operative association of parts, one satisfactory embodiment of which is disclosed by the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of a metal

stairway railing in accordance with this invention.

Figure 2 is a longitudinal sectional view through the rails to illustrate the manner in which the balusters are received through the openings in the said rails and welded thereto.

Figure 3 is a fragmentary plan view of the parts as illustrated by Figure 2.

In Figure 1 of the drawings I have illustrated my railing construction arranged on a stairway. In this showing the numeral 1 designates the outer stringer, 2 and 3, the newel posts, respectively. The dotted lines indicate the steps and risers of the stairway. The upper and lower metal rails of the improvement are indicated by the numerals 4 and 5, respectively, and the balusters by the numeral 6. The rails or bars 4 and 5 have their ends cut and secured to the confronting faces of the newel posts 2 and 3 either by welding or any other desired means, and the stringer board 1 received between the newel posts may be also connected to the bottom rail 5 in any desired or preferred manner or the upper edge of the said stringer board may simply rest in the channeled outer face of the said lower rail 5.

The rails 4 and 5 comprise a channeled member, and these members may be of a desired length or lengths. The channeled rails 4 and 5 have their inner faces punched to provide the same with rectangular openings 7, and these openings when the rails are arranged upon the stairway are designed to aline so that the balusters 6, when the cross sectionally square stock from which the same are formed is cut into desired lengths, will have two of their opposed corners contacting with two of the opposed end walls provided by the openings 7 and their opposite opposed corners partly passing through the openings 7 but will also contact with the second end walls of these openings. What I will term the under face of the rail 5 is provided with a channel 8 which as heretofore stated, receives the upper edge of the stringer 1 therein, while the outer or upper face of the rail 4 is channeled to receive a wooden cap or rail therein.

When the balusters are cut the desired

length and received in the openings 7 of the rails as heretofore stated, the same are welded to said rails, as indicated by the numeral 9. However, prior to this the rails and the balusters are arranged in a jig welding apparatus which is adjusted to the pitch of the rake of the stairway in connection with which the railing is to be used, and it is in this machine that the parts are welded together. After the parts are so welded and removed from the jig the rails 4 and 5 and if necessary the stringer 1 may be cut between the newel posts 2 and 3 but also if desired, the newel posts, stringer and railing may be welded together in the welding jig. With my method and means for producing stairway rails it will be noted that the balusters and top and bottom rails may be produced upon a quantity basis and then assembled and welded together to fit any stairway regardless of the rake of such stairs. The rectangular openings 7 in the rails 4 and 5 are roughly punched, or in other words, the same are not filed after the punching operation and likewise the squared bars which provide the balusters 6, after being sawed into lengths are not filed or otherwise finished as is required upon other welded joints for making a neat fitting between the parts constituting the same. This, of course, is a decided advantage over the ordinary construction and method of associating the parts of a metal railing, as the same produces a construction which is strong, which may be more fastly assembled and which is, therefore more economical than any other devices with which I am acquainted.

Having described the invention, I claim:

In a metal stairway construction, upper and lower channeled rails which have their central portions roughly punched to provide the same with substantially rectangular openings, metal balusters of stock size having their ends roughly cut, and designed to be received between the upper and lower rails to have their respective diagonal corners contacting with the diagonally opposed end walls provided by the openings in the rails, their second diagonally opposed ends partly received in the openings and contacting with the second end walls provided by such openings and the said balusters having their first mentioned diagonally opposed corners welded to the end walls provided by the openings in the rails.

In testimony whereof I affix my signature.

JAMES WINSTON.