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C. F. STEIBER.

STRINGER FOR STAIRCASES.

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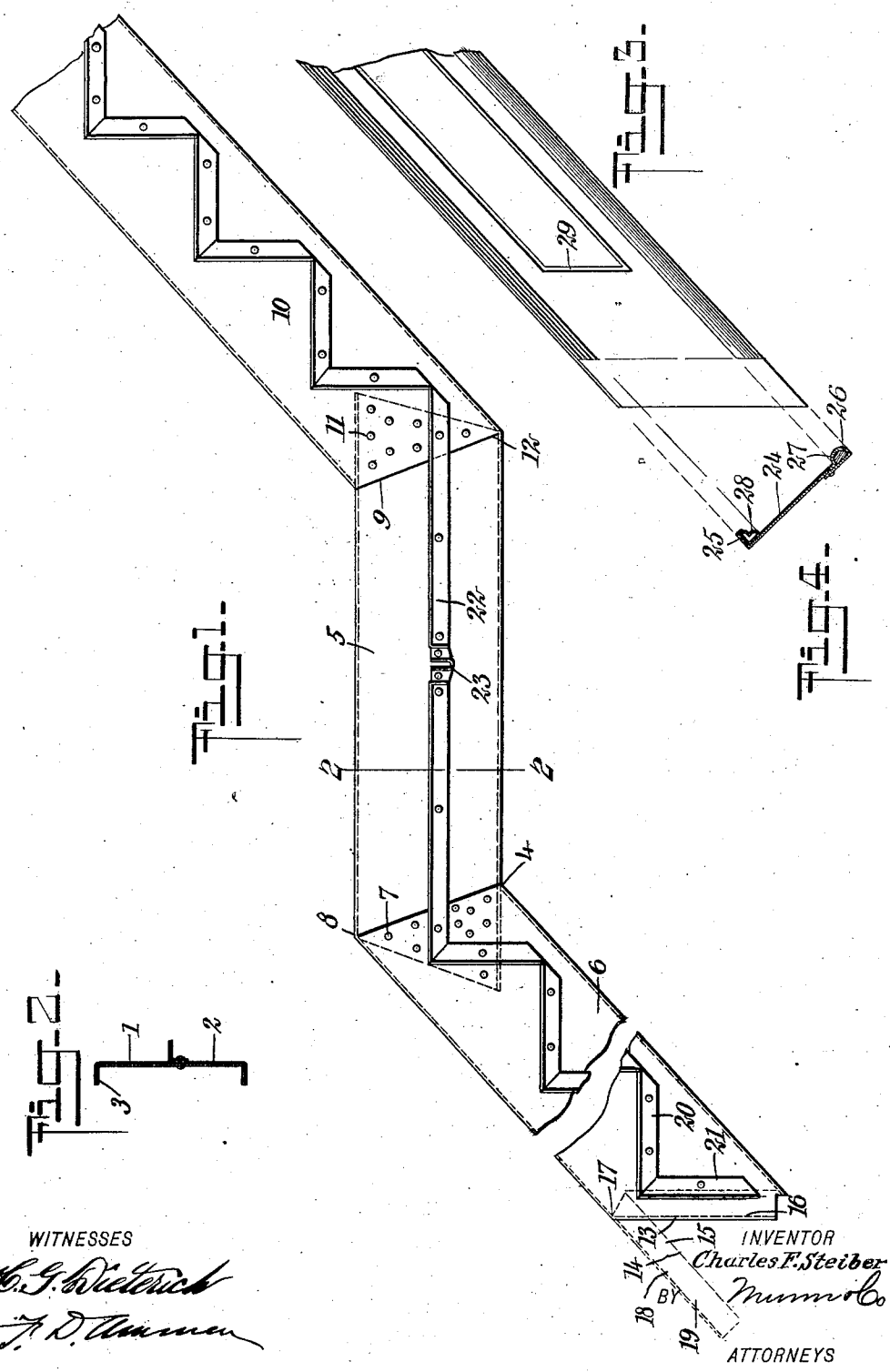


FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

WITNESSES

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STRINGER FOR STAIRCASES.

No. 853,134. Specification of Letters Patent. Patented May 7, 1907.

Application filed February 6, 1907. Serial No. 356,085.

To all whom it may concern.

Be it known that I, CHARLES FRIEDRICH STEIBER, a citizen of the United States, and a resident of the city of New York, borough of the Bronx, in the county and State of New York, have invented a new and Improved Stringer for Staircases, of which the following is a full, clear, and exact description.

This invention relates to stringers for staircases and the like, and the object of the invention is to produce a stringer having joints of improved form, giving the stringer great durability and strength.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the inner side of a stringer constructed according to my invention; a portion of the stringer being represented as broken away; Fig. 2 is a cross section on the line 2—2 of Fig. 1; Fig. 3 is a side elevation showing a facing stringer used with the stringer shown in Fig. 1; and Fig. 4 is a cross section of the stringer shown in Fig. 3.

Referring more particularly to the parts, 1 represents the body of the stringer; this body presents a deep vertical web 2, which is formed at its upper and lower edges with horizontal flanges 3, so that in cross section, the stringer presents substantially the appearance of a deep channel beam. In giving the stringer the form such as that shown in Fig. 1, where the stringer is to be used in a staircase having a landing, the lower edge of the stringer is cut as indicated at the point 4. The cut extends through the lower flange and through the web 1 to the under side of the upper flange 3, but the cut does not extend through the upper flange. The part of the stringer which is to form the landing is then bent into an inclined position with respect to the lower portion 6 of the stringer, so that the web of the portion 5 projects across the web of the portion 6. The overlapping webs are then secured together by rivets 7 as shown. In this way the effect is produced at the joint similar to that produced by the use of gusset plates. The cut which is formed in the stringer before bending in the manner suggested, is located so that after the stringer is bent, the position of the cut substantially bisects the angle formed at the knee 8 of the stringer. When this arrangement is adopted, it is found that the lower edge of the landing portion 5 of the stringer will be supported upon the upper end of the lower flange of the lower portion 6; in this way additional strength is given to the stringer.

At the upper side of the landing a joint 9 is formed in a manner similar to that just described, the cut being formed, however, from the upper edge of the stringer to the upper side of the lower flange. The overlapping webs of the landing portion 5 and the upper portion 10 are connected by rivets 11 as before. In this way, at the under knee 12 formed at the joint 9, the lower flange is left intact as it is at the point 8. In this way the strength of the joints is materially increased. At the foot of the stringer a similar arrangement is adopted so as to finish off the stairs with a vertical edge 13. At this point the material of the stringer is cut away in the form of a notch 14 included between the dotted lines 15 and 16, and the cut on the line 16 is conveyed up to a point 17 lying just below the upper flange. This leaves a projecting tongue 18 having substantially the form of an angle iron, and this tongue is bent downwardly from the point 17 so that the flange of the tongue lies along the line 13. As this part is not subjected to any strain, it is unnecessary to rivet the web 19 of the tongue to the web of the stringer.

On the inner face of the web of the stringer I attach gains 20 and cleats 21 of angle iron, arranged as shown. At the landing portion 5 of the stringer, the gain is formed into a continuous strap 22 which runs along the stringer, and this strap, if the landing is a wide one, is formed near its middle point with a pocket 23 for the attachment of a cross bar to support the middle portion of the landing. In order to finish off the outside of the stringer, I provide a facing stringer 24, the construction of which is shown in Fig. 3. This facing stringer presents a flange 25 at the upper edge thereof, the lower edge of the stringer being bent upon itself so as to form a half round roll 26, or bead. Within this bead a half round truss rod 27 extends, which acts as a stiffener for the stringer. In the angle formed by the flange 25, an ornamental molding 28 is run longitudinally, as

shown. At suitable points along the length of the facing stringer, the material is pressed so as to form a recess 29, giving an ornamental finish to the stringer.

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

1. A stringer for stairs having a web, and a flange at one edge thereof, said stringer having a landing portion inclined to the body of said stringer and having a web and a flange at the edge thereof constituting an uncut and continuous piece with said first flange, said webs being overlapped and fastened together.

2. A stringer for stairs having a lower portion, an upper portion and an inclined landing portion connecting the same, said lower portion having a web and a flange at the upper edge thereof, said landing portion having an upper flange uncut and forming one continuous piece with said first flange, said upper portion having a web and a flange at the lower edge thereof, said landing portion having a lower flange uncut and forming one continuous piece with said lower flange of said landing portion, the webs of said upper and lower portions overlapping the web of said landing portion and fastened thereto.

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

CHARLES FRIEDRICH STEIBER.

Witnesses:
EDWARD SCHOPPE,
PETE IMHOF.