No. 815,840. PATENTED MAR. 20, 1906.

J. M. KNAUS.

STAIR.

APPLICATION FILED OCT. 18, 1905.

Fig. 3

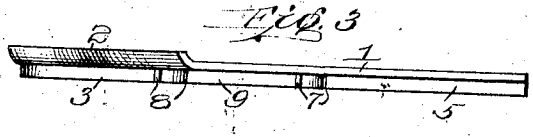


Fig. 1.

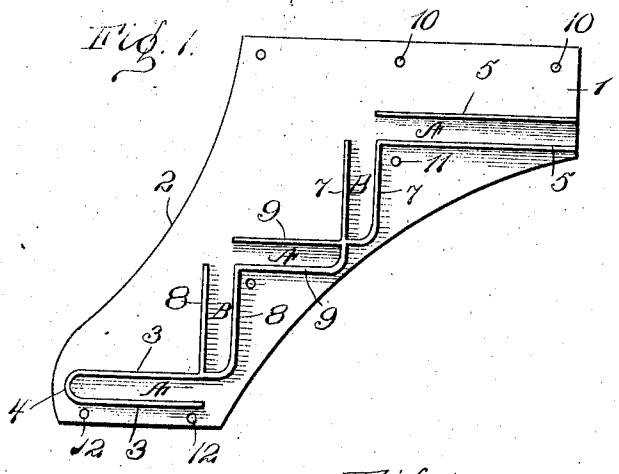


Fig. 2.

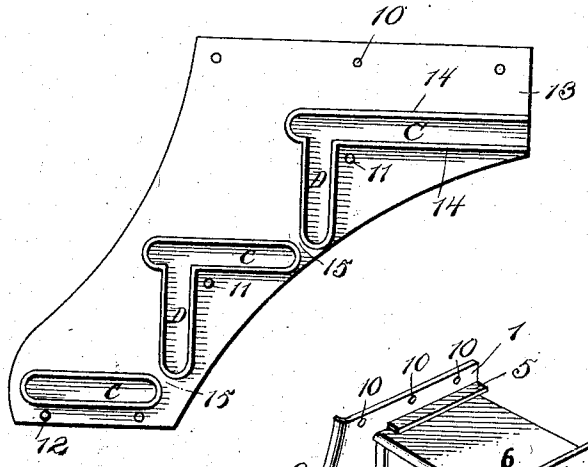
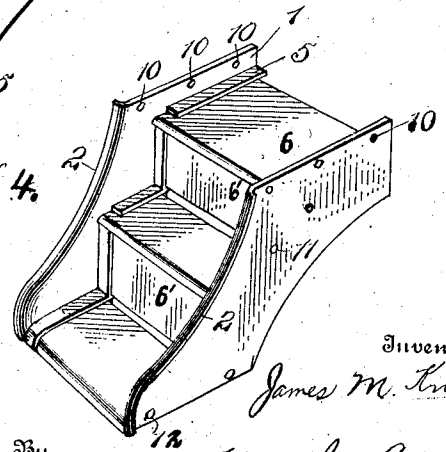


Fig. 4.



Witnesses

J. M. Fowler Jr.

E. C. Vrooman.

Inventor

James M. Knaus

By Mason, Fennick & Lawrence,

Attorneys.

UNITED STATES PATENT OFFICE.

JAMES M. KNAUS, OF SEDALIA, MISSOURI.

STAIR.

No. 815,840. Specification of Letters Patent. Patented March 20, 1906.

Application filed October 18, 1905. Serial No. 283,304.

To all whom it may concern:

Be it known that I, JAMES M. KNAUS, a citizen of the United States, residing at Sedalia, in the county of Pettis and State of Missouri, have invented certain new and useful Improvements in Stairs; and I do 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 appertains to make and use the same.

This invention relates to improvements in stairs, and more particularly to a stair side plate.

One of the objects of the invention is the provision of means for facilitating the assembling and supporting of the lifts and treads of the stairs in position.

Another object of the invention is the construction of plates or members which are provided with peculiarly-formed means for supporting a horizontal member—as, for instance, a stair-tread, and, if desired, a stair-lift.

With these and other objects in view the invention consists of certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the claims hereto appended.

In the drawings, Figure 1 is a view in side elevation of one of the stair side plates constructed in accordance with the present invention. Fig. 2 is a similar view to Fig. 1 of another embodiment of the present invention. Fig. 3 is a top edge view of the plate depicted in Fig. 1. Fig. 4 is a perspective view of a pair of plates employed in constructing a step or stairs and showing lifts and treads in position upon said plates.

Referring to the drawings, 1 designates a preferably flat plate or member. This plate is preferably formed of metal and is provided with a flanged edge 2, Fig. 3. The flanged edge is preferably bent outwardly. Formed integral upon the inner face of each plate 1 is a plurality of sets of parallel flanges. The lower horizontal set of flanges 3 3 form a support for the lower tread of the stairs. These flanges are integrally connected at their front edge, preferably by a curved portion 4, while the upper horizontal set of flanges 5 5 are not connected at either end, but are left open, so as to permit the upper tread 6 to be inserted from either the rear or forward end of the plates. The vertical sets of parallel flanges 7 7 and 8 8 are integrally connected at their lower ends, while the horizontal set of parallel intermediate flanges 9 9 are integrally connected at their inner ends. These flanges or extensions of the plates constitute sockets or grooves A and B for the treads and lifts, respectively, within which the lifts and treads may be easily positioned. Formed in each of the plates 1 and near its upper edge is a plurality of apertures 10. Apertures 11 are formed in the plate below that portion from which extend the inner flanges 5 and 9. These apertures 11 are preferably formed in the plate contiguous to where the flanges 5 and 7 and 8 and 9 are integrally connected. Apertures 12 are formed in each plate near the lower edge thereof below the lower horizontal flange 3.

The tread and lift receiving sockets C and D, respectively, of plate 13 are formed by substantially parallel flanges, which are integrally connected at their ends, with the exception of the upper horizontal flanges 14 14, which are not connected at their inner ends. The treads and lifts 6 and 6′, respectively, must be seated in these grooves or pockets C and D of the plates 13 before both of the plates are secured in their permanent position. Formed in each of the plates 13 are apertures 10, 11, and 12.

It is to be noted that the right-angled parallel flanges for the lifts and treads produce a plurality of substantially L-shaped grooves or pockets. Within each of the L-shaped structures may be positioned a lift and a tread.

In the embodiment depicted in Fig. 2 the lower ends of the vertical flanges are not integral with all of the horizontal flanges, thereby leaving a space 15 between some of the horizontal and vertical flanges through which any foreign substance dropping upon some of the treads may pass. The laterally-extending flanges of the plates constitute casings or inclosing means for the ends of the lifts and treads, thereby protecting the same.

The structure depicted in Figs. 1 and 4 permits the lifts 6′ to be dropped into the sockets B, (formed by the flanges of the plates, which constitute brackets,) and subsequent to the positioning of the lifts 6′ the treads 6 may be positioned within the sockets or grooves A. In fact, the lower tread may be positioned within the lower grooves or sockets A before the lifts 6′ are positioned upon the plates. After the lifts 6′ have been positioned upon

the plates the upper treads may be slid into the grooves A.

The flanged lift and tread supporting means formed upon each of the plates constitute a "stepped" structure.

The plates, which are constructed in accordance with this invention, may be also employed in the construction of coach-steps or any analogous structure.

What I claim is—

1. A device of the character described, comprising a plate provided with parallel, vertical, and horizontal flanges, said flanges producing vertical and horizontal grooves or pockets, the vertical grooves closed at their lower ends, and said vertical and horizontal grooves open at one end.

2. A device of the character described, comprising a plate provided with horizontal and vertical flanges, the vertical flanges integrally connected at their lower ends.

3. A device of the class described, comprising a metallic plate provided with a flanged edge, said plate provided with apertures, a plurality of parallel, vertical flanges, and a plurality of parallel, horizontal flanges formed upon said plate, the lower, horizontal flanges integrally connected at their front end, the vertical flanges integrally connected at their lower end.

4. As a new article of manufacture, a stair side plate formed from a blank sheet of metal provided with laterally-extending, sets of parallel flanges producing a "stepped" lift and tread-supporting means.

5. A device of the class described, comprising a plate provided with a set of flanges integral at one of their ends, said flanges constituting a groove or pocket.

6. A stair-plate provided with a set of flanges constituting a groove or pocket within which a tread or riser may be positioned.

7. A device of the character described, comprising a plate provided with sets of horizontal and vertical flanges, the vertical flanges in each set integrally connected at their lower ends.

8. A device of the character described, comprising a plate provided with a set of vertical flanges, the flanges in said set integrally connected at their lower ends, and tread-supporting means formed upon said plate.

9. A device of the character described, comprising a plate provided with horizontal and vertical flanges, said flanges extending at right angles from said plate, and flanges formed upon said plate and positioned parallel to said first-mentioned flanges.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES M. KNAUS.

Witnesses:

C. H. BOATRIGHT,

R. C. KINSEY.