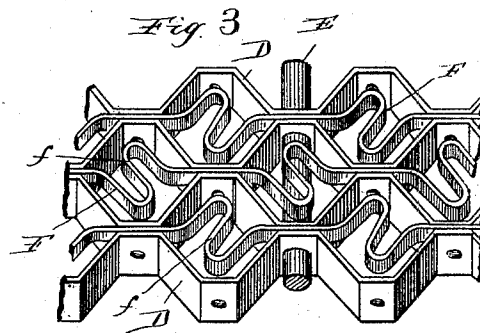
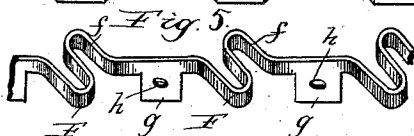
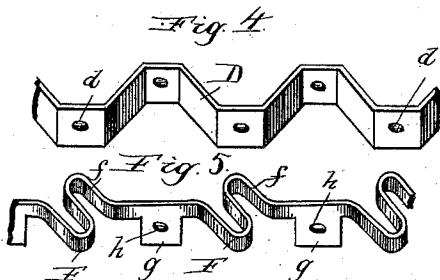
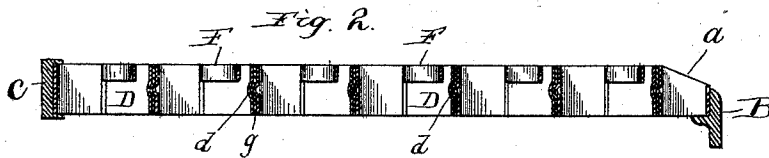
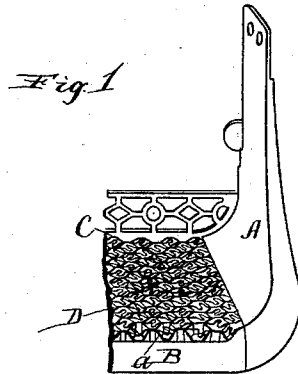


(No Model.)

F. H. STANWOOD.
CAR STEP.

No. 476,323.

Patented June 7, 1892.



Witnesses:

Sew E. Curtis

H. W. Munday

Inventor:

Frank H. Stanwood

By Munday, Warts & Adeock
his Attorneys.

UNITED STATES PATENT OFFICE,

FRANK H. STANWOOD, OF CHICAGO, ILLINOIS.

CAR-STEP.

SPECIFICATION forming part of Letters Patent No. 476,323, dated June 7, 1892.

Application filed September 12, 1891. Serial No. 405,457. (No model.)

To all whom it may concern:

Be it known that I, FRANK H. STANWOOD, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Steps, of which the following is a specification.

This invention relates to certain improvements in the class of car-steps the tread whereof is formed of reticulated or open work, such as is shown in Letters Patent to me No. 382,331, dated May 8, 1888, No. 385,017, dated June 26, 1888, and No. 392,891, dated November 13, 1888.

A prime object in constructing the treads of steps of this open-work is to adapt the steps to prevent any slipping of the foot upon them, so that persons getting on and off the cars will not be liable to injury from this cause. A suitable surrounding frame is, however, a necessity, inasmuch as the open-work or tread portion must be provided with a support at all sides, and the front rail of this frame is located where it must receive pressure from the feet of passengers. Being constructed of metal, the front rail soon becomes smooth under the wear to which it is subjected in use, so that passengers frequently slip when their weight is resting upon it. To obviate this evil pertaining to the ordinary construction of the front rail is one object held in view in my present invention, and this object I accomplish by lowering the front rail, so that it lies in a lower plane than the open-work of the tread and so that any person placing his foot upon the step necessarily treads upon the open-work rather than upon the rail. Of course the necessary metal for strength can be used in the rail by locating the major portion of it below the plane of the tread, and I find it desirable also to bevel off the front portion of the open-work, so that at the extreme edge the open-work will nearly meet or be about flush with the upper edge of the rail.

To prevent people carrying canes and umbrellas from accidentally inserting the same in the meshes of the tread, I partially obstruct the meshes by interwoven strips of metal, substantially as hereinafter described, such strips being adapted to allow the dirt and snow upon the passengers' feet to fall through the meshes while they so cover the area of the

meshes as to prevent the entrance therein of the points of canes and umbrellas.

The nature of my invention will be better understood from the following description and the accompanying drawings, in which—

Figure 1 is a partial view in perspective of a step embodying my present improvement. Fig. 2 is an enlarged transverse vertical section. Fig. 3 is a perspective of a portion of the tread or open-work of the step. Fig. 4 shows a portion of one of the flat metal strips of which the tread of the step is composed, and Fig. 5 is a like view of the interwoven strip for partially closing the meshes of the step.

In said drawings, A represents one of the hangers of the car-step, B the front rail of the frame, and C the rear or back rail thereof. The body of the step is made up substantially in the manner set forth in my Patent No. 392,891, being composed of bent flat metal strips D and the angles provided with interlocking nibs *d*, substantially as described in said patent. Cross-rods E are also provided at intervals for stiffening and tying together the structure. The front rail B, it will be noticed, is lowered so that its upper edge lies considerably below the upper plane of the tread, the object of this feature being to prevent passengers from placing their weight upon the rail. This construction insures the placing of the foot upon the open work of the tread, which is adapted to obviate slipping, and thus prevent accidents to the passengers. The front edge of the open-work may be, and preferably is, beveled off, as shown at *a*.

The other feature of the invention—namely, the guarding against the insertion in the meshes of the tread of the points of umbrellas, &c.—I obtain by means of the bent and interwoven strip F. This strip at the portions thereof which are placed in the meshes of the tread is bent to an S-form, preferably as shown at *f*, and these portions are also preferably narrower than the strips D, in order that they may not serve to retain the dirt and snow which may be dislodged from the feet of the passengers. Those portions which lie between the abutting angles of the strips D are, however, of the same width as said strips D, as shown at *g*, and the portions *g* are also provided with the interlocking nibs *h*, corre-

sponding to those of strip D, so that when placed alternately in the step with strips D there may be a uniform interlocking at each junction of said strips D and F. The wide portions *g* prevent any tendency to rock upon the part of strips F and hold them securely in place. The S-form of bend, while it effectually guards against the entrance within the mesh of umbrella-tips, yet leaves openings of sufficient area to permit the discharge of snow and dirt. The upper edge of strip F may also lie flush with the upper surface of the tread and aid in some degree in preventing slipping.

I claim—

1. The open-work or reticulated step having a front rail located in a plane below that of the tread, whereby the passenger is compelled to place his foot upon a portion of the tread adapted to prevent slipping, substantially as set forth.

2. The open-work or reticulated step hav-

ing a front rail located in a plane below that of the tread and having its front portion beveled off, substantially as specified.

3. The open-work or reticulated step having its meshes guarded by an interwoven strip F, having narrow portion *f* and wide portion *g*, substantially as set forth.

4. The open-work or reticulated step the tread whereof is composed of bent strips D, placed with their angles abutting and interlocked, and guard-strips F, placed between and interlocked with said strips D, substantially as set forth.

5. The open-work or reticulated step consisting of strips D and guard-strips F and provided with a front rail B, located below the surface of the tread, substantially as set forth.

FRANK H. STANWOOD.

Witnesses:

H. M. MUNDAY,
LEW. E. CURTIS.