H. ENGEMANN.

STAIR TREAD.

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1,177,402. Patented Mar. 28, 1916.

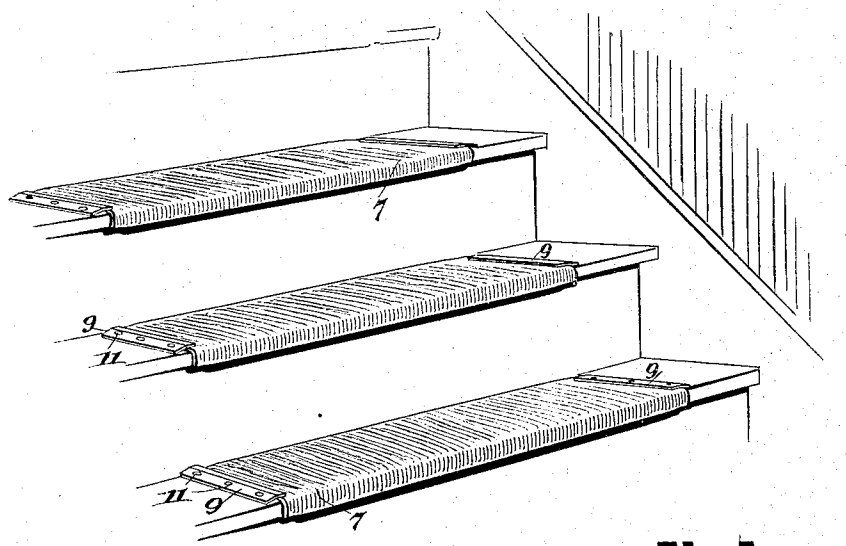

Fig. 1.

Fig. 2.

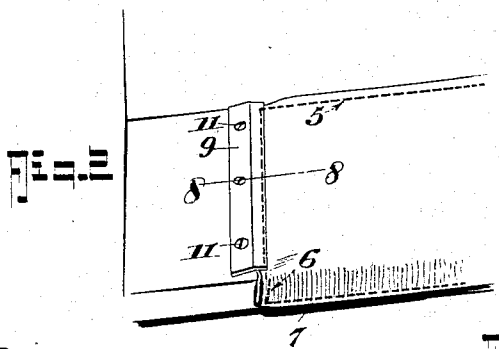

Fig. 3.

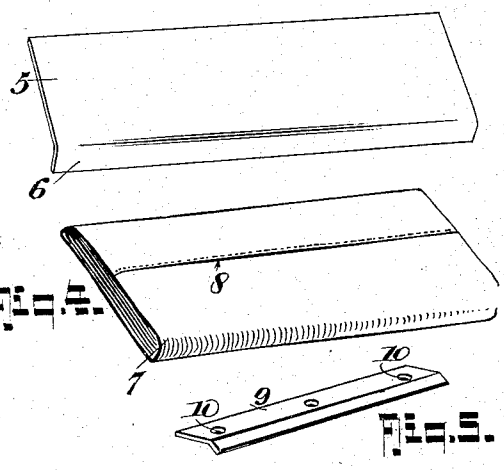

Fig. 4.

Fig. 5.

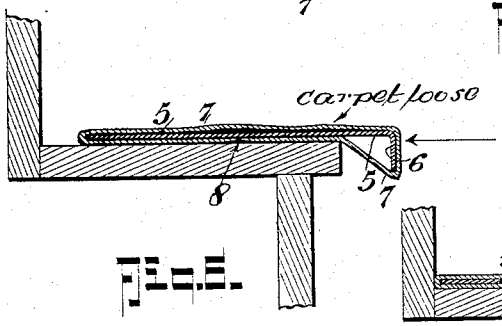

Fig. 6.

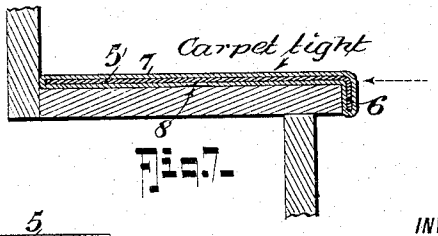

Fig. 7.

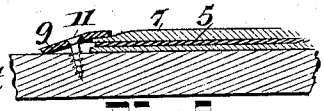

Fig. 8.

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STAIR-TREAD.

1,177,402. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed September 3, 1915. Serial No. 48,887.

To all whom it may concern:

Be it known that I, HERBERT ENGEMANN, a subject of the Emperor of Germany, but who has declared his intention of becoming a citizen of the United States, and a resident of Salt Lake City, in the county of Salt Lake and State of Utah, have made certain new and useful Improvements in Stair-Treads, of which the following is a specification.

One of the principal objects of my invention contemplates the provision of a stair tread of such nature as to economize the use of carpet or other material employed, by eliminating the use of the carpet on the risers of the stair-way, and by providing for the exposure at will of previously protected fresh sections or areas of the carpet to replace the portions which have become worn and disfigured, so that in time all of the material will be used before such material is discarded.

Another object of the invention is to provide an improved stair-tread in the nature of a plurality of tubular covering members formed of stair carpet or other desirable material, each of which encompasses a metallic plate whose function it is to retain the carpet in proper form, means being provided in the nature of metallic rails or plates attached to the stairs for engaging the tread member at the ends thereof for retaining them in proper position on the stairs, the construction being such that when the tread members become worn on their exposed surfaces they may be slipped around the forms so that fresh surfaces will be exposed and the worn surfaces hidden from view.

A further object of the invention is to provide a device of the class described which will be extremely simple, durable, efficient in operation and inexpensive to manufacture.

With these and other objects in view which will become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawing, in which like characters of reference indicate like parts throughout the several figures, of which—

Figure 1 represents a view in perspective of a section of stair-way equipped with the stair treads constructed according to my invention. Fig. 2 represents a fragmentary perspective view in detail of one of the treads. Fig. 3 represents a view in perspective of the filler plate or metallic form. Fig. 4 represents a view in perspective of the tubular carpet within which the form is inserted. Fig. 5 represents a view in perspective of one of the retaining plates or rails. Fig. 6 represents a view in section taken through a portion of a stair-way showing the position of the device before it is finally secured in place and before the carpet has been finally stretched upon the metallic form. Fig. 7 represents a similar view showing the position of the parts after the carpet has been stretched, and the device secured in permanent position. Fig. 8 represents a view in section taken vertically on the plane indicated by the line 8—8 of Fig. 2.

In carrying out my invention I provide a metallic filler plate or form 5 in the nature of a substantially rectangular strip of metal having one longitudinal edge downturned approximately at right angles. as at 6. The width of the plate from the flange 6 to the opposite edge thereof, is approximately equal to the width of the steps to which the device is to be attached, and the width of the flange itself is substantially equal to the thickness of the nosing of the step. This metallic form is adapted to be inserted within a tubular member 7 made of stair carpet or of other desirable and suitable material.

The tubular member 7 may be woven in such manner that no seam appears, or may be made from strips of carpet of suitable length, the ends of which are turned upon the strip and stitched together as at 8. When the form is inserted within the tubular member, the latter substantially loosely encompasses the form.

In securing the device in place upon a stairway, it is first arranged upon the step in the manner indicated in Fig. 6, with the flange 6 extending beyond the front edge of the strip and extending downwardly in the manner shown. By forcing the form rearwardly so as to abut at its rear edge against the adjacent riser, the carpet is stretched upon the form by reason of the forward edge or nosing of the step entering into the angle defined between the body and flange portions of said form. The device in this position is indicated in Fig. 7.

In order to retain the tread in place upon

the step the rails or plates 9 are employed. Each of them is of a length substantially equal to the width of the step to which it is to be applied. The rails are provided with a plurality of spaced openings 10 for the reception of fastening elements such as screws 11, whereby they may be attached to the steps in the manner shown.

Each of the plates or rails 9 has its inner edge bent into angular relation with the main portion of the rail, or offset as it were in the manner shown, and this angularly arranged inner edge is adapted to engage upon the tread member at one end thereof. The elements 11 are then anchored so that the tread is clamped in position upon the steps.

When the exposed surfaces of the tread become worn or disfigured, the plates or rails 9 which retain it in position may be unloosened by partially withdrawing the retaining elements 11, and the tread may be withdrawn or removed and the carpet or tubular member 7 be turned or rotated about the form 5 until the unused surfaces have been exposed on the upper side of the form and the old worn out surfaces positioned on the under side thereof. The device may then be placed upon the step and reinserted beneath the retaining plates 9, and the latter clamped into position.

Such a device as I have described provides for the economical use of the tread material because all of the surfaces of the material used are sooner or later brought into play, and because the use of the tread material on the risers of the stair-way is done away with.

An advantage further rises from the fact that the grain of the wood, should the stair-way be constructed of wood, can be displayed on the risers. Further, an extremely sanitary method of carpeting a stair-way is provided by my device because the carpet fits snugly around the form of the filler plate and engages around the nosing and at its ends is tightly clamped down by the rails 9. Thus no crevices or creases in which dust and foreign matter might accumulate occur, and the pocket for the collection of dust and dirt afforded by the ordinary method of continuing stair carpet from the nosing to the stair below is eliminated.

The metal rails which are used in clamping the device in place lend a finished appearance and render the effect an extremely pleasing one.

The double thickness of carpet afforded by the tubular member makes the use of stair pads unnecessary, and adds very materially to the resilience and liveliness of the treads, thus decreasing substantially the discomfort and inconvenience of stair climbing.

Although I have described the preferred embodiment of my invention, I may desire to make such changes in the construction, combination and arrangement of parts thereof as do not depart from the spirit of the invention and the scope of the appended claims.

I claim:

1. A stair tread comprising a rigid form in the nature of a substantially rectangular strip of material having a depending flange formed along one edge thereof and adapted to overhang the nosing of a step, a flexible tubular member within which said form is inserted, and a pair of retaining rails adapted to be removably secured upon a step and having their inner edges bent into angular relation with the body portions of the rails and adapted to engage upon the tread at the ends thereof for clamping said tread in position.

2. A stair tread comprising a rigid form having a depending flange provided along one edge thereof, a flexible tubular member within which said form is inserted, said tubular member being freely movable about the form, said form adapted to be arranged upon a step with the flange overhanging the nosing of the step, and means detachably connected with the step and adapted to engage the ends of the tread for retaining the latter in place upon the step.

3. In a device of the class described the combination of a rigid form, a flexible tubular member surrounding the form and movable about the same, and rails adapted to be connected with a step for engaging the tubular member and form whereby to retain them in place upon the step.

4. A stair tread including a rigid form and a tubular member surrounding the form and adapted to be turned upon the form at will for exposing new surfaces for use, and means for detachably retaining the tubular member and form in place upon a step.

5. The combination with a step, of a flexible tubular member, a rigid form loosely fitting therein and having a portion extending at an angle to the main portion thereof, whereby to receive the nosing of the step for stretching the tubular member on the form, and means for detachably retaining the member and form in place upon the step.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."