Aug. 7, 1928. 1,680,032

H. T. ANDERSON

METAL STEP

Filed April 25, 1927

Fig. 1.

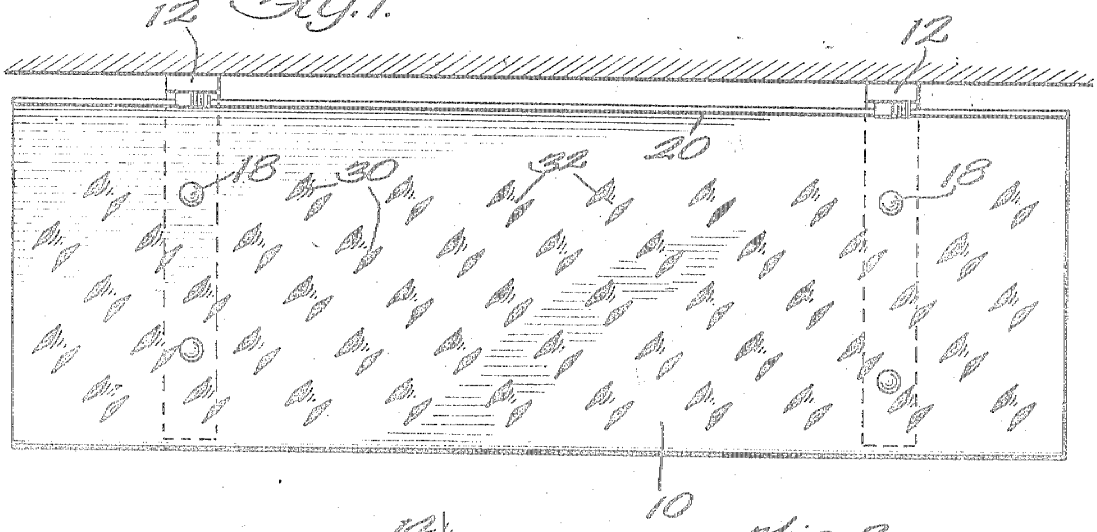


Fig. 2.

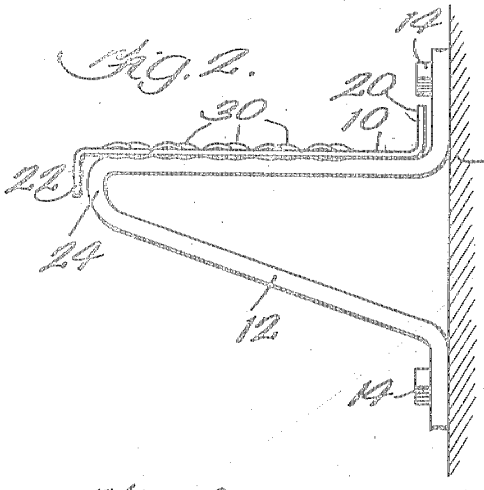


Fig. 3.

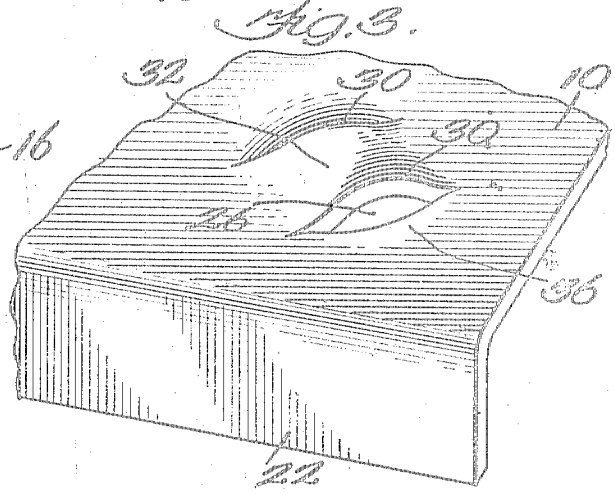


Fig. 4.

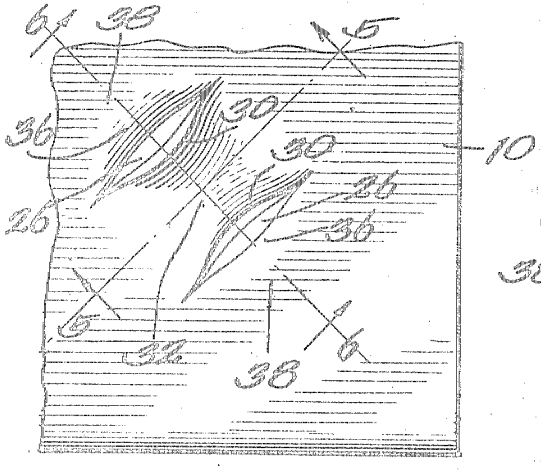


Fig. 5.

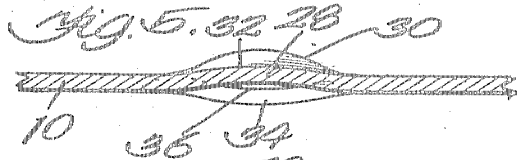
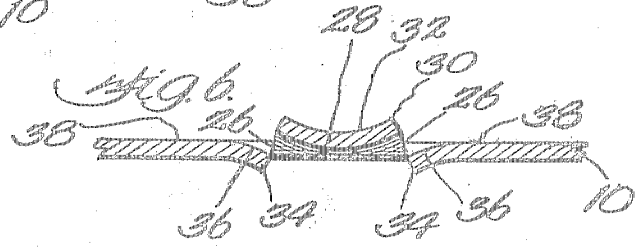


Fig. 6.



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Patented Aug. 7, 1928. 1,680,032

UNITED STATES PATENT OFFICE.

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METAL STEP.

Application filed April 25, 1927. Serial No. 186,253.

This invention relates to metal steps used on railway cars, out-of-door stairways and the like wherein there is always the problem of insuring safety in all kinds of weather for a person placing his foot upon the step.

The object of the invention is to provide a step which is easily and cheaply constructible; which is satisfactory in use and not readily liable to get out of order; which is always substantially free from ice and the like at the points on the step engaged by the foot of the user.

The invention consists in providing on the upper or tread surface of the step sharpened projections which engage the shoe of the person carried by the step, said projections being so constructed and arranged that there is drainage on all sides of the projections through adjacent perforations in the step, thereby reducing to a minimum the chances of the portion of the step engaged by the shoe of the user being in any way slippery and therefore dangerous.

The invention further consists in numerous features and details of construction which will be hereafter more fully set forth in the specification and claims.

Referring to the drawings in which like numerals designate the same parts throughout the several views:

Figure 1 is a plan view of a step illustrating this invention in its preferred form.

Figure 2 is a side elevation taken from the right hand end of Figure 1.

Figure 3 is an enlarged perspective view of a part of anti-slipping devices on the step of this invention.

Figure 4 is a perspective view looking more nearly vertically downward than the view of Figure 3.

Figure 5 is a sectional side view on the line 5—5 of Figure 4.

Figure 6 is a corresponding view on the line 6—6 of Figure 4.

The step of this invention is described as a metal step and under present known conditions will ordinarily be made of that material but any other material capable of construction and use as here described may be substituted without departing from this invention.

The step of this invention is ordinarily a metal plate 10 supported on brackets 12 or the like attached by any suitable means, as, for instance, screws or bolts 14, to the wall 16 of any adjacent object in connection with which the step is necessary equipment. This may be a railway car, an automobile, the side of a building or anything else.

The step 10 is in the case here illustrated permanently secured to the brackets 12 by rivets or the like 18. The step is, in the particular case here illustrated provided with an upwardly turned rear flange 20 adjacent to the wall 16 and a downwardly turned front flange 22 extending over the extreme points 24 of the brackets 12.

In order to prevent persons mounting the step 10 from slipping thereon, the tread face of the step is provided with a multiplicity of short parallel cuts or gashes 26 leaving between them a central body of material 28 whose adjacent edges 30, are stamped upwardly, as clearly shown in Figure 6, to make comparatively sharp shoe engaging points or lines on opposite sides of an intervening curved surface 32. The severed portions of material 34 immediately adjacent to the edges 30, just described, and on opposite sides of the slits or cuts 26 are, as clearly shown in Figure 6, bent downward so as to form downwardly inclined drainage surfaces 36 over which water or other liquid collected on the curved surface 32 and on the adjacent flat surfaces 38 of the step 10 may pass, thereby insuring that the upwardly pointed shoe engaging edges 30 are, for all practical purposes, always free of water and snow when the shoe of the operator comes in contact with them. As to snow, this last statement is true in the sense that the points or lines 30 being sharp, any ice which may be at the extreme points, when the shoe of the operator engages them, will be instantly crushed and thereby removed under the weight of the person whose foot is sustained on these points. The statement as to water is literally true because any water touching the points or lines 30 will instantly drain off, first to the surface 32 and thence around the ends of the slots 26 to the inclined drainage surfaces 36 heretofore described.

By providing the surface of step 10 with a multiplicity of groups of upwardly turned devices 30—32—30, a step on which the user may step without danger of slipping is, for all practical purposes, provided and one which is much safer and more satisfactory in use than prior known devices.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:

1. As an article of manufacture, a normally horizontal step having a tread surface provided with a multiplicity of pairs of short adjacent slots, the step material between each pair of slots being upturned, the material on the opposite sides of the slots being downturned to form drainage openings as described said upturned portion being shaped to provide a transversely extending, curvilinear depression.

2. As an article of manufacture, a normally horizontal step having a tread surface provided with a multiplicity of pairs of short adjacent slots, the material on the opposite sides of the slots being down-turned to form drainage openings, the surface between the upturned portions being shaped curvilinear in both horizontal and transverse directions to drain downward and thereby conduct liquid upon the last mentioned surface downward to finally pass through the drainage openings.

3. An article of manufacture comprising a normally horizontal step having a tread surface provided with a multiplicity of pairs of short adjacent slots, the step material between each pair of slots being upturned, the material on the opposite sides of the slots being downturned to form drainage openings, said upturned portion having its sides inclined inwardly and downwardly to facilitate drainage.

In witness whereof, I have hereunto subscribed my name.

HARRY T. ANDERSON.