

No Model.)

P. H. JACKSON.  
STAIRS.

No. 307,551.

Patented Nov. 4, 1884.

FIG. 1.

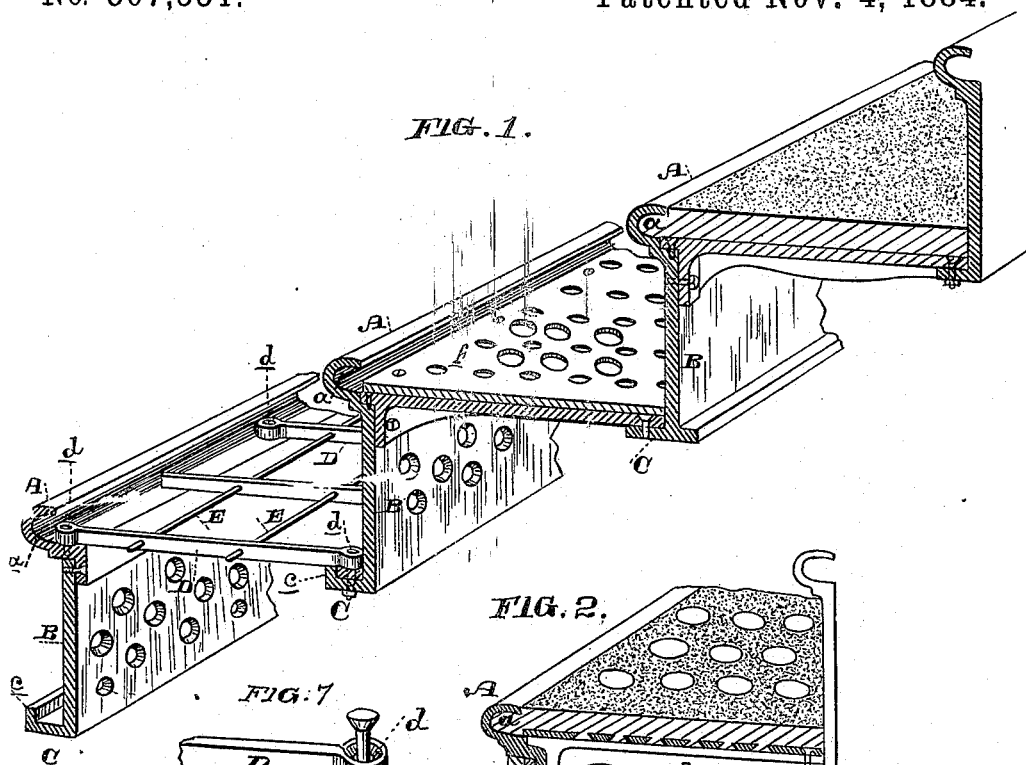


FIG. 2.

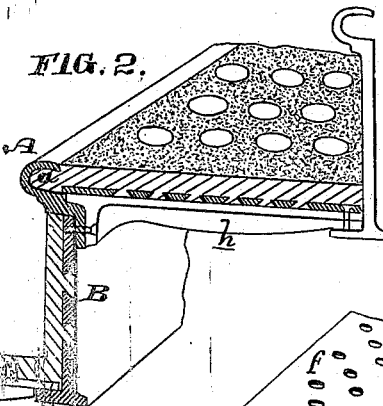


FIG. 4.

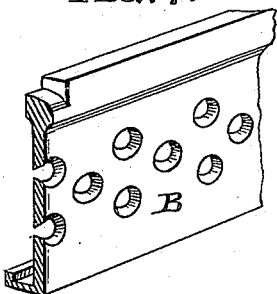


FIG. 5.

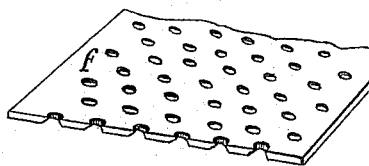


FIG. 3.

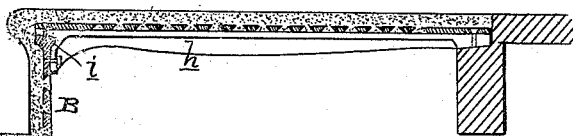
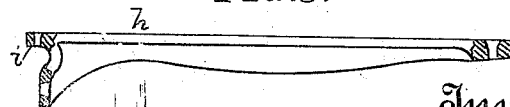


FIG. 6.



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# UNITED STATES PATENT OFFICE.

PETER H. JACKSON, OF SAN FRANCISCO, CALIFORNIA.

## STAIRS.

SPECIFICATION forming part of Letters Patent No. 307,551, dated November 4, 1884.

Application filed September 3, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, PETER H. JACKSON, of the city and county of San Francisco, and State of California, have invented an Improvement in Stairs; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in stairs which are used in buildings, either plain or with openings for glass for illuminating.

It consists of risers constructed so as to form deep vertical beams, supported at the ends only, with treads extending from the top of one to the foot of the next, and an improved means for securing the two together, the formation of the nosing for the edge of each tread with a concave space at the rear, into which Portland cement or other material may be pressed in the plastic state, so as to form a tight joint, a means for securing the nosing to the riser, and also uniting it with the foot of the next one, with means for securing the cement or other material of the tread, together with certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a view showing the steps with the recessed nosing, a means for uniting the riser and treads, and for applying the surface of the Portland cement or other material. Fig. 2 is a view of the step and riser, with a surface of Portland cement or other material with lights and a nosing of metal. Fig. 3 is a section of a stoop and steps. Fig. 4 shows a portion of a riser. Fig. 5 is the cross-plate for bottom of steps, with countersunk holes for holding plaster filling. Fig. 6 is an enlarged view of the bracket-bearer. Fig. 7 is an enlarged view of the metallic bar with eyes at the ends.

My present invention provides for certain improvements in devices shown in patent issued to me July 22, 1884. In the present case I have shown the nosings A, which form the front of the tread, cast with a recess, *a*, in the rear portion, which corresponds with the convex curve in the front. This recess serves a double purpose: first, it may receive the edge of the material of which the tread is formed, espe-

cially if it is formed from Portland cement, asphaltum, or other plastic material, and it fits in this recess so as to prevent leakage and make tight joints; second, the advantage is that by being a much lighter casting it is not apt to be warped into a curved or crooked form when it cools, as was more apt to be the case when this portion was formed solid. The riser B has a flange, C, projecting outward from its front edge. Rods or bars D extend from the inner lower part of the nosing back to this flange C, and have eyes *d* made in their ends, through which bolts pass to secure the lower portion of each riser to the rear of the nosing which rests upon the top of the next riser in front and below. Rods or bars E may also pass through or across bars D, so as to lie parallel with the nosing in front, and the material of which the tread is to be formed, which may be made of Portland cement, asphaltum, or other plastic substances, may be poured or spread into the interstices between these bars, a board or plate being first fixed beneath, so as to prevent the material from running through. The rear edge of this material fills in the channel made by the upturned lip *c*, before described, while its front edge fills the recess in the nosing, thus forming a tight joint, and at the same time serving as the band to hold the front lower portion of each riser to the top upper portion of the next one in front. This nosing may either be cast entire with the riser, or they may be separate and bolted to the riser. The surface of the tread may either be plain or it may be perforated for the insertion of glass, as shown in Figs. 1 and 2.

By reason of the eyes *d* in the bars, which extend from the front to rear, the rivets which are used to secure them in place pass through the eyes and thus prevent the cement from breaking out after it is in place, as would be the case if it were not for this construction. In some cases it may be desirable to fix an iron plate, *f*, across beneath the filling of cement or plastic material, which shall remain permanently in place, being screwed to the back of the riser near the top, and to the front of the one behind near the bottom. In this case the bars would not be necessary, but countersunk holes could be made in the plate to hold

the plastic material in place, a board being placed below, so that when the cement is pressed into and through these holes it would not run entirely through.

5 In my former patent I have shown brackets or bearers placed at one or more points between the ends of the stairs, so as to support the treads. These brackets are made of considerable depth, extending to the bottom of  
10 the riser. In the present case I have shown brackets  $\frac{1}{2}$  of shallow depth bolted to the rear near the top of one riser, extending back beneath the tread, and resting upon projecting lip or flange from the front of the lower portion of the next riser to the rear. By this construction these bearers occupy but little space,  
15 and when illuminating-tiles are used do not act to cut off any portion of the light which may pass through. In some cases I found it advisable to extend the coating of Portland cement or plastic material so as to also cover the front of the risers. In this case the front of the riser and the tread will be entirely formed of the covering material, and the only iron  
20 part which remains in view will be the nosing before described. As this is subject to the greater portion of the wear where the stairs are being used, it will be seen that the material used in this portion of the step has a  
25 greater power to resist the wear, and I am thus enabled to employ the plastic material for the treads in front of the risers with much better effect.

In some cases I have found it desirable to  
35 form the whole surface of the stairs of artificial stone, and in such cases I employ metallic beams or risers, which are supported at their ends as before, and have outwardly-projecting flanges at the bottom. Brackets are  
40 secured to the upper edges of these risers, extending backwardly, and being bolted to the flanges of those behind, so as to form supports at intervals in the length of the stairs, these brackets resting upon the top and flanges  
45 of the risers, as shown at *i*, but extending to a very little depth downward. The risers and treads are properly prepared to receive a coating of Portland cement, concrete, or other material which will set from a plastic condition, so as to form artificial stone, thus making  
50 the entire surface of the steps of stone without its being necessary to make them of great thickness, as in the case of ordinary stone steps. This enables me to employ the  
55 space beneath the stairs for desk-room or other purposes, as the whole depth of the iron and concrete formation will not be sufficient to greatly fill up the space.

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

1. In stairs, the risers having concavo-convex nosing at the top, and flange projecting from the lower front edge, together with the transverse uniting-bars, substantially as herein described. 65

2. The transverse uniting-bars having eyes in their ends to receive rivets or screws, together with a surface or tread formed of Portland cement or other material which sets from a plastic state, risers having an outwardly-projecting flange formed upon the front lower edge, and the nosing with the concave recess at the rear, and to which the cement is fitted, as herein described. 75

3. In stairs, the risers having the recessed nosing at the upper edge, a channel formed by the flange and lip at the lower edge, transverse uniting bars or eyebolts, and longitudinal rods, together with a coating or covering of Portland cement or other plastic material, fitting the recess and around the rods and bars, as herein described. 80

4. In stairs, the risers having the recessed nosing and the flanges at the lower front edge, together with treads extending from one to the other and united as shown, and the bearers resting upon the upper rear edges and lower front edges, respectively, of adjacent risers, so as to support the treads, substantially as herein described. 85

5. In stairs, the risers having nosings at the top and projecting flanges at the lower front edges, bars secured between the bottom of one riser and the nosing at the top of the next in front, said bars and risers having countersunk holes made through them, together with a filling of plastic material covering the treads, and also covering the front of the riser, as herein described. 95

6. In stairs, metallic beams or risers, with outwardly-projecting flanges at the lower edges, and resting upon end supports, a frame resting on the tops of the risers in front, and the lower flanges of those behind at points between the ends of the beams, together with a covering of Portland cement, concrete, or other plastic material, to form artificial stone steps, substantially as herein described. 100

In witness whereof I have hereunto set my hand. 110

PETER H. JACKSON.

Witnesses:

S. H. NOURSE,  
E. H. THARP.