

Peter W. Neefus.

IMPROVED STAIR AND FLOOR PLATE.

PATENTED NOV 29 1870

109651

Figure 1.

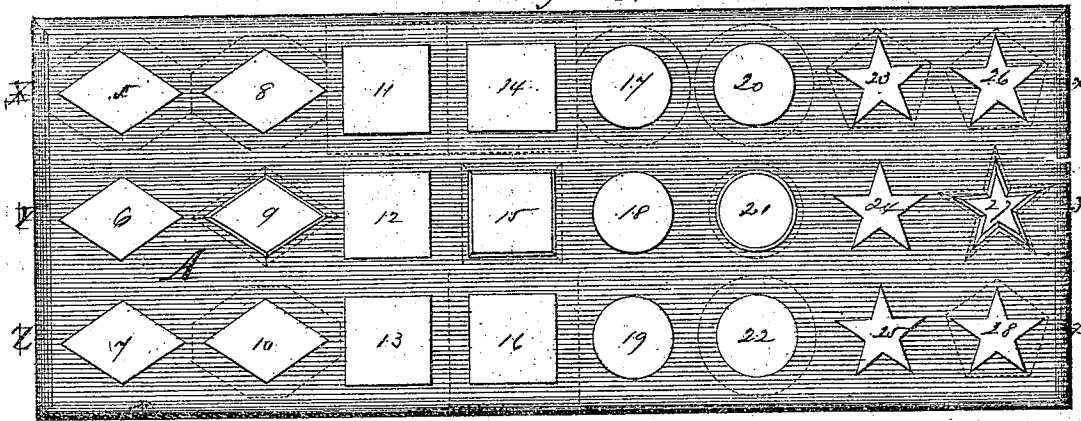


Figure 2.



Figure 3.



Figure 4.



WITNESSES

Charles E. Emery

W. S. Kinkle

INVENTOR

Peter W. Neefus

United States Patent Office.

PETER W. NEEFUS, OF NEW YORK, N. Y.

Letters Patent No. 109,651, dated November 29, 1870; antedated November 26, 1870.

IMPROVEMENT IN STAIR AND FLOOR-PLATES.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, PETER W. NEEFUS, of the city, county, and State of New York, have invented a new and Improved Stair and Floor-Plate; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making part of this specification.

The object of my invention is to construct an elastic surface for floors, and for stair and floor-plates.

In another application I have shown a method of constructing such a surface, by forming projections or studs, of uniform height, on a plate of rubber, or other elastic material, which studs project through perforations in a plate of metal, and form the elastic surface desired.

In the present application, the elastic surface is formed by securing, separately, elastic buttons or studs of uniform height in a floor, or in a plate of wood or metal.

In the drawing—

Figure 1 represents a plan view of a sample floor-plate.

Figure 2 is a vertical longitudinal section at X x in fig. 1.

Figure 3 is a vertical longitudinal section at Y y in fig. 1.

Figure 4 is a vertical longitudinal section at Z z in fig. 1.

A represents the stair or floor-plate. It may be made of either wood or metal, as desired.

In A are secured studs of elastic material, of uniform height, or nearly so, and of any desired size or shape.

The studs are arranged in cross or diagonal rows, or in a manner to form any desired pattern.

The spaces between the studs should be well defined, so that the broom can remove dirt collecting there, but such spaces should not be so large as to give an unequal bearing to the foot.

The studs are preferably made of vulcanized India rubber, but either of the various compounds of that or other gums may be employed. Cork may also be used for the purpose.

In the drawing—

The studs are designated by figures from 5 to 28, inclusive.

They are shown in the various shapes of a diamond, a square, a circle, and a star, and any other desired pattern may be used.

The studs are made in the form of a frustum of a cone, or with their bases larger than their tops, as shown in the drawing, at 9, 15, 21, and 27, and are placed in openings in the plate A of similar shape.

Preferably the studs are introduced from below

into the openings in the plate, but, if desired, they may also be compressed and forced in from the top, when they will expand and fill the enlarged portion of the opening.

In either case, when the plate is placed upon the floor, the latter holds the studs firmly in place against the inclined sides of the opening.

In some cases I take a piece of rubber with parallel sides, of greater size than the top of the opening in plate A, and, compressing it, force it into the opening either from the bottom or the top, when it expands, and is secured in place substantially in the same manner as before.

In some cases I use cement to assist in securing the studs in place.

The drawing shows also different methods of securing elastic studs in a plate of wood or metal.

For instance, in the line X x, fig. 1, as shown in section in fig. 2, the studs are formed with flat enlarged bases, over and upon which the plate A rests.

The studs 6, 7, 13, 19, 24, and 25, in lines Y y and Z z, fig. 1, and in figs. 3 and 4, represent straight pieces of rubber forced tightly into straight holes, or cemented therein with rubber or other suitable cement.

The studs 10, 16, 22, and 28 are made with enlarged flat bases, which fit into recesses in the bottom of the plate.

I propose in some cases to simply bore holes a little way into the floor, or drill or cast the same part way through a plate, and force the studs tightly into the holes.

The holes may be larger at the bottom than at the top, or cement may be used to secure the studs in place.

Either of these plans may be used when it is desired to make an elastic surface for halls, passages, or stairs where stillness is desirable, and may be used also on ships' decks, engine-room floors, and elsewhere, to prevent the feet from slipping.

When the studs are secured separately, as shown, I often put under the whole floor-plate a sheet of rubber, to form an elastic bed, and prevent the moisture from collecting on the wooden floor beneath.

This invention is also adapted to the various uses and applications mentioned in my specification for patent on metallic and elastic stair-plate.

I claim as new and desire to secure by Letters Patent—

The combination of a wood or metal stair or floor-plate with elastic studs 9, 15, 21, and 27, secured substantially in the manner shown and described.

PETER W. NEEFUS.

Witnesses:

CHAS. E. EMERY,
W. A. SKINKLE.