(No Model.)

T. ODDY.

TREAD FOR STAIRS, STEPS, &c.

No. 568,098. Patented Sept. 22, 1896.

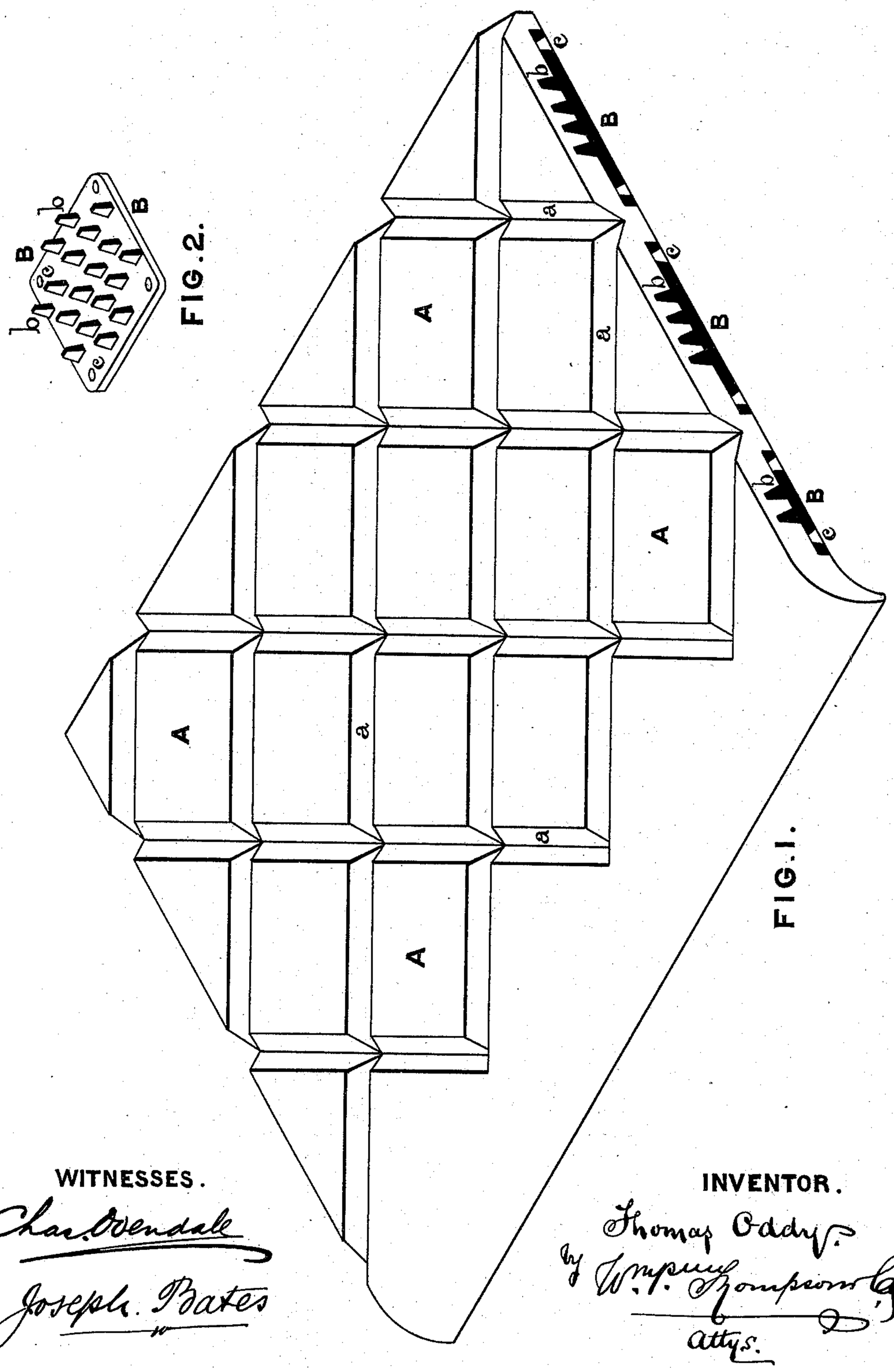

FIG. 1.

FIG. 2.

WITNESSES.

Chas. Wendale

Joseph. Bates

INVENTOR.

Thomas Oddy

by Wright Brown & Co

attys.

UNITED STATES PATENT OFFICE.

THOMAS ODDY, OF ROCHDALE, ENGLAND, ASSIGNOR OF ONE-HALF TO THE HOLMES & SONS, LIMITED, OF NORWICH, ENGLAND.

TREAD FOR STAIRS, STEPS, &c.

SPECIFICATION forming part of Letters Patent No. 568,098, dated September 22, 1896.

Application filed September 30, 1895. Serial No. 564,174. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ODDY, a subject of the Queen of Great Britain, residing at Rochdale, in the county of Lancaster, England, have invented certain new and useful Improvements in Treads for Stairs, Steps, Footways, or the Like, of which the following is a specification.

This invention relates to improvements in treads to be placed upon stairs, steps, footways, and the like to prevent slipping and to protect them from wear.

It consists, essentially, of a tread comprising a sheet of lead, zinc, or similar material with a spiked plate of hard material embedded or inserted therein on the under side with the spikes penetrating the material, so that they extend up through the soft metal to the upper or wearing surface thereof for the purpose of presenting a more durable wearing-surface without reducing the non-slipping qualities of the tread.

The invention will be fully described with reference to the accompanying drawings.

Figure 1 is a perspective view, partly in section, of a stair-tread constructed in accordance herewith; Fig. 2, a perspective view of the spiked plate.

The tread is formed of a sheet or plate A, of lead, lead ore, zinc, or other soft metal or alloy, with one or more, preferably a number, of spiked plates B inserted therein at suitable distances apart. The spiked plate B is made of metal or earthenware or other hard material, preferably chilled cast-iron, of any suitable shape or size, preferably rectangular, of about one inch square, and the spikes *b* correspond in length to the thickness of the sheet or plate A, being of such a length as to project up into the soft-metal plate and nearly penetrate the surface, so that as soon as any wear takes place they become exposed to resist it. Each spiked plate B has a number of holes *c* formed in it at intervals, into which the lead or soft metal embeds itself when in a molten state, securing the plates in position.

In the manufacture of the treads I construct a mold of iron or other suitable material with a number of ribs on the surface to form grooves *a* on the face of the plate A. Upon the surface of this mold between the ribs I place the spiked plates B, resting on their spikes, and pour in around them the molten lead or other metal, thus embedding the spiked plates B in the sheet or plate A. The holes *c* in the plate B are preferably countersunk and the molten metal flows into them, and thus when the metal cools forms a rivet or tie to bind or secure the spiked plates in their place. Instead, however, of running the molten metal over or around the spiked plates B, the metal may be first run and the spikes of the plates then inserted therein; but I prefer the former method. When the spiked plate B is made of cast metal, it may be first galvanized or tinned by any known method commonly used by plumbers or tin-plate workers to increase the affinity between the two metals or alloys; but I do not consider this essential. The grooves *a*, which are preferably made on the surface of the plate or sheet A, may run either longitudinally or transversely and may be of V-rectangular, U-curved, or other shape. They also may be made deeper at the front than at the back for the purpose of draining off moisture or water that may fall or settle thereon. The grooves may also be arranged in triangular, circular, or other form on the face of the sheet or plate A. When the treads so formed are removed from the molds, they may be passed through rolls plain or fluted or they may be subjected to hydraulic or other pressure to harden and increase the wearing qualities and durability of the lead.

The treads may be made flat throughout or with a rounded nosing of lead, as shown, or instead of the latter a nosing of hard metal may be cast in one piece therewith or affixed to the step.

I am aware of the English patent, No. 4,269 of 1892, in which treads for stairs, steps, &c., have been constructed by molding a block of lead to form the step and inserting therein, while in a molten condition, short lengths of iron, brass, or steel tubes, &c. I am also aware of the United States patent to Whiteley for a wearing-surface for door-mats, in which perforated plates have been embedded in the wearing-surface and have been provided on their under sides with spikes or nails by which the wearing-surface is held

down in place; but I believe myself to be the first to form a tread for stairs, of a body formed of a wearing material in which is embodied a plate or plates situated in the lower portion of said body, provided on the upper side with upwardly-projecting hard-metal spikes terminating at their upper ends at or near the wearing-surface of the body, and to this construction I lay claim.

What I claim as my invention, and desire to protect by Letters Patent, is—

1. A tread-plate for steps, stairs or the like, comprising a sheet or body of soft wearing material having embedded in its under side a plate provided with a series of upwardly-extending points or spikes of a material considerably harder than the wearing-body.

2. A tread-plate for steps, stairs, &c., comprising a body portion of a soft wearing material and a metallic plate embedded in the under side of the said body portion and provided on its upper side with a series of comparatively hard metallic spikes extending upwardly through the wearing-body and terminating at or near the upper surface of the same.

3. A tread-plate for steps, stairs and the like consisting of a sheet of soft metal and a series of hard metallic plates embedded in the under side of said soft-metal sheet and provided on their upper sides with a series of hard metallic spikes extending upward through the soft metallic sheet and terminating at or near its upper surface.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of September, 1895.

THOMAS ODDY.

Witnesses:

J. OWDEN O'BRIEN,

CHAS. OVENDALE.