

No. 638,666.

Patented Dec. 5, 1899.

F. W. HUESTIS.
TREAD FOR STAIRS, &c.

(Application filed Jan. 3, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

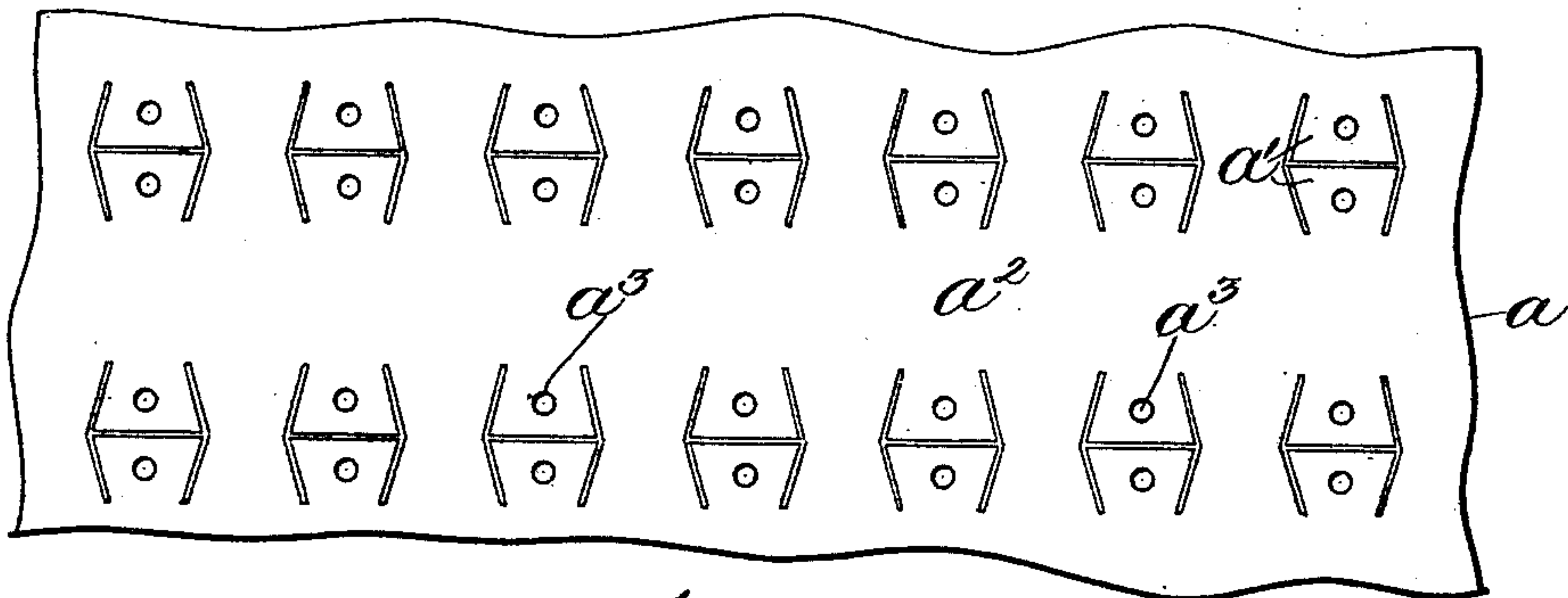


Fig. 2.

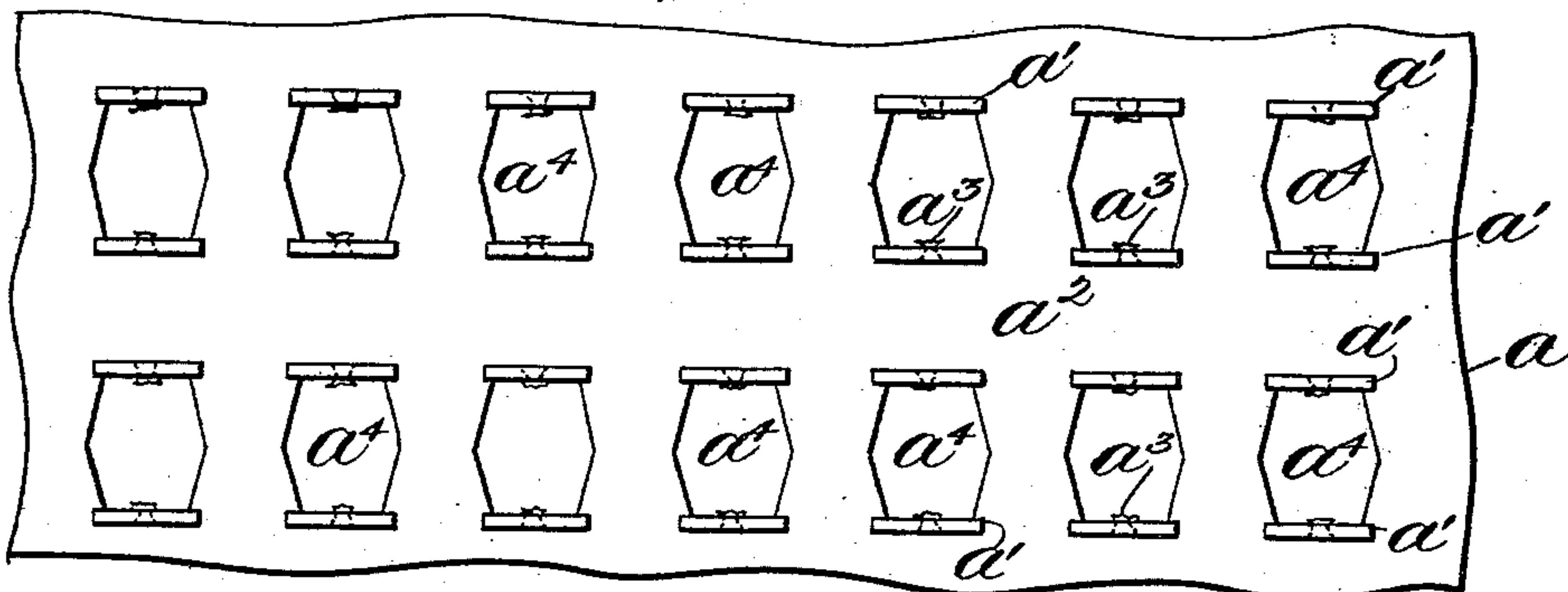


Fig. 3.

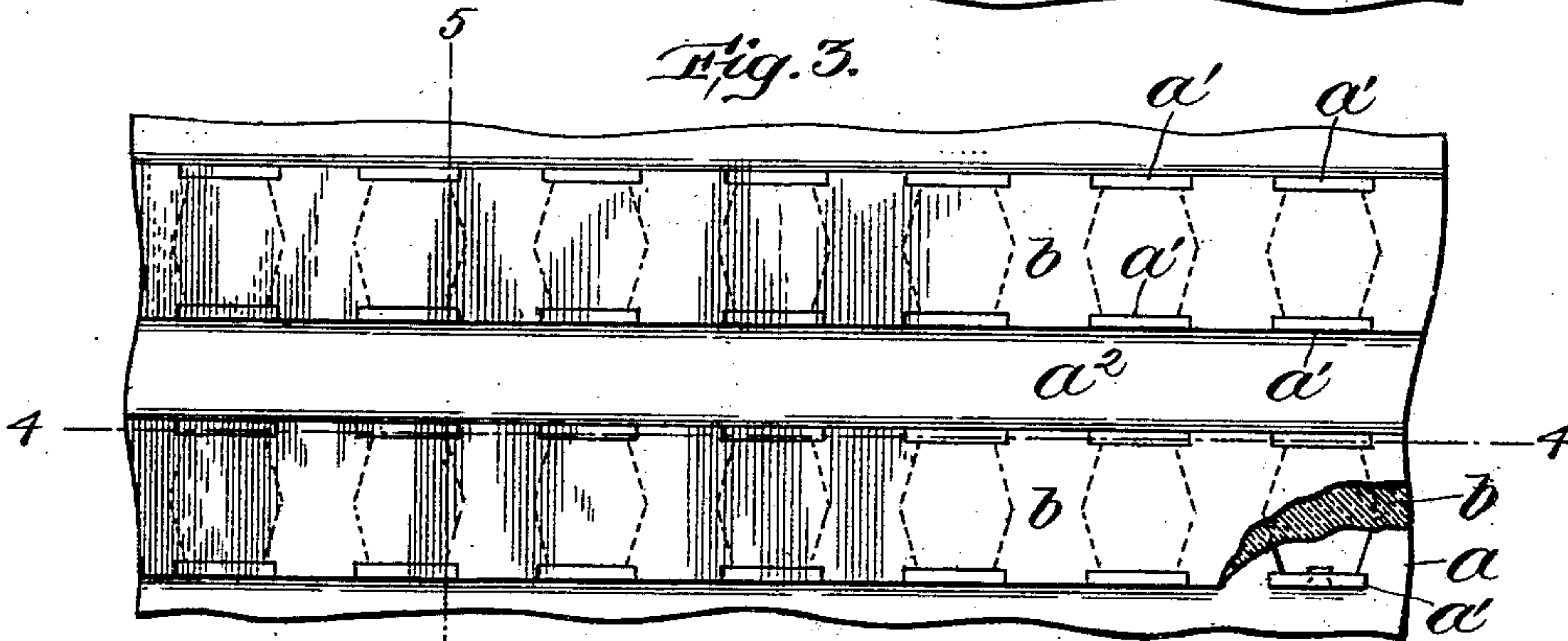


Fig. 4.

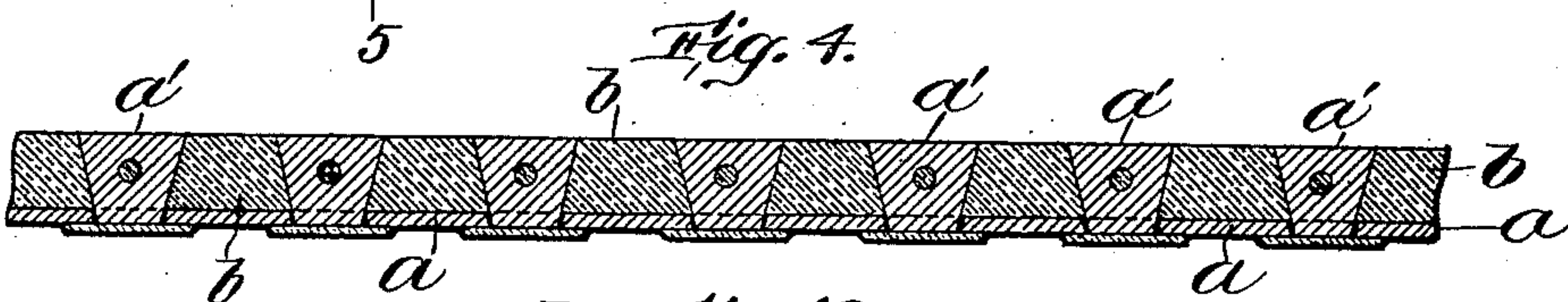
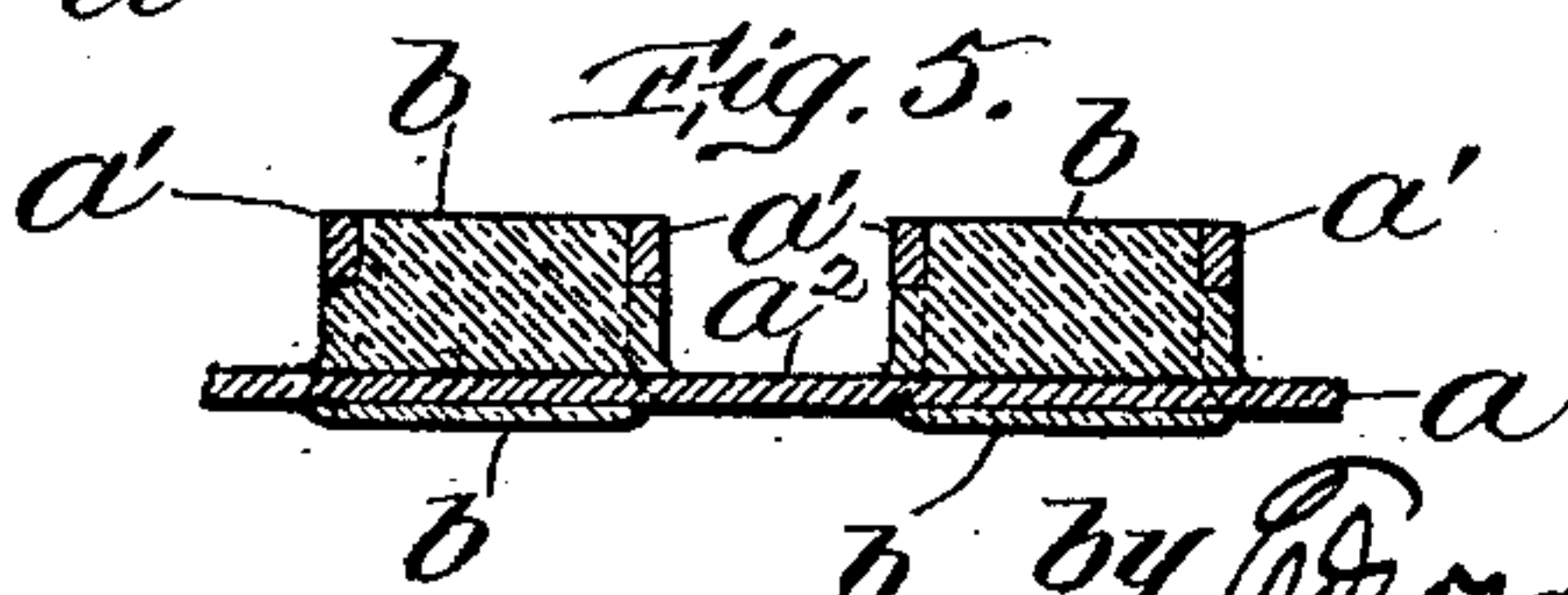


Fig. 5.



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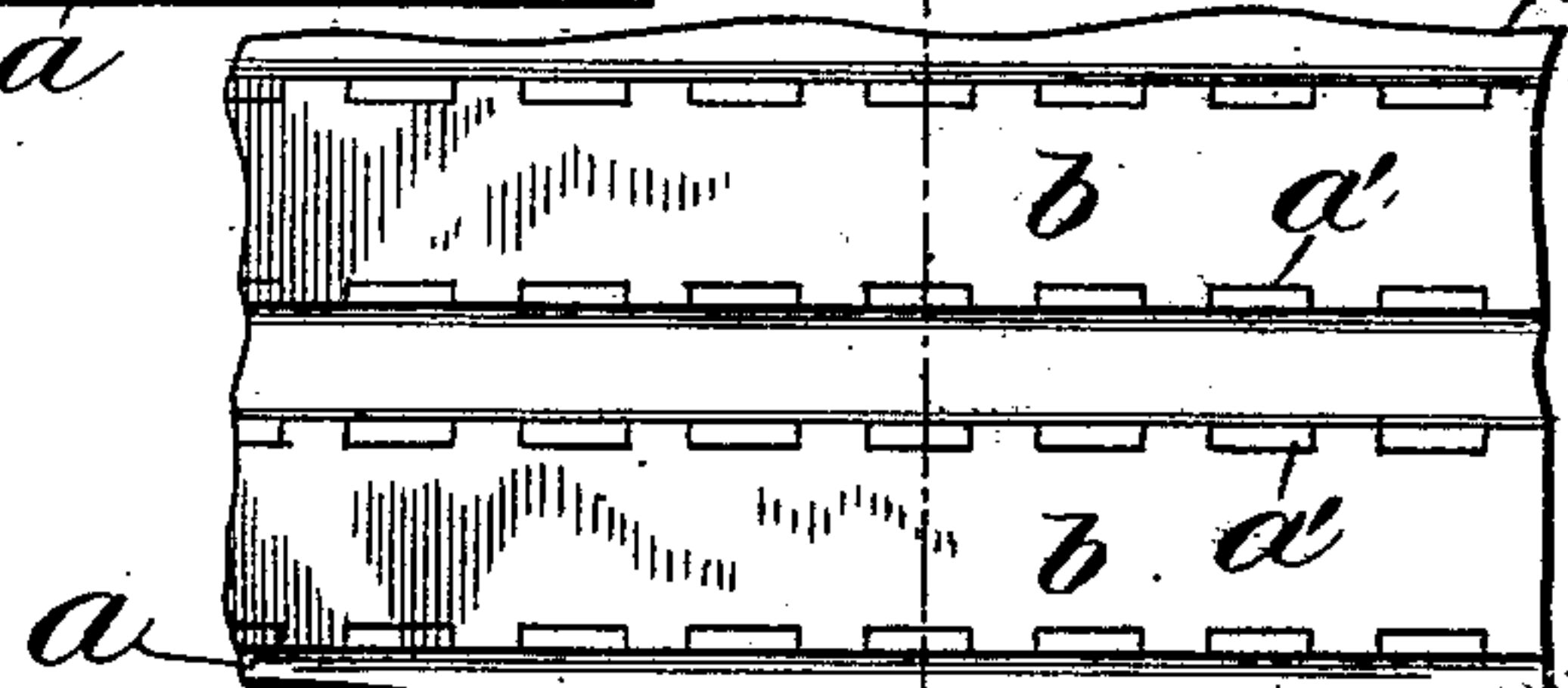
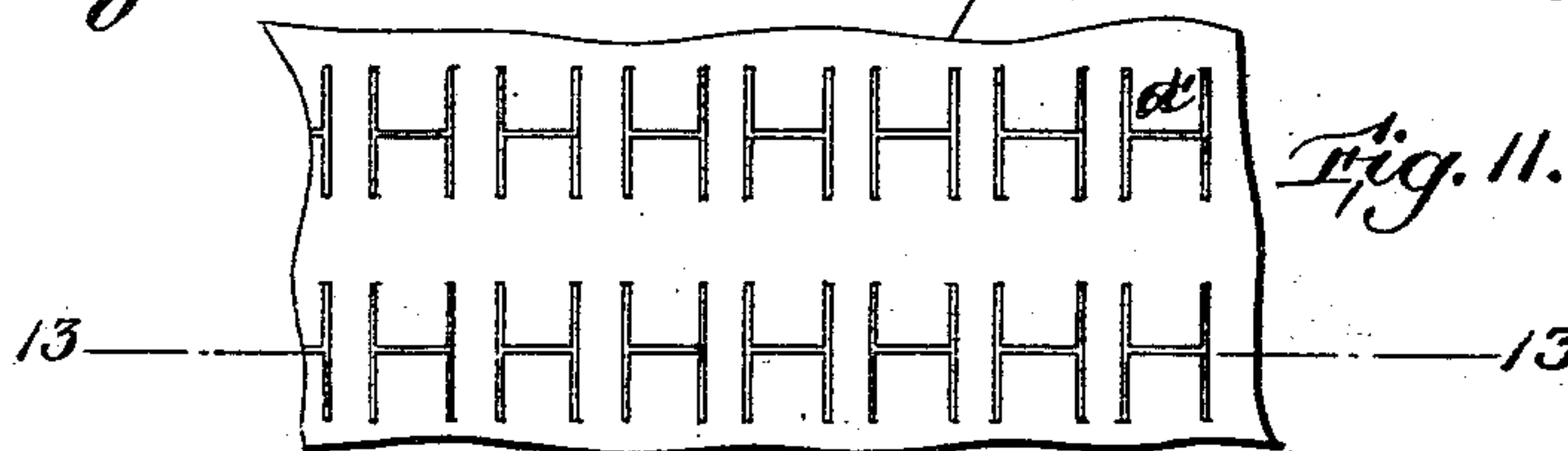
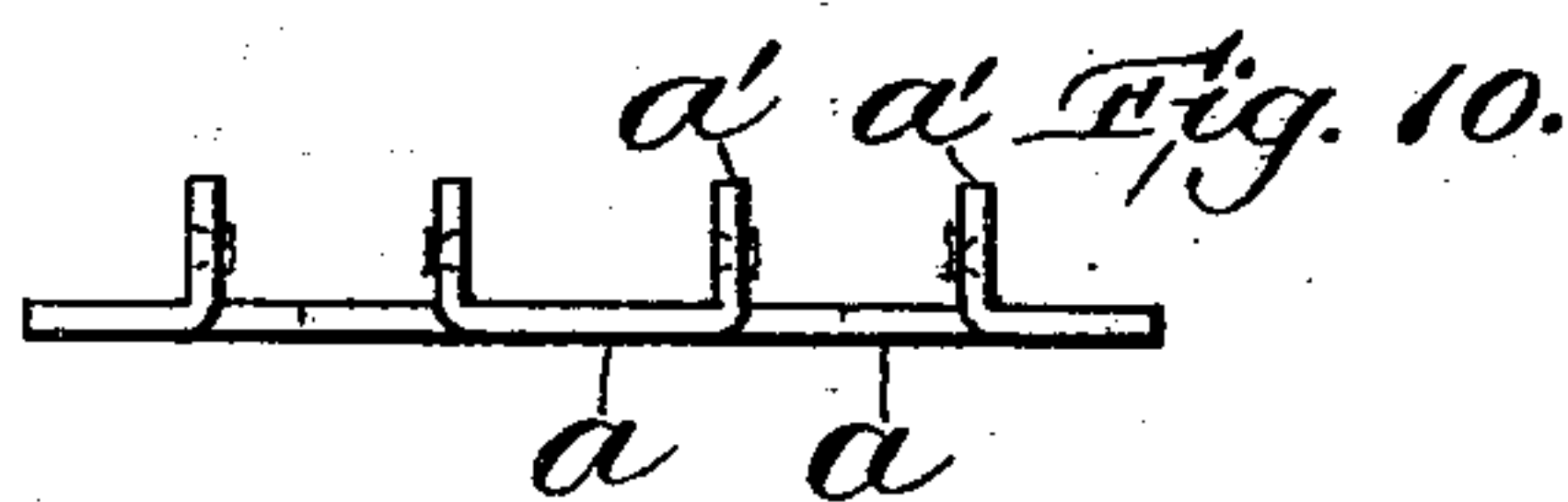
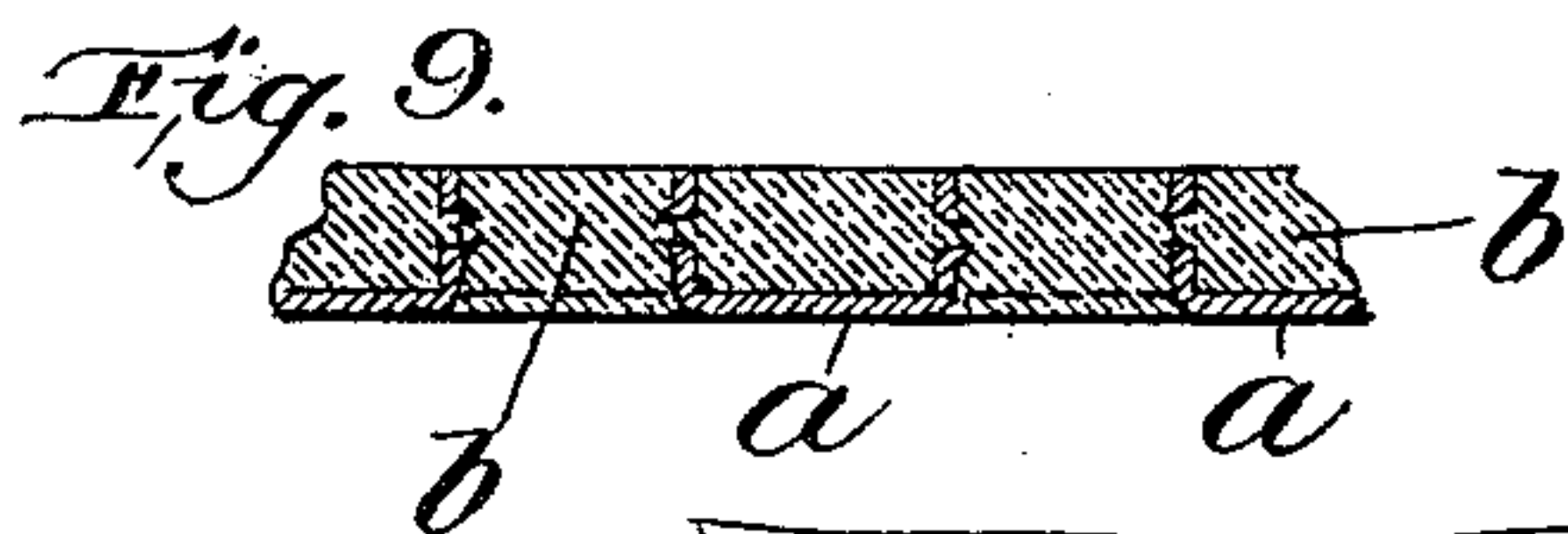
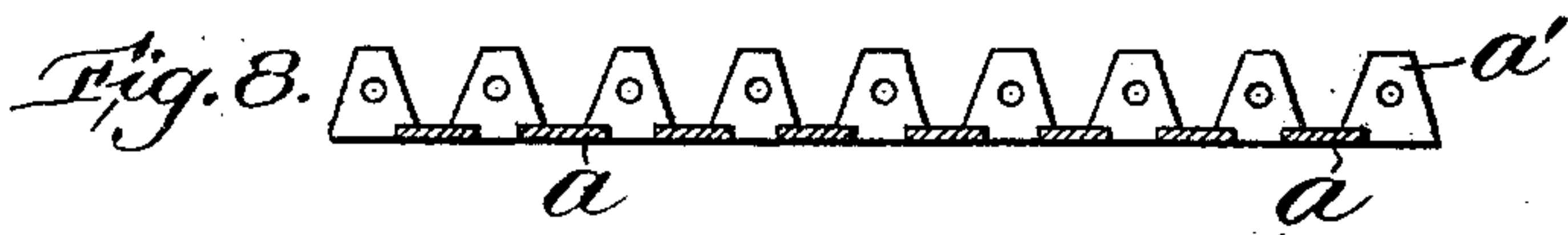
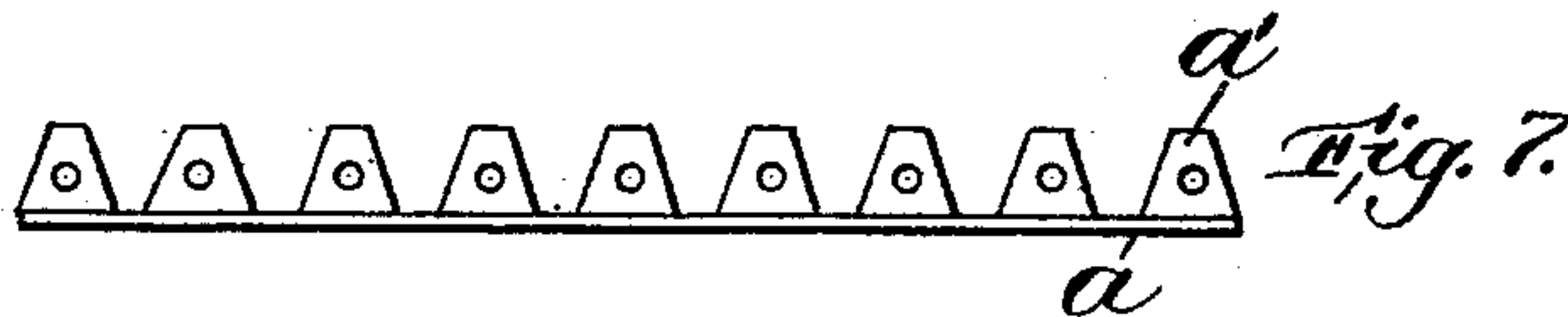
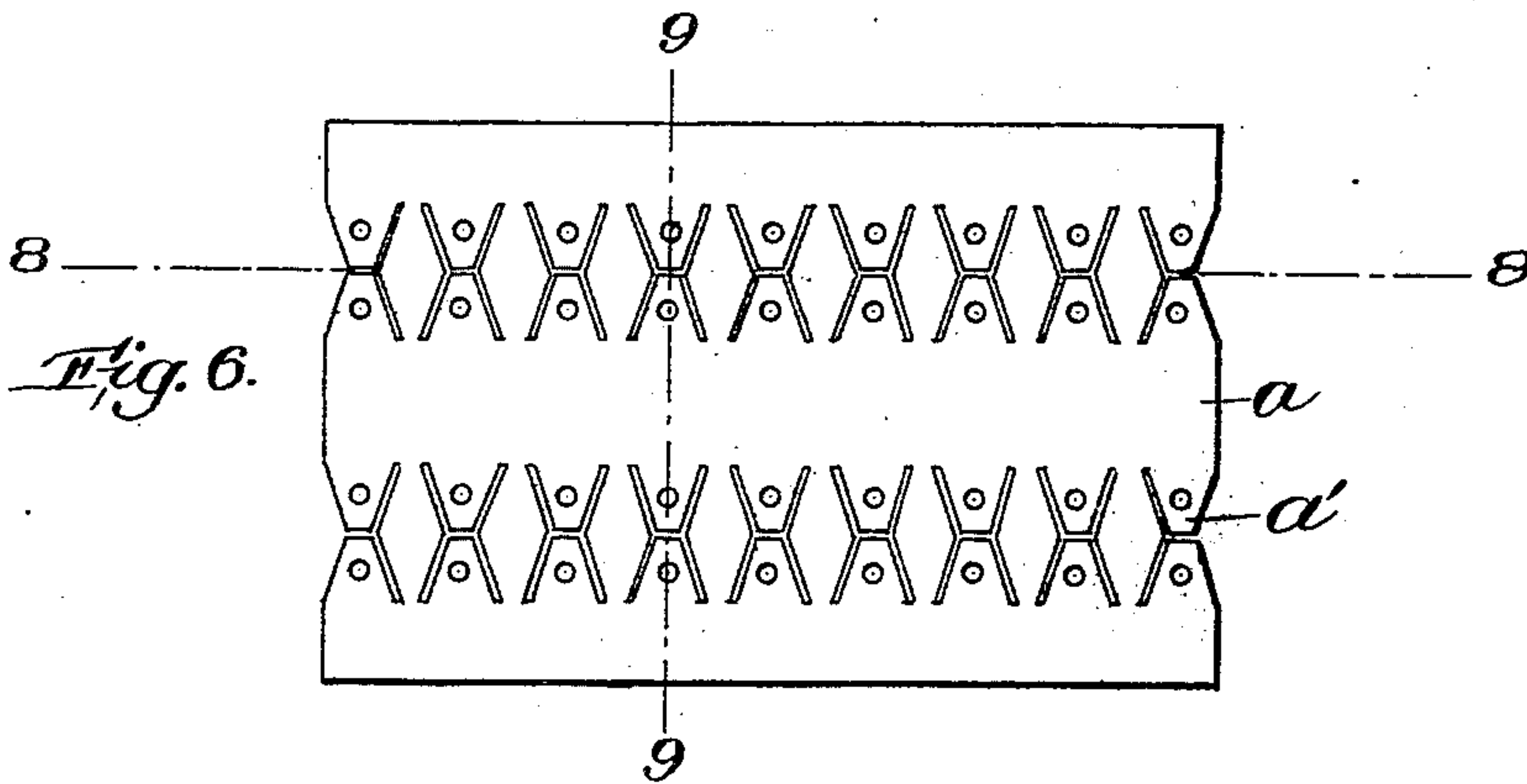
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UNITED STATES PATENT OFFICE.

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TREAD FOR STAIRS, &c.

SPECIFICATION forming part of Letters Patent No. 638,666, dated December 5, 1899.

Application filed January 3, 1899. Serial No. 700,902. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. HUESTIS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Treads for Stairs, Pavements, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a top plan view of a portion of a sheet-metal plate having integral wear-point-forming portions which are adapted to be bent outwardly from the plate and are shown with undercut edges and perforations through their body portions. Fig. 2 is a top plan view of the plate shown in Fig. 1 after the wear-point-forming portions are bent outwardly to form wear-points by providing a multiplicity of wear-points. Fig. 3 is a top plan view of the plate after it is combined with strips of non-slipping material interlocked with the plate, the non-slipping material and combined wear-points alternating with strip-like portions of the sheet-metal plate. Fig. 4 is a sectional detail on line 4 4 of Fig. 3 and shows the non-slipping material interlocked with the wear-points and body of the sheet-metal plate by engagement of the non-slipping material with the undercut edges of the wear-points, by engagement with the orifices in the sides of the wear-points, and by engagement with the back or under sides of the plate, the non-slipping material passing through the holes formed in the plate by the striking up of the wear-points. Fig. 5 is a sectional view at line 5 5 of Fig. 3. Figs. 6 to 15, inclusive, illustrate modifications, Fig. 6 being a top plan view of a sheet-metal plate formed with wear-points whose apices are narrower than their bases instead of being wider than their bases, as in the preferred construction. Fig. 7 is a side view of the sheet-metal plate shown in Fig. 6. Fig. 8 is a sectional view on line 8 8 of Fig. 6. Fig. 9 is a sectional view of a tread-plate like that shown in Fig. 6, to be wholly covered and interlocked with non-slipping material. This sectional view, so far as the plate itself is concerned, is taken on line 9 9 of Fig. 6. Fig. 10 is an end view of Fig. 6. Fig. 11 is a top plan view of another form of sheet-metal plate cut to form wear-points.

Fig. 12 is a side elevation of the sheet-metal plate shown in Fig. 11 after the wear-points have been bent outwardly from the body of the plate. Fig. 13 is a section on line 13 13 of Fig. 11. Fig. 14 is a top plan view of the plate illustrated in Figs. 11, 12, and 13, combined with non-slipping material arranged in parallel rows, alternating with uncovered portions of the plate. Fig. 15 is a sectional view on line 15 15 of Fig. 14.

The objects of my invention are to cheapen the cost of production of stair and pavement treads made up of a hard-metal plate combined with non-slipping material on the tread-surfaces and to make such treads in such a way that the different kinds of metal on the tread-surfaces will wear more evenly than heretofore and at the same time be of lighter weight and give an improved foothold.

In the drawings illustrating the principle of my invention and the best mode now known to me of applying that principle, a is a plate, preferably of sheet metal, on the upper surface of which there are stamped up the integral wear-points a' , which in this preferred construction are disposed in straight lines, as shown, each pair of wear-points being separated by the strip-like portions a^2 of the plate. The wear-points are preferably at right angles to the plate, and the plate is provided with any suitable means for interlocking it with the non-slipping material. Preferably the wear-plates are formed with holders a^3 at their sides for the non-slipping metal, and the non-slipping metal engages these holders to interlock the plate and said metal. The holders may be projections or apertures. This plate is preferably of steel, readily formed in power or other presses or by hand by the use of suitable punches, as will be plain to all skilled in the art without further description. The wear-points a' are integral at their bases with the body of the plate and may be either inclined or vertical, as preferred. I prefer to make them vertical, as shown, in order to secure the greatest length of wear-points in a tread of given thickness. When the wear-points a' are punched up, the holes a^4 are thereby formed through the body of plate a , and when the lead composition or other non-slipping material b is on the plate between

the wear-points a' it may also be interlocked with the plate by passing through these holes and contacting with the other side of the plate. The non-slipping material b is readily
 5 applied to the plate a , so as to lock itself on the plate and fill in the spaces between the parallel rows of wear-points a' up to the outer ends thereof. As the softer non-slipping material wears away the wear-points are also
 10 worn away practically as fast as the non-slipping filling material b is worn away and an inexpensive durable tread is formed, every portion of whose tread or wear surface is practically of equal durability, so that the
 15 wear-surface is not worn into a grooved condition, as heretofore, where steel strips have alternated with parallel lead strips and the lead has been more rapidly worn away than the steel, leaving hard metallic surfaces of
 20 considerable extent on which persons frequently have slipped.

In the preferred construction (illustrated in Figs. 1, 2, 3, 4, and 5) the lead or other non-slipping material b is arranged in rows which
 25 comprise wear-points a' and are separated by the low strip-like portions a'' of the plate. By this construction I am enabled to cheapen the construction of the treads because a relatively small quantity of softer metal is re-
 30 quired.

I am the first, so far as known to me, to make a tread by combining non-slipping material with a sheet-metal plate having wear-surfaces of limited extent, preferably points, and means
 35 for interlocking the same together, and I desire to claim my invention in the broadest legally-permissible manner. Sheet-metal plates for this purpose possess very important advantages over the cast and grooved plates
 40 heretofore used, as the sheet-metal plates are lighter in weight, cheaper to construct, and the wear-points present in the wear-surface material less hard metal on which to slip. Another striking advantage of my new treads
 45 lies in the fact that the sheet-metal plate permits the bending of the treads to conform to curved and irregular surfaces.

What I claim is—

1. A sheet-metal bed-plate for treads for

stairs and other purposes, said plate being 50 formed with integral, outwardly-projecting wear-points and with holes through it.

2. As a new article of manufacture, a tread for stairs and other purposes made up of a bed-plate provided with holes formed by cut- 55 ting said plate and bending outward the cut portions, the lateral edges of adjacent cut portions being separated from each other by the uncut portions of said bed-plate; and non-slipping material secured between the faces 60 and the lateral edges of said cut portions.

3. In a tread for stairs and other purposes, the combination of a bed-plate provided with holes formed by cutting said plate and bending outward the cut portions; said outwardly- 65 bent integral portions of said bed-plate; and non-slipping material secured between said bent integral portions.

4. In a tread for stairs and other purposes, the combination of a bed-plate provided with 70 holes formed by cutting said plate and bending outward the cut portions; said outwardly-bent integral portions having retaining means formed on their faces; and non-slipping material secured between said bent integral por- 75 tions.

5. In a tread for stairs and other purposes, the combination of a sheet-metal plate having wear-surfaces and holes through its body portion of a non-slipping material between 80 said wear-surfaces and passing through said holes and anchored upon the back of the plate.

6. As a new article of manufacture, a tread for stairs and other purposes made up of a bed-plate provided with upwardly-projecting 85 wear-surfaces, said wear-surfaces being separated from each other transversely and longitudinally by portions of said bed-plate; and non-slipping material laid transversely and longitudinally across and on said bed-plate 90 and engaging said wear-surfaces on the sides.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK W. HUESTIS.

Witnesses:

E. A. ALLEN,
 RICHARD P. ELLIOTT.