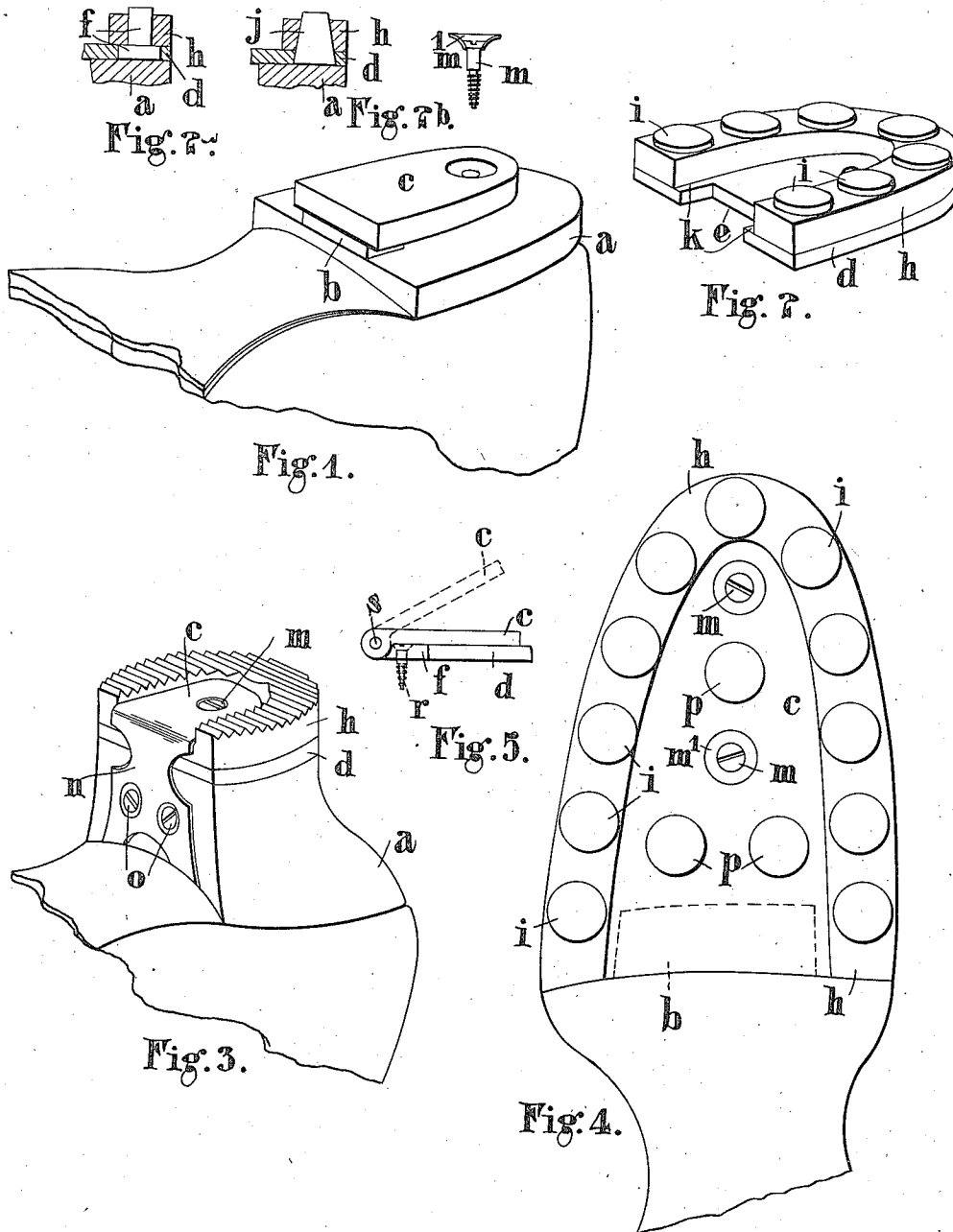


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DETACHABLE TREAD.
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1,066,305.

Patented July 1, 1913.



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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN MITCHELL, a subject of the King of Great Britain and Ireland, and residing at Arthur street, Ponsonby, Auckland, New Zealand, have invented certain new and useful Improvements in and Relating to Detachable Treads, of which the following is a specification.

The invention relates to improvements in detachable sole and heel tread-pieces interlocking with corresponding members on the boots, shoes and the like footwear and although of wide applicability has special advantages, particularly as regards the renewal of soles, when applied to boots of a heavy class such as are used by laborers or for military, sporting or other purposes.

The primary object of the invention is the provision of a renewable sole or heel tread-piece which can be quickly detached or fixed in position without skilled assistance.

To this end the invention consists in the combinations of parts hereinafter described and particularly set forth in the appended claims.

Referring to the accompanying drawings which form part of the specification: Figure 1 shows a perspective view of the underside of the heel of a boot according to one form of the invention. Fig. 2 shows in a corresponding position a similar view of the renewable tread ready to be slid into place; Figs. 2^a and 2^b show forms of renewable studs for the tread; Fig. 3 shows the application of the invention to the heel of a lady's boot or shoe; Fig. 4 shows a view of the invention applied to the sole of a boot or shoe, while Fig. 5 shows a side view of a form of hinged tongue.

I wish it to be understood that the drawings are to a certain extent of a diagrammatic nature and where desirable corresponding parts are denoted by the same reference symbols in different drawings.

In carrying the invention into effect according to one form as shown in Figs. 1 and 2, the body or base, *a*, of the heel of less than the normal depth has attached to it by nails or otherwise an overhung and interlocking support for the renewable tread portion, this overhung support comprising a

cross strip of it may be leather, *b*, and a projecting tongue, *c*, which may likewise be of leather, standing clear of the body of the heel except at that part at which it is attached thereto by way of the cross strip, *b*. For a reason to be explained, it is preferable that the cross strip, *b*, should not extend the full breadth of the projecting tongue, *c*, so that a recess or undercut portion is formed at each end of the strip. The parts described may be referred to as the permanent base structure.

The renewable tread (Fig. 2) according to one form, is built up of a base or lift of leather, *d*, the same size and shape as the body of the heel, with a recess, *e*, corresponding to the cross strip, *b*; since the recess, *e*, does not extend so far as the inner walls of the U or horse-shoe tread attached to the lift, *d*, a projecting ledge or shelf, *k*, is left on each side. This U or horse-shoe shaped tread may consist of a foundation of metal or of comparatively hard low grade rubber, *h*, or composition carrying buttons, *i*, of high grade rubber forming the tread proper. Instead of the buttons, *i*, renewable studs may be employed, illustrative examples of which are shown in Figs. 2^a and 2^b. According to the form shown in Fig. 2^a, the renewable stud, *f*, is formed with a flange, *f*, corresponding recesses being formed in the parts, *h* and *d*, of the renewable tread to receive the stud; while according to the form shown in Fig. 2^b, the stud, *j*, is of conical form and is inserted as shown in a hole of like shape in the tread body. Such a comparatively hard tread body renewable only at occasional intervals may thus outlast several sets of renewable studs.

The method of fixing the renewable tread in place will be understood from a consideration of Figs. 1 and 2. The tread is first slid into place from the rear end of the boot with a straight longitudinal motion, until the cross strip, *b*, fits into the recess, *e*, and the projecting tongue, *c*, simultaneously fits within the interior of the horse-shoe shaped tread. At the same time, the lateral ledges or shelves, *k*, of the base, *d*, fit into the corresponding recesses at the ends of the cross strip, *b*, and so serve to strengthen and maintain in place the extreme ends of the

U which without such shelves and recesses would be left free. In this position the tread registers accurately with the body of the heel and is partially locked to it by the superposed tongue, *c*, and lift, *d*, so that it can only be withdrawn endwise; the fastening of the tread in place may then be completed by any suitable means such as the single screw, *m*, (the head of which preferably co-acts with a metal washer, such as *m'*, let into the tongue) passing through the projecting tongue, *c*, and the base, *d*, into the heel body, *a*.

According to a modification of the invention, (see Fig. 3) applicable to the heel of a lady's boot or shoe, the overhung support beneath which the tread is slid consists of a plate preferably of brass or other metal bent at right angles, the one arm, *n*, being fixed to the more or less vertical front wall of the heel by screws, *o*, while the other arm, *c*, corresponds precisely to the projecting tongue, *c*, already described. The renewable tread as before may be formed of a base, *d*, of leather supporting a working portion, *h*, having a central recess for about half its depth designed to receive the projecting arm, *c*, and to leave the horseshoe shaped tread proper outstanding. In this form of the invention as in that previously described, the renewable tread is slid into place from the rear below the projecting arm, *c*, so as to be partially locked to the heel body, the fastening being completed by the screw, *m*. The invention may also be applied to the soles of boots and shoes. Such an application will be understood in view of the above description by reference to Fig. 4, the same reference letters being used as in Figs. 1 and 2. The renewable tread which may be curved either transversely or longitudinally to suit the sole body is slid into place as before but in view of the length of the overhung portion, *c*, it is generally preferable in this case to use a plurality of screws, *m*, to fix the sole in position.

In order to relieve the buttons, *i*, or the like forming the tread proper, studs, *p*, such as those shown in Figs. 2^a and 2^b or otherwise, may be arranged within the U to pass through the tongue, *c*. Such studs can usually be brought into place by slightly raising the tongue, *c*, when sliding the tread into place but if desirable, the tongue may in some cases be hinged as indicated in Fig. 5. In this case, both the cross strip, *b*, and the tongue, *c*, may be of metal (or the tongue may be of leather fastened to a metal hinge-piece), the cross strip being fastened by screws, *r*, or other appropriate means to the sole body and connected by a hinge, *s*, to the tongue, *c*, so that the latter can be turned up when required into the position shown by dotted lines.

The modification just described, involving the hinged tongue, *c*, may also be applied to heels and is particularly applicable to the form of heel shown in Fig. 3, the parts, *c* and *n*, being in such a case hinged together instead of being bent at right angles. In some cases the detachable and renewable portion may cover a part only of the full area of the sole or heel.

Although I have described certain examples of my invention by way of illustration, it will nevertheless be obvious that the principles involved can be embodied in a variety of different structural forms.

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

1. The combination in footwear of a permanent base and a tread-piece detachable therefrom, the one such part comprising a lift and an attached U-member and the other such part comprising a body portion and an overhung tongue secured thereto, said lift being disposed between said body portion and said tongue and said tongue fitting within the U-member and detachable fastening means passing through said lift and said tongue to fix said tread-piece in place, as set forth.

2. The combination in footwear, of a permanent base and a heel-piece detachable therefrom, the heel-piece comprising a lift and an attached U-member and the permanent base comprising a body portion and an overhung tongue secured thereto, said lift being disposed between said body portion and said tongue and said tongue fitting within the U-member, and detachable fastening means passing through said lift and said tongue to fix said heel-piece in place, as set forth.

3. The combination in footwear of a base member; a tongue carried thereby having lateral overhangs; a detachable tread-piece comprising an associated U-shaped member and lift, said lift having a recess with lateral outstanding shelves operatively engaging with said lateral overhangs and detachable means passing through said tongue and lift for fastening said tread-piece in place, as set forth.

4. The combination in footwear of a permanent base and a tread-piece detachable therefrom, said base and tread piece respectively including members in superposed relationship one of such members being overhung and the other passing beneath said overhung member, together with readily detachable means co-acting with both said superposed members for fastening said tread-piece in place, as set forth.

5. The combination in footwear of a permanent base and a tread-piece detachable therefrom, said base and tread piece respec-

tively including members in superposed relationship, one of such members consisting in an overhung tongue pivotally mounted on said permanent base together with readily detachable means passing through said superposed members for fastening said tread-piece in place, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN MITCHELL.

Witnesses:

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