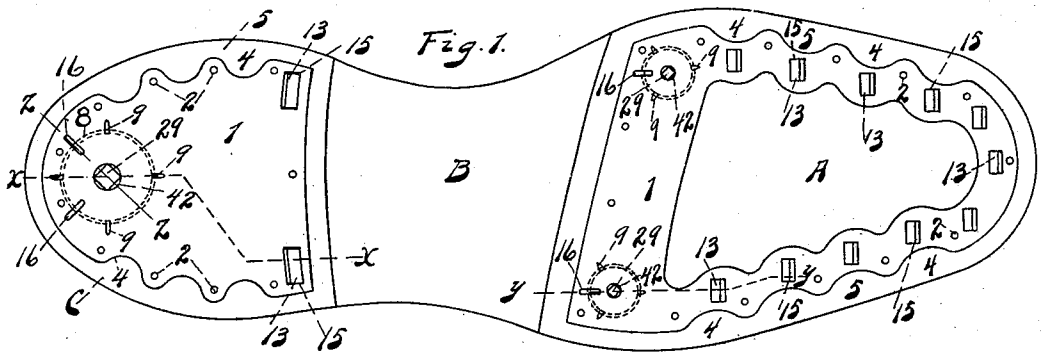
No. 650,557. Patented May 29, 1900.

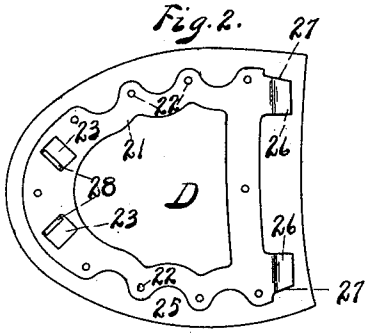
E. J. HARTMAN.

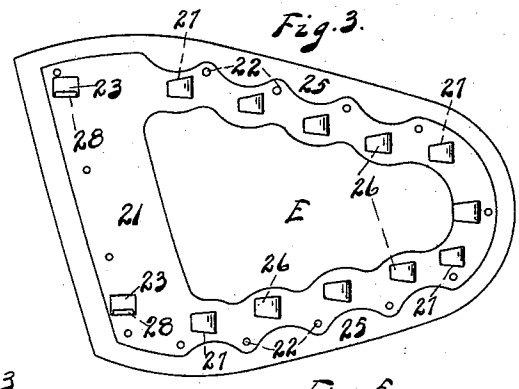
FOOTWEAR.

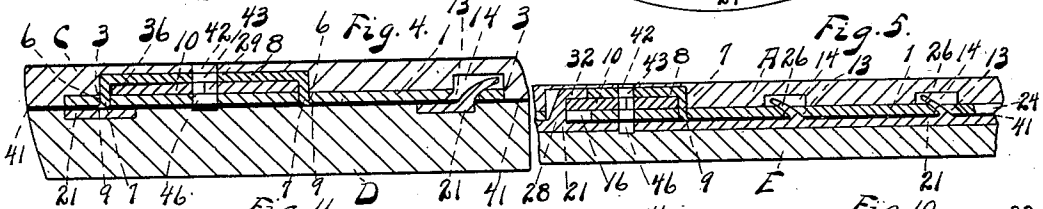
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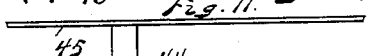
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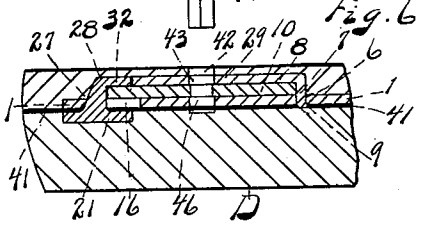


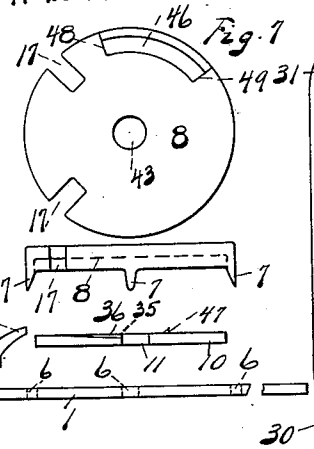




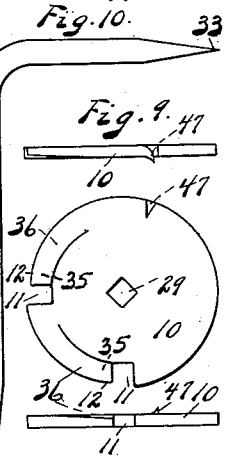












Witnesses:
Louis M. Simon
Earle R. Passel

Inventor:
Edward J. Hartman,
by A. P. Hasbell, His Attorney.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD J. HARTMAN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO EMIL H. WUERDEMAN, OF SAME PLACE.

FOOTWEAR.

SPECIFICATION forming part of Letters Patent No. 650,557, dated May 29, 1900.

Application filed September 21, 1899. Serial No. 731,183. (No model.)

To all whom it may concern:

Be it known that I, EDWARD J. HARTMAN, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Footwear, of which the following is specification.

My invention relates to footwear in the nature of boots and shoes, and has for its object the providing of a separable heel and, if desired, a separable sole, so that when the same are worn they may be replaced by a new heel or sole, or, if desired, the boot or shoe, by means of my improved device, may be provided with interchangeable heels and soles, so that the same boot or shoe may be used for various purposes—as, for instance, street-wear—and so arranged that the heel or sole thereon may be interchangeable with a heel or sole provided, for instance, with spikes and adapted to be used in hunting or outdoor exercise or sports.

My invention consists in the parts and in the construction, arrangement, and combinations of parts hereinafter more fully described and claimed.

In the drawings, Figure 1 is a bottom view of an article of footwear with the outer heel and sole removed and provided with a part of my improved devices. Fig. 2 is a plan view of the detachable heel and Fig. 3 a plan view of the detachable sole. Fig. 4 is an irregular section of my improved device, showing the parts joined, taken on a line corresponding to the line $x\ x$ of Fig. 1. Fig. 5 is a corresponding view of my improved device as applied to the sole of the shoe, showing the parts joined, taken on a line corresponding to the line $y\ y$ of Fig. 1. Fig. 6 is a section of my improved device on a line corresponding to the line $z\ z$ of Fig. 1, showing the parts in locked relation. Fig. 7 represents the locking-plate with its cap and plate, showing the parts detached. Fig. 8 is side elevation of the lower heel-section plate. Fig. 9 represents the locking-plate. Fig. 10 is a side elevation of the locking-key, and Fig. 11 a side elevation of the plug for the opening to the inside of the shoe attached to the inner lining of the latter.

In my improved device I prefer to divide the heel and the sole into two parts or sections—an upper or permanent section—and a lower or removable section to which I attach the respective parts of my improved device; but it is obvious that the parts attached to the upper sections of the heel and sole may, if desired, be attached to the insole of a boot or shoe.

A represents the upper section of the sole; B, the shank or body of an article of footwear, and C the upper heel-section, D the lower heel-section, and E the lower sole-section, of the article of footwear. I provide the bottom of the upper heel-section with a plate 1, slightly smaller than the heel-section and which may be attached thereto by means of pegs 2. The upper heel-section is recessed, as at 3, to a depth corresponding substantially to the thickness of the plate 1 and also to receive the cap hereinafter mentioned. The plate 1 is preferably provided with scallops 4, so as to increase the body of the leather 5 between the plate and outer edge of the upper heel-section. The plate 1 has apertures 6, through which projections 7 of a cap 8 are adapted to take and be bent and flattened at the other side of the plate, as shown at 9, to retain the cap in place. In the cavity of the cap a locking-plate 10 is placed. This locking-plate is preferably in the form shown in Fig. 9 and is provided at its edge with recesses 11, forming locking-faces 35, for the purpose hereinafter explained. To one side of the recesses the edge of the locking-plate is formed cam-shaped, as at 12. The plate 1 is also provided with apertures or eyes 13, the heel-section under the eyes being hollowed, as shown at 14. The eyes preferably slant upwardly through the plate from the rear toward the front of the shoe. The lower or removable heel-section is provided with a plate 21, secured thereto by pegs 22, the lower heel-section being recessed, as at 24, to a sufficient thickness to receive the plate, with its upper surface substantially flush with the upper surface of the lower heel-section. It may also be provided with scallops 25, corresponding to the scallops 4 in the plate 1 in such manner that the scallops may be above one another when the parts are connected and the leather portions of the two

sections meet. For this purpose the leather edges beyond the plates may project slightly above the plates. The plate 21 is provided with hooks 26, which take into the eyes 13 in the plate 1. The hooks 26 are preferably bent in such form that their lower faces slant upwardly to correspond to the slant of the eye-faces and form an incline or wedge to help drive the lower heel-section home when being fastened. The hooks 26 are preferably provided with inclined side faces 27 at their outer edges, which are adapted to take against the corresponding outer edges 15 of the eyes 13 and lead the lower heel-section to proper transverse position with relation to the upper heel-section when the lower heel-section is brought home to proper position, so that the sides of the heel-sections may be flush. The plate 21 is also provided with shouldered projections 28, adapted to take through apertures 16 in the plate 1, the recesses 11 in the locking-plate 10, and apertures 17 in the cap 8.

In attaching a heel the hooks 26 are first brought into engagement with the apertures or eyes 13 on the plate 1. The shouldered projections 28 are then brought to pass into and through the apertures 16, recesses 11, and apertures 17, just mentioned. The locking-plate is provided with a square or other suitably-shaped opening or seats 29 to receive a correspondingly-shaped end 30 of a key 31. The locking-plate is turned by means of the key, bringing the unrecessed portion of the locking-plate under the shoulders 32 of the projections 28. I have shown the projections 28 punched out of the body of the plate 21, leaving openings 23 therein. The hooks 26 may be similarly formed.

In order to bring the parts home properly when fastening the same, the locking-faces 35 are preferably inclined next to the recesses 11, forming inclined locking-faces 36, which draw the shoulders 32 inwardly while the inclined faces are passing thereunder. The cam-faces 12 on the locking-plate lead the shouldered projections to proper position. The rear faces of the projections 28 are also slightly inclined, as shown at 27. These rear faces impinge against the rear edges of the apertures 16 in the plate 1 and force the lower heel-section forward so as to bind the front wedge-shaped faces of the hooks 26 against the forward wedge-shaped faces of the apertures or eyes 13, causing the lower heel-section to be firmly held and locked by means of the shoulders 32 of the projections 28 climbing on the inclined faces 36 of the locking-plate 10, thereby drawing the lower heel-section inward and causing the rear inclined faces 27 to impinge against the rear edges of the apertures 16 in the plate 1 and throw the lower heel-section forward, causing the forward wedge-shaped faces of the hooks 26 to climb on the forward wedge-shaped faces of the apertures or eyes 13.

If desired, a strip of rubber 41 or other material impervious to water or moisture may be placed surrounding the outer edges of the plates 1 or 21, thereby aiding in preventing access of water or moisture to the operating parts of my device and to the interior of the shoe. The key 31 is inserted into the locking-plate from the interior of the shoe through an opening 42 in the insole and an opening 43 in the cap, leaving no opening in my improved device from the outside of the shoe for the admission of water or moisture to the working parts or to the interior of the shoe. The opening 42 is in practice very small and consequently occasions no inconvenience or injury to the wearer; but, if desired, the opening may be closed by a suitable plug of leather or other substance 44, attached to the lining 45 of the article of footwear. The plug may extend through the openings 42, 43, and 29 and an opening 46, which may be made in the plate 1 to allow the end 30 of the key 31 to pass therethrough to give the latter a better hold on the locking-plate.

The cap 8 is provided with an opening 46, into which a laminated edge or projection 47 on the locking-plate may take, the projection being adapted to strike the edge 48 of the opening 46 when the locking-plate has been turned to bring the parts home properly to locked position. If it is desired to remove the heel, the locking-plate is turned to bring the projection 47 in position to strike the edge 49 of the opening 46, when the recesses 11 will register with the apertures 16 and 17 and allow the removal of the heel. The key 31 may be provided with a flattened end 33, adapted to be inserted between the heel-sections to assist in a separation of the parts.

I have thus far described my device as applied principally to the heel portion of a shoe. The sole may also be detachably secured in the same way by corresponding parts, with the exception that I prefer, on account of the increased length of the sole, to increase the number of hooks 26 on the plate 21, and I also find it more convenient to reverse the direction of projection of the hooks. It will be seen that the hooks 26 on the heel-plate 1 extend toward the front or toe portion of the shoe. I prefer to allow the hooks 26 on the sole portion of the shoe to project rearwardly toward the heel. I also prefer in the detachable sole to provide two of the locking-plates 10 and their corresponding parts, one at each side of the shoe, but of relatively-smaller dimensions than the locking-plate for the heel and preferably also provided with but one of the recesses 11. The plate 1 for the sole has also but one aperture 16 and the plate 21 for the sole but one shouldered projection 28 for each of the locking-plates 10. The shouldered projections 28 for the sole also preferably have their shoulders 32 extending toward the toe, and a little play may also be allowed between the rear edge of the shouldered projections and the rear edge of the

apertures 16, because the direction of projection of the hooks being reversed the locking action of the locking-plate will depend more on the forcing of the lower sole-section backward by the action of the cams 12 against the forward face of the shouldered projection 28 rather than the wedging action of the rear inclined face 27 against the rear face of the apertures 16, as is the case in the heel-section.

The reason I prefer to allow the hooks 26 on the lower sole-section to project rearwardly is that when so constructed more pliability is given to the sole. A strip of rubber or other material 41 impervious to water or moisture may also be provided to surround the edge of the plate 1 or 21 for the sole.

It is obvious that changes may be made in the construction I have preferred to show without departing from the spirit of my invention.

I claim—

1. In an article of footwear, the combination of a plate stationarily secured with relation to the body of the article, a removable wear portion, a second plate rigidly secured thereon, with a shoulder for one of the plates, and a rotatable locking-plate for the other plate and rotatable with relation to both plates, with an inclined locking-face on the locking-plate rotating with the locking-plate for taking against the shoulder, and means for turning the locking-plate, and constructed and arranged for drawing the removable wear portion and the body of the article toward each other, and rigidly securing the removable wear portion to the body of the article of footwear by a partial revolution of the locking-plate, substantially as described.

2. In an article of footwear, the combination of a plate stationarily secured with relation to the body of the article, a removable wear portion, a second plate rigidly secured thereon, one or more apertures for one of the plates and one or more projections on the other plate for the aperture or apertures, a shoulder on the projection, a locking-plate rotatably secured with relation to both plates, with a locking-face on the locking-plate for each shoulder rotating with the locking-plate and taking against the shoulder, an inclined face for the locking-face, with means for turning the locking-plate with relation to both the other plates, and constructed and arranged for drawing the removable wear portion toward the body of the article by a partial revolution of the locking-plate, and rigidly securing the removable wear portion to the body of the article of footwear, substantially as described.

3. In an article of footwear, the combination of a plate stationarily secured with relation to the body of the article, a removable wear portion, a second plate rigidly secured thereon, hook and eye between the plates, with a shoulder for one of the plates, and a rotatable locking-plate for the other plate and rotatable with relation to both plates with an inclined locking-face on the locking-plate, rotating with the locking-plate, for taking against the shoulder, and means for turning the locking-plate, and constructed and arranged for drawing the removable wear portion and the body of the article toward each other, with a slight longitudinal movement for bringing the hook and eye into intimate contact, and rigidly securing the removable wear portion to the body of the article of footwear by a partial revolution of the locking-plate, substantially as described.

4. In an article of footwear, the combination of a plate stationarily secured with relation to the body of the article, a removable wear portion, a second plate rigidly secured thereon, hook and eye between the plates, with a shoulder for one of the plates, and a rotatable locking-plate for the other plate and rotatable with relation to both plates with an inclined locking-face on the locking-plate rotating with the locking-plate for taking against the shoulder, and means for turning the locking-plate communicating therewith from the interior of the article of footwear, and constructed and arranged for drawing the removable wear portion and the body of the article toward each other, with a slight longitudinal movement for bringing the hook and eye into intimate contact, and rigidly securing the removable wear portion to the body of the article of footwear by a partial revolution of the locking-plate, substantially as described.

5. In an article of footwear, the combination of a plate stationarily secured with relation to the body of the article, a bottom portion of the article receiving wear by contact with the ground while walking, a second plate thereon, a locking-plate rotatable with relation to both plates, a recess therein, a hook-and-eye connection on the plates between the same stationary with relation to the plate of which each forms a part respectively and stationary with relation to the part to which each plate is attached respectively, a shouldered projection on one of the plates, an aperture for the other plate, constructed and arranged for passing the shouldered projection through the aperture and past the recess in the locking-plate, with means for turning the locking-plate with relation to both the other plates to bring its body under the shoulder of the shouldered projection and detachably secure the bottom portion of the article of footwear to its body by a partial revolution of the locking-plate, substantially as described.

6. In an article of footwear, the combination of plates 1 and 21, hook 26 and eye 13, shoulder 32, locking-plate 10 with locking-face 36 rotating with relation to both plates and taking under the shoulder, with inclined face 27 and contact-face therefor, constructed and arranged substantially as described.

7. In an article of footwear, the combination of plates 1 and 21, hook 26 and eye 13, a shoulder 32, locking-plate 10 with locking-face 36 rotating with relation to both plates

and taking under the shoulder, with inclined face 27 and contact-face therefor, with part 41, constructed and arranged substantially as described.

8. In an article of footwear, the combination of plates 1 and 21, hook 26 and eye 13, a locking-plate 10 with locking-face 36 rotating with relation to both plates, a recess 17 in the locking-plate, a shoulder 32 taking past the recess, an inclined face 27 and contact-face therefor, with means for turning the locking-plate communicating with the locking-plate from the interior of the article of footwear, constructed and arranged for drawing the removable wear portion and the body of the article toward each other with a slight longitudinal movement for bringing the hook and eye into intimate contact, and a stop 47, substantially as described.

9. In an article of footwear, the combination of a stationary plate 1, a removable wear portion, a plate 21 thereon, eyes 13 and hooks 26 at the forward end of the plates and stationary with relation to the plate of which each forms a part respectively, inclined faces between the hooks and eyes, a shouldered projection 28 secured to the plate 21, a shoulder 32 thereon, a locking-plate 10 rotatably secured with relation to both plates, an aperture 16 for the shouldered projection, a rear contact-face for the aperture, a recess 11 at the edge of the locking-plate, with an inclined face 36 on the locking-plate for taking against the shoulder 32, an inclined rear face 27 on the projection for taking against the rear contact-face of the aperture 16, with means for turning the locking-plate with its inclined face acting against the shoulder 32 and drawing the projection inward with its inclined face acting against the contact-face of the aperture 16 and forcing the inclined faces between the hooks and eyes to climb with relation to each other, constructed and arranged for firmly clamping the parts together and holding them in locked position, substantially as described.

10. In an article of footwear, the combination of a permanent section, a plate stationarily secured thereto, a locking-plate rotatable with relation to the plate, a locking-face at its edge and rotating therewith, a removable wear portion for the article, a second plate rigidly secured thereon, a hook-and-eye connection between the plates at their end and stationary with relation to the plate of which each forms a part respectively, and stationary with relation to the part to which its plate is attached respectively, an inclined face between the hooks and eyes, a shouldered projection on one of the plates, an aperture for the same at the other plate, constructed and arranged for passing the shouldered projection through the aperture and past the locking-plate, a shoulder on the shouldered projection, an inclined face on the locking-plate taking against the shoulder, an inclined face at the edge of the shouldered projection opposite the shoulder for taking against the edge of the aperture, with means for turning the locking-plate and causing the inclined faces to climb with relation to their contact-faces and thereby firmly secure the parts together, substantially as described.

11. In an article of footwear, the combination of a permanent section, a plate stationarily secured thereto, a removable wear portion for the article, a second plate rigidly secured thereon, a locking-plate rotatably secured with relation to the plates, a locking-face at its edge and rotating therewith, a cap taking about the locking-plate and secured to one of the plates, a hook-and-eye connection between the plates at their end and stationary with relation to the plate of which each forms a part respectively, and stationary with relation to the part to which its plate is attached respectively, an inclined face between the hooks and eyes, a shouldered projection on one of the plates, an aperture in the other plate, constructed and arranged for passing the shouldered projection through the aperture and past the locking-plate, a shoulder on the shouldered projection, an inclined face on the locking-plate taking against the shoulder, an inclined face at the edge of the shouldered projection opposite the shoulder for taking against the aperture, with means for turning the locking-plate and causing the inclined faces to climb with relation to their contact-faces and thereby firmly secure the parts together, an opening in the cap, a stop at each end of the opening, and a projection on the locking-plate taking into the opening constructed and arranged for striking one stop to cause the recess at the edge of the locking-plate to register with the aperture in the plate when attaching or removing the removable wear portion, and for striking the other stop when bringing the locking-plate to locked position, substantially as described.

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

EDWARD J. HARTMAN.

Witnesses:
LOUIS M. SIMON,
EARLE R. PASSEL.