

G. F. HALL.
SOLE.

Patented Apr. 5, 1892.

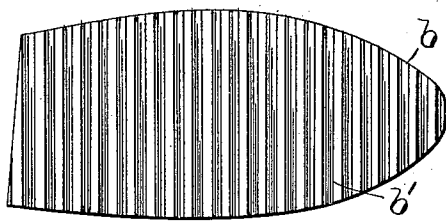


Fig. 1.

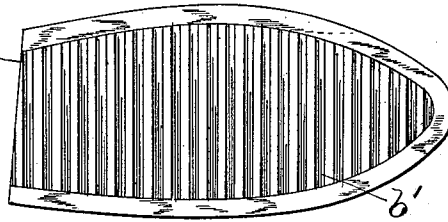


Fig. 2.

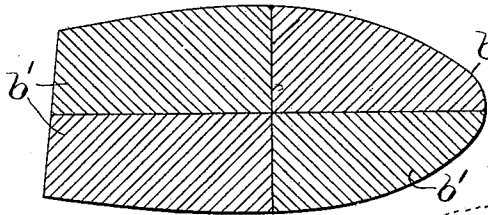


Fig. 3.

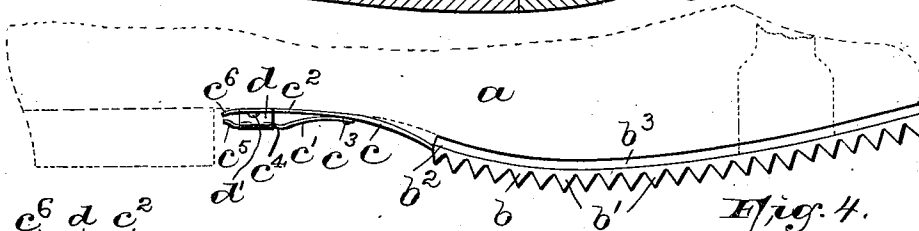


Fig. 4.

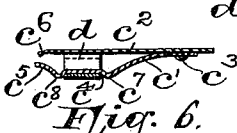


Fig. 6.

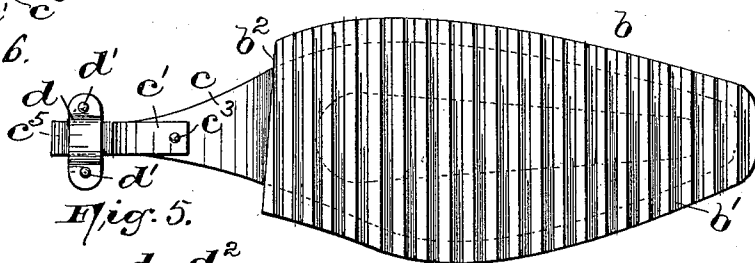


Fig. 5.

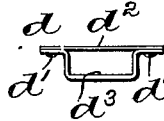


Fig. 7.

WITNESSES:

Walter G. Edward
F. de L. Robinson

INVENTOR:

George F. Hall,
BY Fred C. Fraentzel, ATT'Y.

UNITED STATES PATENT OFFICE.

GEORGE F. HALL, OF NEWARK, NEW JERSEY, ASSIGNOR OF TWO-THIRDS
TO JOHN W. BAKER, OF SOUTH ORANGE, NEW JERSEY, AND CHARLES
GOSLING, OF NEW YORK, N. Y.

SOLE.

SPECIFICATION forming part of Letters Patent No. 472,214, dated April 5, 1892.

Application filed November 4, 1891. Serial No. 410,817. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. HALL, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Soles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The invention has for its object to provide a sole adapted to be detachably secured to the ordinary shoe by means of a plate secured to the sole having a hooked end, which can be connected with a staple or other similar device secured to the bottom of a shoe directly in front of the heel thereof.

The invention is illustrated in the accompanying sheet of drawings, in which similar letters of reference are employed to indicate corresponding parts in each of the several views.

Figure 1 is a plan view of the under side of the sole. Fig. 2 is a similar view of a sole provided with corrugations, the sole being surrounded by a flat border; and Fig. 3 is a like view of a sole provided with corrugations or depressions of a modified design. Fig. 4 is a side elevation of a sole adapted to be detachably arranged on the under side of a shoe provided with a spring-plate having a hooked end portion in engagement with a staple or locking-plate arranged on the bottom of a shoe directly in front of the heel thereof. Fig. 5 is a plan view of the detachable sole shown in Fig. 4 and the holding device used in connection therewith. Fig. 6 is a vertical section of the locking device, shown in holding engagement with the staple or holding-plate, adapted to be secured to the bottom of a shoe; and Fig. 7 is a front view of said staple or holding-plate.

In said views, *a* indicates the lower portion of a shoe.

b indicates my improved sole having on its under side corrugations or depressions *b'*, which may be of any desirable size and any

suitable design, as clearly shown in Figs. 1, 2, and 3. As has been stated, said sole is made from leather, and the corrugations or depressions therein are formed by means of suitable dies under great pressure and heat, either by placing the leather between the same in a dry state or by previously moistening the leather.

This sole is admirably adapted as an ice-creeper or detachable sole for bicyclist's use by providing the same with a plate *c*, projecting therefrom at the back end *b²* of the sole, as clearly illustrated in Figs. 4 and 5. Said plate *c* may be of a suitable construction, or it may be made as illustrated in another application filed by me, the serial number of which is 410,307, in which case the plate is arranged between the upper side of the sole *b* and another piece of leather *b³*, as will be seen from Fig. 4.

In the present construction the plate *c* is formed with a hooked end, which consists, preferably, of a spring-plate *c'*, secured to the free end portion *c²* of the plate *c* by a rivet *c³*. The spring-plate *c'* is provided near its free end with a depression *c⁴* and terminates in a finger-piece *c⁵*. The end portion *c²* of the plate *c* is provided with an upwardly-curved end *c⁶*, which projects toward the finger-piece *c⁵* of the spring-plate *c'*, as will be evident from Figs. 4 and 6. In order to detachably secure this portion of the plate *c* to the bottom of the shoe directly in front of the heel, I employ a locking plate or staple *d*, which is secured to the shoe in any well-known manner. Said staple *d* may be of the construction shown in Figs. 4, 5, and 6, being preferably secured to the under side of the shoe directly in front of the heel portion thereof by means of screws or pins *d'*. Said staple may be arranged on a plate *b³*, which can be secured to the bottom of the shoe beneath the staple *d* by means of the pins or screws *d'*, as will be evident from Fig. 7. The manner of attaching the hook end of the plate *c* to said staple is as follows: The portion *c²* and the spring-plate *c'* are inserted beneath the bridge portion *d³* of the staple *d*, whereby said spring-plate *c'* becomes sufficiently depressed until the depression *c⁴* of said plate engages with

said bridge portion d^3 , being held in its holding engagement by the raised portions c^7 and c^8 on both sides of the depression c^4 , as clearly shown in Fig. 8. In order to remove the detachable sole, said finger-piece c^5 is depressed, which allows the raised portion c^8 to slip under the bridge and the sole can be removed with ease.

When the sole is made of leather and provided with the corrugations or depressions b' , whether said sole is detachably secured to the shoe or forms the sole thereof, said shoes are well adapted for use in operating the pedals of a bicycle, or they can be used as running-shoes for athletes, base-ball shoes, and lawn-tennis or foot-ball shoes. They can also be put to many other various uses, and when used in connection with the ordinary shoe make very good soles for walking purposes and prevent a person from slipping.

Having thus described my invention, what I claim is—

1. The herein-described sole, having corrugations or depressions on its under side, and a plate having a hooked end secured thereto, in combination with a staple-shaped holding-plate adapted to be secured to the bottom of

a shoe, whereby said sole can be detachably secured thereto, for the purposes set forth.

2. The herein-described sole, having corrugations or depressions on its under side, and a plate c , provided on its free end with a spring-plate c' , having a depression therein, in combination with a staple or holding-plate adapted to be secured to the bottom of a shoe, whereby said sole can be detachably secured thereto, for the purposes set forth.

3. The herein-described sole, having corrugations or depressions on its under side, and a plate c , provided on its free end with an upwardly-turned portion c^6 , and a spring-plate c' , provided with a depression c^4 , and a finger-piece c^5 , in combination with a staple or holding-plate adapted to be secured to the bottom of a shoe, whereby said sole can be detachably secured thereto, for the purposes set forth.

In testimony that I claim the invention set forth above, I have hereunto set my hand, this 2d day of November, 1891.

GEORGE F. HALL.

Witnesses:

FREDK. C. FRAENTZEL,
J. W. BAKER.