

A. W. SMITH.

Improvement in Horseshoes.

No. 127,932.

Patented June 11, 1872.

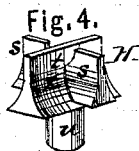
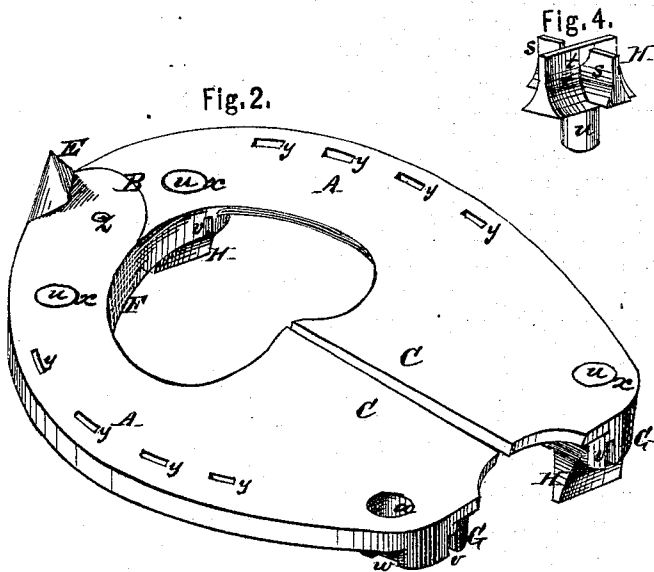
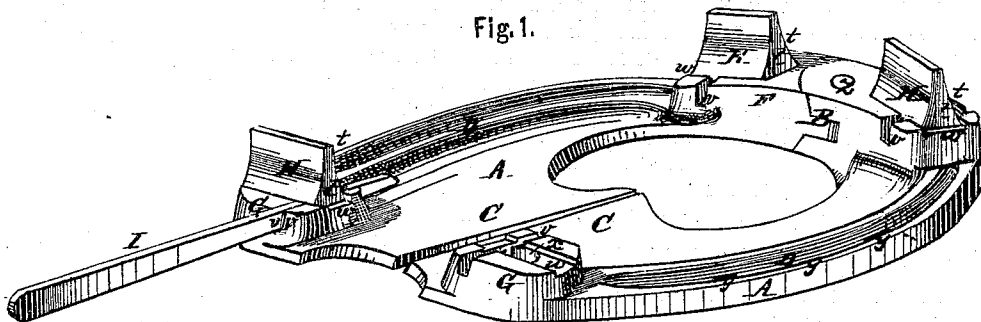
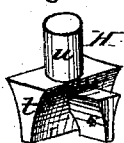


Fig. 3.



WITNESSES.

Geo. L. Ewin

Walter Allen

INVENTOR.

Aaron W. Smith  
By *Knight Bros*  
Attorneys.

# UNITED STATES PATENT OFFICE.

AARON W. SMITH, OF MANCHESTER, NEW HAMPSHIRE.

## IMPROVEMENT IN HORSESHOES.

Specification forming part of Letters Patent No. 127,932, dated June 11, 1872.

Specification describing an Improved Horse-shoe, invented by AARON W. SMITH, of Manchester, in the county of Hillsborough, State of New Hampshire.

The invention consists, primarily, in the combination, in a horseshoe, of a toe-joint, by which to render the same flexible, and inward extensions of the heels beneath the frog. The latter serve to support nearly the entire sole of the foot and to hold the bars of the foot in place, but especially to retain the frog in natural position and to give the same a bearing. This incites the natural expansion and contraction of the foot in walking, which is permitted by the toe-joint, contraction or "pinching" being thus prevented and cured, and all the parts kept in healthy normal condition. The invention consists, further, in a peculiar mode of securing and removing detachable calks. The calks are driven into straight sockets, retained by friction, held from turning by seats receiving their heads, and readily removed, when desired, without taking off the shoe, by inserting a wedge under the shoulders of the same, in grooves provided for its reception. These calks are preferably constructed with supplemental wings, to prevent lateral slipping.

In the drawing, Figure 1 is a perspective of the shoe in inverted position and with one calk removed and another in process of removal. Fig. 2 is a perspective of the same in working position. Figs. 3 and 4 are perspectives of different calks constructed according to the invention.

A A, Figs. 1 and 2, represent the sections of a longitudinally-divided horseshoe, and B a flexible joint, comprising a vertical pivot, *z*, by which the same are united at the toe. This joint permits the natural expansion and contraction of the hoof. C C represent inward extensions of the rear ends or heels of the sections A beneath the frog and in line, or nearly so, with the remainder of the floor of the shoe. These serve to retain the frog in natural position and furnish a bearing for the same. This, as before stated, incites or induces the healthy natural action of the foot, which is permitted by the joint B, the two devices thus co-acting. D D represent the common grooves and *y* the perforations in the same to receive nails for attaching the shoe. E represents a lip at the toe of the shoe to enter a

central notch in the extreme edge of the hoof. F G represent bosses on the under side of the shoe, at toe and heel, to receive the calks H, the former, F, serving also to strengthen the joint B. *x* represent straight-sided vertical perforations in the bosses F G, cylindrical in the illustration, but not necessarily of this shape. *w* represents broad flat grooves or seats in the faces of said bosses coincident with the holes *x*, and *v* narrow grooves or channels crossing the seats *w* at one side of the said holes. The sockets *x* receive the stems *u*, and *w* the bases of the heads *t* of the calks H, which, being tightly fitted, are simply driven to place. To remove a calk it is only necessary to introduce a wedge, I, under it, in the groove *v*, as illustrated in Fig. 1. The calks H are shown as of common form of head in Figs. 1 and 2, operating simply as foot-holds. In Figs. 3 and 4 a proposed improvement of this superior form of calk is illustrated, *s s* representing wings (one or two) to prevent lateral slipping.

The shoe, as represented, is intended to be cast of malleable iron. The calks may be of like material or of steel.

I am aware that removable calks are not new, and that the toe-joint B and frog-bearing C have before been used separately. I only claim the former when of the described construction, and the latter when combined, which combination I have found to be essential. The foot has little or no tendency to spread and contract naturally with the frog out of action. The provision of a bearing for the frog tends to produce or incite the described action, which cannot, however, take place without the said joint, in the absence of which the other provision is only deleterious.

### Claims.

What I claim as new herein is—

1. The combination of the flexible toe-joint B and the frog-bearing C, substantially as shown and described, for permitting and inciting a natural expansion and contraction of the hoof.
2. The frictional sockets *x* and seats *w*, to receive the stems *u* and heads *t* of the calks H, as shown and described.

Witnesses: AARON W. SMITH.

CHAS. H. BARTLETT,  
E. P. RICHARDSON.