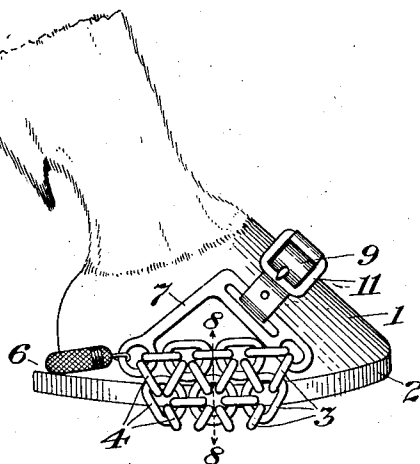


G. N. KINNELL.  
OVERSHOE AND TREAD SURFACE THEREFOR.  
APPLICATION FILED MAR. 12, 1909.

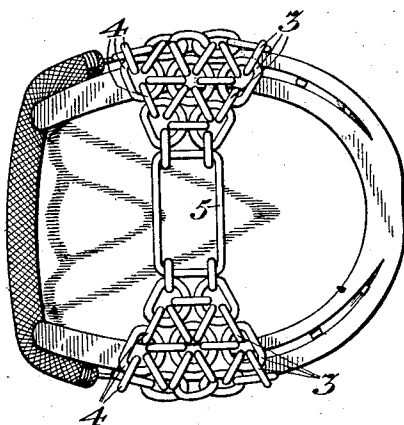
1,010,383.

Patented Nov. 28, 1911.

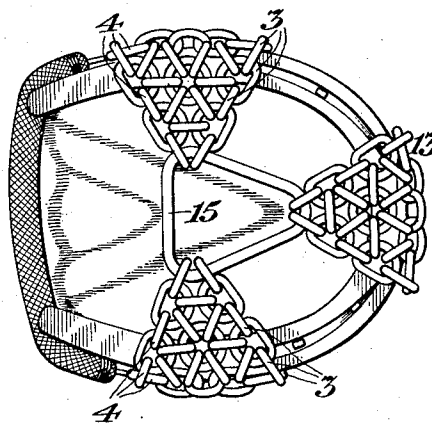
*Fig. 1*



*Fig. 2*



*Fig. 3*



Witnesses:  
*Chas. J. Clagett*  
*Am. Guerin Co.*

Inventor  
*George N. Kinnell*  
By his Attorney  
*George C. Allen*

# UNITED STATES PATENT OFFICE.

GEORGE N. KINNELL, OF PITTSFIELD, MASSACHUSETTS.

OVERSHOE AND TREAD-SURFACE THEREFOR.

1,010,383.

Specification of Letters Patent. Patented Nov. 28, 1911.

Application filed March 12, 1909. Serial No. 482,899.

*To all whom it may concern:*

Be it known that I, GEORGE N. KINNELL, a citizen of the United States, and a resident of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Overshoes and Tread-Surfaces Therefor, of which the following is a specification.

My present invention relates to the use of metallic fabrics for the tread portion of overshoes and other devices intended to prevent slipping, particularly to the use of fabrics wherein a plurality of articulations or links are interlinked laterally as well as longitudinally so as to form a flexible articulated surface.

When chain fabric is used for my purpose, the cross section of the material of the link cannot be decreased below a certain minimum dependent upon the strength of the material used and the character of the use, and I have discovered that where a chain fabric covering the entire bottom of the foot is used, the overshoe becomes too heavy for continued, practical use, even when the links are made of the strongest possible material. I have also discovered that the practical advantages of the overshoe are greater where the fabric does not cover the entire tread, and my present invention contemplates omitting certain parts of the fabric as, for instance, at certain portions of the periphery or at the center of the tread. The latter feature is of particular advantage in the case of overshoes for horses, because I find that where links heavy enough to operate satisfactorily as calks are permitted to bear upon the frog of the hoof, they may cause injury in cases where the frog is diseased or tender or where the use is rough or long continued. Moreover, where a fabric without breaks or reticulations is applied across the tread, the snow is likely to pack in the cavity between the hoof and the fabric, so that the hoof becomes balled in a manner which is not possible where sufficiently open or reticulated fabrics are used. Hence, I may and preferably do arrange open spaces in the fabric preferably near the center of the tread and also toward the periphery of the hoof, so that the tread is more or less open along certain regions near the periphery as well as at the center.

Another feature of my invention which is

of advantage for a chain fabric tread, whether of continuous fabric or of open construction, consists in arranging the fabric so that the yielding or stretching direction thereof is transverse to the foot, while the unyielding directions of direct chain connection extend diagonally across the foot from points in advance of the region of maximum diameter to points in the rear of said region.

The advantages of the various features described above, may be more fully understood by reference to my prior application Serial No. 460,336. In my prior application Serial No. 460,336, I have shown an overshoe consisting of interconnected diagonal strands or articulations adapted to serve as calks and suspended by a spreader and equalizing lever on each side of the foot, subject to upward and forward tension through a toe strap, and to rearward tension through a heel member seated in the notches under the heels of the hoof and above the rearwardly projecting ends of the metallic shoe. The heel member may be of fine quality steel wire or chain, but I prefer heavy baling wire which does not stretch and is not very resilient, yet is flexible enough so that in use it fits itself to the surface upon which it bears and becomes bent or set so that there is practically no tendency for it to spring out of position. Various other novel features and functions of said overshoes are explained in said application. In other applications, I have described auxiliary means for supporting the heel member independently of engagement with the heels of the hoof. For present purposes I have chosen to show the means for securing the tread as substantially the same as that of said application Serial No. 460,336, although any known or desired means of securing the tread to the hoof may be employed.

The invention will be more fully understood from the following description in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of a hoof showing an overshoe secured thereto; Fig. 2 is a plan view looking at the hoof from the bottom. Fig. 3 is a plan view showing a modified form of fabric tread.

In Fig. 1 the fabric tread is secured to the hoof 1, provided with the usual metallic shoe 2, the securing means consisting of a heel member 6, spreader and equalizing

lever 7, and toe strap 9, adapted to be tightened in place by buckle 11. The particular form of metallic fabric illustrated comprises a chain link construction in which the links are assembled in a hexagonal pattern though rectangular or other patterns may be used. It will be noted that the forward line of chain links shown at 3 are arranged in diagonal relation to the tread, and afford lines of direct chain connection, so that the fabric is incapable of being stretched along said lines, whereas along the dotted lines 8—8, Fig. 1, the fabric is capable of stretching. It will be evident that if the fabric were formed by chain lines interlinked along a rectangular pattern, the lines 3, 4, would converge at right angles, and the fabric would be capable of stretching along the line 8—8 even more than in the case of the hexagonal pattern shown, and it will be understood that my invention is not limited to either pattern of interlinkage or to any specific form of links.

In Figs. 2 and 3 the fabric is altogether omitted at the portion of the tread in the region of the frog, the portions of the fabric on opposite sides of the frog being interconnected by means adapted to afford tension across the frog without danger of injurious contact or pressure thereon. The means shown is a flat link 5 elongated transversely of the tread.

In Fig. 2 the fabric is omitted over a large part of the peripheral portion of the tread, as well as at the center, but it will be obvious that a much greater proportion of the tread area may be covered by the fabric, provided adequate openings be left in the fabric.

In Fig. 3 I have shown an arrangement whereby the area of the fabric may be increased by providing a portion 13 extending over the toe of the hoof, and it will be obvious that the ratio of areas covered and not covered by fabric may be otherwise varied within wide limits, provided the fabric area be not increased to a point where the weight of the overshoe becomes prohibitive and the easy clearance for snow impeded. In this case, the central link 15 is triangular with the point extending well forward in the direction of the point of the frog.

It will be understood that any fabric used at the toe may be suspended from the securing means encircling the walls of the hoof in any desired way. It might be suspended from the toe strap 9.

While I have herein fully shown and described, and have pointed out in the appended claims certain novel features of construction, arrangement, and operation which characterize my invention, it will be understood by those skilled in the art that various omissions, substitutions, and changes in the

forms, proportions, sizes, and details of the device and of its operation, may be made without departing from my invention.

I claim:

1. An overshoe comprising a metallic linked mesh fabric tread formed with an opening over the region of the frog of the hoof. 70
2. An overshoe comprising metallic linked mesh fabric secured along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a tension connection across the frog constructed and arranged to avoid injurious contact with the frog. 75
3. An overshoe comprising metallic fabric secured along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a flat link connecting the inner edges of the fabric. 80
4. An overshoe comprising metallic linked mesh fabric secured along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a tension member extending across the frog and connected to the inner edges of the fabric at a plurality of points. 85
5. An overshoe comprising metallic linked mesh fabric secured along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a tension member extending across the frog and interlinked with said fabric by a plurality of links along the inner edges thereof. 90
6. An overshoe comprising a metallic fabric tread portion and means for securing the same to the foot, said means including a spreader for maintaining the fabric in extended position near the lower margin of the hoof. 95
7. An overshoe comprising laterally interlinked chains forming an area or areas of metallic linked mesh fabric forming a tread surface and having an opening over the region of the frog of the hoof. 100
8. An overshoe comprising laterally interlinked chains forming a tread surface secured along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a tension connection across the frog constructed and arranged to avoid injurious contact with the frog, said chains being interlinked laterally at a plurality of points between said tension connection and the edge of the hoof. 105
9. An overshoe comprising laterally interlinked chains forming a tread surface secured along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a flat link connecting the inner edges of the fabric. 110
10. An overshoe comprising laterally interlinked chains forming an area or areas of metallic fabric affording a tread surface along the sides of the hoof and extending 115

downwardly across the edges of the hoof, in combination with a tension member extending across the frog and connected to the inner edges of the fabric at a plurality of points, said chains being interlinked laterally at a plurality of points between said tension member and the edge of the hoof.

11. An overshoe comprising laterally interlinked chains forming an area or areas of metallic fabric affording a tread surface along the sides of the hoof and extending downwardly across the edges of the hoof, in combination with a tension member extending across the frog and interlinked with said fabric by a plurality of links along the inner edges thereof, said chains being interlinked laterally at a plurality of points between said tension member and the edge of the hoof.

12. An overshoe comprising securing means and a tread portion consisting of an area or areas of linked fabric with the lines of direct chain connection of said fabric disposed diagonally of the width of the foot and with a plurality of lateral lines of connection between said diagonal lines of chain.

13. An overshoe comprising securing means and a tread portion consisting of an area or areas of metallic linked mesh fabric with the

lines of direct chain connection of said fabric disposed diagonally of the width of the foot, certain of said lines extending rearwardly from points in advance of the region of maximum width and other lines extending forwardly from points in the rear of the region of maximum width.

14. In overshoes for horses, a tread consisting of an area or areas of chain metallic linked mesh fabric having portions of the fabric omitted over certain regions of the tread.

15. An overshoe comprising a plurality of separate areas of metallic linked mesh fabric, and a tension member connecting said separate areas.

16. In overshoes for horses, a tread consisting of an area or areas of metallic linked mesh chain fabric having portions of the fabric omitted over the central portion and certain peripheral portions of the tread.

Signed at Pittsfield in the county of Berkshire and State of Massachusetts this fifth day of March, A. D. 1909.

GEORGE N. KINNELL.

Witnesses:

JNO. J. WHITTLESEY,  
CHARLES M. WILCOX.