

(Model.)

H. H. GIBBS.
CUSHIONED HORSESHOE.

No. 546,145.

Patented Sept. 10, 1895.

Fig. 1.

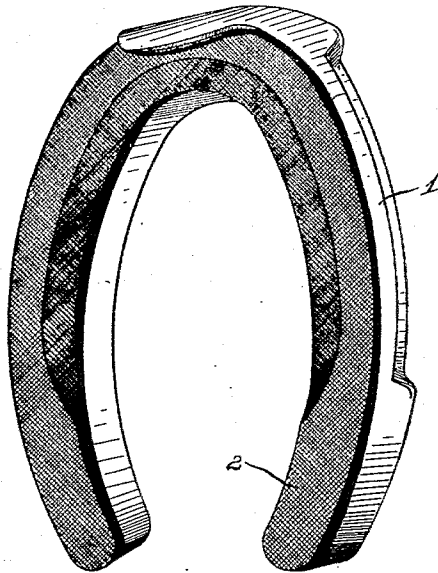


Fig. 2.

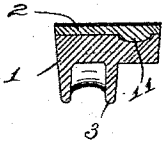


Fig. 3.

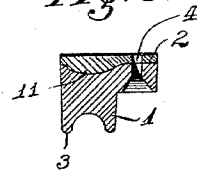


Fig. 4.

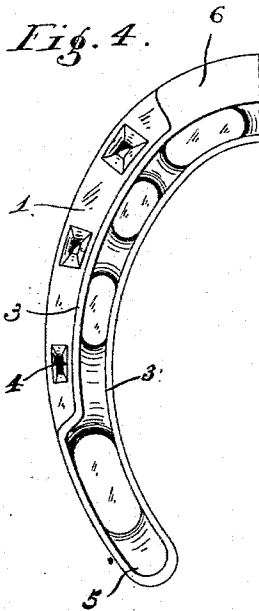


Fig. 5.

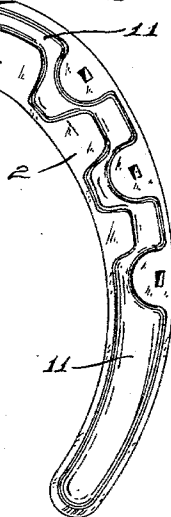
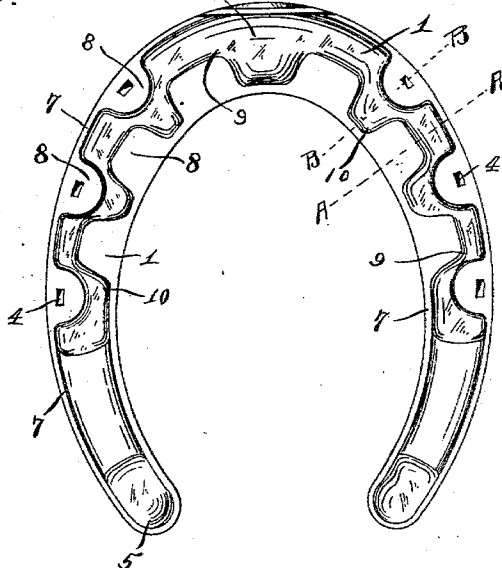


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

HIRAM H. GIBBS, OF INDIANAPOLIS, INDIANA.

CUSHIONED HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 546,145, dated September 10, 1895.

Application filed December 3, 1894. Serial No. 530,756. (Model.)

To all whom it may concern:

Be it known that I, HIRAM H. GIBBS, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Cushioned Horseshoes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

My invention relates to a horseshoe comprising a lower member of metal that comes in contact with the ground and an upper member, made of some elastic material, preferably rubber, which serves as a cushion to relieve the horse's foot of the blow of the shoe on the street. The difficulty with shoes of this general character heretofore has been to keep the rubber cushion in place, as there is a powerful shearing movement of the rubber against the metallic portion of the shoe when the horse's foot strikes the street-surface, and this shearing movement is liable to soon cut away, loosen, and destroy the cushion. The nails alone passing through such cushion are insufficient. Where the cushion is thick enough to have an appreciable effect the nail-heads must necessarily have some play, for when the cushion is compressed they will necessarily move downward. Unless the rubber is otherwise secured this necessary looseness or freedom of movement of the nails and members of the shoe will cause the cushion to cut out. The means I have adopted to overcome this difficulty, as well as the various features of my invention, will appear fully from the accompanying drawings and the description and claims following.

Figure 1 is a perspective of my shoe. Fig. 2 is a cross-section on the line A A of Fig. 6. Fig. 3 is a cross-section on the line B B of Fig. 6. Fig. 4 is a bottom view of one-half of the metallic member. Fig. 5 is a bottom view of one-half of the elastic member, and Fig. 6 is a plan view of the metallic member.

My shoe comprises a lower metallic member 1 and an upper elastic or rubber member 2. There is no rubber in contact with the surface of the street; but I so construct the lower portion of the metallic member that it will not slip and at the same time will be light. To that end I make it on the under side, as shown

in Fig. 4. Extending downward from the body of the metallic member are two flanges 3, one on the inner periphery and the other 55 about midway between the inner and outer periphery of the shoe. The midway flange or extension extends along the outer periphery, excepting where it passes the nail-eyes 4. Between the flanges 3 there is a series of recesses separated by ribs or reinforcements, the recesses being as deep as the shoe will permit. It will be observed that these ribs 3 will afford a sharp contacting surface to the lower part of the shoe to prevent slipping, 65 and they will prevent slipping either laterally or longitudinally, as they extend all about the shoe. By this construction also it is seen that the metallic portion of the shoe is made materially lighter without reducing its 70 strength by reason of the combination with the body of the shoe extending horizontally and the ribs 3 extending vertically. This metallic portion of the shoe is made thinner at the heel 5 than at the toe 6, so that the 75 rubber cushion may be the reverse, for the reason hereinafter explained.

The shoe is provided with calks and a toe after the ordinary manner. On the upper side of the metallic member of the shoe I provide an irregular groove or a recess extending all about the shoe. This recess is formed by the ribs 7, which are on the inner and outer periphery, and by the extensions 8, some about the nail-eyes and extending from the 85 outer periphery, and others extending from the inner periphery between the nail-eyes, as seen in Fig. 6. These extensions 8 are over the deeper recesses on the under side, but they have a further and more important function—namely, to prevent the movement of the rubber in a longitudinal direction. They are substantially cross-ribs, but do not extend entirely across, so that the recess will be continuous; but, the extensions extending from 95 the inner and outer peripheries by reason of the peculiar arrangement, the inner and outer series co-operate to form a cross-rib. They are not made, however, rectangular, nor is any wall or barrier which goes to form the recess on the upper side of the metallic member rectangular. The various extensions are provided with rounded corners 9. The inner angles 10 are also rounded as well as the wall 100

of the recess in every other direction. By this construction it will be observed that there is no surface adapted to cut or shear the elastic cushion above, the surface being rounded or oval, and yet the rubber cushion above would be prevented by such construction from having either lateral or longitudinal movement.

The elastic cushion is made preferably of rubber, vulcanized to a canvas top. The canvas top is next to the horse's hoof, and the rubber is molded on the upper surface of the shoe, or a pattern or mold made like the upper surface of the shoe, so that it will be provided with extensions 11, corresponding with the recesses in the metallic portion of the shoe, of exactly the same form and dimensions, so that the rubber cushion will fit tightly and snugly in such recesses, and for the reason above stated can have neither longitudinal nor lateral movement. The play of the nails by reason of the compression of the cushion that was referred to above will not permit the cushion to escape because of the extensions 11 fitting in the recesses. The thickness of these extensions is greater than the extent of the compression of the rubber cushion that takes place when the horse's foot strikes the street-surface. Hence the extensions keep the cushion in place. Since most of the weight of the horse is received nearer the heel of the shoe, the cushion is made thicker at that point and thinner at the toe, and since the metallic portion is made the reverse a regular thickness will be maintained. It will be observed from this description that I have a shoe which will relieve the horse from the blow on the street-surface and at the same time will be durable, the cushion being unable to escape, and the under side of the metallic portion is so constructed that it will be light, strong, and not liable to slip. It is known that the greatest wear takes place on the front or toe portion of the horseshoe, and by making the metallic portion of the shoe much thicker at the toe and using a cushion above formed like mine the life of the shoe is greatly prolonged.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A horse shoe comprising a metal lower member provided with recesses on its upper

side, some extending substantially lateral and others longitudinal therewith but not through the shoe, and an elastic upper member provided with extensions adapted to fit snugly in such recesses.

2. A horse shoe comprising a lower metallic member having on its upper side recesses which do not extend through the shoe and are surrounded by peripheral walls and walls extending partially across the same, and an elastic member above provided with extensions adapted to fit in such recesses.

3. A horse shoe comprising a lower metallic member having on its upper side recesses formed by walls, some extending substantially laterally and others longitudinally therewith, the angles of such recesses and the corners of such walls being curved, and an elastic upper member provided with extensions adapted to fit in such recesses.

4. A horse shoe comprising a lower metallic member having on its upper side a continuous recess formed by peripheral walls, a series of extensions extending alternately from the outer and inner peripheral walls partly across the shoe, and an elastic member above provided with an extension adapted to fit in such continuous recess.

5. A horse shoe provided on its under side with downwardly extending flanges continuously about its outer and inner periphery between which there is a series of recesses which do not extend through the shoe, and reinforcements or ribs between such recesses, substantially as shown and described.

6. A horse shoe comprising a lower metallic member provided on the under side with downwardly extending flanges continuously about its outer and inner periphery with recesses between them, and provided on the upper side with recesses, such recesses not extending through the shoe, and an elastic member provided with extensions adapted to fit in such upper recesses.

In witness whereof I have hereunto set my hand this 7th day of November, 1894.

HIRAM H. GIBBS.

Witnesses:

G. C. CONNER,
L. A. MONROE.