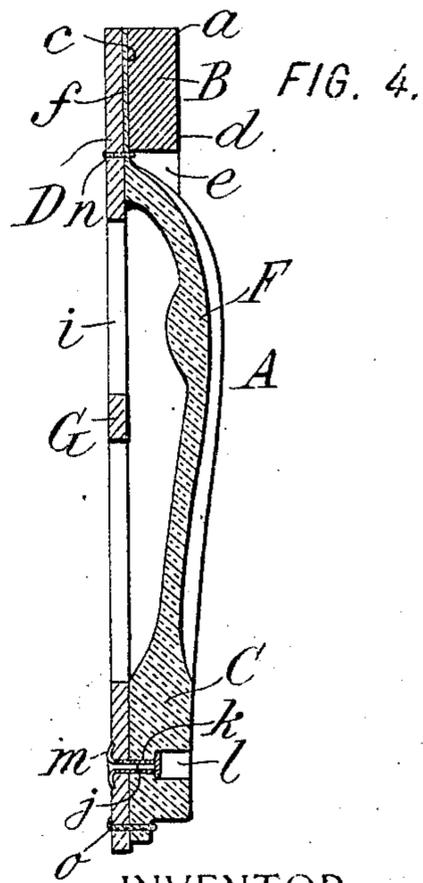
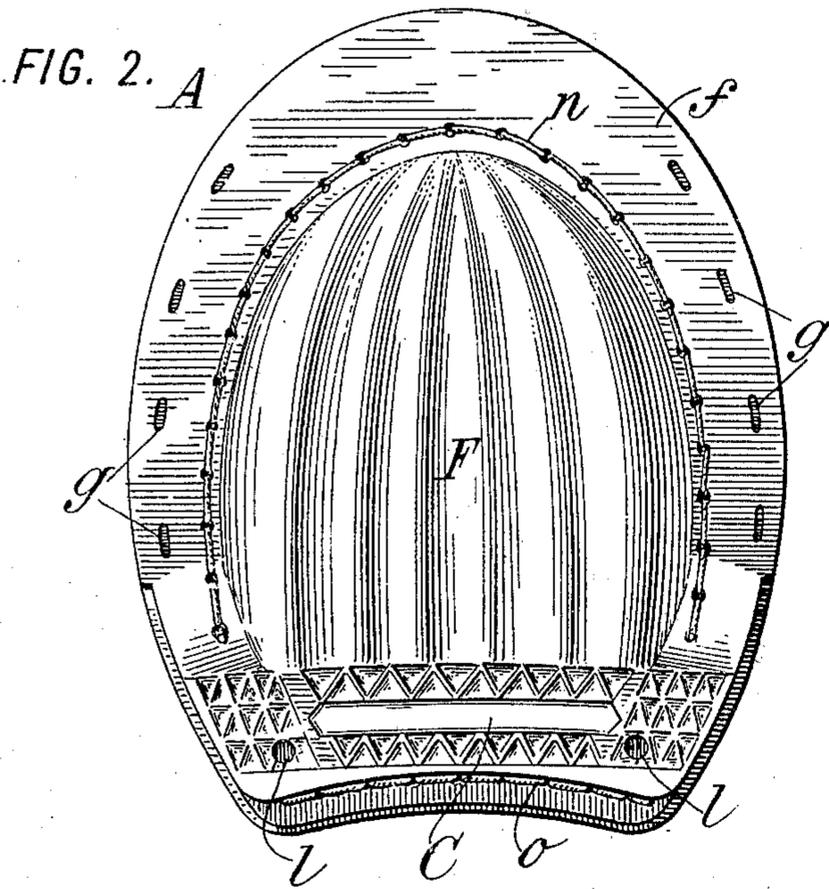
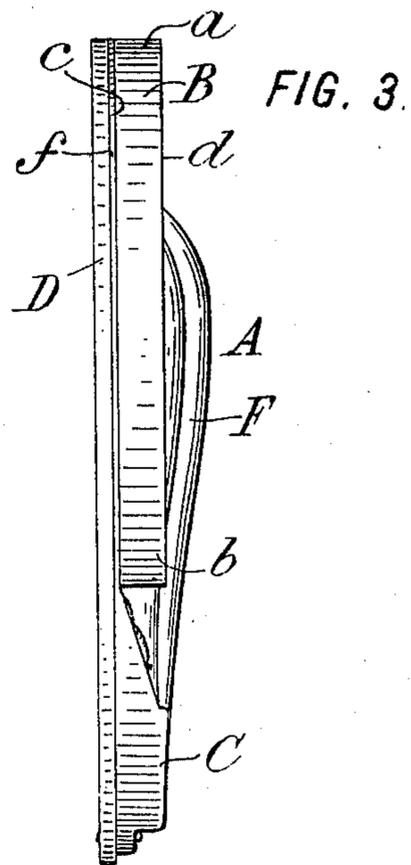
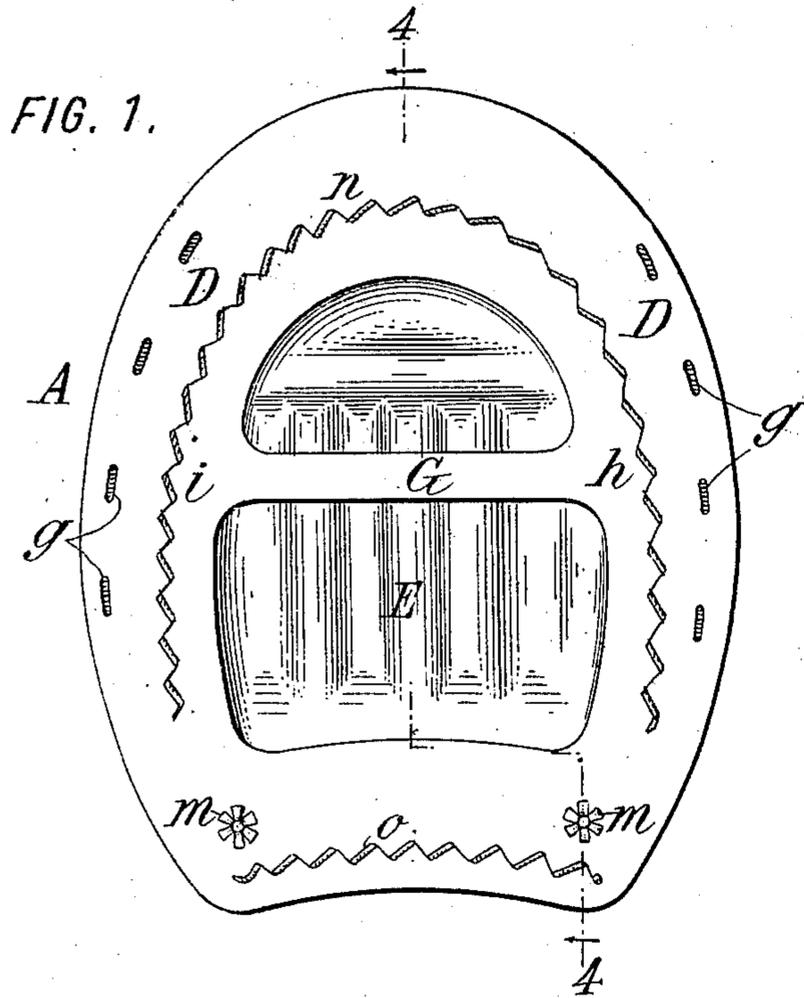


W. J. KENT.
HOOF PAD.

(Application filed Apr. 25, 1901.)

(No Model.)



WITNESSES:
Fred White
Rene Pruine

INVENTOR:
William J. Kent,
 By Attorneys,
Arthur C. Fraser & Co.

UNITED STATES PATENT OFFICE.

WILLIAM J. KENT, OF BROOKLYN, NEW YORK, ASSIGNOR TO REVERE RUBBER COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

HOOF-PAD.

SPECIFICATION forming part of Letters Patent No. 685,769, dated November 5, 1901.

Application filed April 25, 1901. Serial No. 57,472. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KENT, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Hoof-Pads, of which the following is a specification.

This invention relates to hoof-pads, and aims to provide certain improvements therein.

It has heretofore been common to provide a pad for protecting the hoofs of horses against the shocks which are incident to impact of the steel shoe with the roadway and against direct contact of the interior of the hoof with stones or other substances which would otherwise enter the hoof through the open shoe and cause injury to the foot either by their forcible impact against the delicate interior structure of the latter or by their lodgment therein and by continued contact with the road wedging apart the walls of the coffin-joint. Such pads have generally consisted of a rubber or other cushion-like member interposed between the shoe and the hoof, having a portion extending across the under side of the hoof, so as to prevent ingress of foreign material to the interior of the hoof. In the best pads heretofore constructed such portion has been formed as a bulging wall projecting below the under face of the shoe, so that it receives the first shock of the impact with the roadway, so that the subsequent contact of the shoe with the road is less severe. The shock is also lessened by the strip of rubber which is interposed between the shoe and hoof. With such pads it is customary to use a "three-quarter" shoe—that is to say, one in which the heel is omitted—so that the shoe extends only part way to the rear of the foot, the heel portion of the shoe being replaced by a thickened portion of the pad, which extends flush with or slightly below the level of the shoe and constitutes what is known as the "heel-cushion." This relieves the sensitive and delicate heel of the hoof of the shocks which would otherwise be incurred.

My present invention aims to provide certain improvements which are especially applicable to hoof-pads of this general character, these improvements being directed prin-

cipally to certain features of construction which increase the strength and durability of the pad and enable the production of a pad which is light and comfortable in use.

In carrying out the preferred form of my present improvements I provide a hoof-pad having a thin flat portion, which is interposed between the shoe and the hoof, and an elastic central portion extending across the hollow of the hoof and preferably projecting below the shoe. Upon the upper face of the pad I provide a relatively stiff reinforce, such as leather or other suitable material, which is attached to the pad by stitching, cement, or otherwise, and I form this reinforce with a central aperture, preferably extending entirely across the hollow of the hoof, so that the under side of the foot forms with the projecting central portion a chamber for containing air, the air being forced into and out of such chamber between the shoe and the reinforce or otherwise by the movements of the elastic central portion as it is forced upwardly by striking the roadway and downwardly by its own elasticity when the hoof is lifted. By an important improvement I provide a connecting tie or bar across the central aperture of the reinforce, preferably by a band or strip formed integrally with the latter, whereby all danger of spreading of the pad is prevented. I also provide a heel-cushion which is integral with the pad and provide an improved means of attaching such cushion to the reinforce, which consists in rivets or similar devices passing through the cushion and reinforce, the heads of which are sunk far enough into the cushion to avoid danger of their being forced upwardly when the foot strikes the ground and the ends of which are upset or expanded upon the upper face of the reinforce, thus removing all liability of the heel-cushion separating from the reinforce in use.

Referring to the accompanying drawings, which show the preferred form of my invention as adapted for a three-quarter shoe, Figure 1 is a top view of my improved pad. Fig. 2 is a bottom view with the shoe removed. Fig. 3 is a side elevation, and Fig. 4 is a vertical section cut on the line 4 4 in Fig. 1.

Referring to the drawings, let A indicate the

improved pad, and B a three-quarter shoe, with which it is adapted to be used. The shoe is of usual construction, having a toe *a* at front, short heels *b*, a top bearing *c*, a bottom working face *d*, and a hollow center *e*. The pad has a flat thin outer bearing-strip *f* for intervening between the bearing *c* of the shoe and the sole of the hoof and has a thick heel-cushion C for crossing the frog and the heels of the shoe at the rear of the hoof. The pad is connected to the hoof by its bearing-strip *f*, which is clamped between the hoof and the shoe when the shoe is nailed to the hoof, the nails penetrating the pad at the points *g*, and thus preventing displacement of the pad should any looseness between the shoe and the hoof occur in use. The pad has a downwardly-projecting central portion F, filling the hollow center *e* of the shoe beneath the coffin-joint of the hoof. As thus far described the parts may be of any usual or suitable construction and are in their general features well known.

According to one feature of the improvement I provide a reinforce D, which is shown as a ring-like leather member extending completely around the shoe and attached to the upper face of the bearing-strip *f*, so that it is interposed between this strip and the hoof. For use with a three-quarter shoe I prefer that this reinforce shall extend completely around the hoof, and I form it with a central aperture E, which is opposite the downwardly-projecting central portion F of the pad, so as to permit free access of air within said portion to the interior of the hoof. As the portion F is forced inwardly by striking the roadway and outwardly by its own expansion it acts as a pump for drawing air between the reinforce and the hoof and forcing it therefrom, thereby insuring that the interior of the hoof shall always be supplied with fresh air, thus preventing disease of the hoof. The confined body of air in the portion acts as a cushion to receive the first shock of the impact with the ground. I provide a strengthening band or strip G for the reinforce, which extends transversely of the latter across the aperture E and connects the opposite sides *h* and *i*, so as to prevent lateral expansion or spreading of the pad and reinforce, holding both firmly in their original shapes, while in no way interfering with the free passage of air to the interior of the hoof. The reinforce D is preferably constructed of a single piece of leather or other suitable material, and the strip or band G is preferably formed integrally with the reinforce, as shown.

With a three-quarter shoe the shoe ends some distance in front of the heel-cushion, and this part of the pad is hence supported solely by the reinforce and there is liability of the heel-cushion separating from the hoof in use or from the reinforce when one is used. According to my invention I form the reinforce of sufficiently stiff material at this point to support the heel-cushion, and I provide a posi-

tive and secure fastening for these two parts which will remove all danger of separation in use. The means I prefer to employ consist of tubular rivets entering into countersunk holes in the heel-cushion and passing through the reinforce to the upper face thereof and there headed or upset. In Fig. 4 of the drawings this construction is illustrated in detail, the rivet *j* passing through a hole *k* in the heel-cushion C, which is countersunk at *l* to a considerable depth to receive the head of the rivet. The latter passes through the reinforce and is upset or headed at *m*, as shown. Countersinking the heel-cushion to such extent that the rivet will never contact with the ground in use avoids all liability of the rivet being forced upwardly into the horse's hoof, thus preventing any danger of thus injuring the latter. This means of fastening insures against separation of the pad and reinforce under any strain which is likely to occur in use. I have shown two rivets *j*, but any suitable number may be used. The pad and reinforce are also preferably fastened together by stitching, as at *n* and *o*.

In use the pad is placed between the hoof and the shoe, the latter being nailed in place in the usual manner, the nails passing through the bearing-strip of the pad. The projecting portion F will contact with the ground before the shoe, and thus take up the first shock of the impact and by its expansion and contraction will insure a sufficient circulation of air to the hoof to maintain the latter in good condition. The heel-cushion will prevent shock to the heel of the hoof, thus effectually protecting this delicate part of the foot. The reinforce will firmly hold the pad in shape, and the strengthening-band will effectually resist any tendency of the pad or reinforce to expand or spread, while permitting free circulation of air to the bottom of the hoof from the downwardly-projecting portion F. There will be no danger of separation of the heel-cushion from the reinforce, which by its stiffness will, in a three-quarter shoe especially, firmly hold the cushion against the hoof, thus preventing the same from bending downwardly beneath the foot.

It will be seen that my invention provides improvements which can be variously and advantageously availed of, and it will be understood that the invention is not limited to the particular details of construction, arrangement, or combination of features set forth as embodying its preferred form, since it can be employed in whole or in part, according to such constructions, arrangements, or combinations of features as circumstances or the judgment of those skilled in the art may dictate, without departing from the spirit of the invention.

The transverse strip G has an important advantage in that it greatly stiffens the resiliency of the pad, while not impairing its flexibility in any undesirable way.

What I claim is—

1. A hoof-pad comprising a cushioning member, and a reinforce secured to the face thereof, such reinforce having a central aperture opposite the hollow of the foot, and a strengthening-strip crossing said aperture and tending to prevent expansion of such pad.

2. A hoof-pad comprising a cushioning member, and a reinforce secured to the upper face thereof, such reinforce having a central aperture opposite the hollow of the foot, and an integral strengthening-strip crossing said aperture.

3. A hoof-pad comprising a cushioning member, and a reinforce secured to the face thereof, such reinforce consisting of a ring-like leather member having a central aperture, and a strengthening-strip crossing said aperture.

4. A hoof-pad comprising a cushioning member having a bearing-strip for intervening between the hoof and the shoe, a downwardly-projecting portion crossing the hoof, a reinforce fixed to the upper face of said bearing-strip, and having a central aperture, and a strengthening band or strip crossing it transversely.

5. A hoof-pad comprising a cushioning member for intervening between the shoe and

hoof, a downwardly-projecting portion having a chamber on its upper side, and a heel-cushion at the rear of said projecting portion, a reinforce extending over said cushioning member and said heel-cushion, and having a central aperture opposite said downwardly-projecting portion, and a strengthening-strip crossing said aperture transversely.

6. A hoof-pad comprising a cushioning member for intervening between the shoe and hoof, a downwardly-projecting portion having a chamber on its upper side, and a heel-cushion at the rear of said projecting portion, a reinforce extending over said cushioning member and said heel-cushion, and having a central aperture opposite said downwardly-projecting portion, a strengthening-strip crossing said aperture, and tubular rivets passing through said reinforce and said heel-cushion.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM J. KENT.

Witnesses:

GEORGE H. FRASER,
THOMAS F. WALLACE.