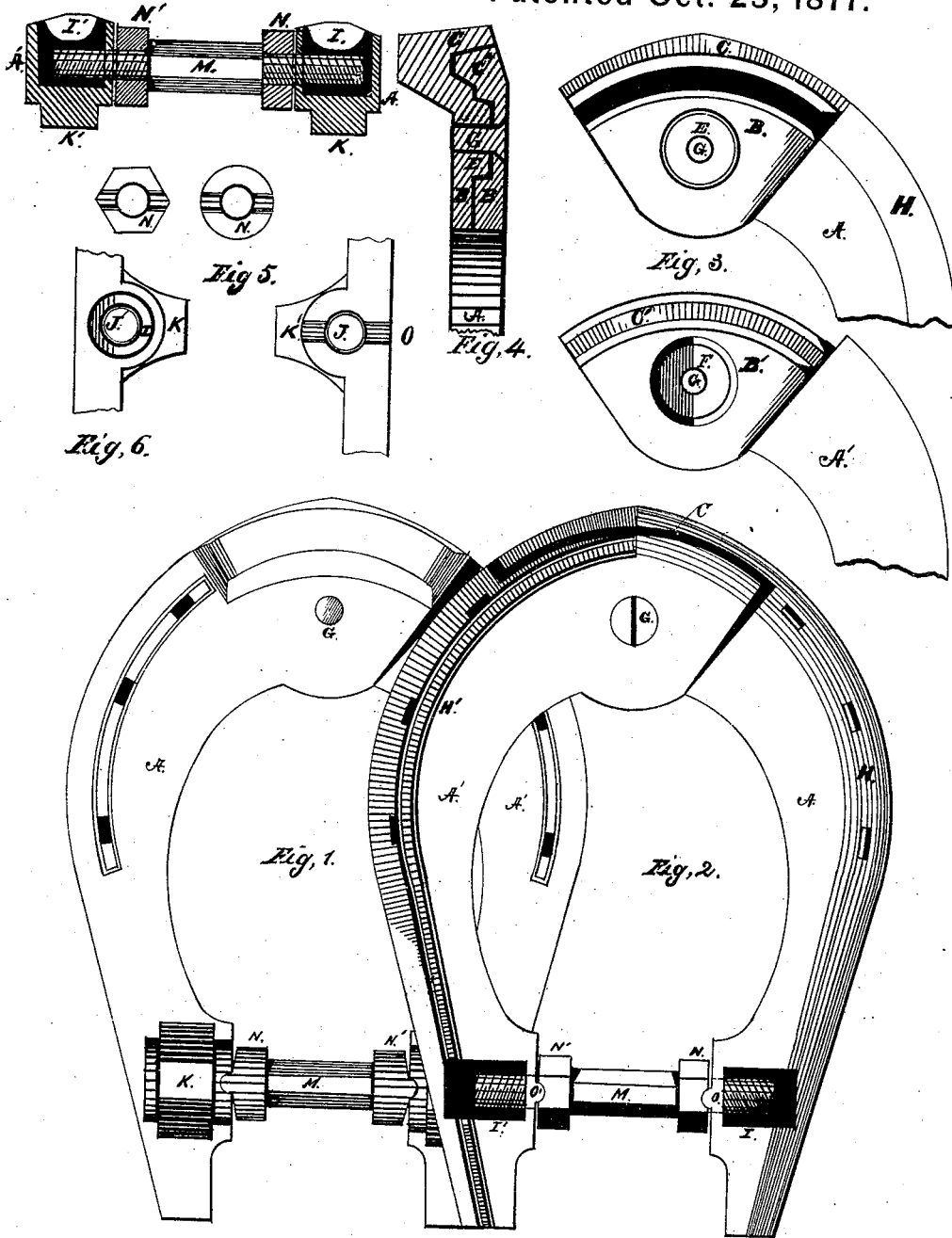


R. B. HUGUNIN.
Horseshoes.

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WITNESSES
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IMPROVEMENT IN HORSESHOES.

Specification forming part of Letters Patent No. **196,457**, dated October 23, 1877; application filed October 16, 1877.

To all whom it may concern:

Be it known that I, ROBT. B. HUGUNIN, of the city, county, and State of New York, have invented certain new and useful Improvements in Hinged and Expanding Shoes for Animals, of which the following is a specification:

This invention consists in the construction and use, in combination with hinging lips of a hinged shoe, of lip flanges or ribs connecting the lips with the shoe-plates; the object being to strengthen the parts of the shoe forming the hinge. Also, in the combination and use, in connection with hinge-lips, of the pivot constructed upon either the upper or lower lip, and working in a corresponding cavity on the opposite lip, the two being held together either by a rivet or screw; the object being to obtain solidity in the joint of the shoe, and to prevent any chucking or lost motion from the wear of the rivet or screw. Also, further, in the combination and use, with a hinged or expanding shoe, of the beveled bearing, or its equivalent flange or rib, extending round the upper or shell contact surface of the shoe; the object being to catch the bottom and inside shell of the hoof, when the same is nailed to the shoe, and, by means of friction between the two, open the hoof uniformly, relieving the shoe-nails, and that part of the shell of the hoof containing them, of the full strain otherwise solely placed upon them while expanding the hoof by means of an expanding-screw.

This invention consists, further, in the combination and use, with an expanding-shoe, of holding and protecting chambers for the loose and disconnected reception of the screw ends of the bolt, the said chambers being an opening cast from the top surface of the shoe, or cored or drilled. And, further, in combining with an expanding-bolt, used in connection with expanding or hinged shoes, grooved or ribbed nuts, when used in connection with corresponding grooves or ribs extending on a line with openings to screw-chambers in the plates; the object being to hold the nuts from turning while turning the bolt in expanding the shoe.

Figures 1 and 2 are rear and front plan views of a hinged shoe using my improvements. Fig. 3 is a plan view of hinging lips B B', showing the stiffening-flanges C C', hinge-pivot E, pivot-cavity F, and screw or rivet G. Fig. 4 is a

vertical cross-section of hinge end of shoe, showing general plan of lips B B', flanges C C', pivot E, cavity F, and rivet or screw G; Fig. 5, detailed views of adjusting screw-chambers I I', with screw ends of bolt M loosely working within the same, also, the arrangement of the locking ribs or grooves O O', corresponding with grooves or ribs on the nuts N N', also, general plan of bolt M.

A A', right and left plates of the hinged shoe; B B', hinge-lips, extending from the front ends of plates A A'; C C', flanges or ribs for strengthening the lips B B' in their connection with A A', C being a flange extending upward from the upper front side of the lower lip B, and connecting the same with it, C' extending downward from the under side of lip B' into a corresponding cavity on the upper side of the lip B; E, beveled or straight pivot, extending outward from either of the lips B B', and having a corresponding cavity, F, on the opposite lip, into which it fits and works. The lips B B' are held together through the pivot E by means of a screw or rivet, G, to prevent either of the parts A A' from becoming lost, if detached from the horse's foot by a giving out of the securing-nails. F, pivot-cavity, in which the pivot E is held and works; G, rivet or screw to secure the parts A A' of the shoe together; H, beveled bearings, extending round the upper surface of the shoe from inside the line of shoe-nails, downward and outward to the rim of the shoe, embracing that part of the shoe upon which the shell of the hoof rests, which, when pared to correspond with the bevel, and securely nailed to the shoe, is expanded by means of the screw M. The friction from the incline of the shoe, acting against the incline of the shell of the hoof, causes the latter to uniformly expand with the shoe the whole length of the shell, relieving the shoe-nails from part of the otherwise entire strain of the expansion. The same result is obtained by using the equivalent direct bevel or raised flange H'. (See Fig. 2.) The beveled surface H, when nailed to the hoof and acted upon by an expanding-screw, as in opening the shoe, causes, first, a longitudinal strain upon the fastening-nails, the resistance of which enables the beveled surfaces of the shoe to act

upon the hoof as a wedge, forcing it open with a uniform pressure of resistance from the shell, thus avoiding the tendency to split the shell of the hoof which arises when the lateral pressure is transmitted through the nails alone. I I', screw-protecting chambers, for the loose and disconnected reception of the screw ends of the bolt M, being an opening cast from the top side of the shoe, (see Fig. 2;) or these chambers may be cored out when cast, or drilled when dropped out. K K', heel-calks spanning the chambers I I'. In a flat shoe these chambers extend through the then generally thickened end of the shoe. M, expanding-bolt, having a right, or both a right and left, screw-thread cut upon its ends, with screw-nuts to match, in which case the expansion takes place from both sides or ends of the bolt on turning the same; N N', grooved or ribbed nuts, working over the ends of the bolt M, against grooves or flanged ribs on the sides of the shoe; O O', grooves or ribs extending on a line with the bolt-openings J J' to the screw-chambers I I', for receiving the ribs or grooves of the nuts N N', and preventing them from turning during the turning of the bolt M in expanding the shoe.

Having described the features of my invention, what I claim as my invention is—

1. The combination of the plates A A' with the hinging-lips B B', having flanges C C', substantially as specified.

2. The combination of plates A A', hinging-lips B B', having pivot E, and pivot-cavity F, substantially as specified.

3. In combination with a hinged or expanding shoe operated by an expanding-screw, M, the beveled bearing-surface H or rib H', substantially as and for the purposes specified.

4. In combination with a hinged or expanding shoe, the screw-bolt chambers I I', arranged for the loose working and protection of the ends of the adjusting-bolt M, as and for the purposes specified.

5. In combination with a hinged or expanding shoe, the bolt M, using the round, square, grooved, or ribbed nuts N N', working against corresponding ribbed or grooved surfaces O O' on the inner sides of the plates A A', substantially as and for the purposes specified.

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Witnesses:

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