



Fig. 3.—Forms of Hoof: a, side view of an acute-angled fore foot (shod); b, side view of a regular fore foot, showing the most desirable degree of obliquity; c, side view of a stumpy or "upright" fore foot, obliquity above 20 degrees. In a, b, c, note particularly the relation between the length of the shoe and the overhanging of the heels. Note also the toe roll of the shoes.

How to Shoe a Horse

The Horse's Foot—The Parts of the Shoe and How They are Fitted

The Bureau of Animal Husbandry at Washington has recently issued a most useful bulletin on horse-shoeing. A great many horses have their feet ruined by bad and indifferent horse-shoeing and the need for more practical knowledge is shown.

In the bulletin the structure and mechanism of the foot is shown. The bones of the foot are four in number, three of which—the long pastern, short pastern, and coffinbone—placed end to

end and horn-like. They are very elastic, absorb moisture rapidly, and as readily dry out and become hard, brittle, and easily fissured. Horn of good quality is fine-grained and tough, while bad horn is coarse-grained, and either molten and friable, or hard and brittle. All horn is a poor conductor of heat, and the harder (drier) the horn, the more slowly does it transmit extremes of temperature.

The colt should have abundant exercise on dry ground. The hoofs will then wear gradually, and it will only be necessary from time to time to regulate any uneven wear with the rasp and to round off the sharp edge about the toe in order to prevent breaking away of the wall.

Speaking specially of the shoe itself, the bulletin says:

"The shoe is an artificial base of support, by no means ideal, because it interferes to a greater or less degree with the physiology of the foot, but indispensable except for horses at slow work on soft ground. Since a proper surface of support is of the greatest importance in preserving the health of the feet and legs, it is necessary to consider the various forms of shoes best adapted to the different forms of hoofs. Certain properties are common to all shoes and may be considered first. They are form, width, thickness, length, surfaces, borders, "fullering" nail holes, and clips.

Form.—Every shoe should have the form of the hoof for which it is intended, provided the hoof retains its proper shape; but for every hoof that has undergone change of form we must endeavour to give the shoe that form which the hoof originally possessed. Front shoes and hind shoes, rights and lefts, should be distinctly different and easily distinguishable.

Width.—All shoes should be wider at the toe than at the ends of the branches. The average width should be about double the thickness of the wall of the toe.

Thickness.—The thickness should be sufficient to make the shoe last about four weeks and should be uniform except in special cases.

Fig. 7.—Left fore hoof of regular form, shod with a plain "fullered" shoe. Note the distribution of the nails, the length of the fuller (crest), and the closeness of the end of the shoe to the branches of the frog.

end, form a continuous straight column passing downward and forward from the fetlock joint to the ground. A small accessory bone, the navicular, or "button" bone, lies crosswise in the foot between the wings of the coffinbone and forms part of the joint surface of the latter. The short pastern projects about one and a half inches above the hoof and extends about an equal distance into it. The horny box, or hoof, consists of wall and bars, sole and frog. The wall is all that part of the hoof which is visible when the foot is on the ground. It consists of three layers—the periople, the middle layer, and the leamy layer.

With respect to solidity, the different parts of the hoof vary widely. The middle layer of the wall is harder and more tenacious than the sole, for the latter crumbles away or passes off in larger or smaller flakes on its under surface, while no such spontaneous shortening of the wall occurs. The white line and frog are soft horn structures, and differ from hard horn in that their horn cells do not, under natural conditions, become

Length.—This will depend upon the obliquity of the hoof viewed in profile. The acute-angled hoof (Fig. 3a) has long overhanging heels and a considerable portion of the weight borne by the leg falls in the posterior half of the hoof. For such a hoof the branches of the shoe extend back of the buttresses to a distance nearly double the thickness of the shoe. For a hoof of the regular form (Fig. 3b) the branches should project an amount equal to the thickness of the shoe. In a stumpy hoof (Fig. 3c) the shoe need not project more than one-eighth of an inch. In all cases the shoe should cover the entire "bearing surface" of the wall.

Surface.—The surface that is turned toward the hoof is known as the "upper" or "hoof surface" of the shoe. That part of the hoof surface which is in actual contact with the horn is called the "bearing surface" of the shoe. The "bearing surface" should be perfectly horizontal from side to side and wide enough to support the full thickness of the wall, the white line, and about one-eighth of an inch of the margin of the sole. The bearing surface should also be perfectly flat, except that it may be turned up at the toe ("rolling motion" shoe, fig. 3, a, b, c). The surface between the bearing surface and the inner edge of the shoe is often beaten down or concaved to prevent pressure too far inward upon the sole. This "concaving," or "seating," should be deeper or

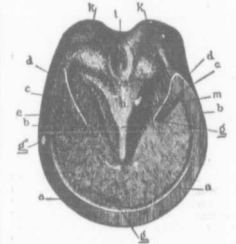


Fig. 1.—Ground surface of a right foot hoof of the regular form: a, b, the side walls; c, d, the quarters; e, e, the bars; d, d, the buttresses; e, the lateral cleft of the frog; f, body of the sole; g, g, the leamy layer (white line) of the toe and bars; h, h, body of the frog; i, i, branches of the frog; k, k, horny bulbs of the heels; l, middle cleft of the frog.

shallower as the horny sole is less or more concave. As a rule, strongly "cupped" soles require no concaving (hind hoofs, narrow foot shoes).

Borders.—The entire outer border should be bevelled under the foot. Such a shoe is not so readily loosened, nor is it so apt to lead to interfering.

Fullering.—This is a groove in the ground surface of the shoe. It should pass through two-thirds of the thickness of the shoe, be clean, and of uniform width. It is of advantage in that it

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Fig. 8.—Side view of hoof and shoe shown in Fig. 2. Note the straight toe, weak coronet, clinches low down and on a level, length of the shoe, and the under-level at the toe and heel.