

On horseshoeing / by William Miles.

Contributors

Miles, William.
Royal College of Surgeons of England

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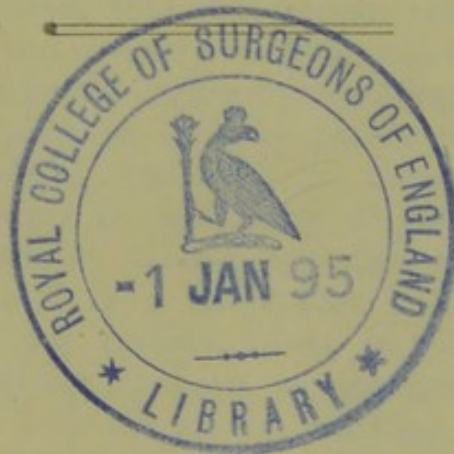
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ON

H O R S E S H O E I N G .

By WILLIAM MILES.



LONDON:

JOHN MURRAY, ALBEMARLE STREET.

1858.

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1852.

ON HORSESHOEING.

ALTHOUGH the subject of this paper may not legitimately come under the head of agriculture, it is nevertheless so intimately connected with the interests of the agriculturist, and has been so woefully neglected by him, that I may perhaps be excused for attempting to arouse him to a sense of its importance in a pecuniary point of view. Horses are essential to the carrying on of his pursuits, he cannot possibly do without them, and a lame one is a very serious and expensive incumbrance to him.

My object, therefore, shall be to show him and others how they may insure to themselves a much larger amount of good and efficient service from their horses than has hitherto been obtained from them, at the small cost of a little attention to the mode in which they are shod, and the general treatment of their feet in the stable. It is too much the habit to consider that shoeing has accomplished all that can be expected of it, if the shoes are only firm on the horse's feet when his master requires his services; whether they are tight and pinch him, or are easy and comfortable to him, are matters that are seldom considered, so long as he can go at all, and contrive to keep himself on his legs, and not diminish his marketable value by tumbling down and breaking his knees; all the pain he endures passes unheeded, except by the poor brute himself, and until he becomes positively lame and useless he receives no sympathy or care from those whose bounden duty it was by timely attention to have spared him. "No foot no horse" is a truth that I doubt not has been realized to many of my readers, when, in the expectation of an agreeable ride either on business or pleasure, they have found their horse emerge from the stable, marking time with his head at every step with the precision of a drill-sergeant.

The first thing that occurs to every one on such occasions is to travel yesterday's journey over again in the mind's eye, in the hope of discovering some particular hole in the road, or some particular stone that must have caused the unlooked for and unexpected calamity; the bare possibility of its being the gradually developed result of long-continued bad shoeing, and bad treatment in the stable, of course never suggests itself, because the horse has always been treated as other horses are

treated, and therefore those things can have nothing whatever to do with it; and this would be considered a sufficient and satisfactory answer to any one who had the temerity to surmise such a cause. I will nevertheless venture to assert, that in nine hundred and ninety-nine cases of foot-lameness out of every thousand, bad shoeing and bad stabling have had more to do with it, than the supposed accident that causes the horse to "drop his head to it," and thereby show that the culminating point had at last been reached, and that he is indisputably lame.

Foot-lameness is a very insidious affair, particularly that most painful and common form of it, navicular lameness. It steals on very gradually, and for the most part unobserved by all but the unfortunate horse; he, poor beast, notes its every stage, and if those who look after him, and those who employ him, would only attend to the indications he gives them, they would know as much about it as he does, excepting the pain. His courage enables him to bear a good deal without much flinching, nevertheless he soon shows to a close observer that mischief is brewing; the first indication he gives is the straightening of the pastern bone, so as to place the weight of the leg more on the coffin bone, and less on the navicular bone; then, as time goes on, and the pain increases, he relaxes the fetlock joint, and bears less weight on the foot altogether; still there is not much in his mode of standing to attract the attention of a casual observer; his next plan for obtaining relief is to advance the foot slightly, so as to bring the toe of the lame foot a little in front of the toe of the opposite foot, whereby he removes it in some degree from the base which supports his weight.

All this may have been going on for months, and no one have observed it, until at last he can bear the pain no longer, and he thrusts his foot fairly out in front of him in undisguised "pointing;" nevertheless he contrives, when he is at work, by shortening his stride and stepping a little quicker, to conceal the lameness; and the groom and his master become in time so accustomed to his posture in the stable, that they look upon it as a mere trick, and say, "it is all nothing, he always stands so when at rest:" the latter may be true, but the former is something more than doubtful.

Some horses are unquestionably given to tricks, but no horse ever indulges in a trick which compels him to stand almost constantly on two legs instead of four; the pain and inconvenience of such a proceeding would soon induce him to relinquish it as a matter of amusement. Before he can point a fore foot he is obliged to dispense with the support of the opposite hind leg, which he does by relaxing the muscles, lowering the hip, bending the joints, and resting the limb on the toe; he then has to divide his weight as equally as he can between the other hind leg and

the opposite fore leg, and having done this he raises the lame foot and deposits it sufficiently forward to insure its exemption from sustaining any portion of his weight; he then lowers his head and neck with a view of still further diminishing the weight on his feet, and presents altogether such a picture of misery, that it would require a very lively imagination in the beholder to suppose the horse is merely indulging himself in an agreeable trick.

The horse's foot is made up of a variety of textures so elaborately and beautifully combined as to form one complicated but perfect spring, and unless that spring is permitted to have constant freedom of action, it very soon gets out of order, the more delicate parts lose their elasticity, and the power of expansion, which is so essential to the soundness of the foot, becomes first diminished, and ultimately destroyed, whereby the horse is soon rendered useless. I take it there are few persons who will dispute the expansion of the horse's foot, but whatever the general theory about it may be, the all but universal practice is to treat it as an inelastic solid, whose chief use is to pound MacAdamized roads.

The horse in a state of nature roams about at will with his feet unfettered, and they take no harm, simply because he is permitted to look where he is going, pick his way over difficult ground, and direct his own pace; but as soon as he enters the service of man these valuable privileges and safeguards are withdrawn, and the various uses to which he is put, and the rapid rate at which he is required to travel over all sorts of roads, call for some efficient protection to his feet, and it is not only our duty, in return for the important services he renders, to see that it is applied in the manner the least detrimental to him, but it is our interest to do so in anticipation of the lengthened service it will insure to us. If horses were always properly shod, and properly stabled, they would repay the care thus bestowed on them by the increased length of efficient service they would perform. When a horse has worked seven or eight years it is no uncommon thing to hear his master say, "he owes me nothing," which may be perfectly true, considering the treatment he has received; but if he had been properly treated during the time he would be still some eight or ten years of active service in his master's debt.

The horse is a much longer lived animal than people generally suppose him to be; but the prevalent mistake as to the length of his natural life may be attributed to two opposite causes: First, the very large number that are known to die at an early age—victims, it may truly be said, of over-work, bad management, and cruel treatment; and next, the great difficulty there always is of ascertaining the real age of a horse when the mark has disappeared from his mouth. Horses are marketable commodities, and very few persons are disposed to lessen their value, by

recording very accurately the number of years that pass over their heads, after the mark is gone; the consequence is, that they remain *about* nine or ten years old so long, that their actual age becomes buried in oblivion, and at last no one really does know how old they are. Many a man at this moment is using a horse, perhaps some eight or ten years older than he thinks he is. I remember many years ago purchasing an active showy horse, said to be about the mysterious age of other people's horses, and there was nothing in his appearance or powers of work to indicate greater age; but on tracing his history I discovered that he was twenty-nine years old, and the sire of a very large progeny. Now, if I had not taken the trouble to trace him back I should never have known within fifteen or sixteen years how old he really was.

I have, at different times, met with four horses who were all known to be over forty years old, and were still at work; one of them was shot at the age of forty-five, not because he was incapable of further work, but because his master saw the servant ill use him. But, perhaps without taxing my memory for further facts, those supplied by my own stable in November of last year may sufficiently illustrate my position, that the natural life of a horse is longer than it is generally supposed to be. I had at that time six horses in my stable whose combined ages amounted to one hundred and forty-five years, and five of them are still there, with clean legs and hoofs looking like colts' hoofs. The sixth I had destroyed last December at the age of twenty-six. When I purchased him nineteen years ago he had incipient navicular disease, but I contrived by shoeing and stable management to keep it at bay all that time.

The patriarch of the lot, who was bred only five miles from Exeter, has just completed his fortieth year; his early history does not redound to his credit; he was a very unruly, unmanageable brute, and was perpetually changing masters for running away and kicking carriages to pieces; two hackney men in succession tried him, but were obliged to part with him; at length he was handed over to the tender mercies of a commercial traveller, whose long journeys through Devon and Cornwall, after a few years, subdued him, and he became a very useful horse, and at the age of fourteen was sold to a friend of mine, from whom I purchased him exactly twenty years ago. He is a high stepper and remarkably handsome, and if you do not look in his mouth his general appearance would pass muster for nine or ten years old; he is perfectly quiet out of the stable, but he had been so teased and worried all his life, until he came into my hands, that even now he will not permit a stranger to enter his box alone. The next in seniority is twenty-nine years old, and is the best hack I ever rode. Seventeen years ago, the smith who usually shod him declared his feet to be so far gone that he could shoe him no

longer ; and he was on the point of being shot, as "used up," and "quite done for," when I came to the rescue, and accepted him as a present, with the view of trying what I could do to put him on his feet again, and the result of my trial has been seventeen years of very efficient service.

There is no specialty attending the history of the other three ; one is twenty-one years old, and has been in my possession sixteen years ; another is sixteen years old, and has been in my possession nine years ; and the last of the six above named horses is thirteen years old, and I have had him eight years. The horse I purchased to replace the one that was shot in December is seven years old, and was in hard work up to the time I bought him, and although he has been only five months in my possession, his feet and legs have wonderfully improved, and begin to resemble those of my other horses.

If I were asked to account for my horses' legs and feet being in better order than those of my neighbours, I should attribute it to the four following circumstances : First, that they are all shod with few nails, so placed in the shoe as to permit the foot to expand every time they move ; secondly, that they all live in boxes instead of stalls, and can move whenever they please ; thirdly, that they have two hours daily walking exercise when they are not at work ; and fourthly, that I have not a head-stall or rack-chain in my stable : these four circumstances comprehend the whole mystery of keeping horses' legs fine, and their feet in sound working condition up to a good old age. Another case occurs to me, where the same result has followed similar treatment in a mare I purchased for a friend twelve years ago ; she was twelve years old when I bought her, and had done a great deal of work ; she has ever since been shod by the smiths who shoe my horses, has lived in a loose box, is never tied up, and continues to do her work as pleasantly as ever she did. I may mention, in confirmation of the fact, that my horses are never tied up ; that a short time ago a veterinary surgeon, who had occasion to apply a liniment to the throat of one of them, asked for a halter, and learnt to his astonishment that there was not one in the stable ; we substituted a watering bridle, and afterwards fastened the horse to the pillar reins, to prevent his rubbing his neck, instead of adopting the usual plan of tying him short by the head to the wall : a watering bridle is at all times preferable to a halter either for commanding or leading a horse.

I am often assured, when talking of shoeing, that it is quite impossible to persuade country smiths to listen for a moment to any new suggestion, or to adopt any new plan, that they are an obstinate prejudiced race, and nothing can induce them to relinquish any of their old notions. I can only say in reply, that this does not at all accord with my experience of them as a class ; on

the contrary, I have found them, for the most part, to be hard-working, painstaking men, evincing great interest in their work, and anxious to do it as well as they could. I do not mean to say that there are no exceptions, because I know there are ; but the exceptions do not disprove the rule.

Before we consent to condemn them in a body let us see how the matter really stands between them and their employers, who accuse them of prejudice and obstinacy. We must not forget that they have been accustomed from the period of their apprenticeship to shoe horses in one particular manner, which has hitherto given satisfaction, and, as far as they know to the contrary, they have never lamed a horse.

We must not be surprised, if, under these circumstances, they should show great reluctance to relinquish plans which long habit has rendered almost second nature to them, or if they require to be thoroughly convinced of the practicability and superiority of a new plan, before they consent to give up the old one ; and as it is much more difficult to efface what has been already learnt than to teach what is new, he who undertakes to become an instructor, must at least be sufficiently master of his subject to be able to point out pretty clearly the advantages of the plan he proposes over that which he desires to alter ; to which end he must acquaint himself with the details of his plan before he ventures into the forge, for an intelligent smith will make a very accurate estimate of his fitness to teach before he has been many minutes there ; and I have no doubt but much of the obstinacy and perversity one hears of may be traced to the smith's having received impracticable, if not impossible, directions. And surely it is not very unreasonable in him to object to carry out details which he does not comprehend, and which he strongly suspects his instructor is not very clear about, when he knows full well that he would decline to share the blame with him, in case the experiment should fail, and the horse cast a shoe.

I have been sometimes surprised at the readiness with which smiths have yielded their opinion to me, as soon as they found that I really knew what I was talking about, and that I could not only give them directions, but show them exactly how to carry them out in detail, and, if I had only possessed the brawny arm which is necessary for such a purpose, that I could have forged the shoe and fitted it to the foot. They all feel that horseshoeing is open to improvement, and as a class they are anxious for information that they can depend on, but they are naturally very shy of relinquishing plans which they have been long accustomed to for others which they do not comprehend ; but any gentleman who will take the trouble to acquaint himself with the principle and details of the plan which I advocate, will very soon become a welcome visitor at the forge, and while he is

improving the condition of his own horses' feet, he will find that he is indoctrinating the whole district to the great benefit of his neighbours; for although they will not take trouble themselves, they are soon ready to avail themselves of the trouble taken by others, and will send their horses to the man who can shoe them best, and that causes the other smiths to look about them and change their plans.

A few years ago I rented a house for the summer near to a country village, and was very soon waited on by the smith with specimens of his shoes, and a foot shod in his very best manner; and as examples of careful finish they were very pretty things to look at; but when I descended from the ornamental to the useful, and began to point out the defects one after the other, he looked astonished, and not very well pleased; he was, however, somewhat consoled by my telling him that I would have one of my horses brought to his forge on the following morning, and then I would show him what I meant. I kept my word, and finding that he entered with interest into my views, and tried his best to understand and carry them out, I took some trouble with him, and frequently looked in and directed him at his work. One day I found him turning store-shoes of a better form than any I had yet seen in his forge, and observing to him that they were more like what I meant, he said, "Oh yes, I have got it now, Sir; my shoes were all too short to fit as they ought to do;" and pointing to some that were hanging against the wall, he added, "before you came here I used to feel very proud of those shoes, but now it makes me ill to look at them, and I don't think I could ever make one like them again." He had become a really good shoer, and understood how to fit a shoe properly, and I think he would have found it a difficult job to fall back on his old pattern again. His fame soon spread, and he obtained the shoeing of all the gentlemen's horses for several miles around him. Similar results have followed in other instances where I have bestowed a little trouble, and I must say that I have invariably received civility and attention at the time and on many occasions expressions of great gratitude afterwards.

Many persons have been deterred from interfering with the smith, because, as they have told me, they knew nothing whatever about the anatomy or physiology of the horse's foot, and had neither the time nor the inclination to study it; but such knowledge is not at all necessary to a thorough acquaintance with the principle and practice of horseshoeing; if it were, they might well be excused for not attempting it: all that is really required of them is to take one anatomical and one physiological fact on trust, and believe that the horse's hoof is lined by a very sensitive membrane, which must on no account ever be wounded, and

that the hoof itself is elastic, and expands when the weight of the horse is thrown on the foot, and contracts when it is taken off again; all the rest is purely mechanical and merely calls for the exercise of a little thought and patience to understand the principle and apply it.

But before I enter on details let me dispose of one subject that has given rise to much unnecessary thought and controversy—I mean the very generally entertained notion, that particular kinds of roads and certain kinds of work call for separate and distinct methods of shoeing—which has greatly complicated and mystified a very simple and straightforward matter: the truth is, that no system of shoeing is worth one moment's thought or consideration that will not answer equally well in every description of ground, and for every kind of work.

It has been supposed that the hunter forms a special exception, but the experience of a large number of gentlemen in various parts of the country during the last ten years has entirely dispelled the fallacy, and proved beyond dispute that the torture inflicted on hunters by nailing the shoes from heel to heel, with a view of keeping them on their feet, is an unnecessary act of cruelty perpetrated to support the notion, that deep ground would pull the shoes off unless they were secured by extra nails; but if a shoe fits the foot as it ought to do, and is perfectly fastened to it by five nails, nothing short of a violent wrench from the smith's pincers can remove it. This has been proved in numberless instances, not only by myself but by others in various hunting countries, who have kindly communicated to me the result of their experience after a fair trial of the plan of shoeing and general treatment of the horse's foot, which I recommended in a work I published some years ago on that subject, and which an officer of Prussian Hussars desired my permission to translate and publish in German; and he writes me that he and several of his brother officers have had their horses shod as I have directed, and that they never lose a shoe. It would be a useless waste of time to go over all the proofs again; nevertheless, as I am now writing for agricultural readers, it is desirable that I should be able to show to them, beyond the possibility of doubt, that the mode of shoeing which I recommend will stand the test of the deep clay ground their horses are sometimes called upon to work in; and in order to qualify myself to speak with authority in this matter, I have lately instituted an experiment which I think will carry conviction to the mind of the most sceptical.

The two subjects of my experiment were horses employed in drawing materials for a large public building in course of erection in a deep clay meadow, and I chose the particular time for making the experiment, because the unusual quantity of rain that had fallen during the preceding six weeks had rendered the

ground, both in the meadow and at the quarry from which the stone was drawn, as deep and clinging as it is possible to conceive ground to be. One of the horses was the property of the builder, and the other belonged to the person who had contracted to draw the stone from the quarry, and whose horses are chiefly employed in drawing either timber or stone, than which no work can be more trying to the security of horses' shoes at such a season, and in such a county as Devon. I was present at the shoeing of these horses, and saw them both shod with five nails only in each fore shoe and a clip at the toe. The shoes were plain waggon-horse shoes, with stamped holes and no fullering. The builder's horse was a fair average cart horse 15 hands $3\frac{1}{2}$ inches high, and the shoes that were put on him weighed 1 lb. 14 ozs. each. The contractor's horse was a heavy waggon horse 16 hands and an inch high; and I could scarcely have found a fairer subject for my experiment: he has remarkably weak feet, with hoofs full of what smiths call shaky places, and he is so hot and impetuous in his work that the driver never can prevent him doing much more than his share. I had one of his shoes measured and weighed just before it was nailed on, and found it to be 6 inches across from side to side at the quarters, and 7 inches from toe to heel, and it weighed exactly $2\frac{1}{2}$ lbs., so that each nail in his shoe had to retain half a pound weight of iron and hold it to his foot.

I visited both the horses at the end of a fortnight, and found their shoes not only safe on their feet, but not a clinch had risen, neither had either of their shoes shifted in the smallest degree. I was fortunate enough to meet the larger horse coming from the quarry with a load of stone, and anything more satisfactory to me, as regarded my experiment, or less satisfactory to the poor brute, I cannot conceive; for he was literally plastered up to the knees and hocks with a thick layer of red clay, and the spokes of the wheels were in a like condition up to the nave, showing pretty clearly the kind of ground he had had to deal with, and the sort of test that had been applied to the security of his shoes.

At the expiration of another fortnight I again examined the shoes of both the horses, and finding those of the larger horse completely worn out, I had them taken off and replaced by new ones fastened by five nails; the shoes of the other horse not being worn out, I permitted him to carry them another week, and then, considering he had worn them long enough for my purpose, I had him reshod; but wishing to make my experiment as perfect as I could, I had two of the nails omitted, and shod him with *three* nails only in each fore shoe; and at the end of four weeks I saw him at work with his shoes safe on his feet. I do not mention this fact with the view of trying to persuade others to shoe their horses with only *three*

nails, although I have not had more than three nails in a fore shoe of any horse belonging to me for several years past, neither do I intend to increase the number: I merely record the fact to show that no one need fear to trust their horses' shoes to the keeping of *five* nails.

The result of the numberless experiments I have made at various times, on all sorts of horses doing every kind of work, is, that there is but one principle to be observed in horseshoeing, which will admit of no variation or compromise: *the shoe must fit the foot, whatever the shape of the foot may happen to be, and it must be nailed to the hoof in such a manner as will permit the foot to expand to the weight of the horse*; this latter condition will be best complied with by placing three nails in the outer limb of the shoe, and two in the inner limb between the toe and the commencement of the inner quarter; a larger number than five nails can never be required in any shoe of any size, or under any circumstances, excepting for the sole purpose of counteracting defective and clumsy fitting. I will now proceed to describe, as shortly as I can, the details of the plan I recommend; and if it should appear, to those who have done me the honour to read what I have already published, that I have repeated myself, I can only answer that the details of a fixed plan will admit of no variation in substance, and very little in words.

The first thing requiring attention is the removal of the old shoes, which should be done with much more care than is usually bestowed on it, and without any of that violent wrenching from side to side one too often witnesses, whereby the clenches are dragged through the crust by main force, and the horn wantonly and unnecessarily destroyed. It is very little trouble to raise the clenches with the buffer, and, if the nails should still retain a firm hold and resist a moderate effort to displace the shoe, the punch should be used to loosen them, so as to cause the shoe to come off easily and without damage to the hoof. The smith will be amply repaid for his trouble by the unbroken horn he will find to nail to, and the firmer hold he will obtain for his nails when he comes to nail on the new shoe. Having taken off the shoe the rasp should be passed round the lower edge of the crust before the foot is let down, to remove the jagged edge, and also to ascertain that there are no stubs remaining in the horn: if the edge is not rasped it is apt to split and break when the horse moves, which he is sure to do as soon as his foot is on the ground again. No horse should have more than one foot bared at a time; however strong his feet may happen to be, he is sure to stand quieter on a shod foot than he can on a bare one, and it will prevent his breaking the crust. A horse with weak flat feet is in positive misery when forced to sustain his whole weight on a bare foot, while the opposite foot is held up.

Previous to preparing the foot for the reception of the new shoe, we must consider, first, the kind of foot we have to deal with; and next, the condition of the roads it will have to travel upon; for it would be manifestly improper to pare a weak flat sole as much as a strong arched one, or to pare either as much when the roads are hard and covered with loose stones as when they are moist and even. No general rule, therefore, can be laid down that would apply to all kinds of feet, or indeed to the same foot at all times; the amount of paring the foot is to undergo must entirely depend on the above considerations.

A strong foot with an arched sole, when the roads are in good order, will require to have the toe shortened, the quarters and heels lowered, and the sole pared, until it will yield in some slight degree to very hard pressure from the thumb; but on no account should it ever be pared thin enough to yield to moderate pressure: the angles formed by the crust, and the bars at the heels, must be cleared out, and all the dead horn removed therefrom, and the bars should be lowered nearly to a level with the sole.

A weak flat foot, on the contrary, will bear no shortening of the toe, and very little paring or lowering anywhere; the heels of such feet are sure to be too low already, and the sole too thin; in fact, the less that is done to them the better beyond clearing out the dead horn from the angles at the heels, and making the crust bear evenly on the shoe; but the hollow between the bars and the frog, or the frog itself, must never be touched by a knife in any foot, whether it be a weak one or a strong one, and as these latter directions differ so materially from the usual practice of smiths, I may perhaps be expected to state my reasons for wishing to enforce them in opposition to what they no doubt consider a time-honoured custom; I mean, the inveterate habit they all have of trimming the frog, and opening out the heels at every shoeing; but I think I shall be able to show, that "it is a custom more honoured in the breach than the observance."

The bars are not separate and distinct portions of the hoof, but simply continuations of the crust reflected or turned back at each heel in the direction of the centre of the sole, where they meet in a point and form a triangular space for the reception of the elastic cushion, usually called the sensible frog: each of these reflected portions, at its deepest part, rises about an inch into the cavity of the hoof, and is connected at its upper part, throughout its whole extent, on one edge with the horny sole, and on the other with the horny frog, whereby the horny covering of the foot is completed and made continuous. This doubling back of the crust on each side, from the heel to the point of the frog,

together with the increased thickness of the crust itself at the extremity of each heel, is evidently designed to keep the heels apart, and prevent their pressing inconveniently on the structures within the hoof; and if the substance of the horn be thinned by paring the sides of it, it is clear that its power of resistance must be diminished, the natural action of the foot damaged, and the chance of contraction greatly increased. Many smiths, who are merciless in paring the sides of the bars, which ought never to be touched by a knife, waste much time and patience in preserving the portion that projects beyond the surface of the sole, which they had better have pared down nearly to a level with the sole, as it only impedes the removal of the dead horn from the corner of the sole at the heel, and would have been worn away, if the presence of the shoe had not prevented it.

The frog may be said to consist of three portions, viz., the horny frog, the sensitive frog, and a thick elastic cushion, which is interposed between the sensitive frog and the navicular joint, for the purpose of protecting this important little joint from injury: the portion, however, with which we are now more immediately concerned, as connected with the mechanical art of shoeing, is the horny frog.

No part of the foot shows the difference between good shoeing and bad so soon, or so palpably, as the frog. The frog of a foot that has been well shod for some time presents a full, plump appearance, with an even surface and a broad oval cleft, with a well-defined edge, not broken through at the back; whereas a frog, that has been long subjected to bad treatment, is shrunk and hard, with a ragged uneven surface and a narrow cleft broken through at the back, and extending up between the bulbs of the heels. The horn of the frog is thinner and of a closer and more delicate texture than the horn of the hoof, and is evidently intended not only to protect the parts immediately above it, but also to prevent the evaporation of the moisture which keeps these parts in a soft, yielding condition; but it cuts so easily, and looks so clean and trim when its surface is pared off, that very few smiths indeed can be prevailed on to leave it alone, and not even cut off the rags; nevertheless they had better do so, for those very rags which they think it desirable to remove were caused by paring off the surface of the horn at the last shoeing, whereby a part was laid bare that never was intended to be exposed to the action of the air, and which in consequence became dry and hard, and soon cracked, and the edges having curled outwards formed the rags which are so offensive to the eye of the smith; and, if he should be tempted to remove them, he will again lay the foundation of other cracks and other rags, until at last the frog will have dwindled down by

small degrees to half its original size. Now if, instead of persisting in this gradual work of destruction, he would only leave the frog alone, and never touch it with a knife, the rags in due time would entirely disappear, and the frog become covered by a coating of newly secreted horn. The horn of the frog, when left to itself, is always undergoing a process of exfoliation and reproduction. The exfoliation for the most part occurs in small particles, resembling the dust which adheres to Turkey figs; but at other times the whole surface of the frog will exfoliate in a mass, leaving a smaller, but still perfect, frog beneath, covered with sound horn. The small particles of exfoliated horn may best be seen in the feet of horses shod with leather, where the artificial covering has prevented their escape; and so little is this natural process of exfoliation understood by horse-masters in general, that I have frequently had my attention gravely directed to the accumulation of these particles, as unmistakable evidence of the leather having rotted the frog.

The shoe should be neither too light, nor too narrow in the web: light shoes are apt to bend before they are half-worn out, and narrow-webbed shoes expose the sole and frog to unnecessary injury from stones in the road. Every fore-shoe should be more or less seated on the foot-surface, to prevent it pressing on and bruising the sole; but a perfectly flat surface should be preserved around the edge of the foot-surface of the shoe from heel to heel for the crust to rest upon. The amount of seating to be employed must be determined by the description of foot to be shod; for instance, a broad foot, with a flat sole and weak horn, will require a wide web, considerably seated, to prevent it coming in contact with the sole and bruising it; but a narrow foot, with an arched sole and strong horn, will require less width of web and less seating, otherwise the dirt and grit of the road would become impacted between the shoe and the sole, and cause as much pressure and injury as the iron would have done.

The safest guide to the proper amount of seating is to apply the shoe to the foot, and observe whether there is room for a picker to pass freely between the shoe and the sole; if there should not be sufficient space for a free passage all round the shoe the seating must be increased; and if there should be more than is necessary, it must be diminished. The smith, having carefully prepared the foot, and selected a shoe with a proper amount of seating for it, has next to cut off the heels, and fit the shoe to the foot; and he must always bear in mind, that fitting the *shoe* to the *foot* does not mean fitting the *foot* to the *shoe*—an error that smiths are prone to fall into.

I have very frequently had occasion to remind a smith, that he was saving himself trouble at the expense of the horse by accom-

modating the foot to the shoe, instead of altering the shoe to the foot; and it must be confessed, that unless a smith is encouraged to take an interest in his work, by the owner of the horse paying an occasional visit to the forge, and showing that he, too, is interested, it is very tempting to him, when he finds the foot and the shoe do not come well together, to adopt the more expeditious

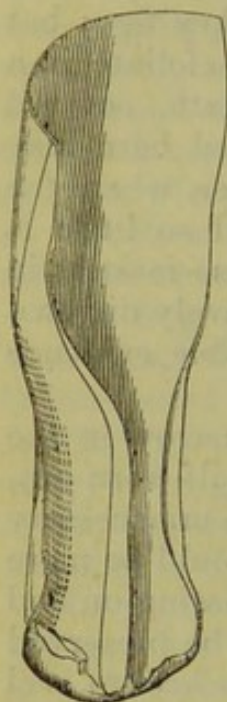


Fig. 1.

and less troublesome course of substituting the knife and rasp for the hammer and anvil. Every forge is expected to be supplied with store shoes "turned in the rough," and if they were left longer in proportion to their width, and straighter at the quarters, with the heels wider apart than we usually find them, the labour of fitting the foot accurately would be greatly diminished, as we shall see when we come to consider that part of our subject. The first thing, however, that demands our attention is the mode of cutting off the heels to the required length; and for this purpose a curved chisel, as shown in Fig. 1, is a more convenient tool than a straight one, and saves the smith much trouble in "filing up" the shoe before he nails it to the foot; it removes the corners and rounds the points of the heels at once, and enables him to fit the heels of the shoe to the heels of the hoof with greater nicety than he can possibly do when they are cut off square.

The best manner of proceeding is to remove a small corner from the outer rim on each side, and a larger and longer portion from

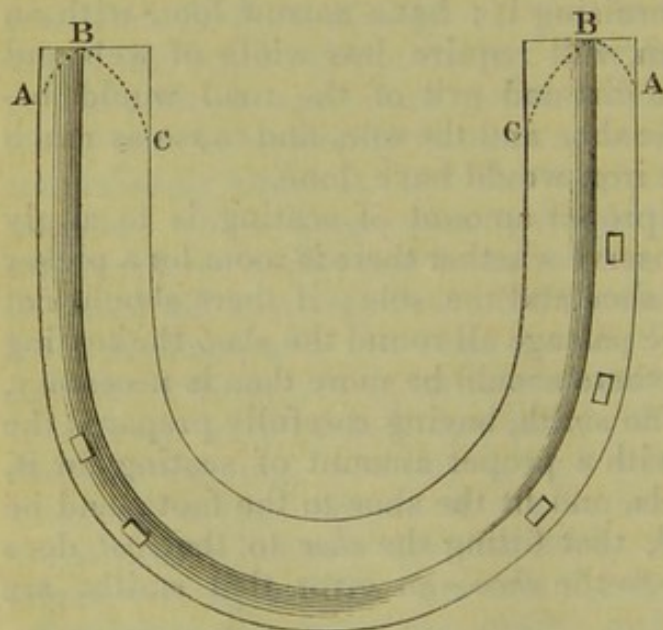


Fig. 2.

the inner rim, as shown by the dotted lines A B C, in Fig. 2. By this mode of cutting off the heels the outer rim of the shoe is lengthened, and the inner rim shortened, without diminishing the width of the web, as shown at A C, in Fig. 3. After the heels have been cut off, as directed above, the nail-holes should be opened; and the best mode of doing it is to make them pass straight through the shoe, instead

of inclining inwards in the direction of the centre of the hoof, as

is almost invariably done, the effect of which is to convert a simple and safe operation into one of difficulty and danger, for the nails must first be driven with their points inclining inwards, and then outwards, until at last they emerge high up in the thinnest part of the crust, having split their way out in the direction of the fibres of the horn, with a great probability of some portion of the shanks lying so close to the sensitive lining of the hoof as to press upon it when the foot is in action and expands. Where the holes are thus made to incline

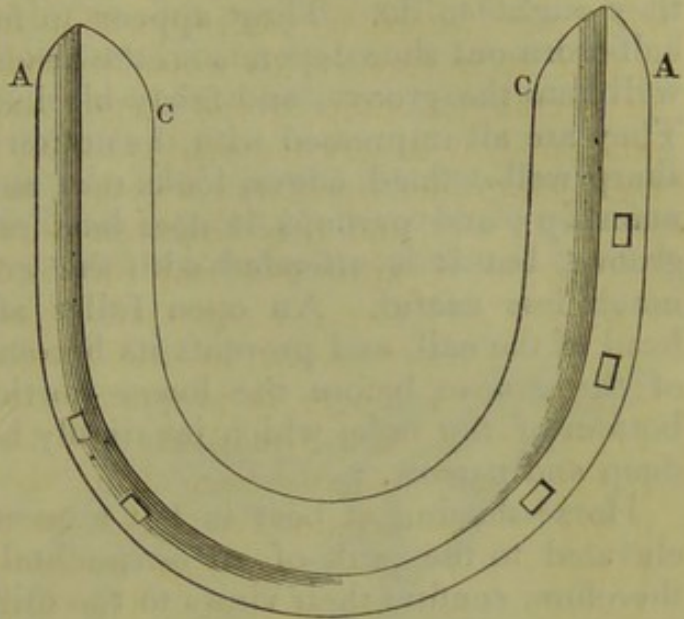


Fig. 3.

inwards it requires considerable dexterity to drive the nails so as to steer clear of the many dangers that lie in the way. I do not allude to the graver matter of pricking the foot, as it is called, but to the thousand and one varying degrees of pressure from the shanks of the nails, causing constant uneasiness, or, it may be, pain in the foot. If the quick has been wounded the horse soon tells the tale, but if he is only uneasy from pressure, he bears it patiently, and it is never known to his master, although it is very frequently the unsuspected cause of broken knees.

We hear much about rolling stones in the road causing broken knees: a rolling stone is a very convenient scapegoat for a large amount of bad riding, bad driving, and bad shoeing; but, I take it, we should be much nearer the truth, in nine cases out of ten, if we attributed the misfortune to misplaced nails, driven through holes slanting inwards. When the nail-holes are made to pass straight through the substance of the iron, and the angle at which the hoof meets the shoe is considered, it will be self-evident that nails, driven *straight* through those holes, must cross the grain of the horn and come out low in the crust, presenting the strongest portion of the shank for a clench; and my experience tends to show, that nails so driven obtain a much firmer hold in consequence of their piercing the horn *across* the grain, than nails driven higher up the crust *with* the grain.

A few observations on the fuller, or groove in which the nail-holes are stamped, may not be out of place here, with a view to correct an error that almost all smiths fall into, of making their fullering-irons so fine and thin, that the grooves produced by

them will not permit the heads of the nails to sink into them as they ought to do. They appear to forget that the safety of a half-worn-out shoe depends on the heads of the nails having sunk well into the groove, and fairly blocked the bottom of the holes. They are all impressed with the notion that a narrow fuller, with sharp well-defined edges, looks neat and indicates skilful workmanship; and perhaps it does look neater than a coarse, open groove, but it is attended with the great disadvantage of being much less useful. An open fuller affords more space for the head of the nail, and prevents its becoming tied in the upper part of the groove before the lower portion has descended to the bottom of the hole, which invariably happens when the fuller is deep and narrow.

Horse-shoeing at best is but a necessary evil, and cannot be elevated to the rank of an ornamental art; smiths had better, therefore, confine their views to the utilitarian principle entirely, and thereby endeavour to make it as little hurtful to the horse, and as little inconvenient to his master, as they possibly can.

Having cut off the heels and opened the nail-holes, the next thing to be done is to turn up a clip at the toe preparatory to fitting the shoe to the foot, which latter operation should always be commenced at the front of the foot, and be gradually and carefully carried back to the quarters and heels. Every shoe should have a clip at the toe, to prevent the shoe being driven back on the foot and bending the nails in the crust; but I strongly object to the clip, which I often see turned up on the outside of a shoe, which is not only useless but destroys more horn than two or three nails would do.

No one doubts the fact of horses travelling safer and better in shoes a week or two old than they do in perfectly new ones; and this arises from the fact of their having worn away a portion of the iron at the toe, and thereby diminished the jar which the foot had previously received from the front of the toe coming in direct contact with the surface of the road. In order to relieve the horse from any unnecessary jar to the foot I always have the whole breadth of the toe of the shoe turned up, so as to raise the ground-surface of the shoe at the toe above the level of the ground, by which arrangement horses are found to trip less, and put their feet down with greater confidence. The plan of welding a lump of steel on to the toe of the shoe only makes bad worse; it increases the jar, is longer wearing away, and causes the horse to trip more and for a greater length of time; whereas turning up the toe of the shoe obviates the evil at once, and makes the shoe last quite as long as the steel would have done. All feet will not bear the same amount of elevation of the toe: strong feet will bear a good deal, but flat feet with weak horn

will bear only a little; still that little should be imparted to the shoe. The old shoe, placed on a flat surface, will afford a very good guide to the amount of elevation to be given to the toe of the new shoe, provided the old one is not worn so much as to be thoroughly and entirely worn out.

A very convenient and handy tool for turning up the toe of a shoe may be made by welding a piece of bar-iron five inches long, one inch broad, and somewhat less than a quarter of an inch thick, crosswise on to each blade of a pair of smith's tongs. Any smith can manufacture such a tool for himself, and will find it very useful by enabling him to grasp both limbs of the shoe at the same time, and turn up the toe over the end of the anvil without twisting the shoe, which he could not do with common tongs; and he can easily restore the seat-

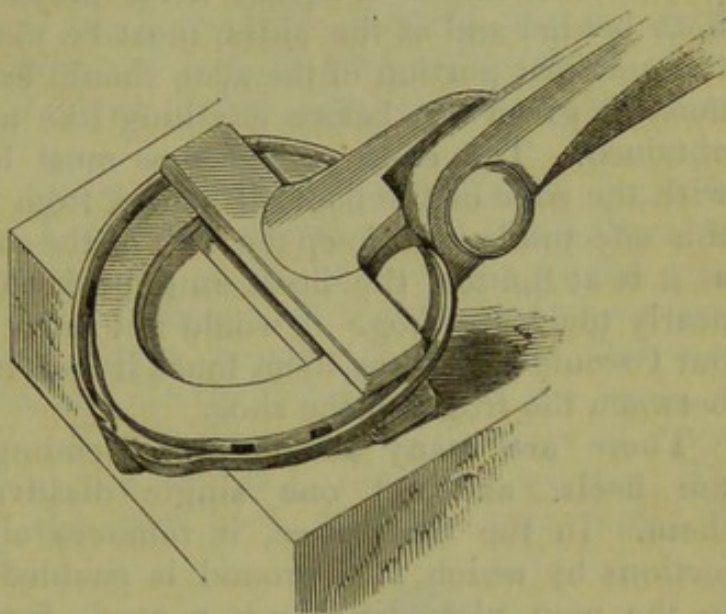


Fig. 4.

ing at the toe by merely turning the shoe on the anvil. Fig. 4 will show this tool in use. Having turned up the toe of the shoe and fitted it carefully to the toe of the hoof, the smith must direct his attention to the quarters and heels, and whatever shape they may happen to take, that shape must be implicitly followed by the shoe; whether the quarters be straight or curved, or the heels narrow or open, the shoe must follow the same shape: it is a grievous mistake to suppose, as too many persons do, that it is in the power of the smith to change the form of the foot by merely changing the form of the shoe: what are called open-heeled shoes will not make open-heeled feet. The situation of the nails alone can alter the form of the foot, either by preventing or permitting the hoof to expand to the weight of the horse. If the shoe is nailed from heel to heel the hoof cannot expand, and the foot must become damaged; but if it be nailed, as I direct, with three nails on the outside and two on the inside, a foot, that has been already damaged by bad shoeing, may to a great extent be restored by thus permitting the foot to expand.

As a general rule, the first nail on the outside should be placed an inch and a half from the centre of the toe, the second in the middle of the quarter, and the third just behind the quarter; and on

the inside, the first nail should be rather more than an inch from the centre of the toe, and the second about three-quarters of an inch behind it; by this arrangement the whole of the inner quarter and heel are left unfettered and free to expand, and any undue pressure on the sensitive parts of the foot, from the descent of the bones into the hoof, is avoided. Fitting the heels will call for a little extra care at first, as it involves the abandonment of some deep-rooted prejudices and groundless fears. First, the prejudice in favour of square heels projecting beyond the hoof, both behind and at the sides, must be yielded; and the fear lest the smallest portion of the shoe should happen to touch the frog must be given up, before anything like accurate fitting can be obtained. The edge of the shoe must be made to correspond with the edge of the hoof all round, from heel to heel, and to do this effectually, and keep the web of the shoe as wide at the heels as it is at the toe, the heels must be brought in until they very nearly touch the frog. I would not have them bear on the frog, but I would rather see them touch it than be able to lay my finger between the frog and the shoe.

There are many advantages attending the bringing in of the heels, and not one single disadvantage to set against them. In the first place, it removes all the points and projections by which stiff ground is enabled to pull off the shoe; in the next place, it affords a good, firm, flat surface for the heels of the hoof to rest upon, and, by bringing the sides of the shoe nearer together, the navicular joint, which lies in the hoof above the frog and about an inch from its point, is saved from many an unlucky jar from a stone in the road, by the shoe receiving it instead of the frog. The shoe must not only fit the edge of the crust, but the whole of the crust must have an even bearing on the shoe, and this can only be effected by making the shoe hot enough to scorch the horn, and applying it to the foot. The quantity of horn to be thus destroyed, when the foot and shoe have both been made as level as the smith can make them, is very inconsiderable, and the heat so applied can do no harm. I would not have the shoe burnt into its place on the foot without previous preparation, as is very often done to save a little trouble, but I would have the hot shoe applied so as to insure a close fit all round. A thin, weak hoof will not bear as much heat, without inconvenience to the horse, as a strong one; but as a close fit is of even more importance to a weak hoof than it is to a strong one, it is essential that the shoe be applied to it hot enough to scorch the projecting portions of horn, in order that they may be seen, and removed by a rasp.

It is a very good plan, in fitting the shoe to the inner quarter and heel, to keep the rim of the ground-surface of the web within the

rim of the foot-surface, somewhat after the fashion of the shoe in common use for preventing cutting; it enables the horse to withdraw his shoe from stiff ground without the chance of leaving it behind him, which he will inevitably do if any portion of the shoe is permitted to project beyond the hoof. When the shoe has been carefully fitted to the foot it must be cooled and "back-holed;" that is, the nail-holes must be opened on the foot-surface of the shoe; and in doing this care must be taken to break down the *outer* edge of all the holes, so that the nail may pass straight through the shoe without any inclination inwards, and the openings should be made large and free, to prevent the shank of the nail becoming tied in the hole before the head has been driven fairly home.

The shoe has then to be "filed up" preparatory to being nailed to the foot; and I may here observe, that much time and labour are generally wasted in polishing portions of the shoe which might very well be left alone; all that is really necessary is to round off the sharp edges, remove any "burs" that may project from the surface, and file the foot-surface of the heels, as shown at F, in Fig. 5. Fig. 5 shows the foot-surface of a near fore-shoe; A, the clip at the toe; B 1, the outer quarter; B 2, the inner quarter; C 1, the outer heel; C 2, the inner heel; D, the seating; E, an even flat surface from heel to heel for the crust to bear upon, and in which the nail-holes must be placed. They must never be permitted to encroach on the seating, but be always confined to this flat surface; F, the ends of the heels filed away in a direction upwards and outwards, the object being to prevent pressure on the frog without diminishing the width of the web on the ground-surface of the shoe.

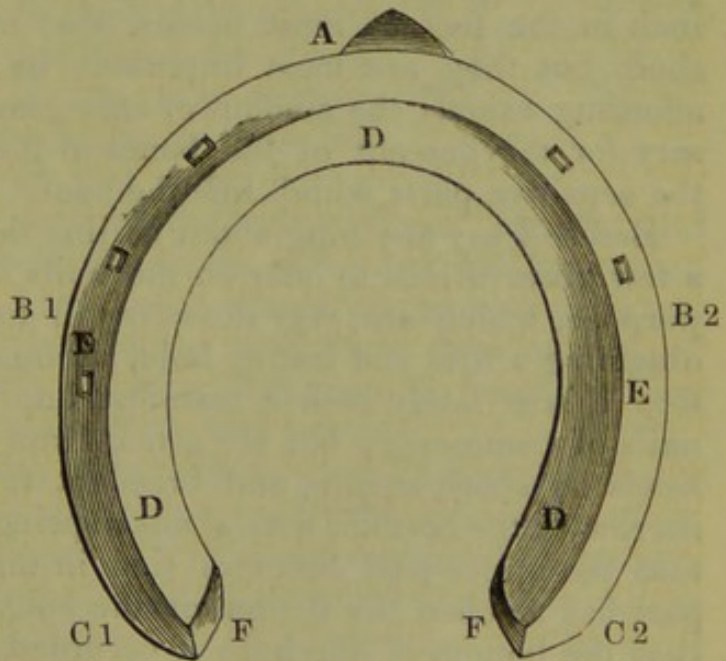


Fig. 5.

Fig. 6, the ground-surface of the same shoe. A, the toe turned up out of the line of wear; B 1, the outer quarter; B 2, the inner quarter; C 1 and C 2, the heels; with D, the web as wide as at any other portion of the shoe; E, the fuller. It will be observed that the inner quarter of the shoe, marked

B 2 in each of the figures, is considerably straighter than the outer quarter marked B 1, which is the natural shape of a well-

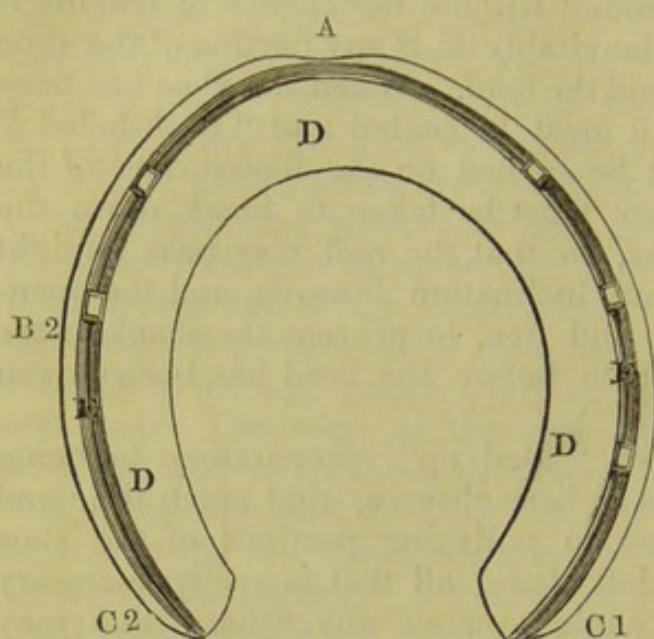


Fig. 6.

formed foot: the inner quarter is not only straighter and more upright than the outer quarter, but the crust is thinner and more elastic, and consequently expands in a greater degree to the horse's weight; but when we talk of the hoof being elastic and the foot expanding, we would by no means have it inferred that they bear any relation to the elasticity or expansion of India-rubber; if they

did, the bones of the foot would be thrust through the hoof during violent action, or in a down leap. The elasticity and expansion are small in degree, scarcely exceeding the eighth of an inch in the feet of most horses, that have been several times shod, but they are most important in their consequences, by affording exactly the amount of enlargement of the cavity necessary for the descent of the bones of the foot, without squeezing the sensitive parts which line the hoof.

Before I say anything about nailing the shoe to the foot, I have a few observations to offer on the nails usually employed for the purpose, which are very defective in form and ill-contrived for obtaining a firm and lasting hold, although I am bound to confess that I have lately seen a manifest improvement in some of the nails of commerce; but the general run of them are made with heads so short, square, and broad at the top, and so small and narrow at the bottom, with shanks springing suddenly from them, that the upper part becomes tied in the fuller before the lower part has reached the bottom of the hole, and the consequence is, that the bottom of the hole is occupied by the shank alone, and before the shoe is worn out the head of the nail is gone, and little more than a brad remains to retain the shoe.

The smiths who shoe my horses make their own nails, and I recommend others to do the like, at least for the better class of horses; it gives them an opportunity of choosing their rods, making their nails of a better shape, and cooling them more gradually than the wholesale manufacturers do, whereby they are rendered tougher

and less liable to break. The head of the nail should be oblong on the top, straight-sided at the upper part, and die away gradually into the shank with a broadish shoulder, to fill the opening made by "back-holeing" the shoe; hence the necessity for these openings being larger and freer than they are usually made. A nail so formed will always retain the semblance of a head, and can never be reduced to a mere headless brad. The shank should be less taper, and the point less elongated, than those of the nails in common use; the shorter point and broader shank supply a firmer and better clench. Fig. 7 represents the two nails I have been endeavouring to describe; but a comparison of the letters attached to each will perhaps convey more clearly what I mean than my words may have done. When the nail-holes are in the right places and pass straight through the shoe, and the shoe has been properly fitted to the foot, the difficulty of nailing it on is reduced to nothing, and might almost be handed over to a carpenter to do with as much confidence as to a smith; the nails have only to be driven straight, and they must pass through the shoe, across the substance of the horn, avoid the sensitive parts altogether, and come out in their right places, presenting the strongest portion of the shank for a clench, instead of the thin narrow point; the smith has then only to twist off the projecting portion of the nails, cut a notch in the hoof to receive the turned-down clench, and bury it with his hammer in the notch so formed, and not touch it again with a rasp; in fact, a rasp should on no account whatever be applied to the surface of the hoof above the clenches; it tears and destroys nature's covering, designed to keep the horn moist and tough, and renders it dry and brittle.

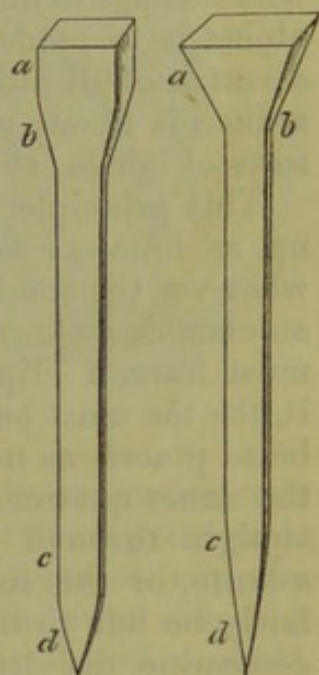


Fig. 7.

I shall, no doubt, astonish some persons when I assert that nearly all the evils incident to horse-shoeing are attributable to the affectation and dandyism of the smith, who is not contented to follow a necessary and useful art, simple in its mechanical parts, but calling for the exercise of some judgment in its application, but he must import into it dangerous difficulties and mischievous ornament; for instance, he assumes that a deep narrow fuller, with small nail-holes inclining inwards, and still smaller openings on the foot surface of the shoe, present a neat, trim appearance, and show that he is master of his art; knowing full well, that nothing but long practice could enable any one to navigate a nail safely through a channel beset by so many dangers; but he entirely overlooks the

fact that the power to do so has nothing to recommend it but the danger and risk attending the performance. Again, he imagines that a hoof carefully rasped all over imparts an air of finish to his work, of which he feels proud, forgetting altogether that he has removed a most important covering from the hoof, for which no amount of ornamental finish can compensate.

I am anxious again to impress on smiths and their employers that horse-shoeing is at best but a necessary evil, and that any attempt to raise it to the rank of an ornamental art must be attended with damage to the horse and inconvenience to its owner. My sole object is to render it as safe, simple, and useful as possible; to divest it of all difficult and dandy crotchets in its application, and reduce it to one principle, to be carried out in the shoeing of all sorts of horses, at all sorts of work.

This principle, which admits of no variation, may be summed up as follows: the shoe must fit the foot from heel to heel, whatever the shape of the foot may be, and the crust must have an equable bearing on the shoe all round; the toe of the shoe must have a clip in the centre, and, when the foot will bear it, the toe must be elevated from the ground; the nail-holes must be so placed as not to encroach on the inner quarter, but leave the inner quarter and heel free to expand, and they must pass straight through the shoe; the frog must never be touched by a knife, or the surface of the hoof by a rasp. The detail may fairly be left to the judgment of the smith, who will be able to determine the description of shoe best calculated to meet the

requirements of the foot that he has to deal with; he will have to consider whether it is strong and upright, or weak and flat, and be guided by those circumstances as to the substance, width of web, and amount of seating the shoe must possess, and also the degree of elevation of the toe the foot will bear. These are matters of detail infringing no part of the principle, and may and ought to be left to the experience and judgment of the smith. Fig. 8 represents the ground surface of a near fore foot, shod as it ought to be, and

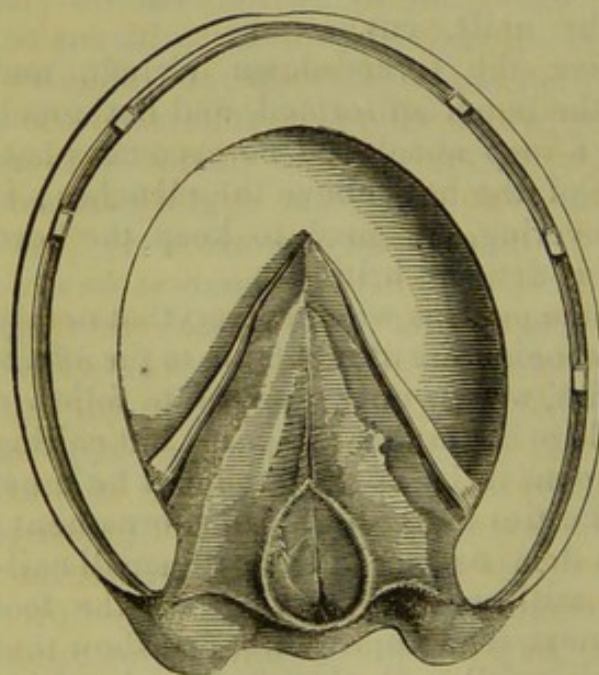


Fig. 8.

fig. 9 represents the same foot, with the shoe rendered trans-

parent, showing the portions of the foot that are covered and protected by it, A the crust, B the bars, and C the heels; it will be seen, moreover, how bringing in the heels diminishes the opening of the shoe and lessens the chance of stones in the road bruising the frog; one side or other of the shoe would alight upon them and save the frog. I may observe in passing, that corns have never failed to disappear under this mode of shoeing; they are always the consequence of bad shoeing, and good shoeing always removes them. I could not keep a corn in my stable, if I desired it ever so much, unless I altered my plan of shoeing. A large number of flat-footed

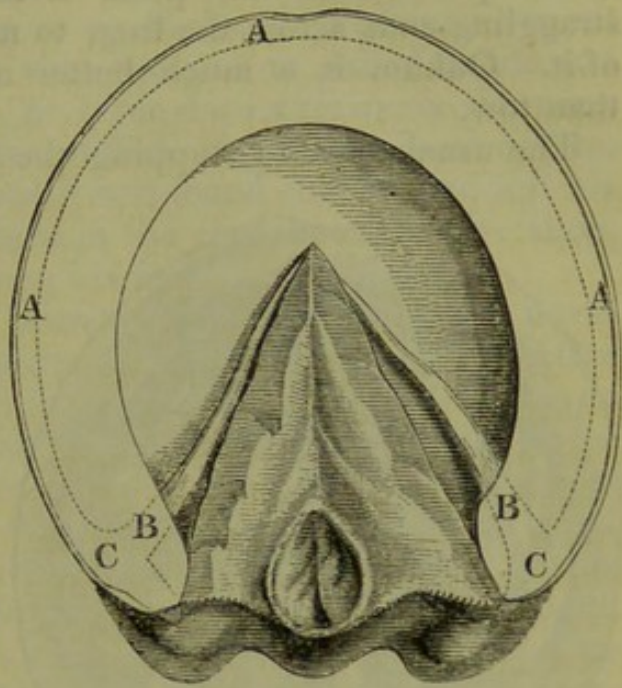


Fig. 9.

horses cannot go safely at any time without some protection over the sole, and all horses would be benefited by it when the roads are strewn with loose stones; but it is a mistake to suppose that leather, or any substitute for it, inserted between the shoe and foot, calls for a greater amount of fastening than five nails; they will retain a shoe, with leather under it, as firmly as if the leather were not there: all that is required is, to make the leather fit the shoe as accurately as I desire the shoe to fit the foot, and that no projecting portions be left either behind or at the sides of the heels, and instead of the leather being cut square at the heels, I would have it slightly arched inwards from heel to heel. It is necessary however to prepare the foot, before the leather is put on, and the best way of doing it is to smear the whole lower surface of the foot and frog with common tar; gas-tar must be especially avoided, as it dries and hardens the horn, instead of keeping it moist and promoting its growth, as common tar does; then the hollow on each side between the frog and the crust, from the point of the frog back to the heels, should be filled with oakum dipped in tar, and pressed down until the mass rises somewhat above the level of the frog on each side, and gives it the appearance of being sunk in a hollow. A small portion of oakum may be spread over the sole in front of the frog, but none must be put on the frog itself excepting the bit in the cleft, which is necessary to prevent dirt working in from

behind. The best way of dealing with this bit is to pull some oakum out straight, twist it once or twice, fold it in the centre, then dip it in tar and press it into the cleft, and carry the straggling ends across the frog, to mix with the mass on the side of it. Oakum is a much better material for stopping the feet than tow.

The usual mode of stopping the feet is to take a large wad of

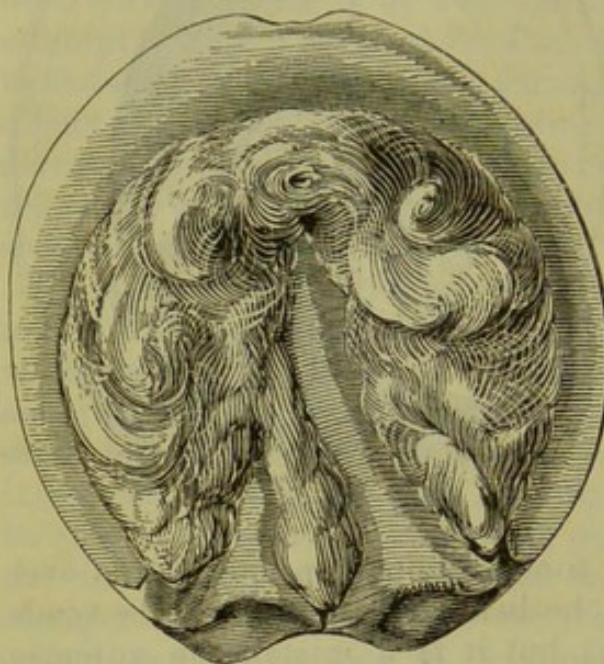


Fig. 10.

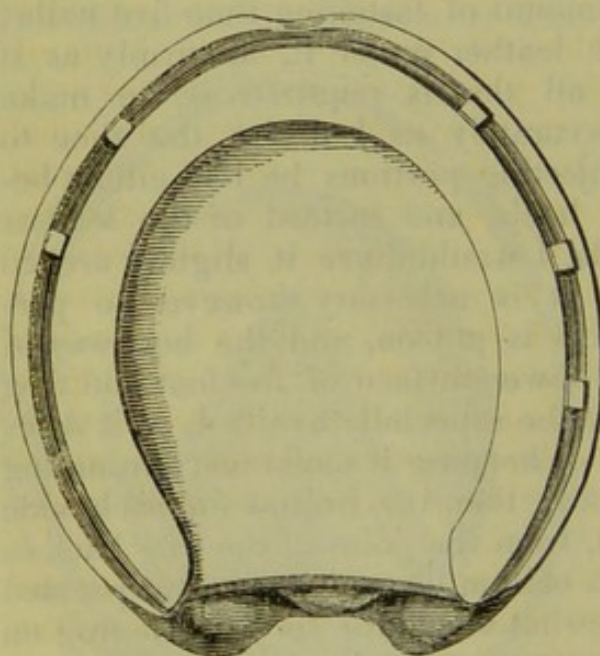


Fig. 11.

tow and spread it over the whole of the sole and frog in one mass, which is most objectionable, inasmuch as it causes a constant pressure on the frog, which is just what the stopping, to be at all useful, should prevent. Fig. 10 shows the stopping, properly placed in the foot, and fig. 11 shows the appearance the same foot would present when properly shod with leather.—Just as I had proceeded thus far with my subject, I received a letter from a gentleman in the north of Devon, containing the following anecdote, and as it bears on the matter I have in hand, I will at once record it. He appears to be a zealous advocate for the system of shoeing I have recommended, which I gather from his letters, for I have not the pleasure of his acquaintance. He tells me that a short time ago he sent his bailiff to a sale some ten miles off, and directed him to take a very hot pony he possesses, which had never been previously used excepting in the plough: this pony was shod with only four nails in each fore shoe,

and he cast one of them by the way. The bailiff took him to the nearest forge and told the smith to put on another, and at the

same time called his attention to the way in which his shoes were made and put on. His reply was, "I never saw a horse shod like this; it will never do for this country; no wonder he cast his shoe: but I'll put one on my way, and I warrant he won't throw that." Accordingly the shoe was put on, nailed inside and out with eight nails, and two or three days afterwards the pony went to plough again in some stiffish clay for an hour or two, and when his work was finished it was found that he had left his new shoe behind him somewhere in the clay, but the other shoe, with four nails in it, was safe on his foot.

The fact is, that a larger number than five nails are never required excepting for the purpose of counteracting defective fitting, and in this case the fitting was clearly so bad that even eight nails could not hold it, although placed in the small shoe of a pony. I may mention here that a few days ago my groom picked up a shoe in the road with nine nails sticking in it, and I was struck with his observation on finding it. He said, "if this had been one of our shoes, Sir, with only three nails in it, there would have been a pretty talk about it; but as there are *nine*, no one will say anything about it:" and I have no doubt of the correctness of his conclusion, for human nature is prone to be very tender over the misfortunes of long-cherished prejudices, but merciless in its visitations on the failure of any attempt to correct them.

The hind foot is differently formed from the fore foot, and requires to be differently shod; nevertheless, the same principle of fitting the shoe to the foot, whatever its shape may be, bringing in the heels close to the frog and placing the nail-holes so as to permit the inner quarter and heel to expand, applies with equal force to the hind as it does to the fore shoes. One of the great mistakes smiths fall into in shoeing hind feet is squaring the toe, and placing a clip on each side of it, with a view, as they say, of preventing the horse striking the toe of his hind shoe against the heel of his fore shoe, and producing the disagreeable sound, called "forging;" but as a horse never does forge with his toe, the plan of squaring it and the reason assigned for it equally fail in their object, and, like many other fallacies connected with the art of horse-shoeing, produce the very results they were intended to obviate.

A horse forges by striking the outer rim of each side of the hind shoe, just where it turns backward, against the *inner* rim of the fore shoe, just behind the quarters; therefore the broader the toe of the hind shoe is made by the squaring and the clips, the more likely the horse is to strike it against the fore shoe. It happens in this way: the horse fails to carry his fore foot forward quickly

enough to get it out of the way of the hind foot, and the toe of the hind shoe is thrust into the opening of the still held up fore shoe, and the outer edge of the hind shoe strikes against the inner rim of the fore shoe and produces the sound. I have entirely cured several horses of forging by merely causing the corners of the artificially-squared toe to be removed and the toe restored to its natural form.

The best mode of treating the toe of the hind shoe of all horses is to make it rounding and rather pointed, and to turn up a small stout clip in the centre: the toe should be tolerably thick, as the wear is always great at this part of the shoe, and the back edge should be rounded with a file, particularly for horses at all likely to be put to fast work; it prevents the chance of "overreach," which, like forging, is often erroneously attributed to the front of the toe, but is invariably caused by the back edge, which in a half-worn-out shoe becomes as sharp as a razor. The accident is very properly named, for the horse really overreaches the fore foot with the hind foot, and the back edge of the toe of the hind shoe in its return passage to the ground strikes the soft part of the heel of the fore foot, and often produces a wound that is very troublesome and difficult to heal.

The only other portions of the hind shoe which require special attention are the heels, and in dealing with them we must depart widely from the principle I have hitherto advocated of following nature as closely as possible. We are compelled to have recourse to art, not however with a view of assisting, much less with a view of improving, nature's contrivances, but for the sole purpose of counteracting what, it must be confessed, is to a large extent a necessary interference on the part of man. Nature made horses with flat heels, but she put no sharp bits in their mouths; she left them free to choose their own time for stopping and their own mode of doing it; but as soon as they are subjected to the control of man, his heavy hand and sharp bit pull them up without warning, and without the smallest reference to the position they may chance to be in at the time, or indeed without reference to anything but his own sudden impulse. We must therefore do all we can to guard the poor horse against the numberless strains and injuries incident to his changed condition, and the best mode of effecting it is to raise the heels of the shoe, and keep the natural heels as far from the ground as is practicable without throwing the foot too much on the toe.

The plan I have adopted for many years past is to have the heels forged longer and deeper than is commonly done, and when the ragged ends have been cut off, the heels are made red hot, and

the shoe placed in the vice with the heels upwards and projecting ; the smith then hammers them down, to shorten and condense them, until the mass is reduced to about an inch and a half in length ; he then removes the shoe from the vice and makes the top, bottom, and sides of the heels flat on the anvil, preparatory to fitting the shoe to the foot, taking care that both heels are of an equal height. This plan affords a larger and more even surface of support than mere calkins would do, and is better for fast work ; but calkins are very useful for heavy draught, provided they are made of an equal length at each heel. Nothing is more distressing to a horse than working in shoes that bear unevenly on the ground, twisting and straining his joints at every step he takes.

Some horses have a habit of striking the foot or shoe of one side against the fetlock joint of the other side either with their fore or hind feet, and various devices have been at different times suggested as a remedy for the evil ; but as each horse has his own mode of doing it, much difficulty is often experienced in hitting upon the right one. I have frequently solved the difficulty by placing a boot, or piece of cloth covered with damp pipe-clay, over the injured part, and then causing the horse to be trotted along the road, and he generally returns with some of the pipe-clay adhering to the offending portion of the opposite foot or shoe, as the case may be, pointing out pretty clearly the part to be lessened or removed. The adoption of this simple plan has saved many a horse from months of torture arising from ill-contrived shoes and misapplied remedies.

As a general rule, horses' shoes should be removed once between each fresh shoeing ; but this, like all general rules, admits of exceptions, for if a horse wears out his shoes in less time than a month, they had better not be removed, or if he has a weak, brittle hoof, and does not carry his shoes longer than five or six weeks, they had better remain untouched, as such feet grow horn very slowly, and are rather injured than benefited by frequent removal of the shoes ; but a horse with strong feet, who carries his shoes over a month, should have them removed and refitted at the end of a fortnight or three weeks, dependent on the time his shoes are likely to last.

The treatment, or I might almost call it the ill-treatment, that horses' feet receive in the stable requires a good deal of revision, and might very well commence with the all but universal custom of washing the feet and legs with cold water the moment the horses return to the stable from their work, when they are often heated, tired, and exhausted. Nothing can be more injudicious than subjecting them to the sudden chill, caused by a liberal application of cold water to their legs and feet at such a time, and then

leaving them to dry as best they can. The amount of cold produced during the process of evaporation is so great, that the poor beasts remain in a state of chilled wretchedness for many hours before they become thoroughly warm again. If their legs and feet must be washed as soon as they return from their work, let it be done with water that is quite hot, and let them be rubbed dry immediately; they will then feel warm and comfortable, instead of being cold and miserable; but as many stables are not provided with hot water at command, the best plan is not to wash them at all when they first come in, but merely to pick out the feet, clean off the dirt, and leave them for several hours, until the circulation has recovered itself and subsided into a natural state, or even until the following morning, when they may be safely washed with cold water, and the delay will do no harm.

Horses' feet are generally kept too dry in the stable; they all require moisture, and the best way of applying it is to surround the hoof by a wet swab, and keep it on for a few hours during the early part of the day, before the horse has been to work, but it must never be put on after his return from work. The feet should be stopped at night, and the best thing to do it with is fresh cow-dung, without any admixture of clay; when clay is added, the heat of the foot dries it, and the stopping becomes hard and does the foot more harm than good. Many persons, to save themselves a little trouble, substitute horse-dung for cow-dung; but they would do well to forego the whole of the trouble, and not stop the foot at all, rather than use horse-dung for the purpose.

It is a very good plan to smear the hoofs, sole, and frog all over with some emollient dressing every morning, as soon as the horse has been cleaned and got ready for the day; it need not interfere with the use of the wet swabs, which may with advantage be placed over it. I have used the following preparation for many years in my stable, and have found it to be very efficient in preserving the natural covering of the hoof in a good healthy state, and, as a necessary consequence, the horn beneath it elastic and tough:—To a pound and a half of lard add a quarter of a pound of beeswax, a quarter of a pound of common tar, and a quarter of a pound of honey; melt the lard and beeswax together, and then stir in the tar and honey: they require to be stirred for some little time, until the mass begins to set. I am informed that the addition of two or three ounces of glycerine will prevent the mass becoming too hard, and I have no doubt, from the peculiar oily properties of glycerine and the numerous purposes for which I find it is used in surgery, that it would prove a valuable addition to the hoof-dressing. What is required is some covering that shall pre-

vent the escape of the natural moisture of the hoof, and at the same time be emollient, adhesive, not too fluid, and free from any irritant.

Various causes have combined during the last few years to enhance the value of horses of every description, and it has become incumbent on every one, whose attention may have been particularly called to the subject, to communicate any information his experience and careful observation has supplied him with, and which he believes may be of use to his neighbours, by arousing them from the state of apathy into which many of them have permitted themselves to fall concerning a matter of so much importance to them commercially and personally as the soundness of their horses' feet.

Dixfield, December, 1857.

