

(No Model.)

E. T. COVELL.
FASTENING FOR HORSESHOES.

No. 441,940.

Patented Dec. 2, 1890.

Fig. 1.

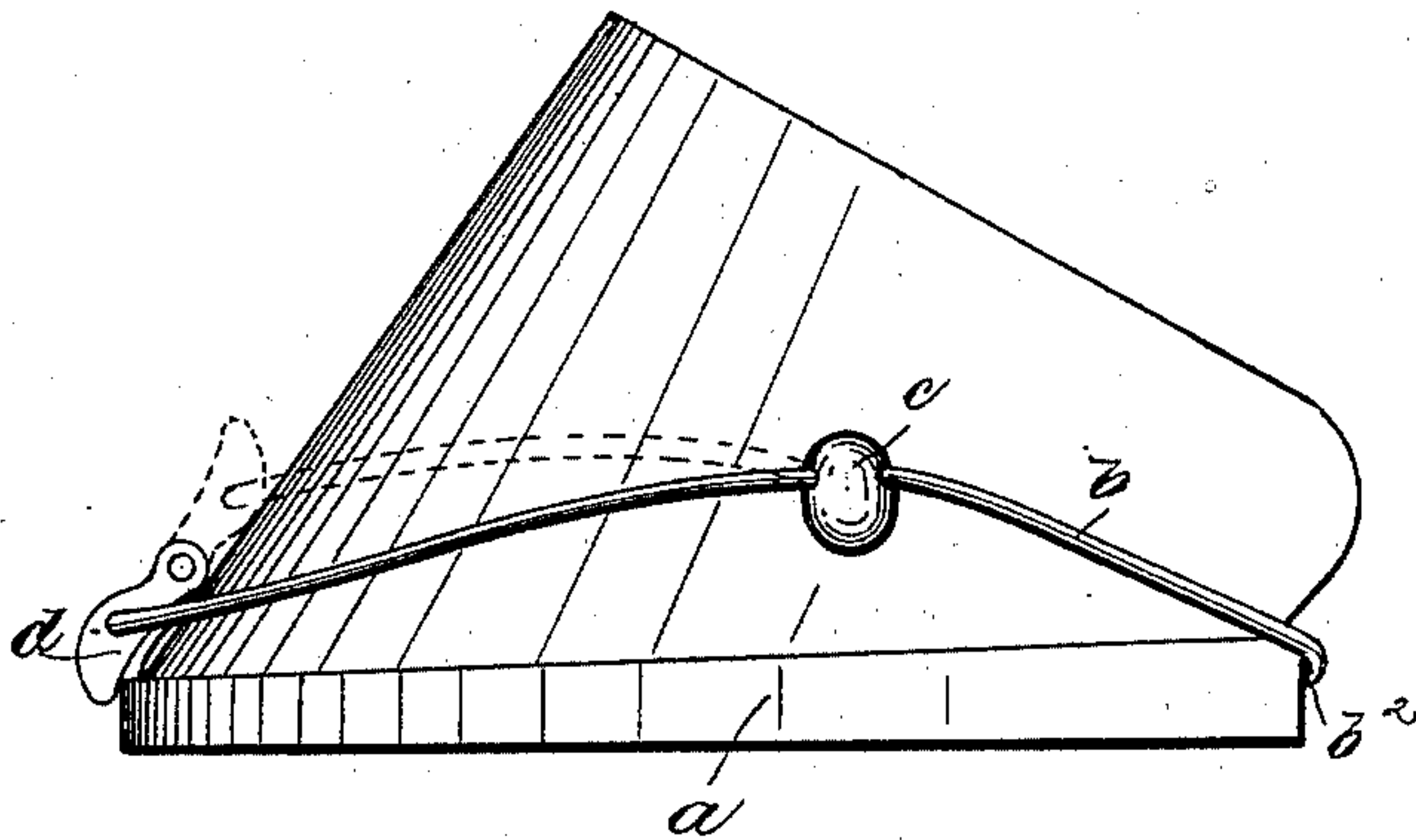


Fig. 2.

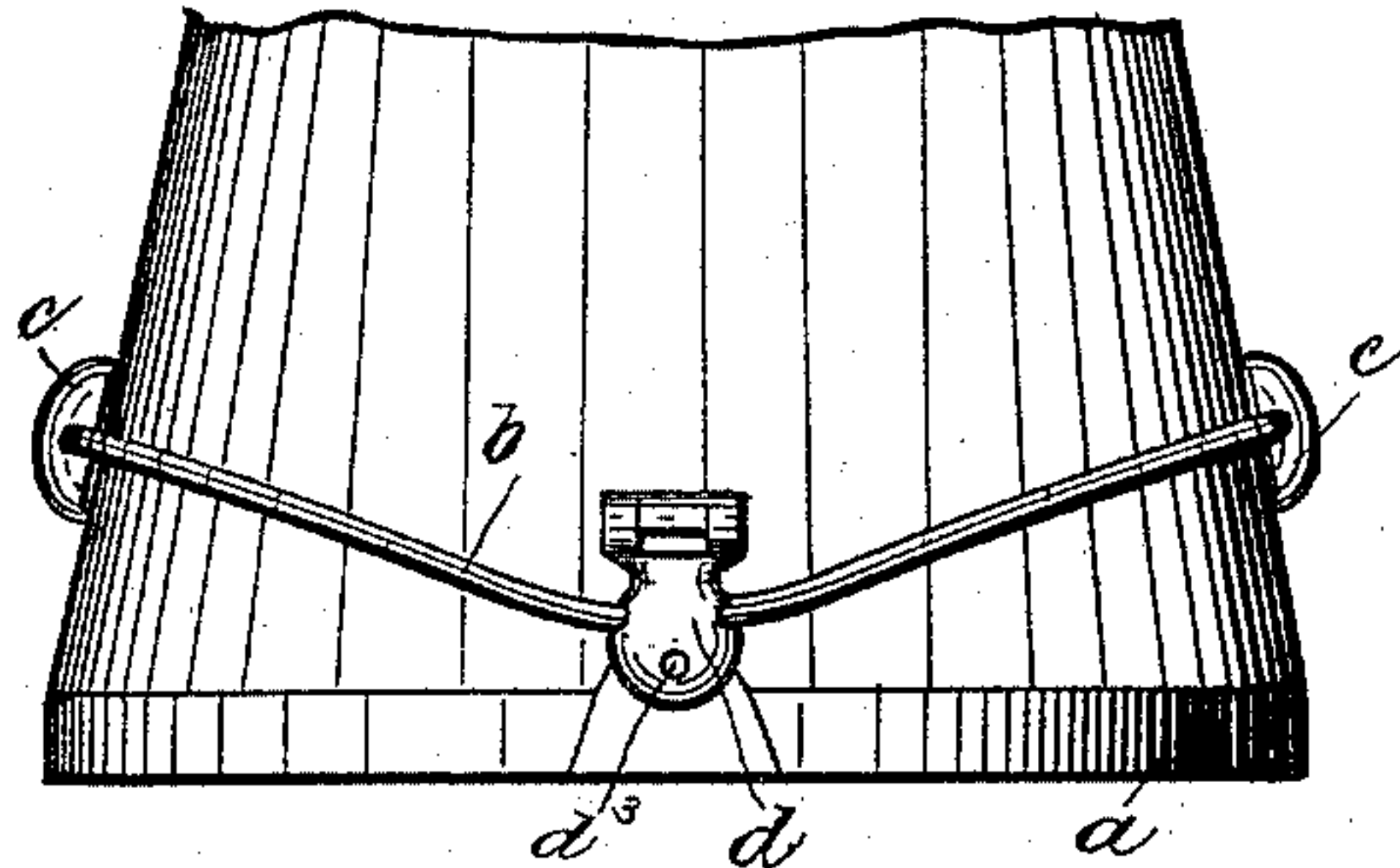


Fig. 3.



Fig. 4.

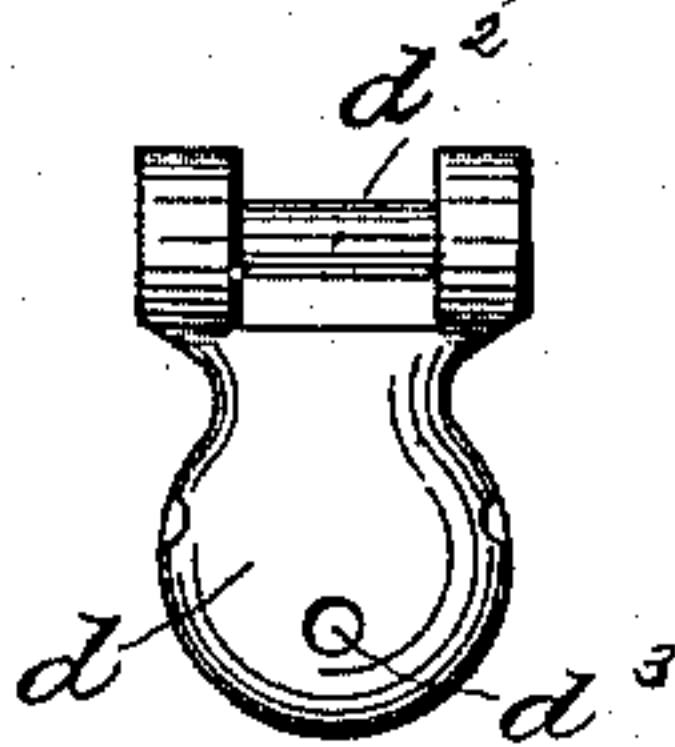


Fig. 5.

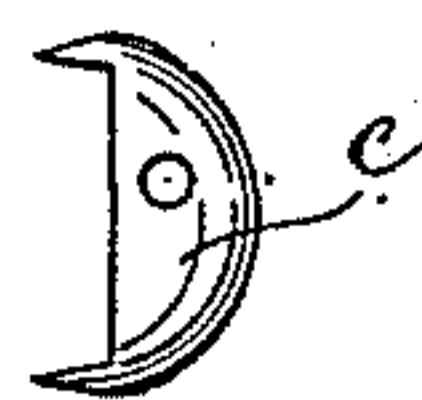


Fig. 6.



Witnesses

Jas. J. McAloney
H. C. Lee

Inventor.

Edward T. Covell,
by J. P. Plummer
Atty.

UNITED STATES PATENT OFFICE.

EDWARD T. COVELL, OF NEW BEDFORD, MASSACHUSETTS.

FASTENING FOR HORSESHOES.

SPECIFICATION forming part of Letters Patent No. 441,940, dated December 2, 1890.

Application filed June 11, 1890. Serial No. 355,024. (No model.)

To all whom it may concern:

Be it known that I, EDWARD T. COVELL, of New Bedford, county of Bristol, State of Massachusetts, have invented an Improvement in Fastenings for Horseshoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 The object of my invention is to provide means for fastening shoes to the hoofs of horses without using nails, the said fastenings being easy to apply, of unobjectionable appearance, and holding the shoes securely in place so that they cannot be cast off.

15 The fastening consists, essentially, of a wire or band engaged with the heel end of the shoe and passing diagonally up over the sides of the hoof, with which it is engaged by a suitable seat or support adapted to have a firm frictional hold upon the surface of the hoof, the said wire then extending forward and downward and being connected with the toe end of the shoe and provided with a straining device by which it may be drawn up tight, so as to hold the shoe securely, and may subsequently be relaxed, if required, to effect the removal of the shoe. The said straining device is herein shown as consisting of a lever fulcrumed in a projection formed at or connected with the toe end of the shoe in such manner that by turning the lever on its fulcrum from one to the other position it tightens or slackens the wire, which is shown as passed through an eye or opening near the free end of the lever. When the lever has been turned to tighten the wire, the strain of the latter retains the lever in this position until forcibly moved therefrom by a suitable tool.

45 Figure 1 is a side elevation of a horse's hoof having a shoe applied thereto by a fastening device embodying this invention; Fig. 2, a front elevation of the hoof; Fig. 3, a detail showing in side elevation the lever-engaging projection or fulcrum-piece at the fore end of the shoe; Fig. 4, a detail showing the tightening-lever in front elevation enlarged; Fig. 5, a side elevation of one of the wire-support-

ing seats used at the side of the hoof, and 50 Fig. 6 a detail showing one of the rear ends of the shoe in end elevation.

The shoe *a* may be of usual shape and material, being exactly like the ordinary shoe, except that it need not have the usual nail-holes, and is provided at its rear ends with means for engaging the fastening-wire, being shown in this instance as having holes bored longitudinally into it to receive the bent ends *b*² of the fastening-wire *b*. 60

The fastening device consists, mainly, of a continuous piece of stout wire *b*, the ends *b*² of which are engaged with the rear ends of the shoe, the said wire being long enough to extend around the hoof from one rear end to the other rear end of the shoe. At each side of the hoof the said wire is engaged with a seat or support *c*, (shown in this instance as a pronged stud,) provided with a passage through which the wire is threaded, the prongs of said stud making a frictional engagement with the side of the hoof without penetrating the same to any great extent, and preventing the portion of the wire from slipping down along the sides of the hoof, the holding power depending largely upon the natural inclination of the sides of the hoof, as shown in Fig. 2, and increasing with the increased strain on the wire. The forward end of the wire *b* is connected with the fore part of the shoe through the intervention of a straining device which tightens the wire and thus draws the shoe connected with it at forward and rear ends up snugly against the bottom of the hoof and holds it there securely. The said connecting and straining device, as shown in this instance, consists of a short lever *d*, provided with a fulcrum-pin *d*², that engages with a suitable fulcrum projection *e* (see Fig. 3) at the forward end of the shoe, the said projection being shown in this instance as a tongue extending up along the fore end of the hoof and turned downward to make a hook-like seat for the fulcrum-pin *d*². The wire *b* is shown in this instance as passing through an eye or opening formed in the end of the lever *d*, although it might be otherwise connected therewith, if preferred, as by a suit-

able notch or shoulder formed in the said lever to receive it.

In applying the shoe the fastening-wire *b*, having the lever *d* and seat-pieces *c* threaded on it, is first carried around the hoof and engaged at its bent ends *b*² with the rear ends of the shoe, which is then placed in proper position against the bottom of the hoof, with the projection *e* against the front of the hoof.

The lever *d*, when in dotted-line position, Fig. 1, is then engaged with a fulcrum-piece *e*, as shown, the wire being somewhat slack in this position, and the seat-pieces *c* are engaged with the sides of the hoof at some distance above the direct line from the heel ends *b*² to the fastening-lever *d*, the slackness of the wire permitting them to be carried up to a sufficient height to give the desired tightness and holding power when the wire is subsequently tightened. The tightening is effected by turning the lever *d* on its fulcrum from the dotted to the full line position, which, as will be readily seen, tightens the wire and at the same time brings the strain of the wire on the lever *d*, below the fulcrum, tending to hold the said lever tightly in place against the front side of the fulcrum-projection, so that it cannot be accidentally dislodged.

The position of the end of the lever *d* with relation to the end of the hole is such that it cannot strike on any stone or projection in the use of the shoe in such way as to turn the lever back so as to loosen the fastening. A slight space is left between the under face of the lever *d* and the outer face of the projection *e* at the end of the lever to receive a tool—such as a screw-driver or the handle of a pair of pliers—by which the said lever can be turned back when it is necessary to unfasten and remove the shoe, and as it is desirable that the wire should be strained very tightly the lever is usually turned into position by the employment of a pair of pliers or a suitably-shaped wrench that gives the operator sufficient leverage to turn the same.

The herein-described fastening holds the shoe firmly and securely to the hoof, and can be quickly applied and removed without requiring especial skill or the use of special tools, and is thus a great convenience when it is desired to change shoes, as in icy weather, and it also has a great advantage as a permanent fastening, it being impossible to injure the foot of the horse in applying the same, and the fastening being of light weight and neat appearance when applied.

By having a band which is connected with the heel end of the shoe at one side of the hoof, extends diagonally upward therefrom, and is engaged with the side of the hoof at some distance above the shoe, and extends diagonally downward from said point of engagement, and is connected with the toe end of the shoe, such arrangement being used at

each side of the shoe and hoof, the effect of applying tensile strain to such band is merely to draw the shoe directly up against the bottom of the hoof, the weight of the shoe being borne from the point of engagement at the sides of the hoof, substantially the same as when the shoe is fastened by nails; but if the band were merely passed from the heel end of the shoe forward and upward around the hoof the strain on said band would tend to slide the shoe forward on the hoof instead of to draw it directly against the hoof, as is the case with a band applied as herein described.

The invention is not limited to the specific construction shown of the means of connecting the wire with the heel and toe ends of the shoe and for engaging the same with the sides of the hoof above the shoe and straining the wire, as the construction of these parts can be varied without materially changing the nature and mode of operation of the fastening.

The fulcrum-piece *e* may be formed with the shoe or may be formed as a separate piece having a dovetailed foot to enter a dovetailed socket in the shoe, or it may be riveted or otherwise fastened thereto in any suitable manner.

The lever *d* is shown as provided with a small socket *d*³, which serves to receive a stud or projection formed on the jaw of the pinchers, by which the lever is turned down.

I claim—

1. A fastening for a horseshoe, comprising a wire or band connected with the heel end of the shoe at each side thereof, extending upward therefrom and engaged with the sides of the hoof above the shoe and extended down from said points of engagement with the hoof and connected with the toe end of the shoe, combined with a straining device for tightening said band, whereby the shoe is drawn tightly up against the bottom of the hoof, substantially as described.

2. The combination, with a horseshoe provided with a fulcrum-piece at its fore end, of a fastening-wire engaged with said horseshoe at the rear end, seats for supporting the said wire upon the sides of the hoof, and a straining-lever engaged with said wire and with the fulcrum-piece at the fore end of the shoe, substantially as and for the purpose described.

3. The combination of the band adapted to be connected with a horseshoe at the heel and toe ends, with seats or supports for engaging the said band, provided with projections to make frictional connection with the sides of the hoof, substantially as described.

4. The combination, with a horseshoe, of a fastening-band connected with the heel end of the shoe at each side thereof, extending upward therefrom and engaged with the sides of the hoof above the shoe and extended down from said points of engagement with

the hoof toward the shoe at the front thereof,
combined with a straining-lever having its ful-
crum on the shoe and being engaged with the
said band for tightening the same in engage-
5 ment with the shoe and hoof, substantially
as described.

In testimony whereof I have signed my

name to this specification in the presence of
two subscribing witnesses.

EDWARD T. COVELL.

Witnesses:

JOS. P. LIVERMORE,

JAS. J. MALONEY.