

No. 619,745.

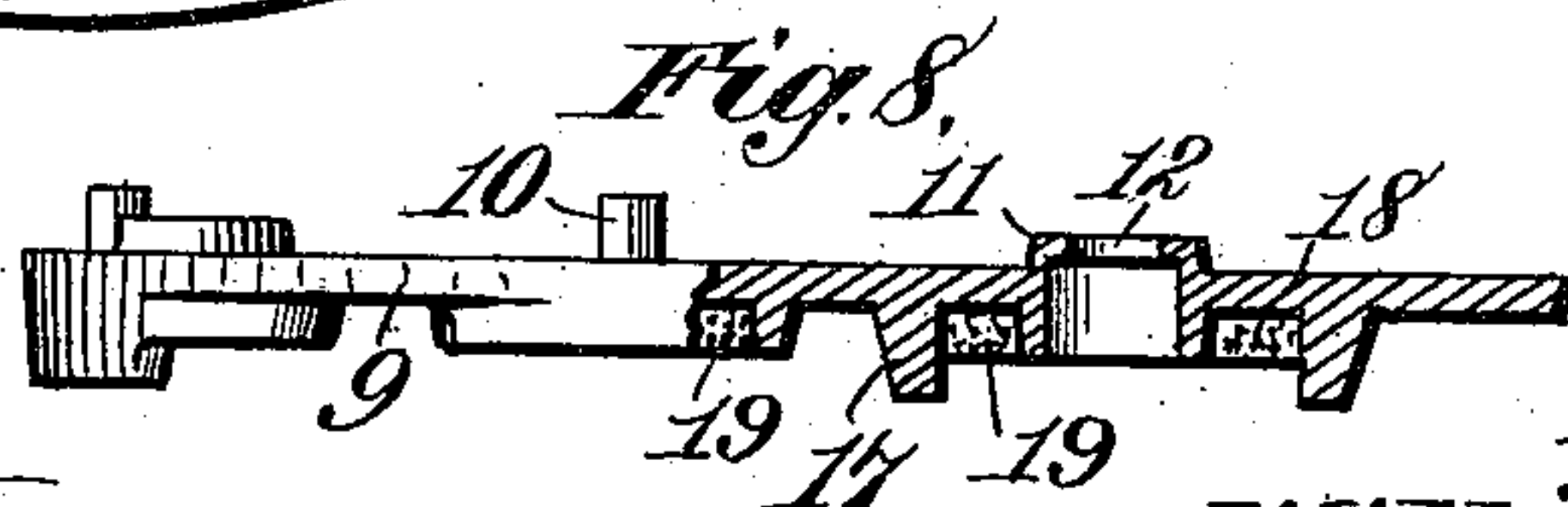
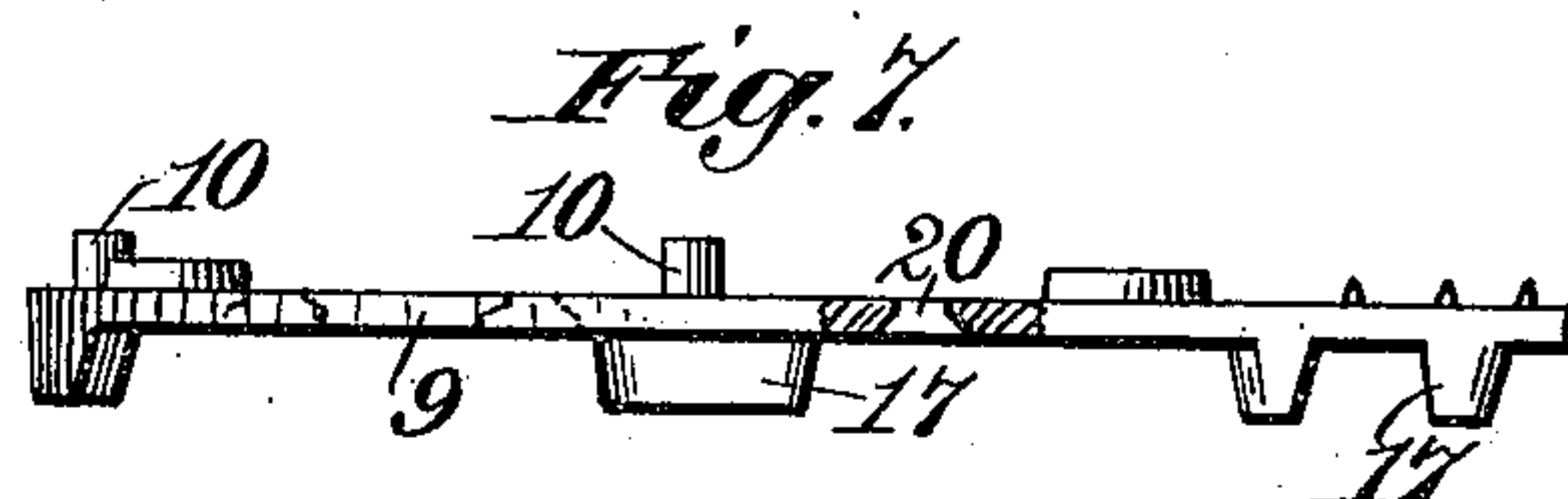
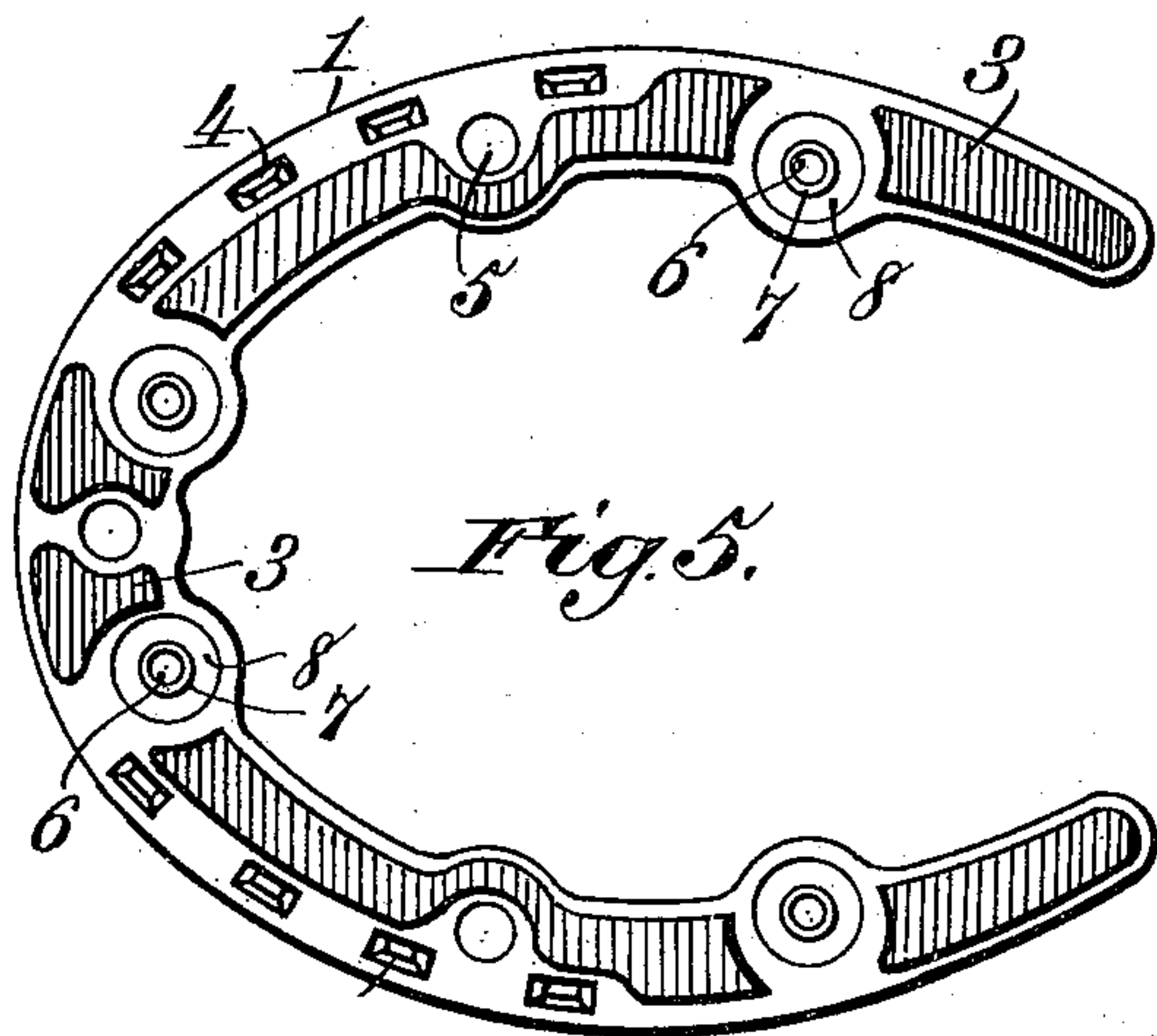
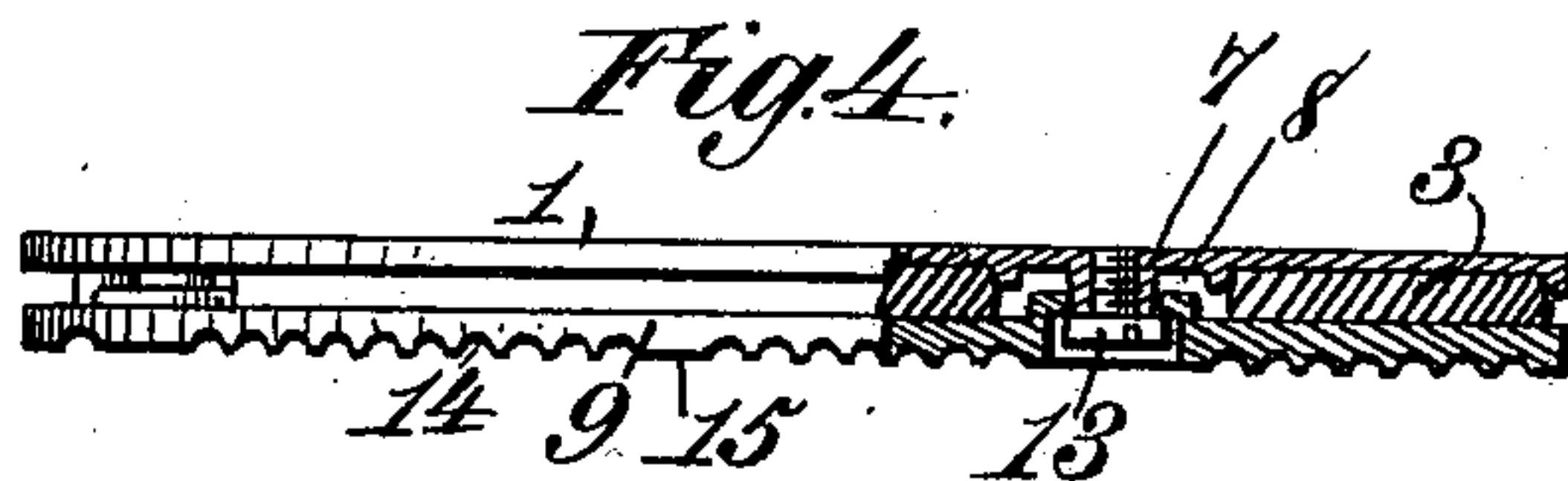
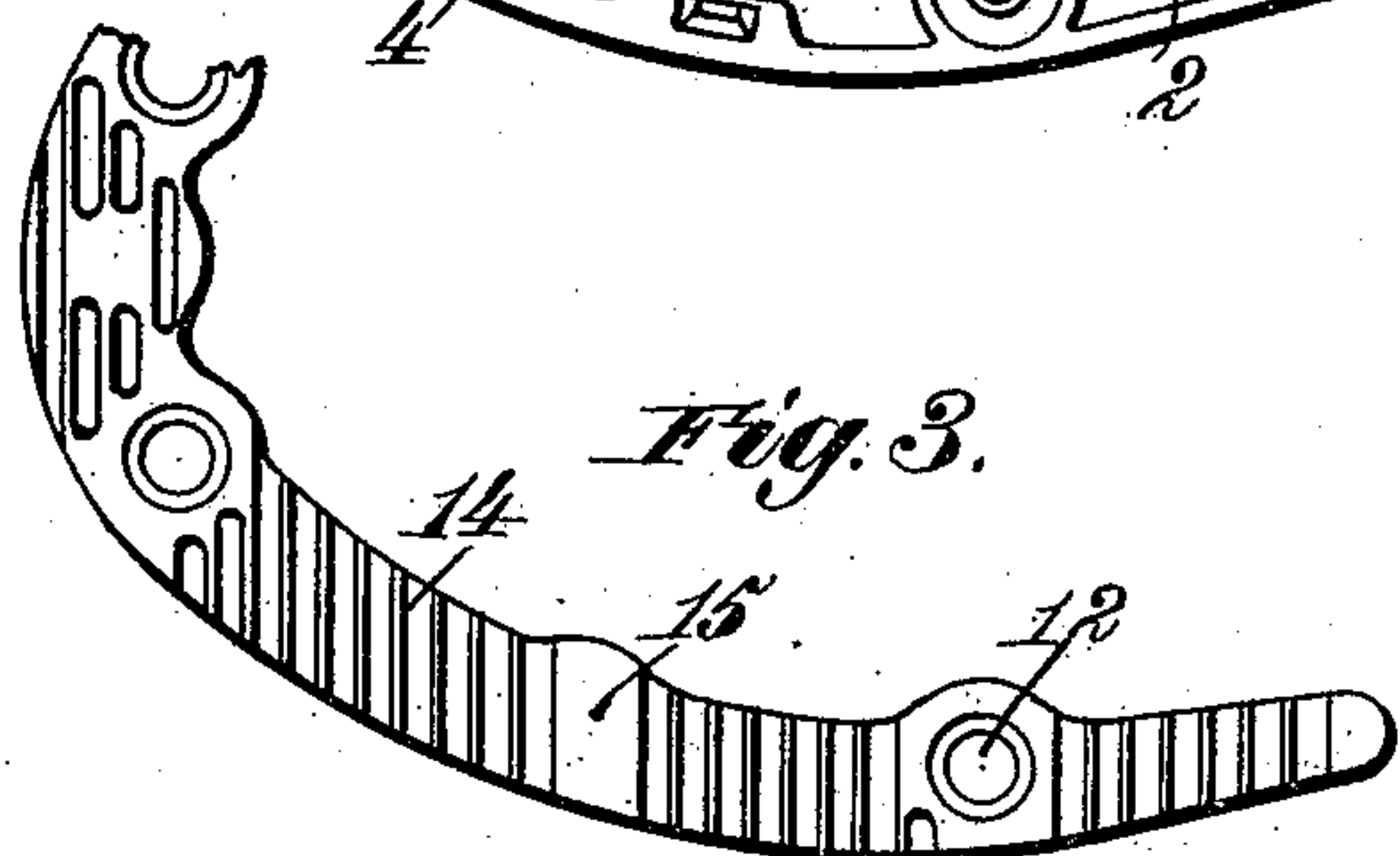
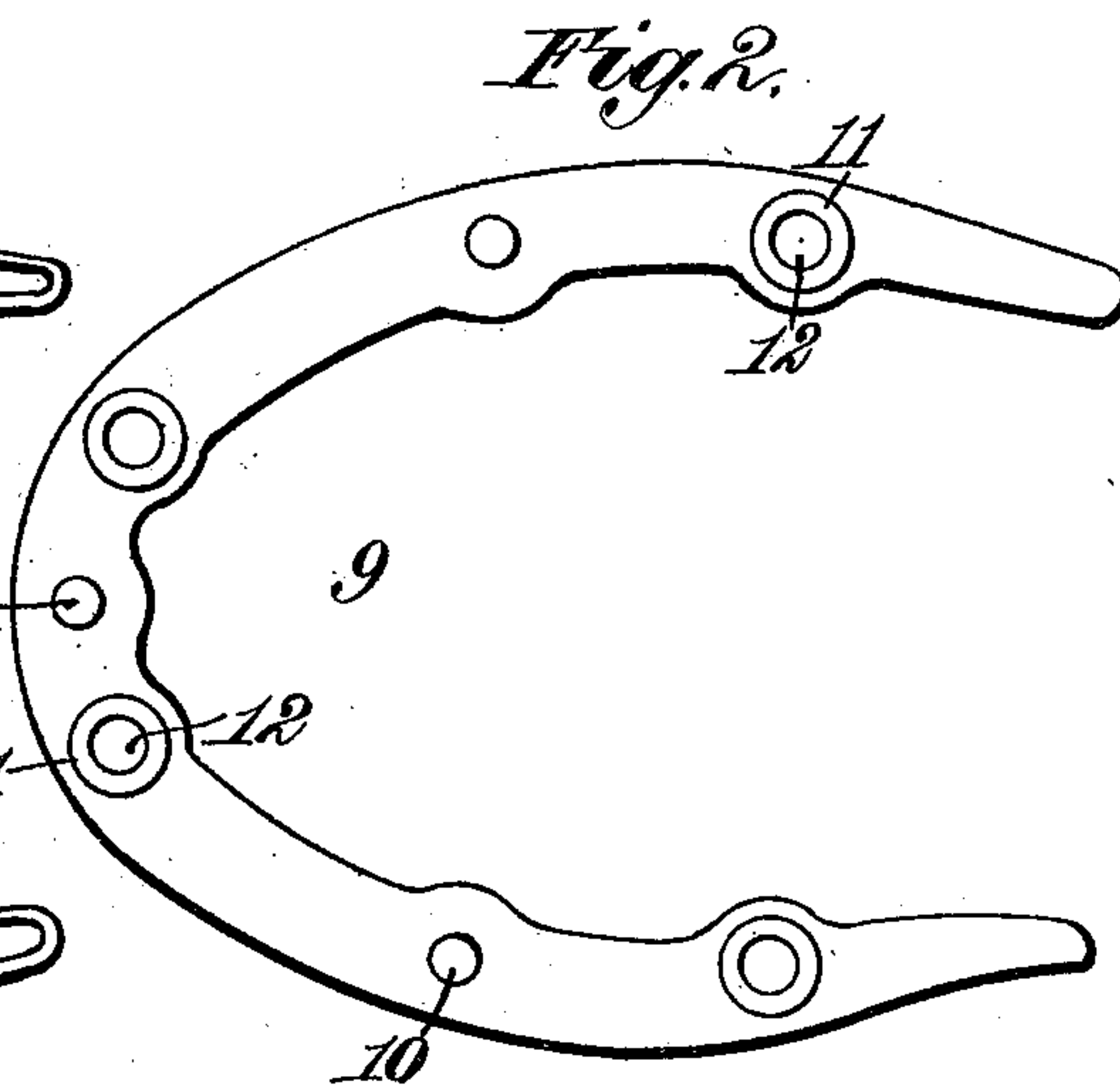
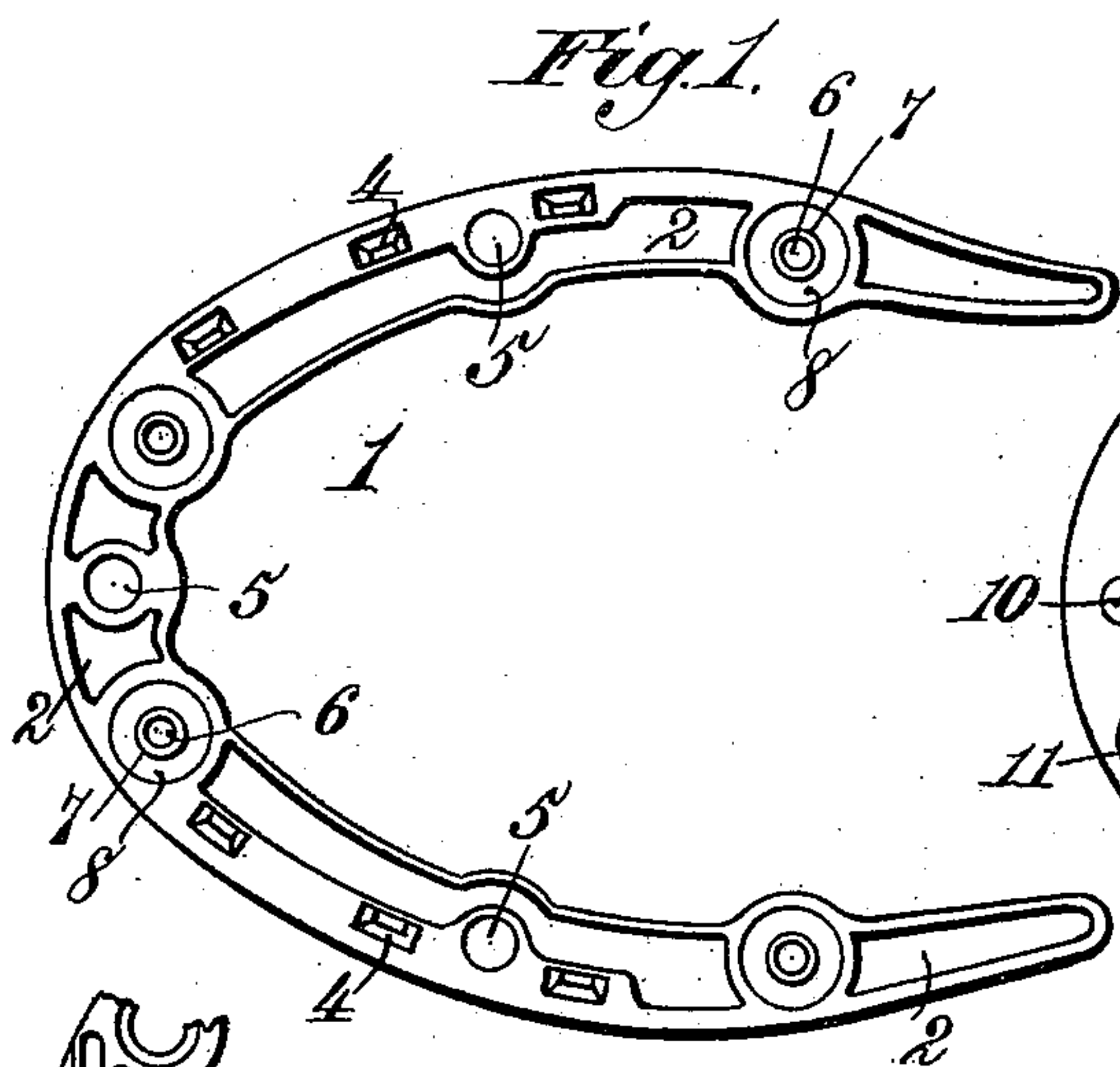
Patented Feb. 21, 1899.

W. S. HITCH.

HORSESHOE.

(Application filed Apr. 18, 1898.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM S. HITCH, OF DOVER, DELAWARE.

HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 619,745, dated February 21, 1899.

Application filed April 18, 1898. Serial No. 678,037. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. HITCH, a citizen of the United States, residing at Dover, in the county of Kent and State of Delaware, have invented new and useful Improvements in Horseshoes, of which the following is a specification.

It is the object of my invention to improve that class of horseshoes in which each shoe comprises an upper plate to be secured to the hoof, a lower detachable shoe-plate capable of being readily removed and replaced, and intermediate elastic material to take up shock of impact, prevent concussion, and relieve the joints and extremities from jar and strain.

My invention is designed to provide a horseshoe having a light but strong and durable web of such width as to afford adequate support for the horse's hoof and avoid the objections to a narrow web that provides lightness only at the risk of producing ring-bones or other injury.

The invention comprises an upper shoe-plate that is recessed in its under side for reception of elastic pads or cushions, preferably rubber, to obviate the effects of concussion. It also comprises interchangeable lower shoe-plates having wearing-surfaces that may be either corrugated or otherwise roughened or provided with projections, according to whether intended for use on asphalt or other smooth roadways or on cobblestones or rough pavements or in dry weather or sleet, and, furthermore, I may roughen the bottom of the lower shoe-plate by providing it with recesses having rubber-fiber packing embedded therein, that will not only relieve concussion, but will serve also to prevent slipping.

My invention consists in novel features of construction and combination of parts in a horseshoe, as hereinafter described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a bottom view of an upper plate for the pair of hind-feet shoes, which are preferably rights and lefts. Fig. 2 is a top view of a lower shoe-plate for said pair of hind-feet shoes. Fig. 3 is a bottom view of said lower shoe-plate, provided with a transversely-corrugated wearing-face. Fig. 4 is a side view of one of said hind-feet horseshoes, partly in section. Fig. 5 is a bottom

view of the upper plate of a fore-foot shoe having elastic pads inserted in recesses in the bottom side of said plate. Fig. 6 is a part sectional view of a horseshoe having a corrugated bottom plate and showing an elastic pad or plate intermediate the bottom plate and the inserted pads of the upper plate. Fig. 7 is a view of a detachable lower plate having its bottom provided with calks or projections. Fig. 8 is a view of a lower shoe-plate having its bottom side recessed for reception of rubber fiber to prevent slipping and reduce concussion.

The reference-numeral 1 designates the upper shoe-plate, that is provided in its bottom side with suitably-arranged recesses 2, of any preferred location, dimensions, or configurations, and which have embedded therein a series of rubber pads or cushions 3 to take up jar or concussion and relieve the joints, tendons, and extremities from shock or other strain. This upper shoe-plate is also provided with holes 4 to permit the passage of nails for fastening the said plate onto the hoof. On the bottom side of said upper plate the nail-holes 4 are preferably countersunk to accommodate the nail-heads.

In the toe portion of the plate 1 and at appropriate points on the sides there are circular mortises 5 for reception of studs on a lower shoe-plate, as hereinafter explained. The plate 1 is also preferably provided with circular internally-screw-threaded perforations 6, that are surrounded by tubular bosses 7 on the bottom side of the plate, the screw-threads being extended through said bosses, which constitute extended bearings for screws that are to secure together the upper plate and lower plate in such manner that the latter can be readily detached when required. These tubular internally-screw-threaded bosses 7 are surrounded on the bottom side of the plate 1 by annular recesses 8, that correspond with annular bosses on the lower shoe-plate.

The lower shoe-plate 9 is provided on its top with tenons or studs 10 to engage in the mortises 5 of the upper plate, and it also has annular bosses 11 to correspond with the annular recesses 8 of said upper plate. These annular bosses 11 surround circular openings 12, that receive the tubular bosses 7, and said openings are countersunk on the bottom of the

lower plate 9 to receive the heads of screws 13, that secure the plates 1 and 9 together, so that the lower plate can be readily detached at any time, leaving the upper plate secured to the
 5 hoof. The heads of the screws 13 are concealed in the countersunk portions of the openings 12, so as to be flush with the bottom of the shoe. The studs or tenons 10 and screws 13 provide convenient means for detachably se-
 10 curing the lower plate to the upper one so that it can be quickly removed and replaced for either rough-shod or smooth-shod or so as to replace a worn plate or one of different weight, as required.

15 When the plates 1 and 9 are attached and in use, the elastic pads 3, inserted in recessed portions of the plates 1, will take up shock and jar, so as to relieve the horse's feet from strain, and as the lower plate yields the annular re-
 20 cesses 8 will afford space to receive the annular bosses 11 and permit the plates 1 and 9 to approach under the pressure to which the latter is subjected.

The bottom face of the lower plate 9 may
 25 be provided with corrugations 14 of any degree of coarseness, preferably arranged transversely and interrupted by smooth faces 15, that serve to protect the corrugations from excessive wear.

30 In addition to the series of inserted elastic pads 3, carried by the upper shoe-plate 1, a rubber plate or pad 16 may be placed intermediate the upper shoe-plate 1 and lower shoe-plate 9, as shown in Fig. 6, thus providing a
 35 doubly-elastic shoe. This intermediate pad 16 will of course be perforated at suitable points for passage of the devices that serve to detachably connect the upper plate and lower plate.

40 As shown in Fig. 7, the lower shoe-plate may, if desired, be provided with calks or projections 17 of any preferred form; or, as shown in Fig. 8, I may provide the bottom side of the lower shoe-plate with suitably-formed re-
 45 cesses or cushion-holders 18, having rubber

fiber 19 embedded therein and projecting sufficiently to afford roughened surfaces to prevent slipping. These rubber-fiber pads will become further roughened by any gravel that may adhere thereto or become embedded 50 therein. Such external cushions or elastic pads are also useful in contributing to the elasticity of the shoe and the lessening of concussion.

In Fig. 7 I have shown the lower shoe- 55 plates as provided with nail-holes 20, so that they can be secured with nails, if desired.

By providing interchangeable lower shoe-plates in suitable variety, as shown, a horse can be quickly shod for any weather or so as 60 to travel with safety and speed on roads of any condition or character.

What I claim as my invention is—

1. A horseshoe composed of an upper plate having its bottom side provided with a series 65 of recesses, elastic pads inserted in said recesses of the upper plate, a lower detachable shoe-plate, and means for connecting said plates, substantially as described.

2. A horseshoe comprising an upper plate 70 having its bottom side provided with a series of recesses, elastic pads inserted in said recesses of the upper plate, a lower detachable shoe-plate having a roughened wearing-face, and means for connecting said shoe-plates, 75 substantially as described.

3. A horseshoe composed of an upper plate having its bottom side provided with a series of recesses, elastic pads inserted in said recesses of the upper plate, a lower detachable 80 shoe-plate, an intermediate rubber plate or pad, and means for connecting said plates, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 85 nesses.

WILLIAM S. HITCH.

Witnesses:

SAINT CLAIR GEORGE,
 CHAS. H. DOUGHERTY.