

A. W. SMITH.  
Horseshoes.

No. 142,590.

Patented September 9, 1873.

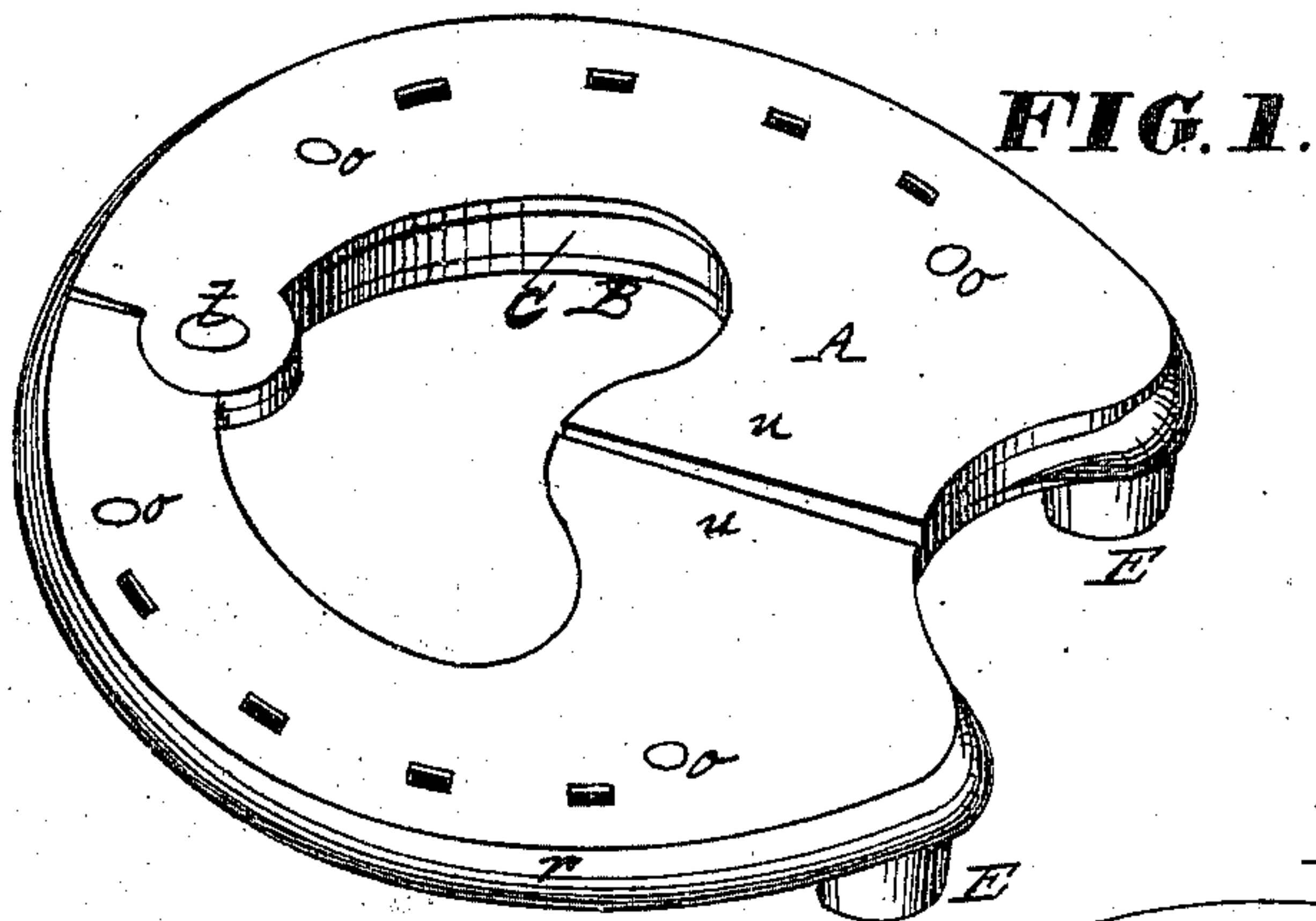


FIG. 2.

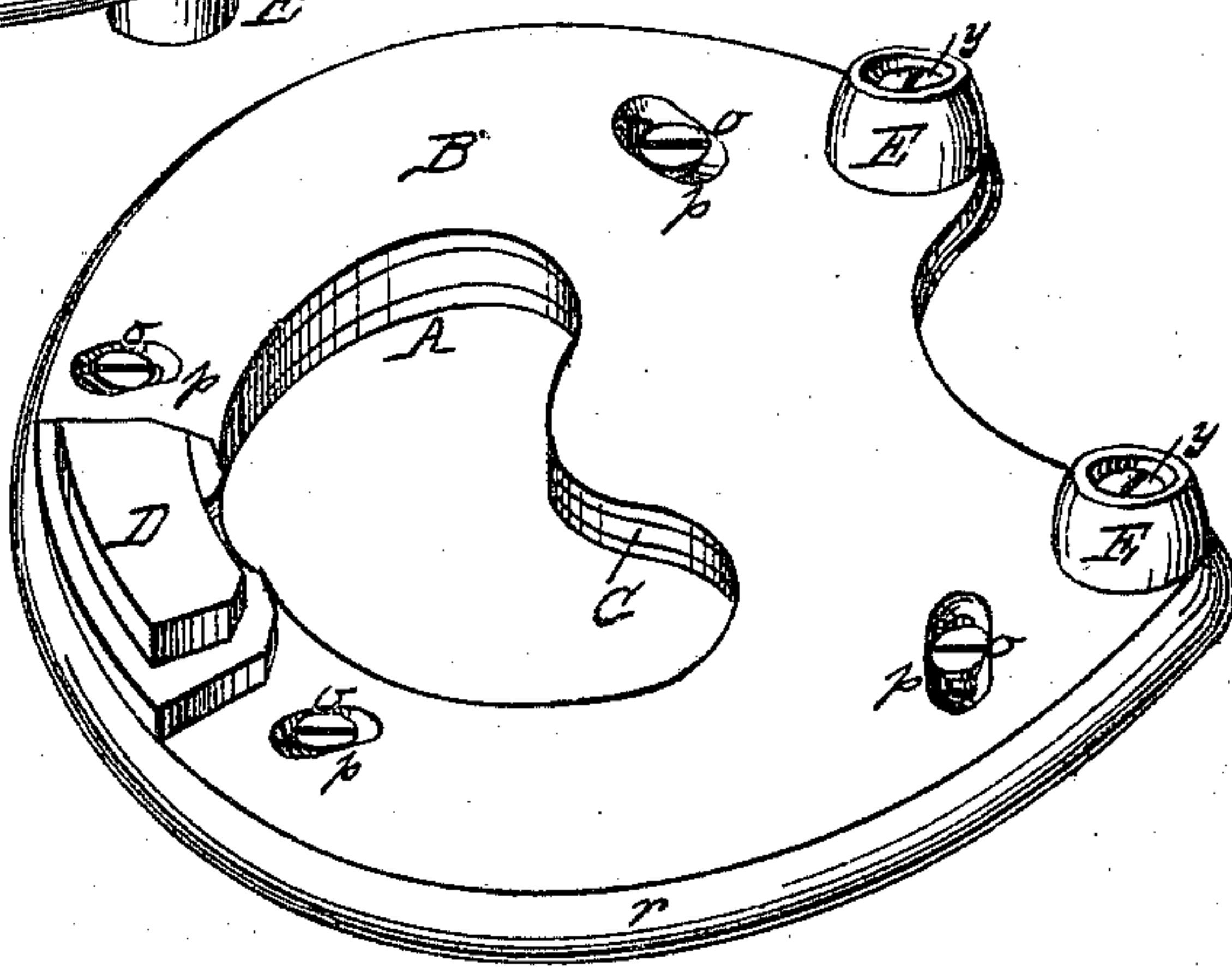


FIG. 3.

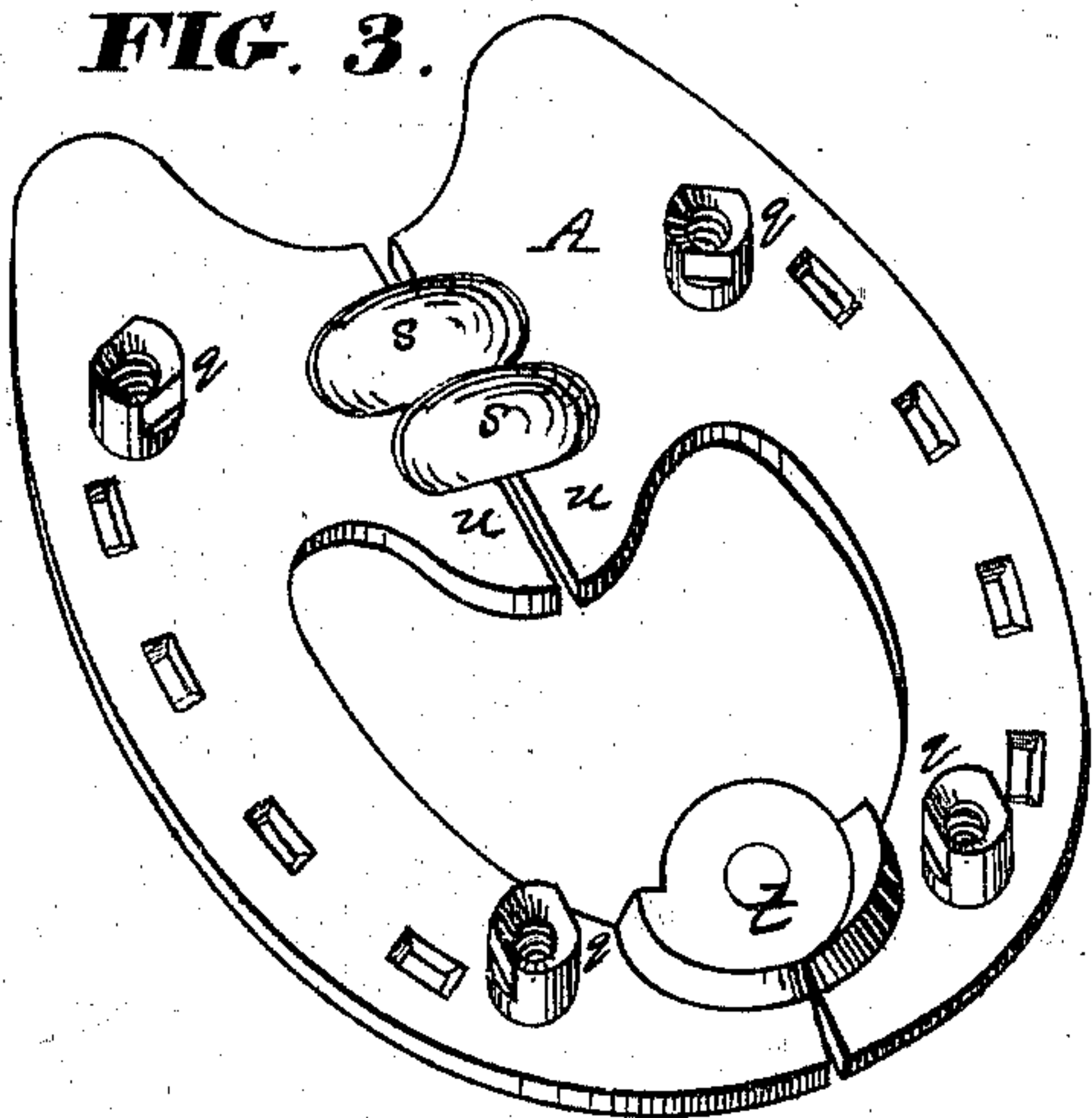


FIG. 4.

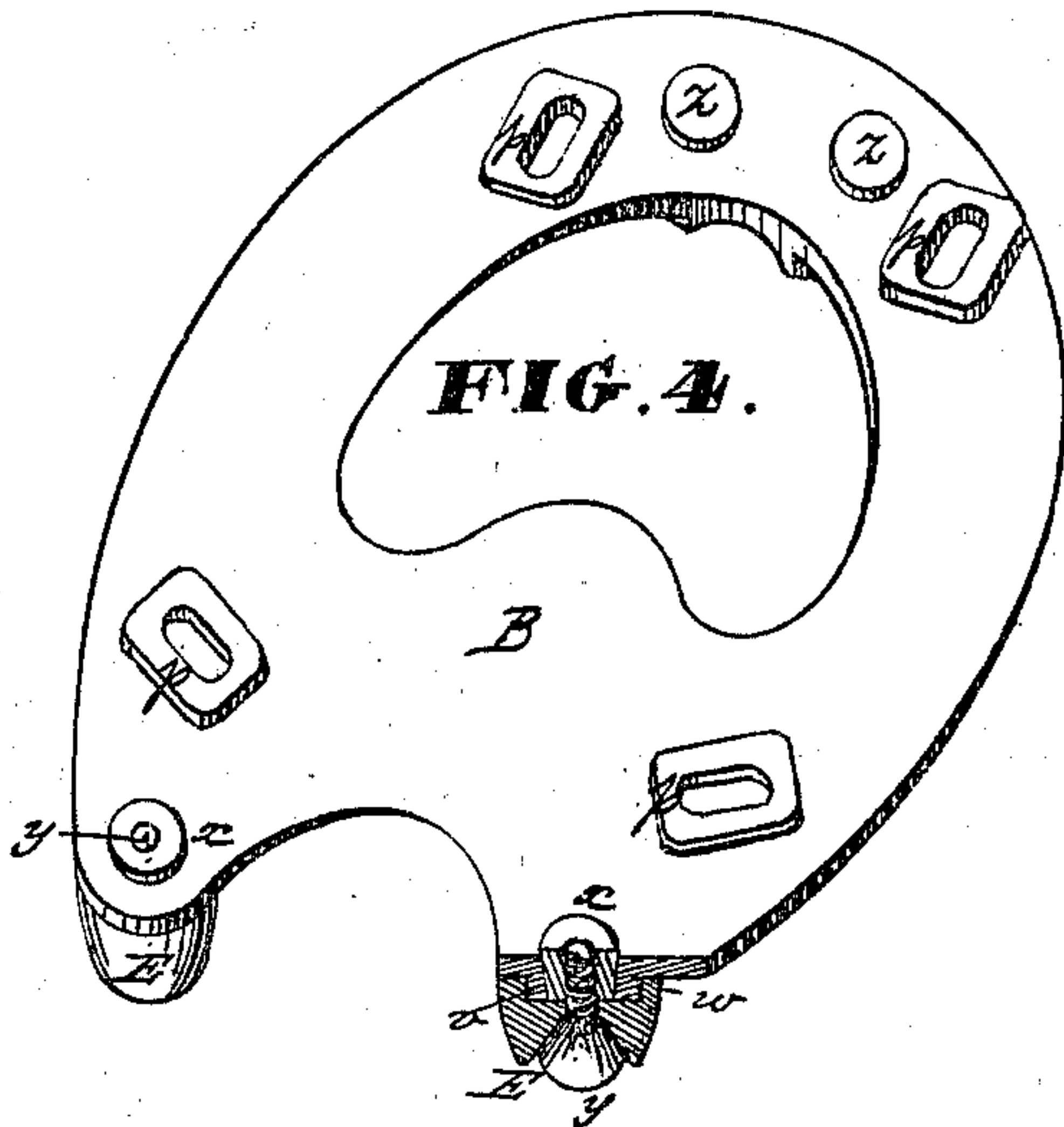
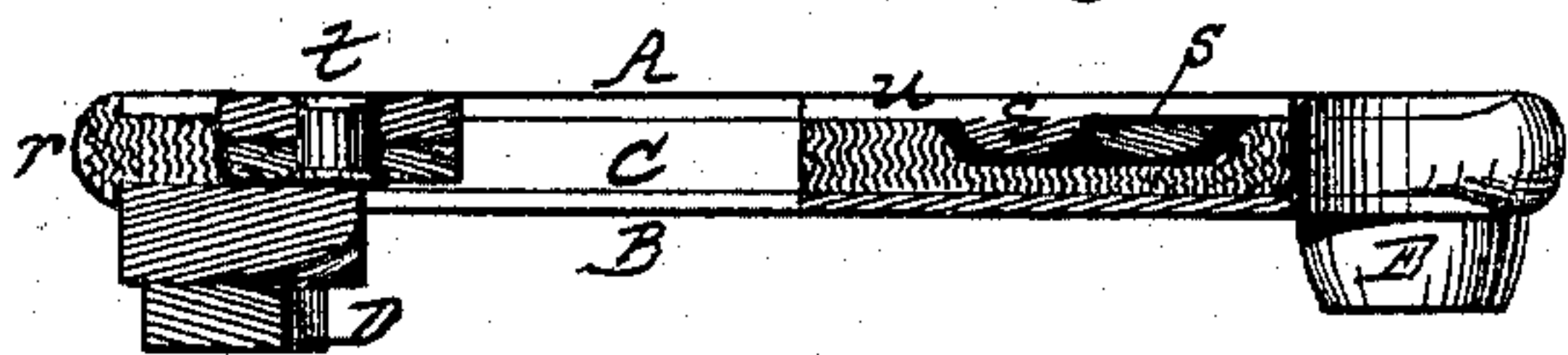


FIG. 5.



WITNESSES:

Jas. L. Ewin  
Walter Allen

INVENTOR:

Aaron W. Smith  
By *Knights* Attorneys.



# UNITED STATES PATENT OFFICE.

AARON W. SMITH, OF MANCHESTER, NEW HAMPSHIRE.

## IMPROVEMENT IN HORSESHOES.

Specification forming part of Letters Patent No. 142,590, dated September 9, 1873; application filed February 19, 1873.

*To all whom it may concern:*

Be it known that I, AARON W. SMITH, of Manchester, in the county of Hillsborough, New Hampshire, have invented a certain Improved Horseshoe, of which the following is a specification:

The first part of this invention consists in a peculiar mode of combining a supplemental shoe or wearing-sole and a cushion of vulcanized rubber, (caoutchouc,) or equivalent material, with a permanent horseshoe, so that the former may be applied to the shoe after the shoe has been nailed to the hoof, and may be readily removed therefrom without disturbing it, while the rubber cushion shall be free to give its elastic support at all points, the object of the latter being to give an artificial spring to the foot on pavements, frozen ground, and the track. The second part of the invention consists in the combination of a flexible main shoe, a solid slotted supplemental shoe, and an interposed cushion. The third part of the invention consists in the extension of this cushion in marginal flanges to protect the edges of the shoe, so as to prevent injury by interference, overreaching, or striking. The fourth part of the invention consists in means for securing and supporting removable calks in a superior manner.

Figure 1 is a perspective top view of a flexible and elastic horseshoe, illustrating this invention. Fig. 2 is a perspective bottom view of the same. Fig. 3 is a perspective bottom view of the main shoe. Fig. 4 is a perspective top view of the wearing-sole or supplemental shoe, partly in section. Fig. 5 is a vertical longitudinal section of the complete shoe.

This horseshoe, in its preferred complete form, consists of three primary members—namely, first, a main shoe, A, for permanent attachment, by nails or their equivalent, to the horse's foot; second, a supplemental shoe or wearing-sole, B, for application to the former after it is attached; third, an interposed cushion, C, of rubber, or its equivalent, to give artificial spring to the foot on pavements, frozen ground, and the track. A toe-calk, D, and heel-calks E are applied to the wearing-sole B to roughen it. Two modes of attaching these calks are illustrated; but it will be understood that both the toe and heel calks

may be attached in either way. The first consists in the use of rivets *z*, by which the toe-calk D is attached in the illustration. The second mode consists in the use of "counter-sunk" screws *y*, in combination with plugs *x*, which may be of wood or metal, held in tapering or straight sockets. These plugs form stationary nuts to receive the points of the screws, and when a screw is broken off they facilitate removing it, obviating resort to drilling. The calks E are further constructed with marginal flanges *w*, to embrace bosses *v* on the shoe, to strengthen the joints between them. The calks may be of any preferred shape. The main shoe A is preferably of the peculiar form represented, having inward sole extensions *u* to support the frog, and a toe-joint, *t*, to permit the natural expansion and contraction of the hoof thus induced. This construction is the subject-matter of a former invention, patented by me June 11, 1872. The heel-bars *s* serve to support the adjoining edges of the sole extensions *u*, to prevent undue strain on the toe-joint, and to give a more solid support to the foot. Two of these bars may be employed, as in the illustration, or one may be employed as a tenon, in connection with a corresponding socket in the other part. This main shoe is secured to the hoof by nails, as in the illustration, or in any preferred way, and the rubber cushion C is then applied thereto, and secured by the application of the wearing-sole or supplemental shoe B. The cushion C is conformed to the shoes proper, and is constructed with a marginal enlargement, *r*, which embraces and protects the edges of the shoe, so as to prevent injury by interference, overreaching, or striking. It may be molded out of caoutchouc, or any similar elastic material. The main shoe A is provided with countersunk internally-threaded bosses *q*, and the supplemental shoe B with countersunk slots *p* to receive screws *o*, for attaching the supplemental shoe and interposed cushion. The outer ends of the bosses *q* enter the perforations *p*, and play vertically therein as the cushion expands and is compressed. The elongation of these perforations, constituting them slots, permits the movement of the parts of the flexible main shoe. The supplemental shoe is preferably made in one part; and for



winter use it is made solid to prevent "balling." The elastic sole, as thus made, does not come in contact with the foot so as to heat it, as is the case with leather and rubber soles for the same purpose. The cushion C may also be made solid, as it does not come in contact with the foot. The main and supplemental shoes and calks are preferably cast, and then malleableized, and to increase the durability of the calks they may be passed through an additional steelifying process.

The removable supplemental shoe and elastic cushion are disclaimed, except as combined with each other and attached to the main shoe, in the manner herein set forth. An "interfering attachment" similar in shape to a section of the elastic cushion is likewise disclaimed; also, the lateral supports for the calks, broadly, and in themselves considered.

The following is claimed as new:

1. The main shoe A, supplemental shoe or wearing-sole B, and interposed elastic cushion C, when the same are united by screws *o* and bosses *q*, in combination with countersunk

perforations *p*, receiving the said bosses, so as not to obstruct the yielding movement of the sole, as set forth.

2. The combination of a flexible shoe, A, a slotted supplemental shoe, B, and an interposed cushion, C, as herein described.

3. The edge-guard *r*, combined with the cushion C, as described, for the purposes specified.

4. The plugs *x*, constructed and employed substantially as described, in combination with screws *y* for attaching the calks.

5. The combination of the flanges *w*, bosses *v*, countersunk screws *y*, and plugs *x*, substantially as described, for the purpose set forth.

6. The rivet-shanks *z* of the calk D, headed on the upper side of the removable supplemental shoe B, as described, for the purpose specified.

AARON W. SMITH.

Witnesses:

ISAAC L. HEATH,

E. M. TOPLIFF.