

No. 640,309.

Patented Jan. 2, 1900.

W. KONDAKOV.  
NAILLESS HORSESHOE.

(Application filed Aug. 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

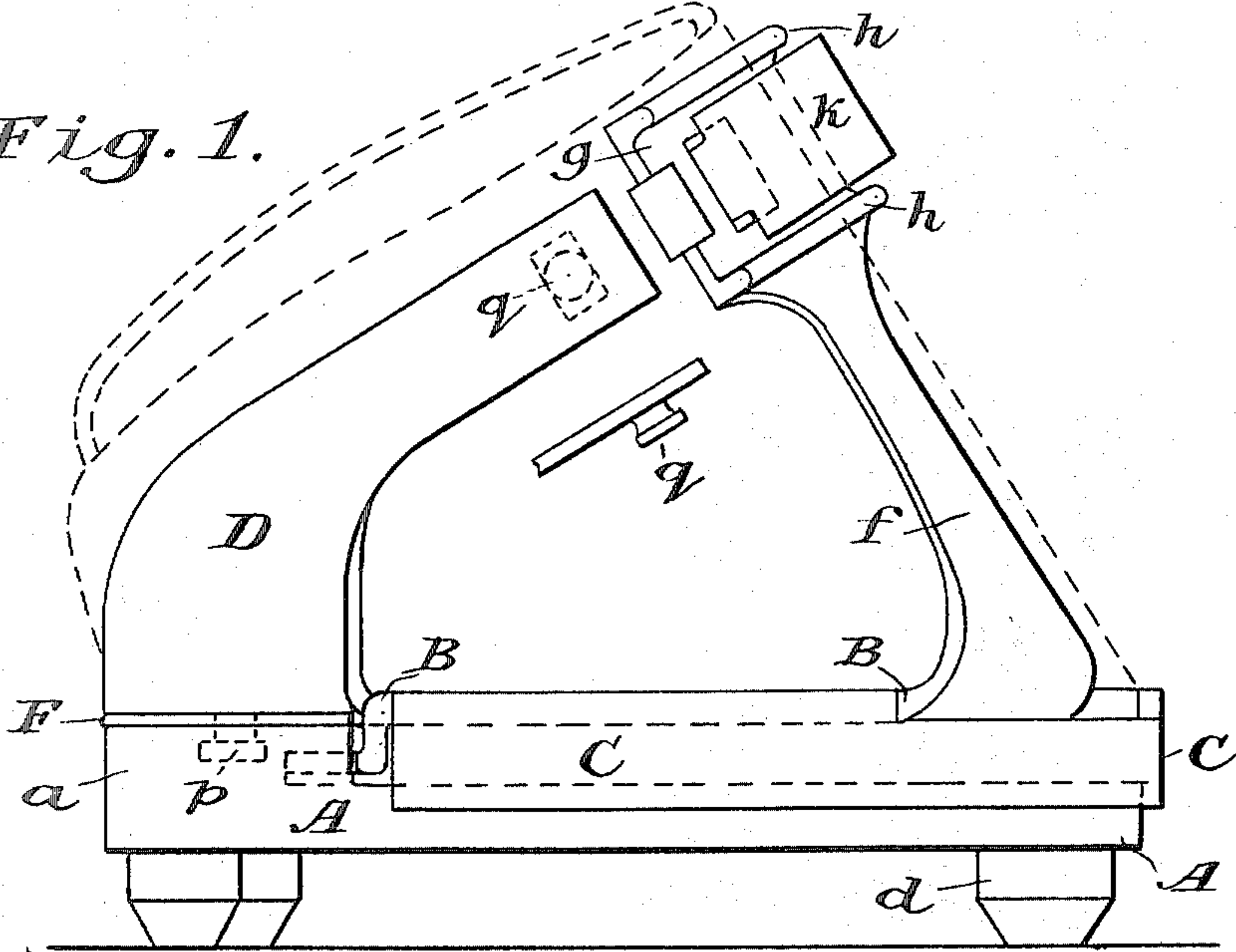


Fig. 7.

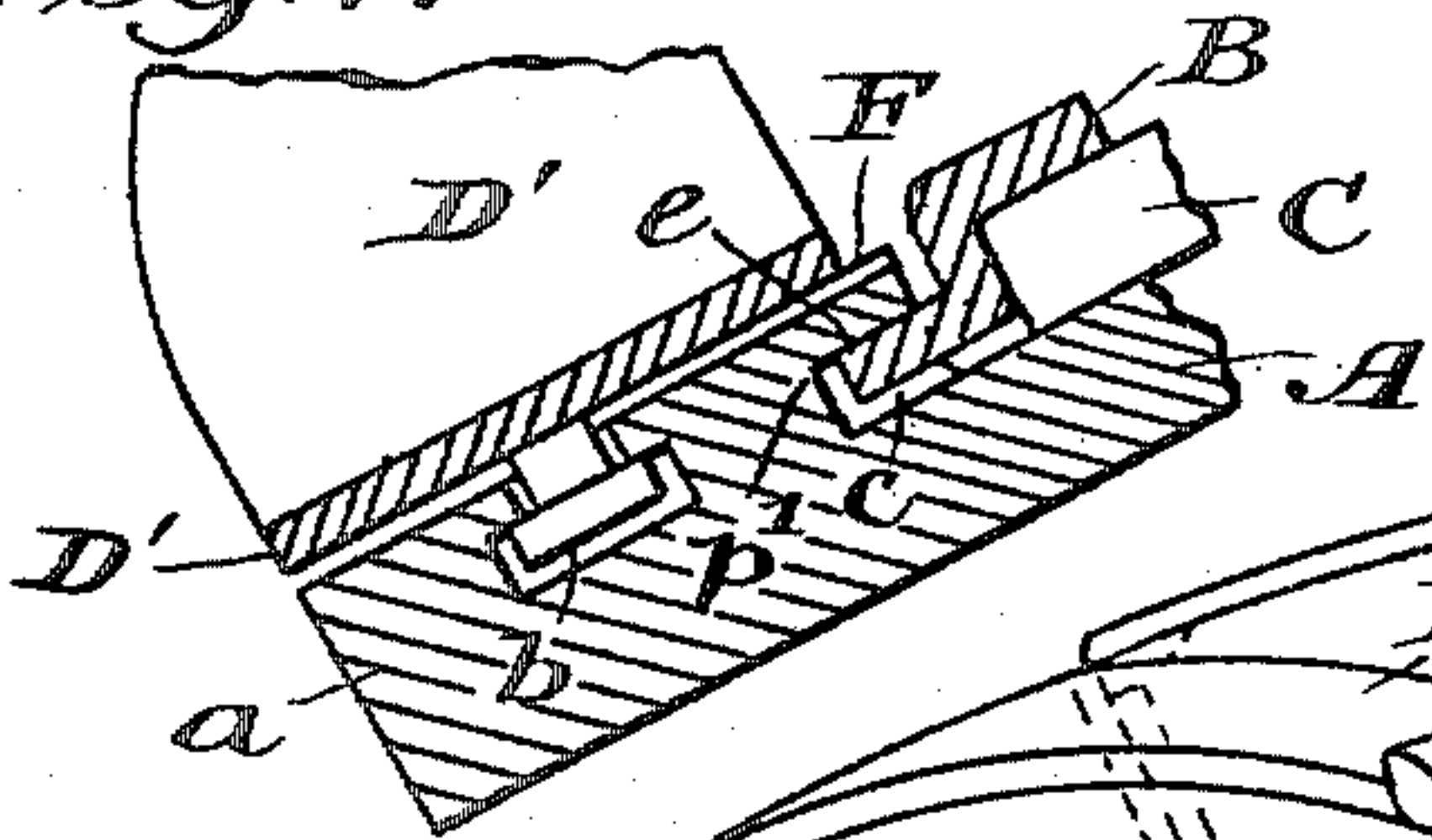
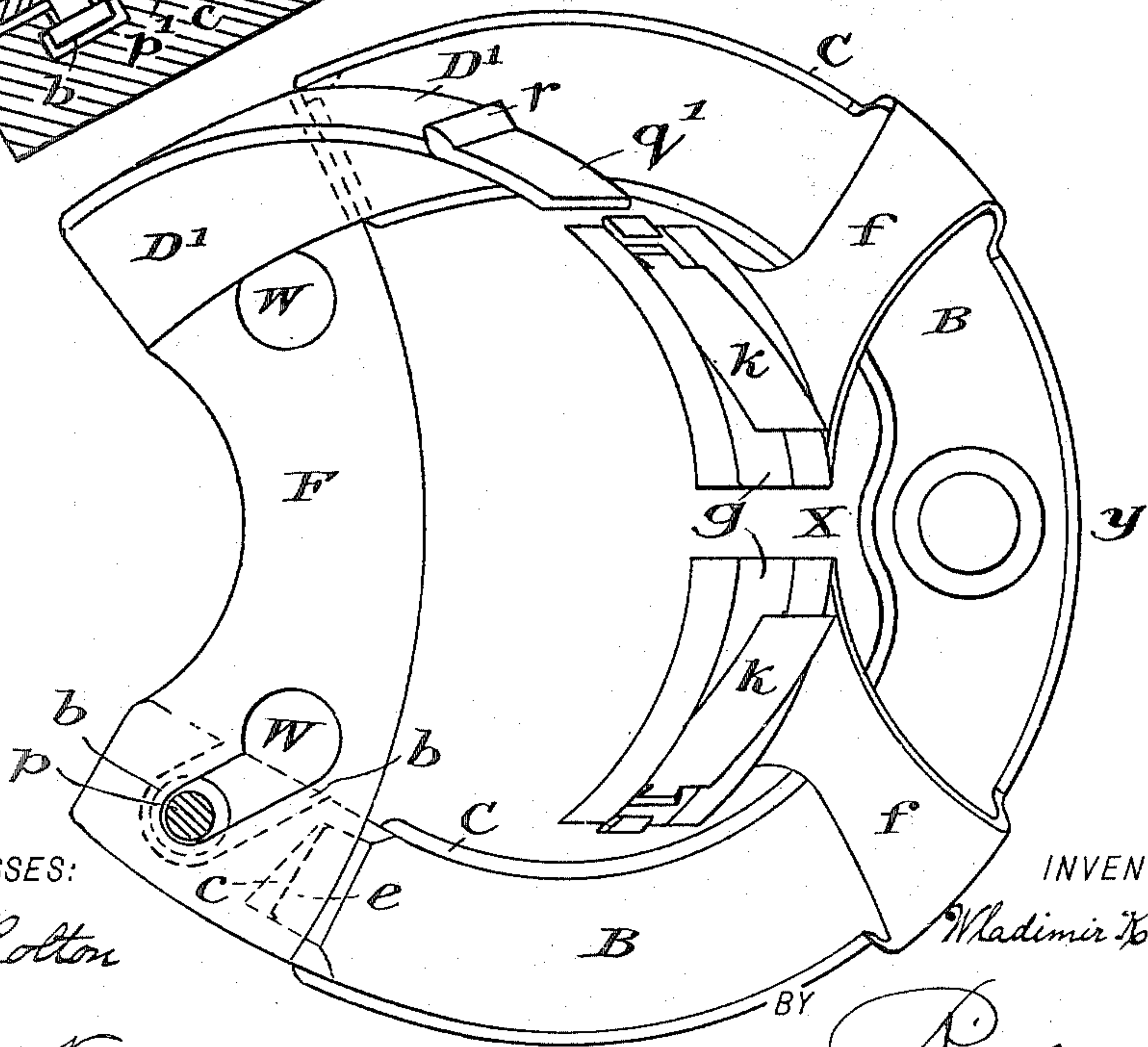


Fig. 3.



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No. 640,309.

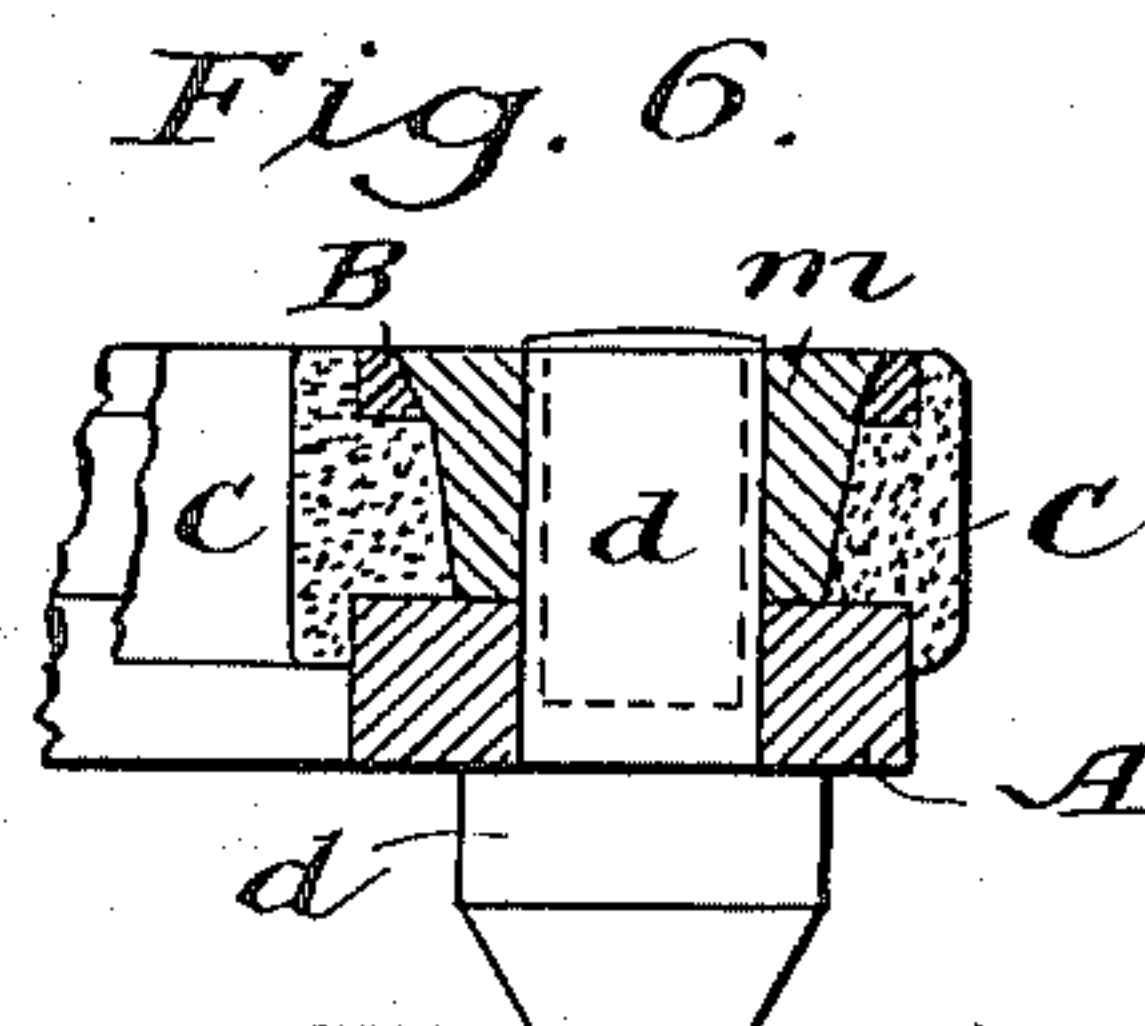
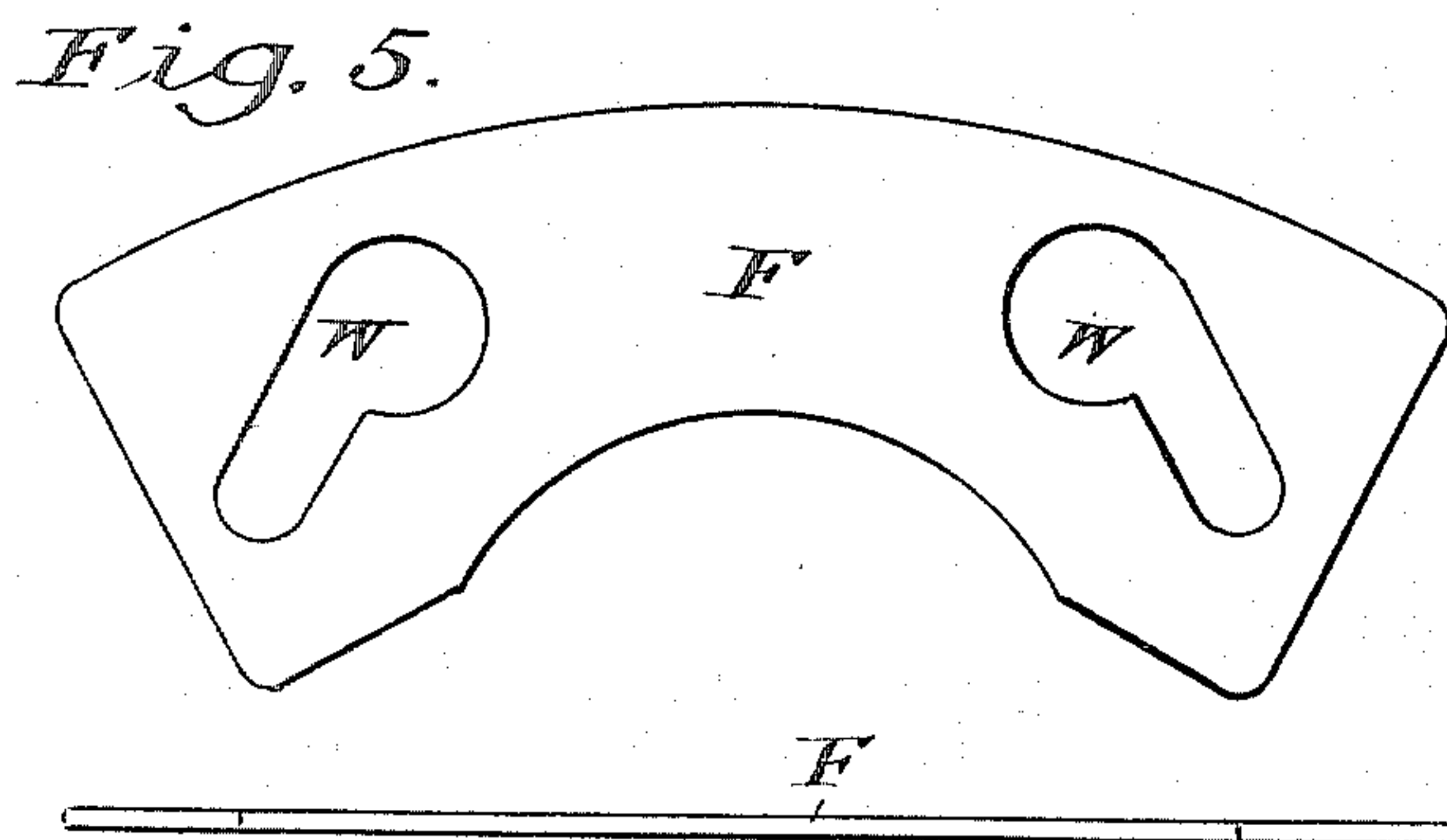
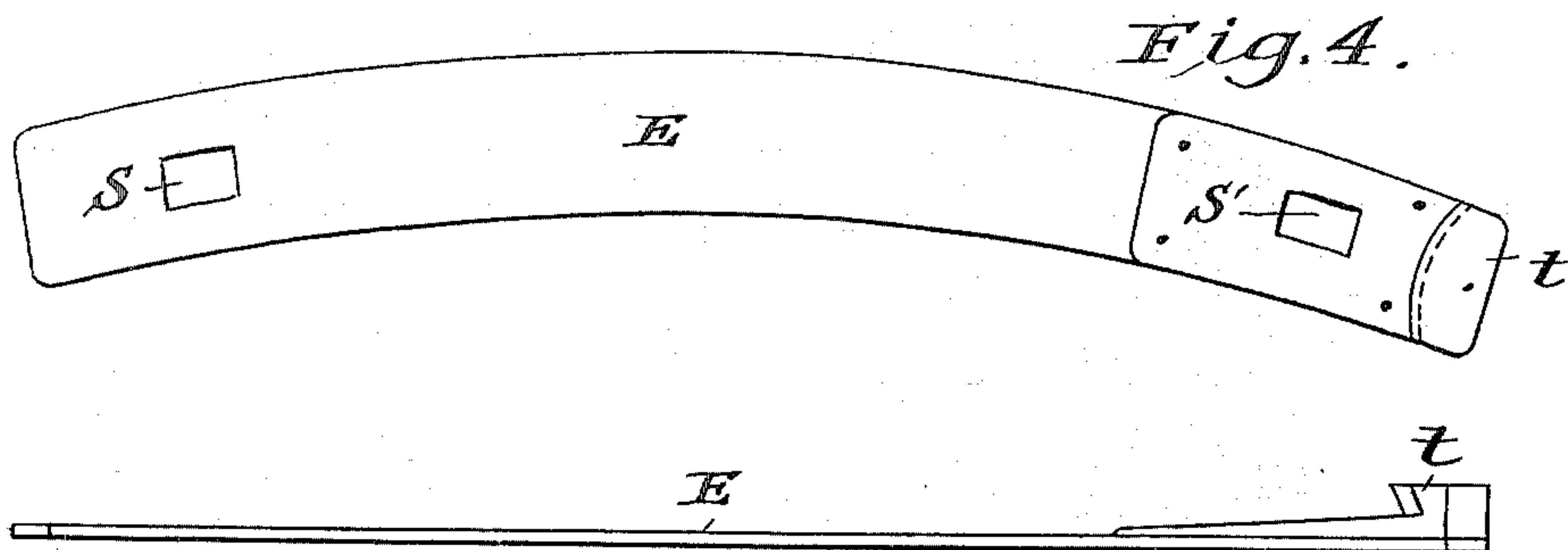
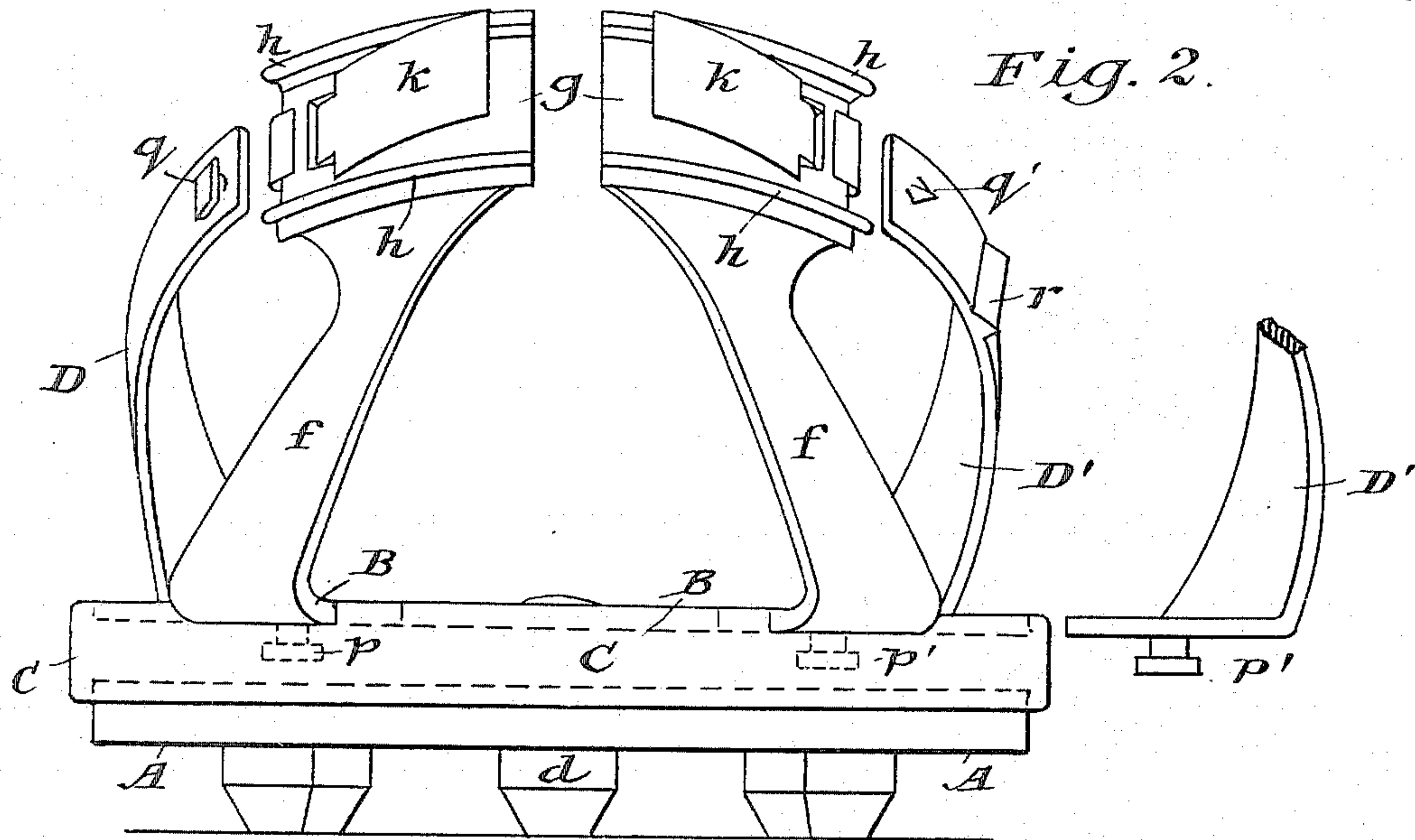
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2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

VLADIMIR KONDAKOV, OF ST. PETERSBURG, RUSSIA.

## NAILLESS HORSESHOE.

SPECIFICATION forming part of Letters Patent No. 640,309, dated January 2, 1900.

Application filed August 10, 1899. Serial No. 726,778. (No model.)

*To all whom it may concern:*

Be it known I, VLADIMIR KONDAKOV, a subject of the Emperor of Russia, and a resident of St. Petersburg, Russia, have invented certain new and useful Improvements in Horseshoes, of which the following is a specification.

The object of the proposed invention is a horseshoe which is fastened to the hoofs without the aid of nails and is easily put on and taken off without the least injury to the hoof.

On the accompanying sheet of drawings, Figure 1 represents the side elevation of the shoe, the fastening-band, Fig. 4, being omitted for sake of clearness of the drawings. Fig. 2 represents a front view of the shoe also without the band. Fig. 3 is a top view of the shoe, the band being omitted, one of the heel-plates being cut down, so as to show more clearly the construction of the hinder extremities of the shoe. Fig. 4 represents the fastening-band. Fig. 5 represents the connecting-plate. Fig. 6 is a sectional detail showing the manner in which the parts of the shoe are secured together. Fig. 7 is a sectional detail showing the construction of the extremities of the shoe with the heel-plate put on.

The proposed horseshoe consists of the following parts: the bottom part or the shoe proper, A; the top part B, with two projections or toe-plates gripping the fore part of the hoof; the rubber lining C; two parts D and D', being the so-called "heel-plates," gripping the hinder part of the hoof, the metallic strip or band E, serving for securing the shoe to the hoof, and the plate F for preventing the shoe from being straightened. The construction of all these parts may be described as follows:

The bottom chief part A has the form of the ordinary horseshoe with three calks. The hinder extremities of this part have projections *a*, provided with  $\perp$  slots *b* and mortises *c*. The fore calk is a loose one, having one end threaded, and serves for fastening the rubber strip C and the top plate B to the shoe A. The top plate B is also in form of a horseshoe. Its extremities *e* are shaped like tenons to fit in the mortises *c* of the bottom part A. On the front of the top plate rise two strips *f*, bent backward, according to the form of the hoof. These two strips on top are spread out,

forming two curved surfaces *g*, which on their upper and lower edges are provided with ribs *h*, between which is placed the fastening-band E. The outer edges of these surfaces have slots for attaching the springs *k*. Between the projections or toe-plates *f* the top plate B is perforated and provided with a pyramidal nut *m* and bolt *d*, which fasten the top plate and rubber lining to the bottom part of the horseshoe. The rubber lining C is a narrow strip of rubber perforated in the middle part to receive the fastening-bolt *d*, the cross-section of the rubber strip having an H form.

The heel-plates D and D' are two curved strips of metal of such a form as to fit tight to the heel of the hoofs. The lower ends of the heel-plates are bent, forming nearly straight angles, and provided with studs *p* and *p'*, which are put in the T-slots of the bottom part of horseshoe A. On top of the heel-plates are provided catches *q* and *q'*, and one of the heel-plates—for instance, D', embracing the hoof from the outer side—is further provided with another catch *r*.

The fastening-band E is an elastic steel strip having on one end a slot *s*, into which engages the catch *q* of one of the heel-plates. On the other end, beside the slot *s'*, is a catch *t*.

The hoofs while the horse is running constantly spread out and contract, stretching the horseshoe, which thus slackens. For preventing this is provided the plate F, with slots *w*, by which it is placed on the T grooves or slots of the bottom part A and by the aid of the studs *p* and *p'* of the heel-plates connects both extremities of the shoe.

When putting on the horseshoe, the top ends of the heel-plate are turned aside, the fastening-band E is connected to the catch *q* by the slot *s* and bent over the surfaces *g* of the toe-plates, pressing against the springs *k*. Then by pincers are simultaneously seized the catch *r* of the outer heel-plate and the catch *t* of the fastening-band E, and the latter is connected to the second heel-plate by means of the slot *s'* and the catch *q'*. By the tension of the band E the heel-plates and the toe-plates are firmly pressed against the hoof and grasp it with a power sufficient to hold the horseshoe on the hoof, which is considerably aided by the springs *k*. In such a manner the shoe is secured on the hoof. When tak-



ing the shoe off, it is sufficient to disconnect by pincers the fastening-band E.

The heel-plates and toe-plates have their inner sides pressing against the hoof lined  
5 by any soft metal for preventing any injury to the hoof.

I claim as my invention—

1. A nailless horseshoe comprising a shoe-plate, heel-plates detachably connected there-  
10 with, independent toe-plates carried at the front of said shoe-plate and having transverse channels at their upper ends, and a fastening-band connecting the extremities of the heel-plates and resting in said channels, sub-  
15 stantially as described.

2. A nailless horseshoe comprising a shoe-plate, heel-plates detachably connected there-  
with, independent toe-plates carried at the front of said shoe-plate and having trans-  
20 verse channels at their upper ends, and a fastening-band connecting the extremities of the heel-plates and resting in said channels, and a spring interposed between said band and channels, substantially as described.

25 3. In a nailless horseshoe, a shoe-plate comprising a base-plate A, a top plate having hori-

zontally-extended tongues at its rear ends engaging corresponding grooves or recesses in the rear ends of the bottom plate, elastic material interposed between said plates, means 30 for connecting the forward portions of said plates together, and means for securing the shoe-plate to the hoof, substantially as described.

4. In a nailless horseshoe, a shoe-plate com- 35 prising a base-plate A, a top plate having tongues at its rear ends engaging corresponding grooves or recesses in the rear ends of the bottom plate, elastic material interposed between said plates, said elastic material hav- 40 ing upwardly and downwardly extending flanges, overlapping said upper and lower plates on each side, means for connecting the forward portions of said plates together, and means for securing the shoe-plate to the hoof, 45 substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WLADIMIR KONDAKOV.

Witnesses:

N. TSCHÉKALOFF,

J. BLAU.