

No. 751,693.

PATENTED FEB. 9, 1904.

W. A. SHAW.
RAIL JOINT.

APPLICATION FILED AUG. 17, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

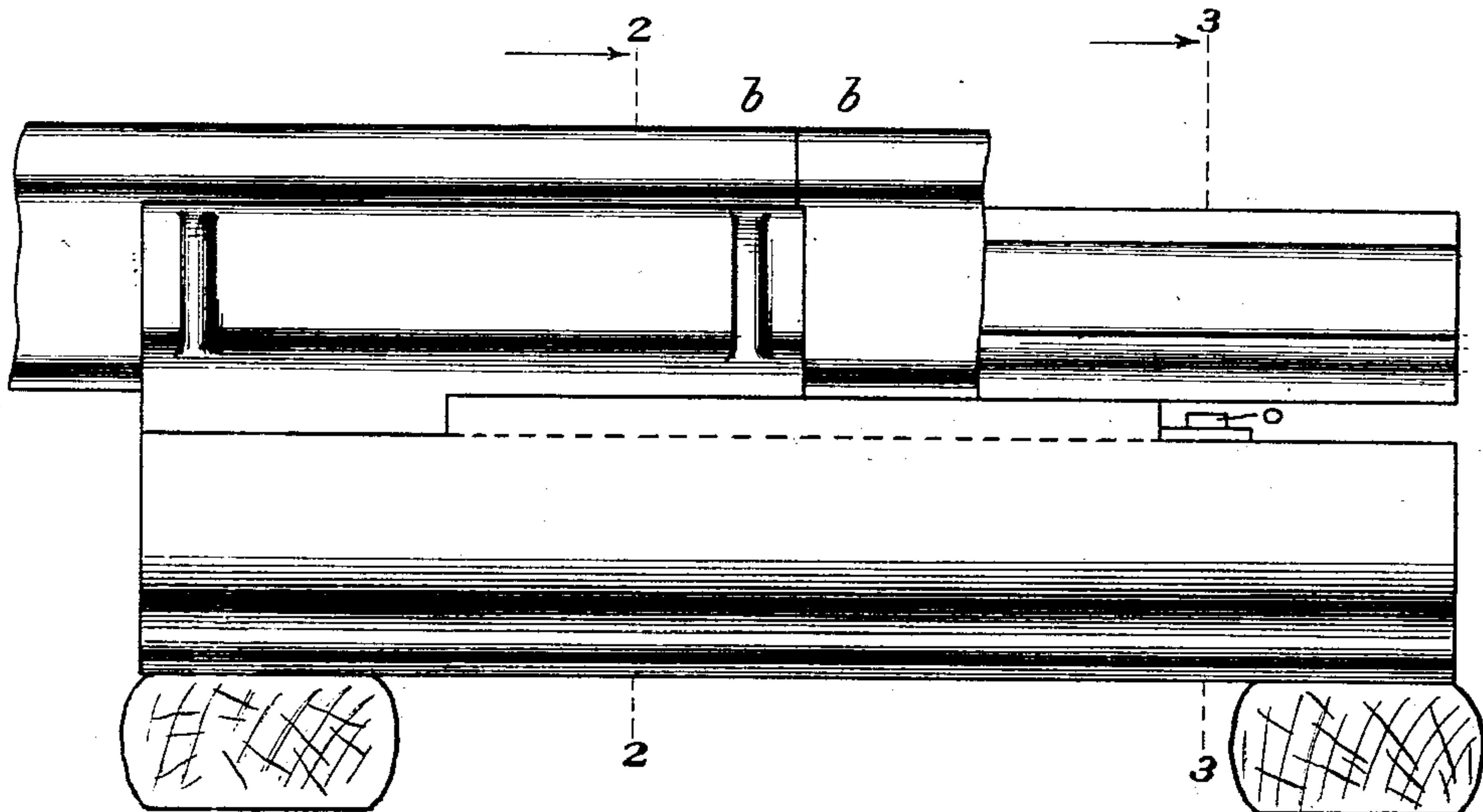


Fig. 1

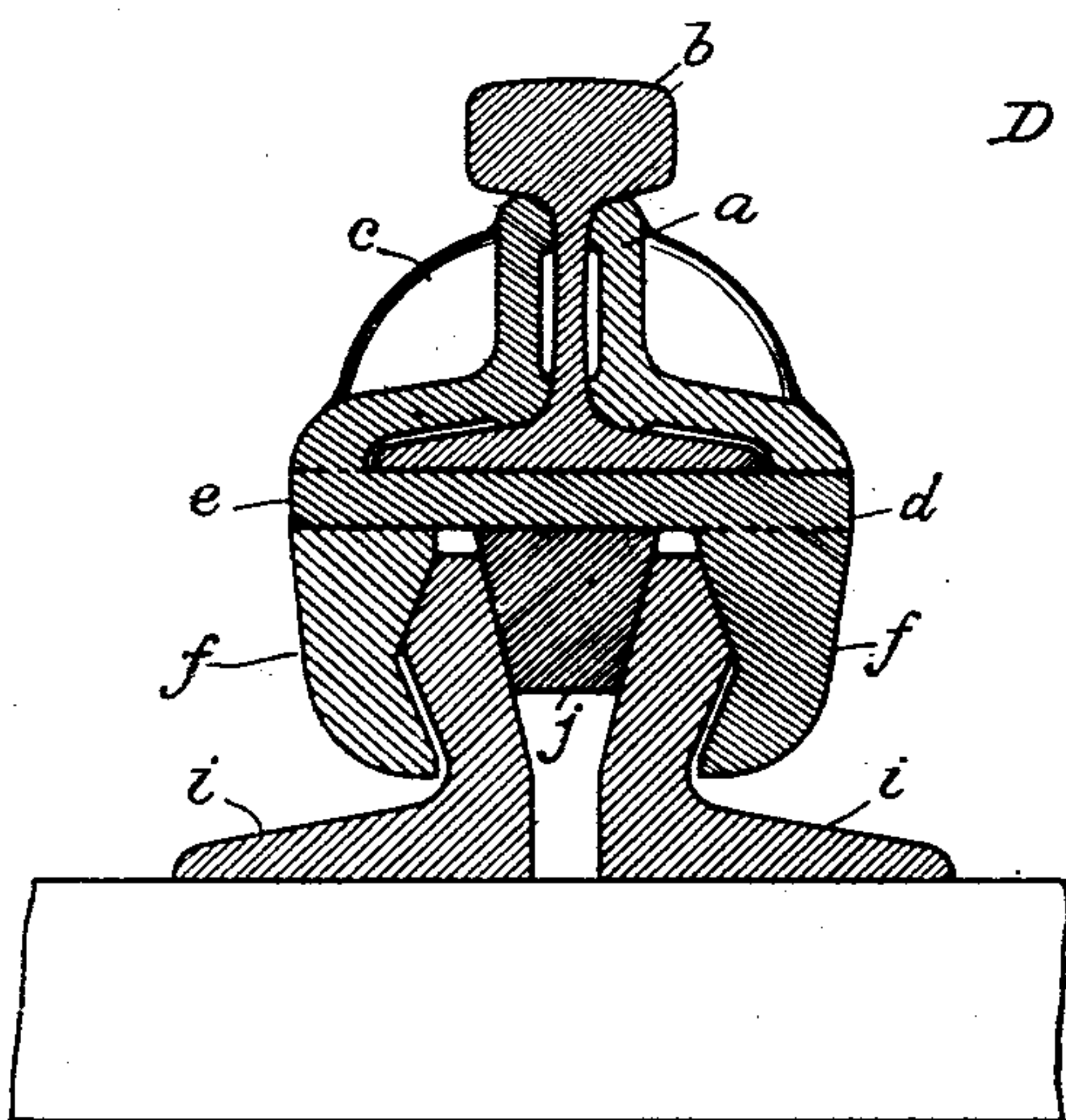


Fig. 2

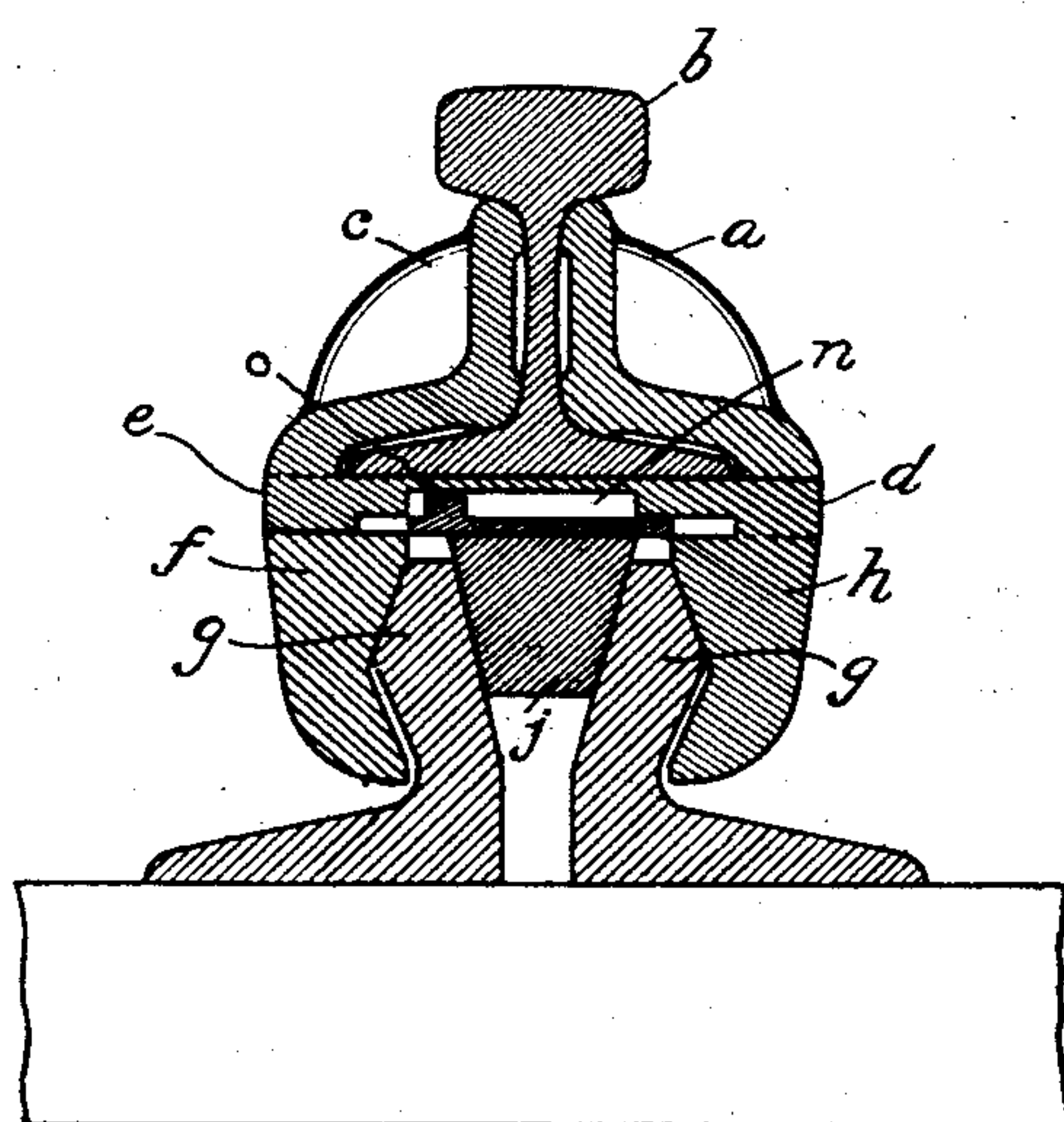


Fig. 3

Witnesses:
John L. Tunisore.
W. Perry Hahn

Inventor:
Warwick A. Shaw

No. 751,693.

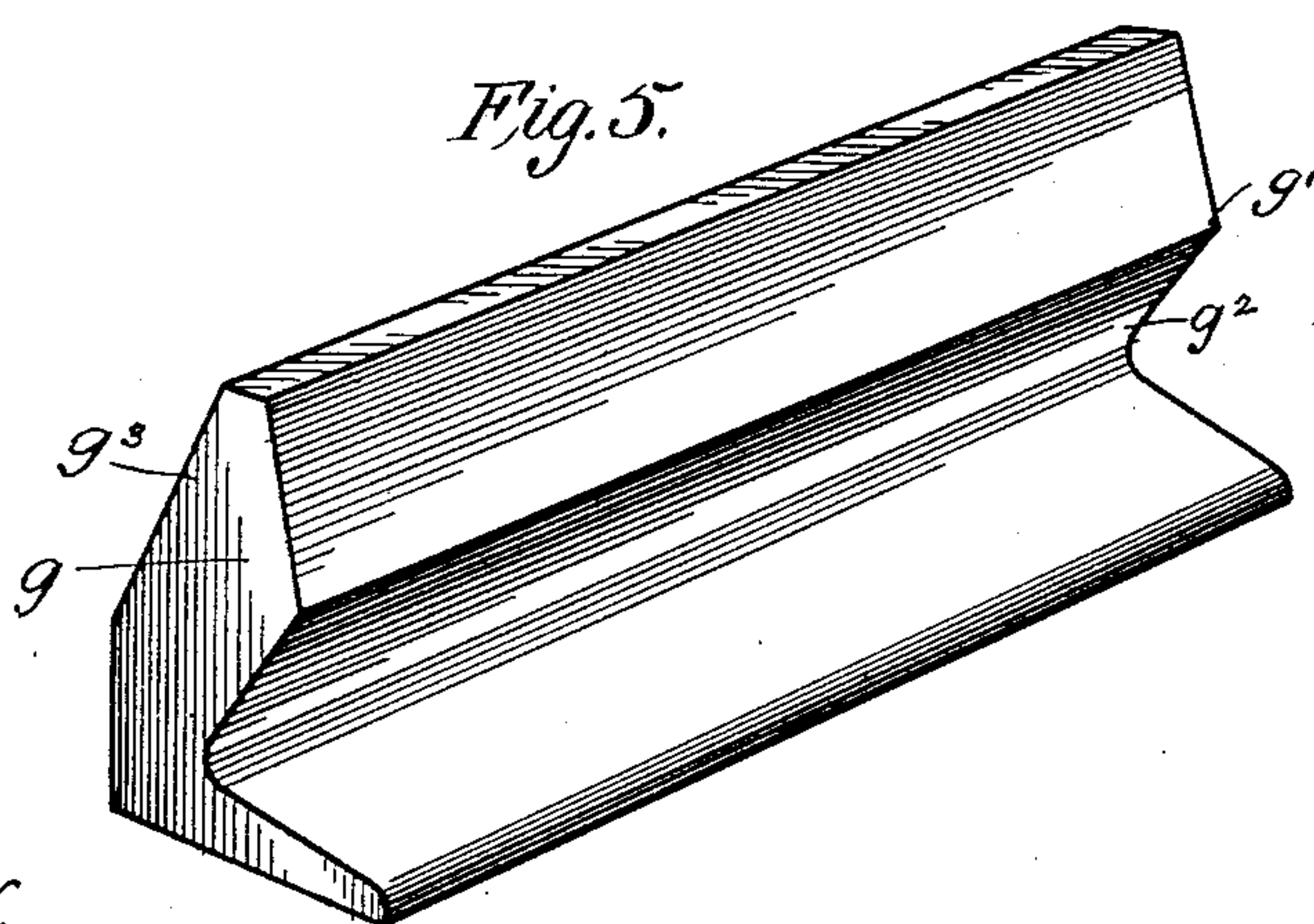
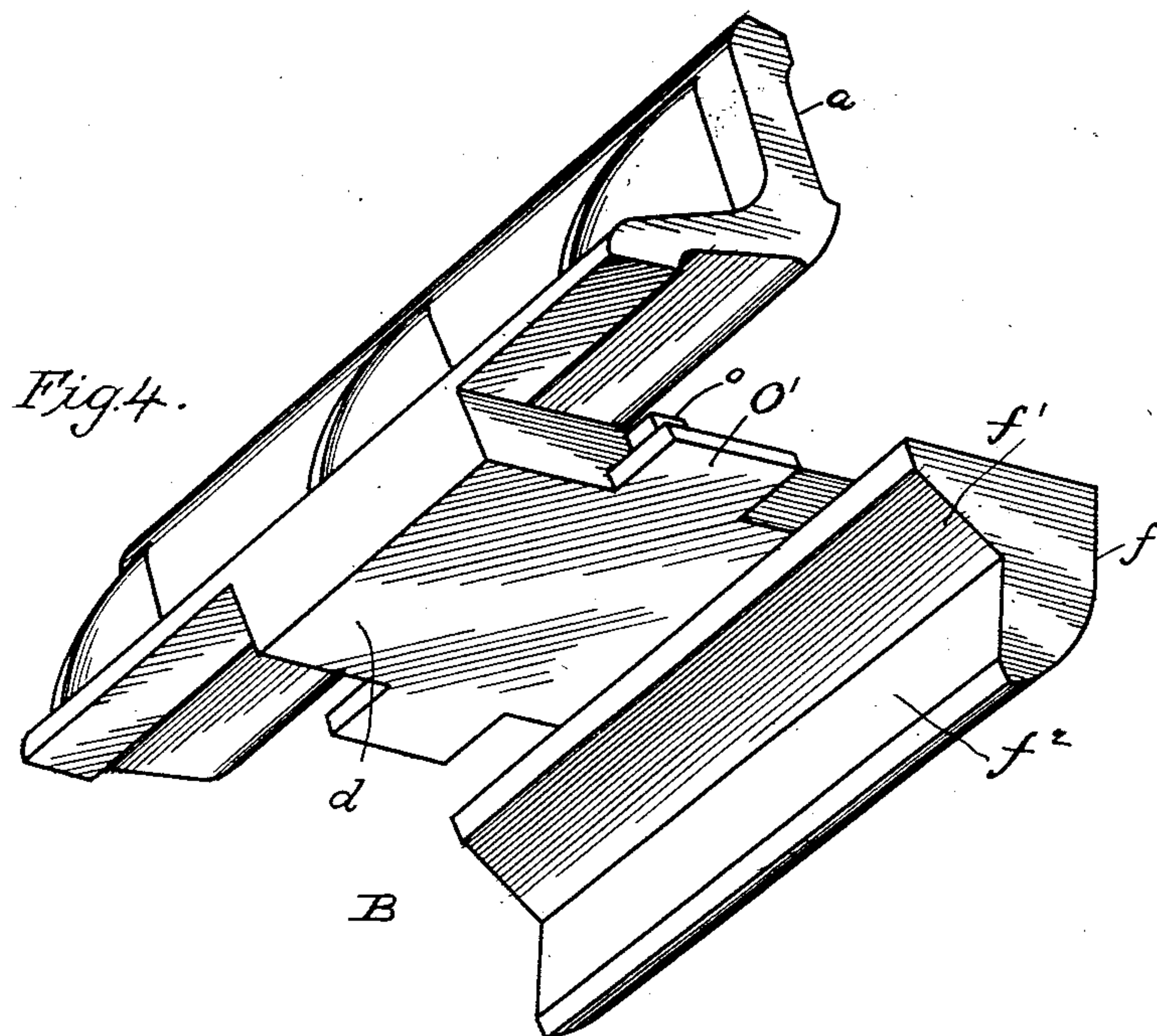
PATENTED FEB. 9, 1904.

W. A. SHAW.
RAIL JOINT.

APPLICATION FILED AUG. 17, 1903.

NO MODEL.

3 SHEETS—SHEET 2.



Witnesses.
John L. Timison.
W. Perry Hahn

Inventor.
Warwick A. Shaw

No. 751,693.

PATENTED FEB. 9, 1904.

W. A. SHAW.
RAIL JOINT.

APPLICATION FILED AUG. 17, 1903.

NO MODEL.

3 SHEETS—SHEET 3.

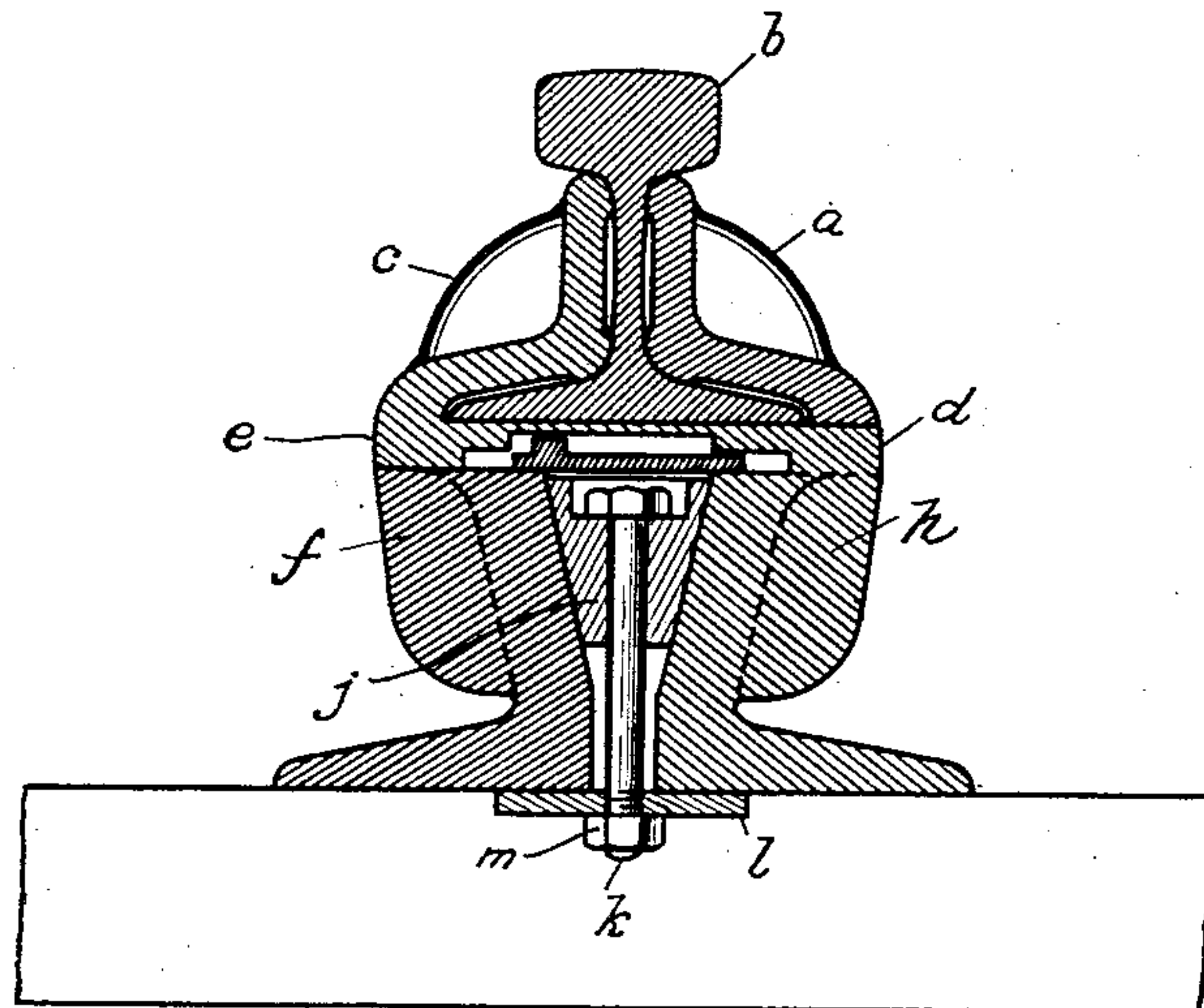


Fig. 7.

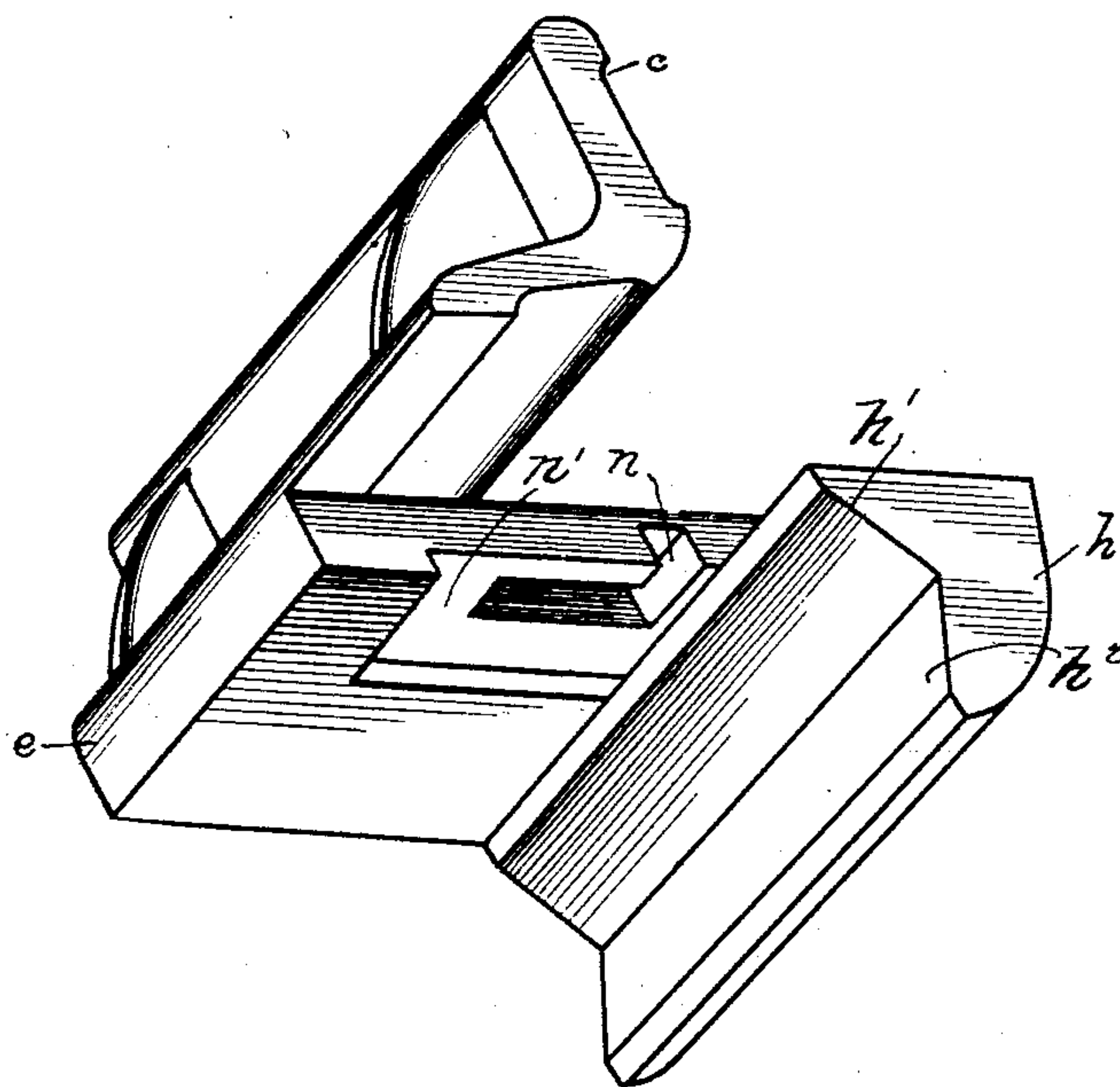


Fig. 6.

Witnesses:
John L. Turison.
H. Perry & Co.

Inventor
Warwick A. Shaw.

UNITED STATES PATENT OFFICE.

WARWICK A. SHAW, OF CHICAGO, ILLINOIS.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 751,693, dated February 9, 1904.

Application filed August 17, 1903. Serial No. 169,836. (No model.)

To all whom it may concern:

Be it known that I, WARWICK A. SHAW, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Rail-Joints, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to certain improvements in rail-joints, and more particularly to that class of joints in which the fish-plate serves to hold the two ends of the rail together and also support the rails at their point of connection. It has for its object to provide means whereby the ends of the rails will be securely held in position and not be displaced by the jar of the train in passing over the joint.

A further object is to provide a rail-joint in which the weight upon the rails will serve to hold the ends of the rails in position instead of jarring them loose, as has heretofore been experienced.

Also my invention is designed to more securely hold the rails in perfect alinement and prevent any unevenness in the tracks at the points where the rails are joined.

I have shown the preferred embodiment of my invention in the accompanying drawings, in which—

Figure 1 is a side elevation of my device, portions being broken away to more clearly show the rail-gripping device. Fig. 2 is a transverse section taken on the line 2 2 of Fig. 1. Fig. 3 is a transverse section taken on the line 3 3 of Fig. 1. Fig. 4 is a perspective view of one side of the rail-joint. Fig. 5 is a perspective view of the supporting device for the rail-joint. Fig. 6 is a perspective view of the opposite side of the rail-gripping device, and Fig. 7 is a sectional view showing a modification of means for causing the gripping device to engage the rails.

In the construction which I have worked out as the most practical form of my invention upon one side of the rails *b* I arrange one portion of my gripping device, comprising a fish-plate *a*, arranged to bear against the rail

at a point immediately beneath the tread of the rail and above the flange and a base-plate *d*, which is formed integral with the fish-plate and arranged at intermediate points between its ends and passes beneath the rail to the opposite side thereof. Depending from the opposite end of the base-plate *d* is an arm *f*, also formed integral with the base-plate, and the inner side of this arm has an outwardly-inclined face *f'* at the upper part thereof, the lower part having an inwardly-inclined face *f''*. Upon the base-plate between the points where the fish-plate *a* and the depending arm or plate *f* join on both sides of the plate are formed keys *o* and projecting guards *o'*.

The above-described portion of the gripping device is arranged to act in conjunction with two devices on the opposite side of the rail. As these two devices are similar in construction, I shall only describe one of them. Each portion comprises a fish-plate *e*, provided at its outer end with a base-plate *e*, formed integral therewith, which passes beneath the rail and lies in a position beside the base-plate *d*. Formed in the plate *e* is a slot *n*, in which the key *o* is adapted to engage, and also a groove *n'*, in which the key-guard *o*, is adapted to rest. Upon the opposite side of the base-plate *e* is a downwardly-extending arm *h*, also formed integral with the base-plate and having an outwardly-inclined face *h'* and an inwardly-inclined face *h''*, formed upon the inner side thereof.

Suitable supports *g* are arranged beneath the base-plates *d* and *e* and between the downwardly-extending arms *f* and *h*. These supports have formed upon their outer sides an outwardly-inclined face *g'* and an inwardly-inclined face *g''*, which coact with the faces of the downwardly-extending arm. The inner faces of the supports are inclined, as at *g'''*, and between the supports is adapted to be placed a wedge *j*. This wedge is formed large enough to at first project above the supports and hold the base-plates out of engagement with said supports; but as the trains pass over the rails they are forced downwardly, thereby forcing the wedge down between the two supports, spreading the same and the two depending arms *f* and *h*, thereby

drawing the fish-plates toward each other through the medium of the bed-plates and causing the fish-plates to firmly grip the rails. The outwardly-inclined faces f' and h' upon the downwardly-extending arms coact with the faces g' upon the supports to aid in supporting the bed-plates and also as the supports are spread apart to aid in causing the fish-plates to firmly engage the ends of the rails.

In Fig. 7 I have shown a modification of means for drawing the wedge downwardly. In this form instead of depending upon the rail to force the wedge between the two supporting-plates a bolt k is passed through the wedge, a nut m , having a washer L interposed between it and the bottom of the supports, being screwed upon its lower end to draw it tight. It will be seen that by tightening the nut the wedge will be drawn downwardly and the supports spread, causing the fish-plates to grip the rails. It will also be seen that in this form I may dispense with the inclined faces upon the outer sides of the supports and the inclined faces upon the inner sides of the downwardly-extending arms and form the supports and arms in one integral portion. While I have described a bolt for operating the construction shown in the modification, it will be apparent that I may also use a bolt in connection with the preferred structure or I may use any other means for drawing the wedge downwardly, and I do not wish to limit myself to the particular means shown and described in my specification. It will also be seen that I may use the wedge shown in my preferred form in connection with the modification.

Although I have shown and described the preferred embodiment of my invention, I do not wish to limit myself to this form, as there are numerous changes which may be made without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a rail, of means for holding the same, arranged upon opposite sides thereof and having overlapping parts, and means for operating said parts to cause said first-mentioned means to grip the rail.

2. The combination with a rail, of means for holding the same arranged upon opposite

sides thereof, and having overlapping parts, and means operated by the downward pressure of the rail for separating said parts to effect a firmer holding of the rail by said first-mentioned means.

3. The combination with a rail, of means for holding the same arranged upon opposite sides thereof and having overlapping parts, supports for said means and means for separating said parts to cause said first-mentioned means to grip the rail.

4. The combination with a rail, of means for holding the same, arranged upon opposite sides thereof and having overlapping parts, supports arranged between said parts and means operated by downward pressure of the rail for spreading said supports whereby said holding means are drawn together to grip the rail.

5. The combination with a rail, of fish-plates arranged upon opposite sides thereof and having parts extending beneath and supporting said rail, supports for said fish-plates and means for moving said supports whereby said fish-plates are drawn together to grip the rail.

6. The combination with a rail, of fish-plates arranged upon opposite sides thereof and having overlapping parts, supports arranged between said overlapping parts, and a wedge arranged between said parts and operated by the downward pressure of the rail to draw said fish-plates toward each other.

7. The combination with a rail, of fish-plates arranged on opposite sides thereof and having overlapping parts, supports arranged between said parts and cooperating with the same to draw said fish-plates toward each other when downward pressure is exerted upon the rail.

8. The combination with a rail, of fish-plates arranged on opposite sides thereof and having overlapping parts, supports arranged between said parts, and cooperating with the same when downward pressure is exerted upon the rail to draw said fish-plates together, and means for spreading said supports.

In witness whereof I have hereunto subscribed my name in the presence of two witnesses.

WARWICK A. SHAW.

Witnesses:

W. PERRY HAHN,
WILLIAM G. LAUB.