

No. 644,071.

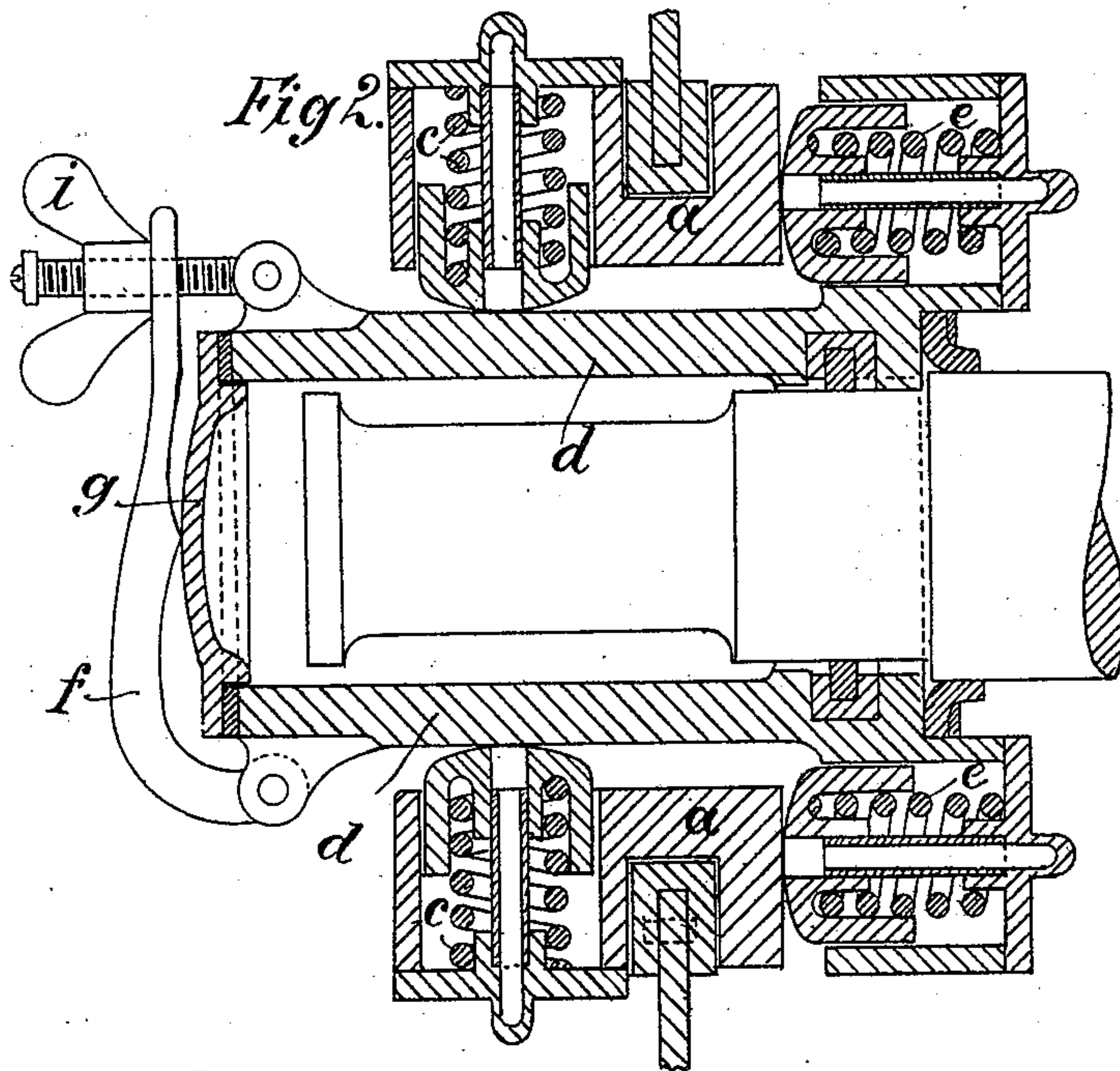
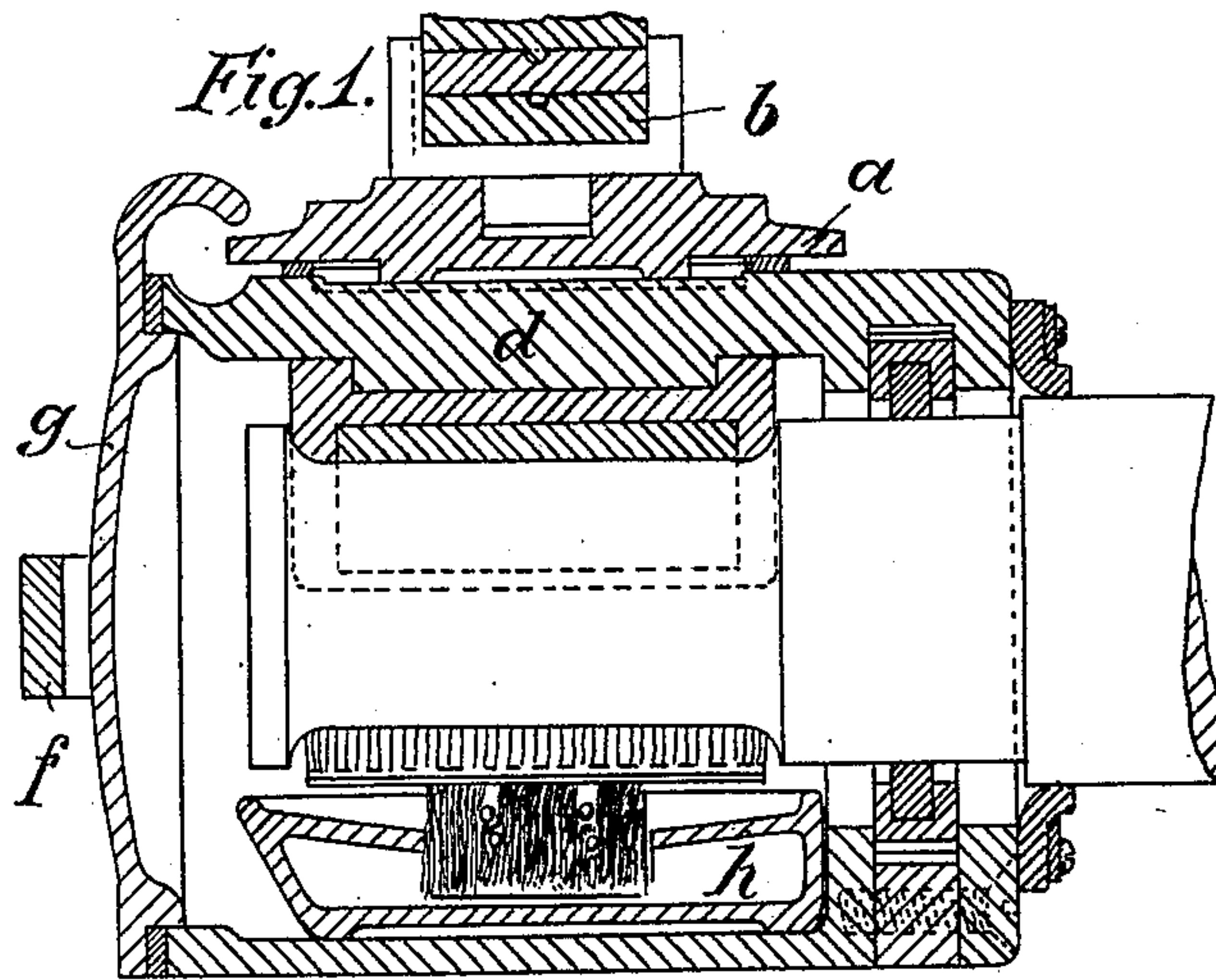
Patented Feb. 27, 1900.

H. GUMMI.
AXLE BOX.

(Application filed Apr. 7, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
William Miller.
William Schulz.

Inventor:
Hans Gummi
per *Roeder & Briesen*
Attorneys

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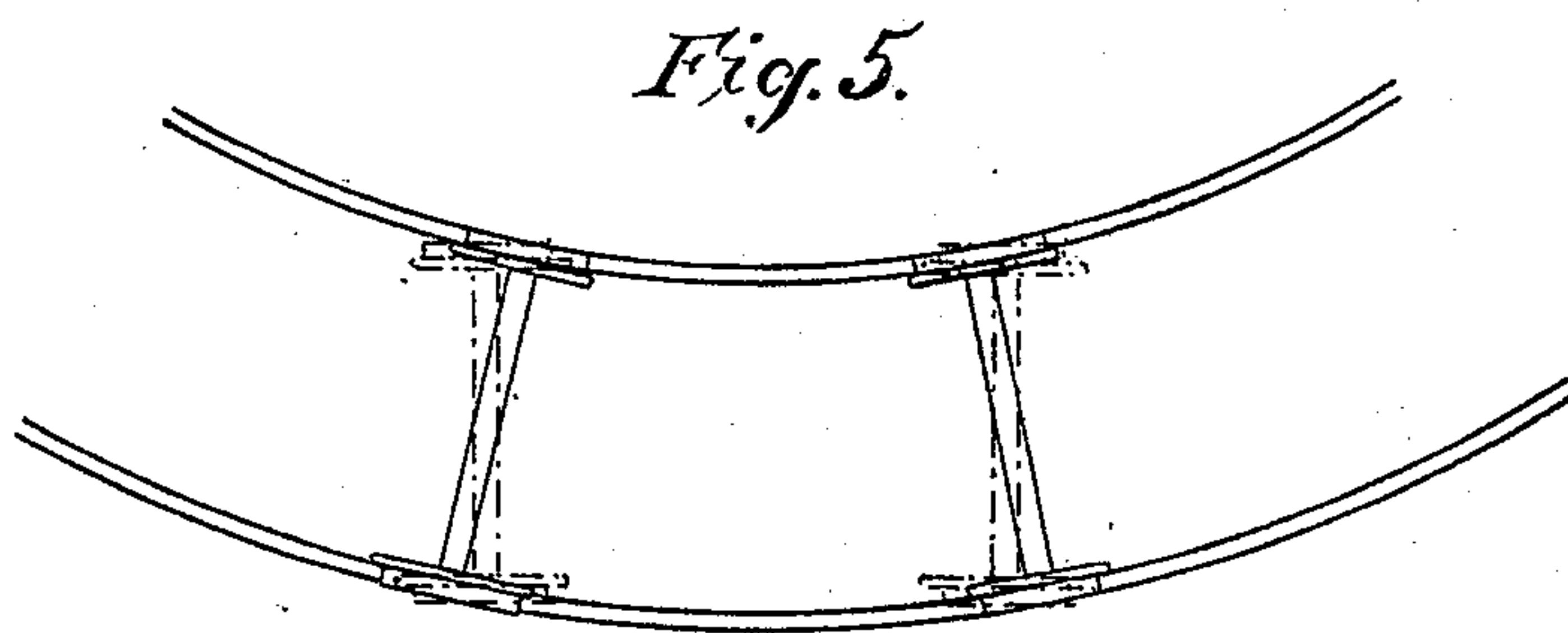
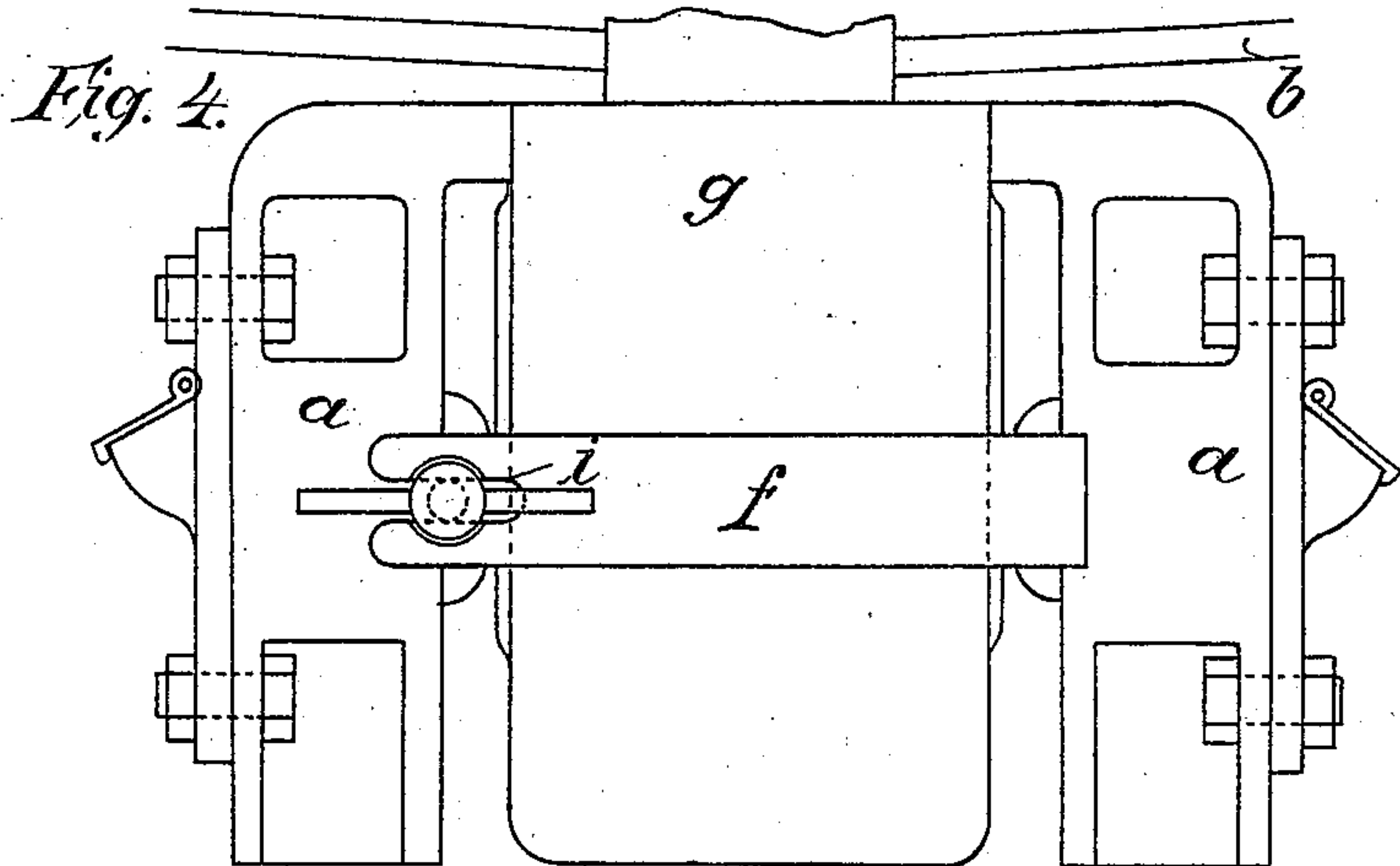
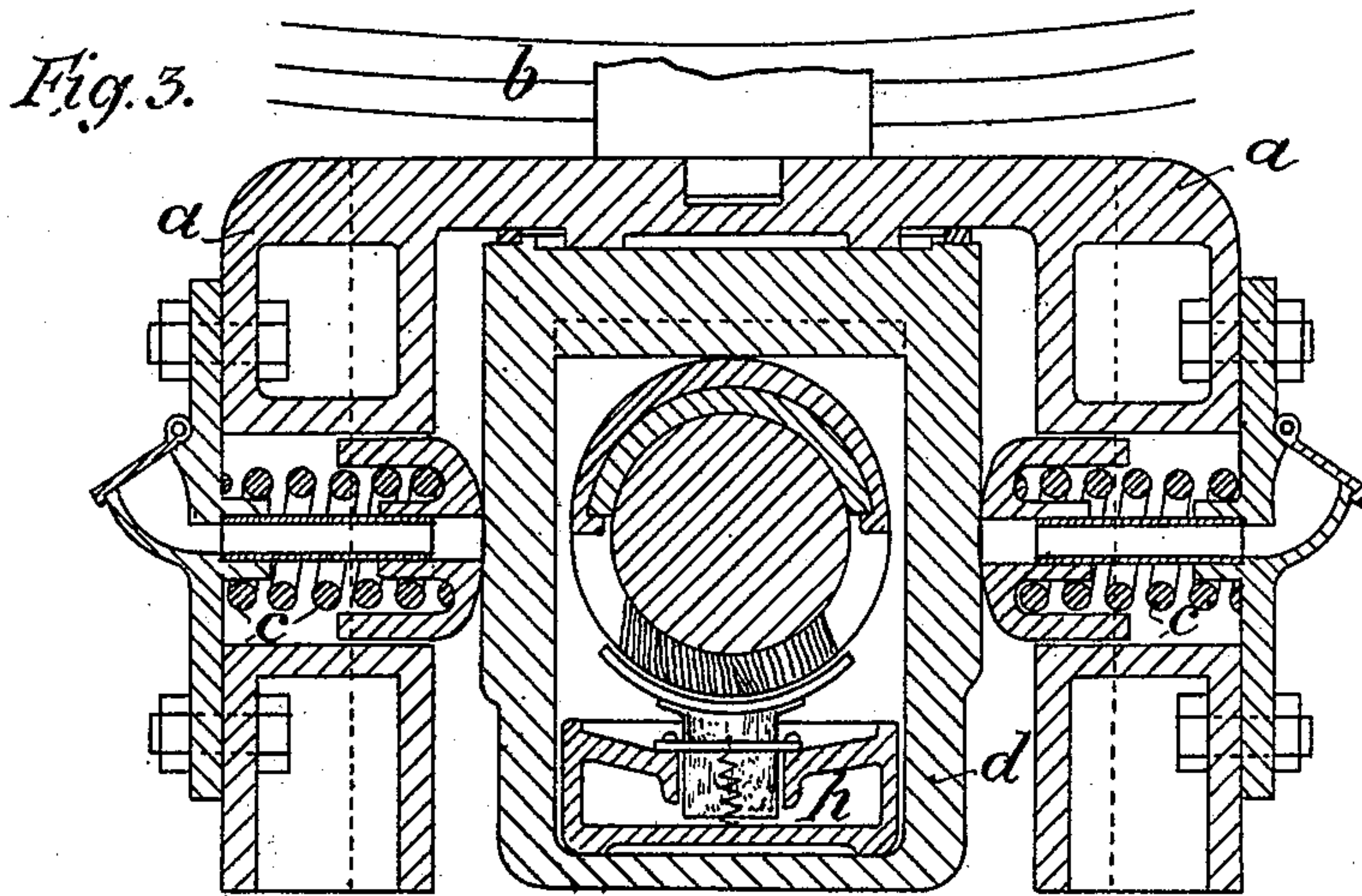
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AXLE BOX.

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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

HANS GUMMI, OF BAUTZEN, GERMANY, ASSIGNOR OF ONE-HALF TO
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AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 644,071, dated February 27, 1900.

Application filed April 7, 1899. Serial No. 712,140. (No model.)

To all whom it may concern:

Be it known that I, HANS GUMMI, engineer, a subject of the King of Saxony, and a resident of Bautzen, in the Kingdom of Saxony, Germany, have invented certain new and useful Improvements in Axle-Boxes, of which the following is a specification.

This invention, which relates to axle-boxes for railway and tramway carriages and the like, consists, substantially, of an axle-box which is displaceable horizontally in two directions—*i. e.*, in the direction of travel as well as at a right angle thereto—and is returned to its normal position by means of spiral springs and a guiding-frame which is connected with the bearing-spring in order that a complete radial adjustment of the axle end may be secured at every bend of the road, and thereby the wear of the tires and rails considerably reduced when running on curves. Furthermore, in consequence of the radial adjustment of the axles the distance between them when running on a curve will be increased. Thereby a smoother travel is obtained and the carriage is prevented from running off the track.

Figure 1 of the accompanying drawings is a vertical section of an axle-box constructed according to the invention; Fig. 2, a horizontal section, and Fig. 3 is a vertical cross-section, of the same. Fig. 4 is a front view elevation of the same. Fig. 5 is a diagram showing part of the track and the radial adjustment of the carriage-axle on a curve.

The fixed guiding-frame *a*, on which the bearing-spring *b* is arranged, is fitted with two transversely-arranged spiral springs *c*, lying opposite to one another at a right angle to the axle and bearing on the opposite sides of the axle-box *d*, so that the end of the latter may be displaced in the direction of travel. The axle-box *d* is fitted with two longitudinally-arranged spiral springs *e*, arranged parallel to

the axle and bearing against the end of frame *a*, so as to enable the end of the axle to be displaced in the direction of its length—*i. e.*, at a right angle to the direction of travel.

The construction of the present axle-box differs essentially from those hitherto known in the fact that the actual axle-box is displaceable horizontally in a fixed guiding-frame *a* in the direction of travel as well as at a right angle thereto. The axle-box is closed at the end by a cover *g*, which is kept closed by means of an iron piece or pivoted strap *f*. This last-mentioned piece is screwed up tightly by means of a winged nut *i*. A lubricating apparatus *h* prevents the axle from becoming hot in the axle-bearing. By removing the cover *g* the lubricating vessel *h* can be conveniently removed. Packing-rings or the like arranged at suitable spots prevent dust, dirt, or other matter from penetrating into the axle-bearings.

The axle-box hereinbefore described can be applied to all carriages running on rails, and any alteration thereof made in accordance with the necessary dimensions of the axle is purely constructional in its nature.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In an axle-bearing, an axle-box, a pair of springs *c*, arranged at right angles thereto and adapted to permit a lateral displacement of the box, and a pair of springs *e*, fitted to the box parallel to the axle and adapted to permit a longitudinal displacement of the same, substantially as specified.

Signed by me at Zittau, Germany, this 2d day of March, 1899.

HANS GUMMI.

Witnesses:

OTTO B. GULICH,
OTTO LUCHS.