

No. 771,022.

PATENTED SEPT. 27, 1904.

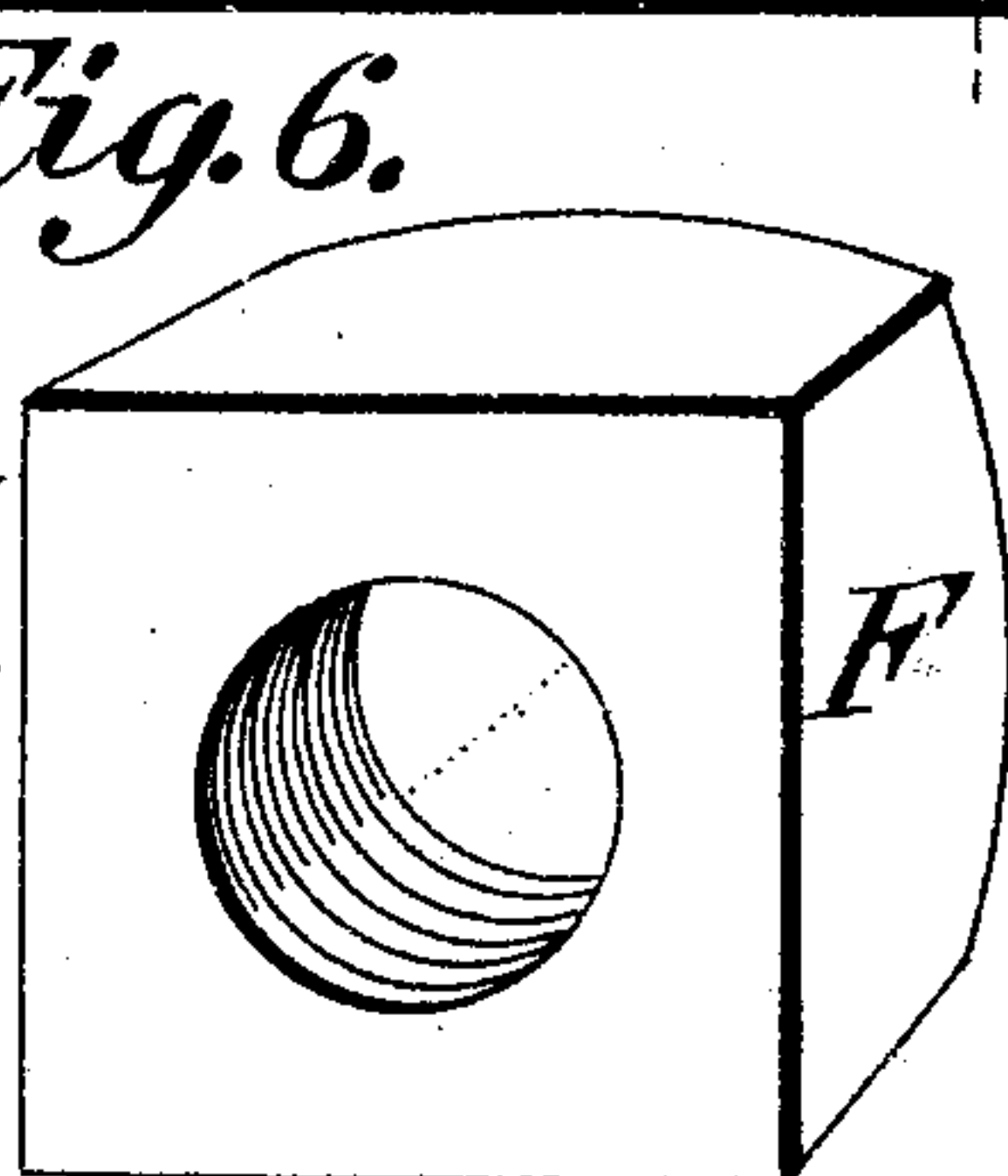
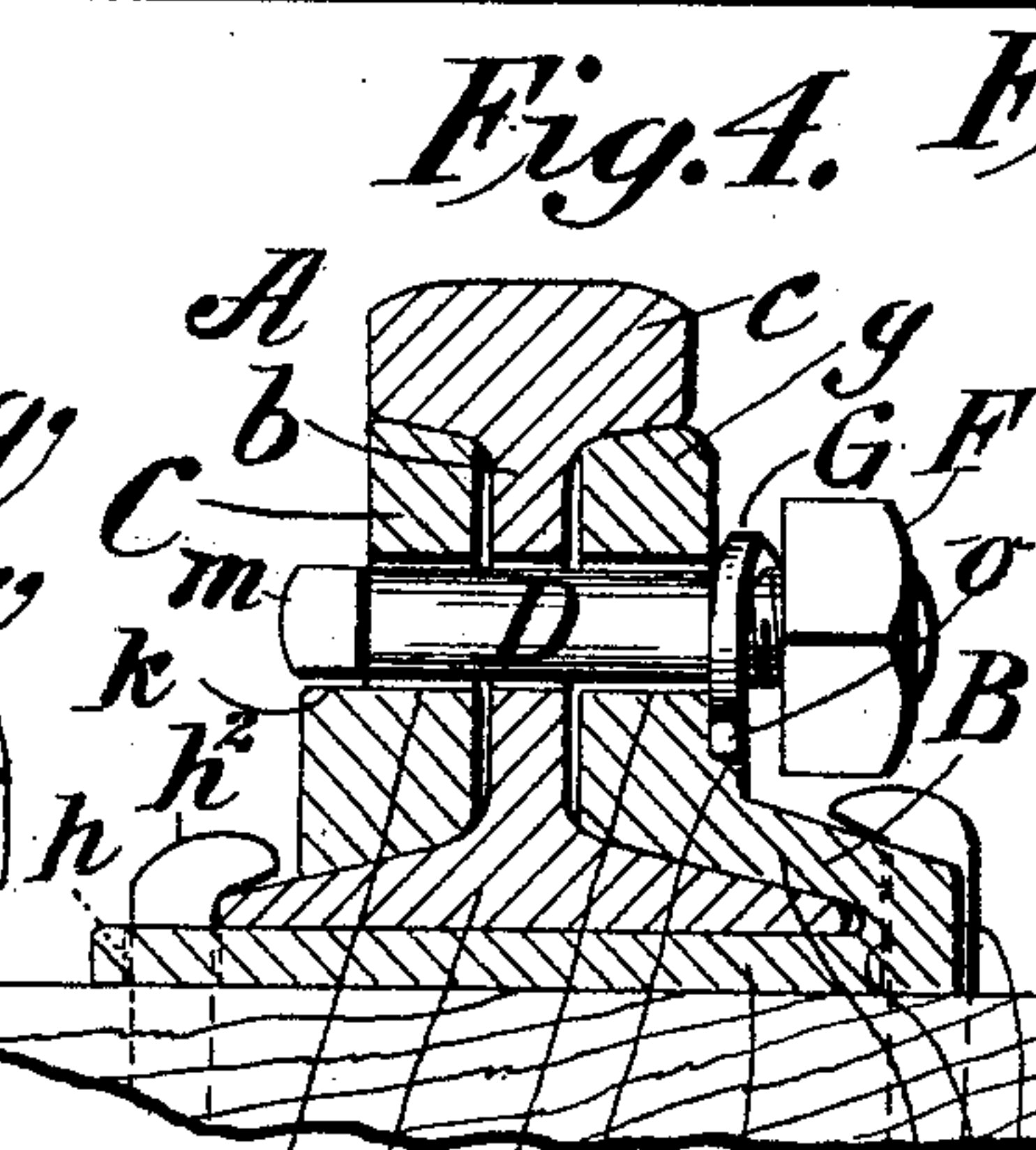
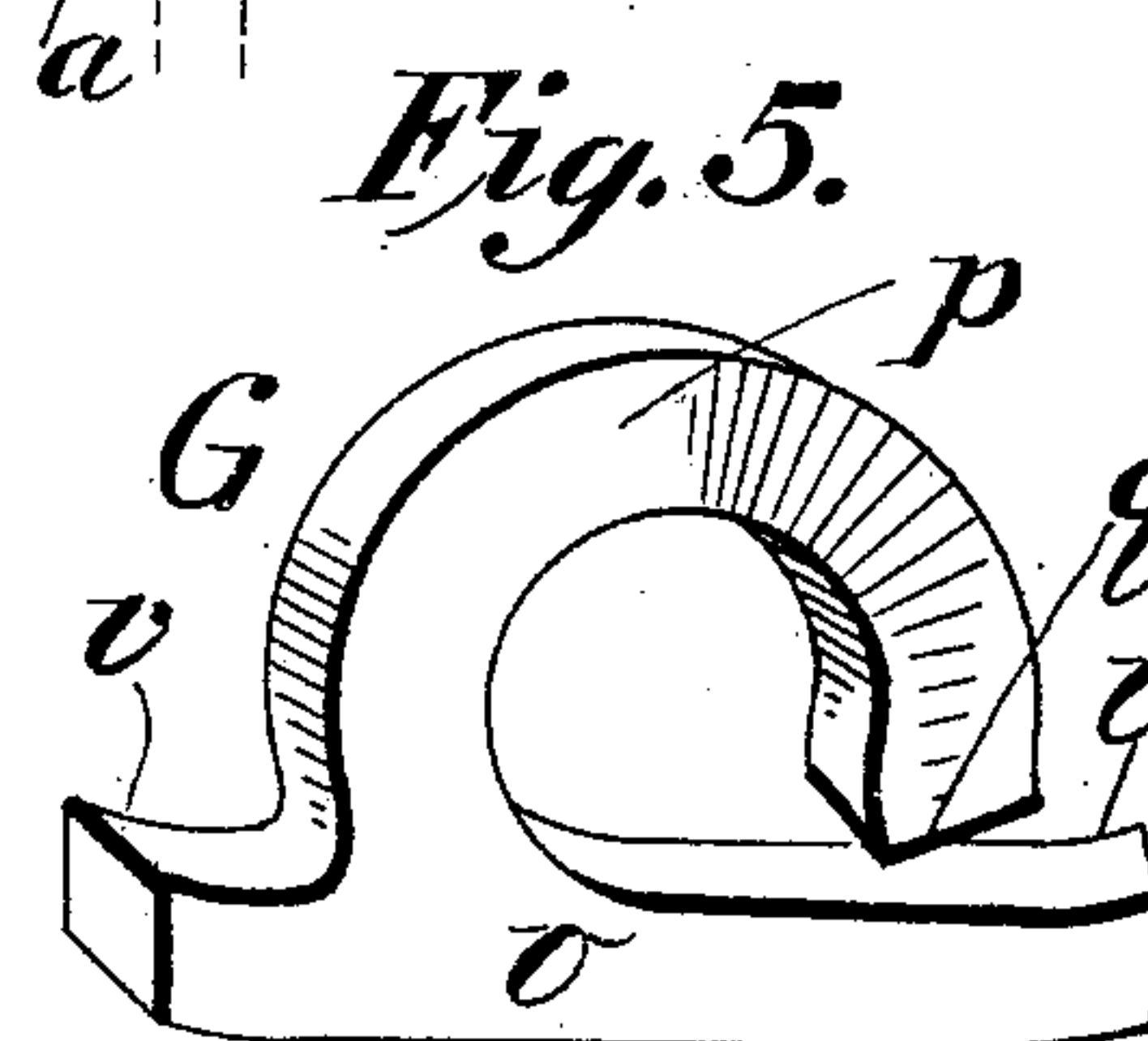
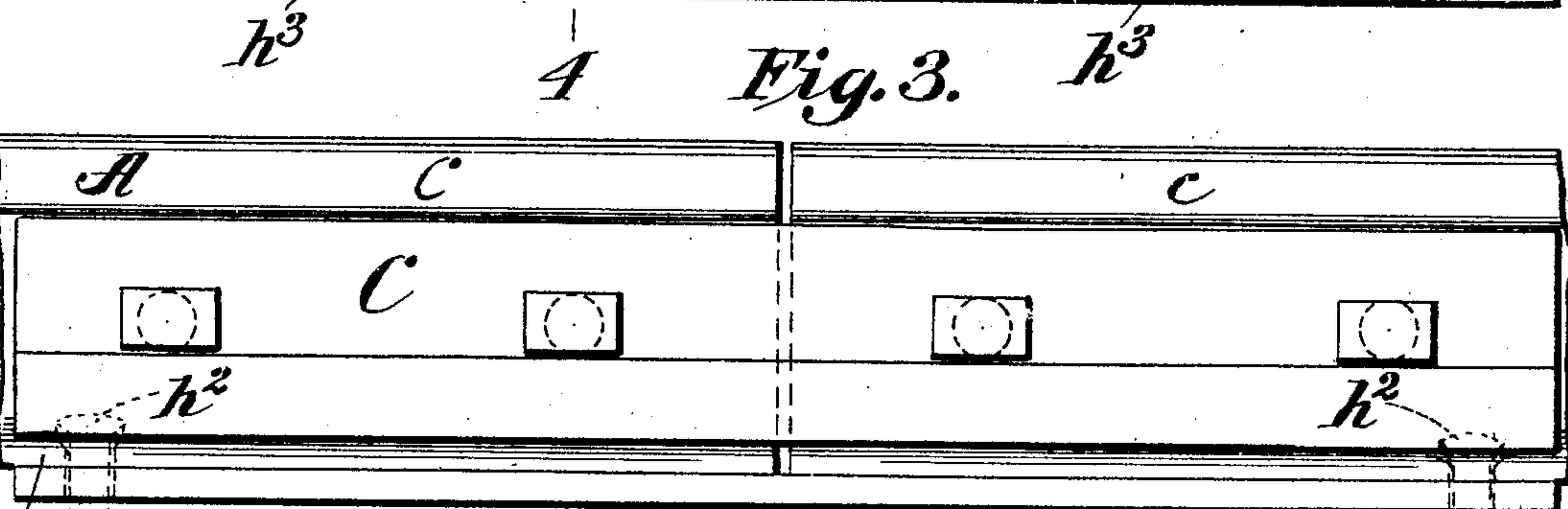
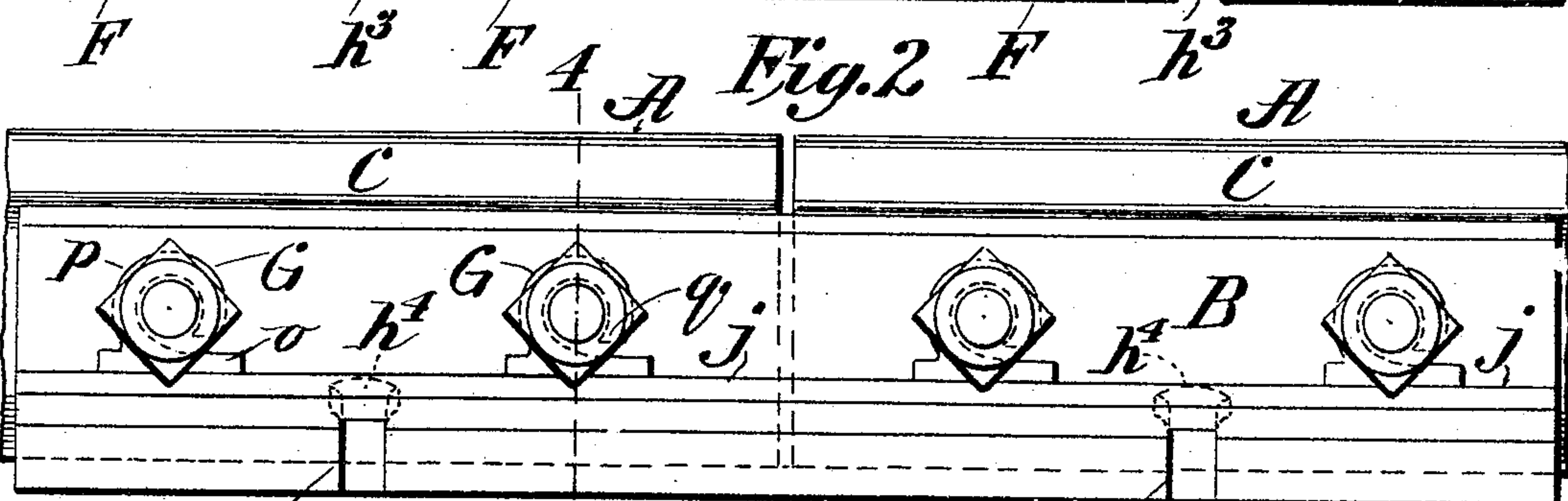
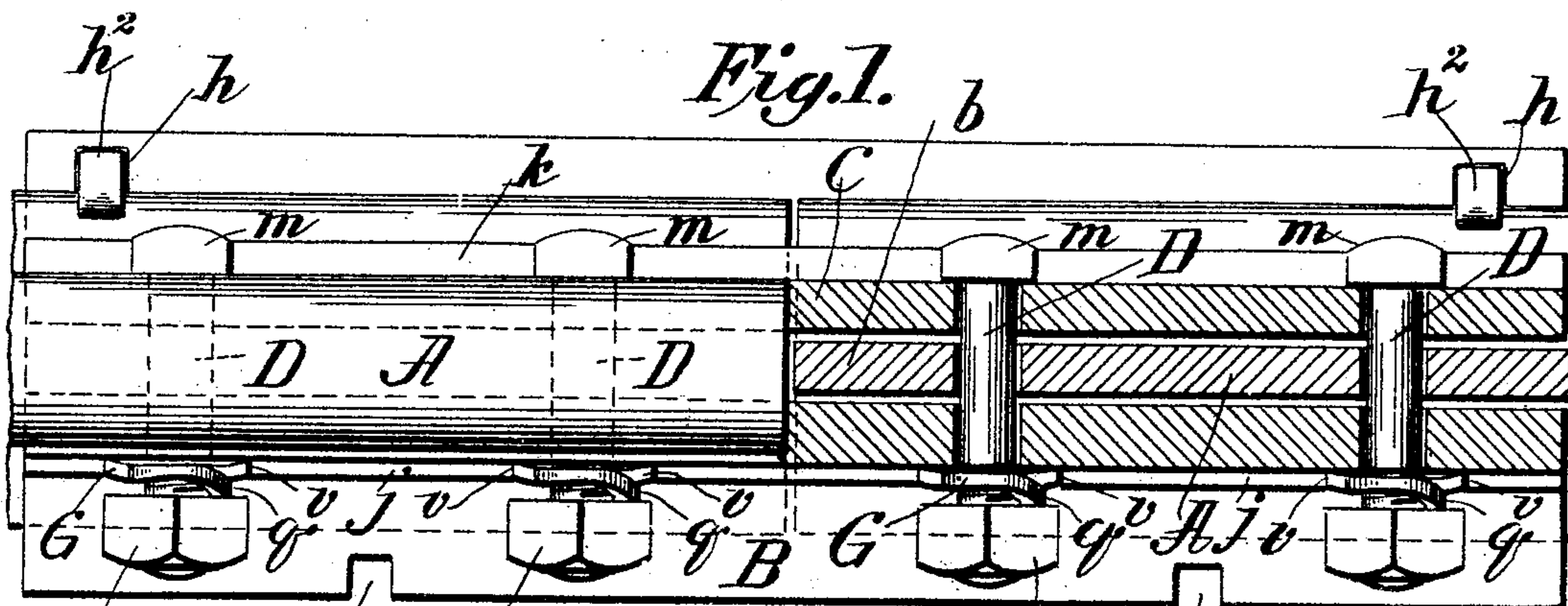
C. O. MINOR, DEC'D.

L. M. MINOR, ADMINISTRATRIX.

RAIL JOINT.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES O. MINOR, OF NORTHAMPTON, MASSACHUSETTS; LENORA M. MINOR ADMINISTRATRIX OF SAID CHARLES O. MINOR, DECEASED.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 771,022, dated September 27, 1904.

Application filed December 5, 1903. Serial No. 183,887. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. MINOR, a citizen of the United States of America, and a resident of Northampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Rail-Joints, of which the following is a full, clear, and exact description.

This invention relates to improvements in joints for the adjoining ends of track-rails.

An object of the invention is to provide a rail-joint which will be capable of holding the rails with the utmost firmness, produced practicably and economically, and which will be durable in long periods of use.

Another object of the invention is to construct the principal portions or sections of the rail-joint which occupy positions of engagement with the contiguous end portions of the rail and at opposite sides thereof with features which contribute in preventing rotational movements of the transversely-applied bolts and in serving as abutments for preventing displacement of the nut-locking devices, which are combined in and in part constitute the joint.

The invention consists in the combinations and arrangements of parts and the construction of certain of the parts, all substantially as hereinafter described, and set forth in the claims.

The improved rail-joint is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view and in part a horizontal sectional view through the rail-joint. Fig. 2 is a side elevation of the joint. Fig. 3 is an opposite side elevation of the joint. Fig. 4 is a vertical cross-section through the joint, as taken on the line 4 4, Fig. 2. Fig. 5 is a perspective view of the nut-retaining device on a larger scale. Fig. 6 is a perspective view of one of the nuts.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the rail of the usual form as comprising the base *a*, the upstanding web *b*, and the widened tread *c*. The rail-joint is in part composed of the member B, which comprises the base-plate *d* and

the integrally-formed inwardly-inclined portion *f* and the upstanding portion *g*. The portion *d* is of a suitable length to lie under and serve as a rest for the end portions of two adjoining track-rail bases, its width being greater than that of the rail-base, and at its side opposite from that having the inwardly-extended and upstanding portion it extends outwardly beyond the rail-base and has the holes or recesses *h* *h* for the spikes *h*². The space between the base portion *d* and the inwardly and upwardly inclined portion *f* of the joint member B allows one flange-like side of the rail-base to be fitted therewithin, while the upstanding portion *g* snugly fits in the outwardly-flaring space at the side of the rail between the base and the under side of its tread portion *c*, as shown in Fig. 4, its inner face being, however, free from the adjacent side of the rail-web *b*. At the lower outer portion of the joint member B are the edge-wise-opening recesses *h*³ for the spikes *h*⁴, so that by the opposite edge spiking the member B constitutes a stable foundation on the ties for the rail and coacting joint members. The said member B has the transverse bolt-holes *i* and thereunder a horizontal longitudinally-extending ledge *j*.

C represents the fish-plate oppositely applied within the outwardly-flaring space between the rail base and tread, the same having transverse bolt-holes *i*², adapted to register with the bolt-holes *i* in member B and with the holes through the rail-web, and closely below the bolt-holes *i*² the fish-plate is constructed with the comparatively wide horizontal and longitudinally-extending ledge *k*.

The bolts D are inserted at the fish-plate side of the joint through such plate, the rail-web, and a portion *g* of the joint member B, the bolts having flat-sided preferably oblong heads *m*, the under sides of which rest upon and in engagement with the fish-plate ledge *k*, which prevents the bolts from turning, and on the protruding screw-threaded ends of the bolts the nuts F F are screwed.

G G represent nut-fastening devices composed of steel or other suitable metal, and each of these devices consists of a bar-like

lower member *o* and a curved tongue *p*, extended upwardly and in approximately circular course from an intermediate portion of the bar-like member, said tongue being laterally deflected and having its free end *q* chisel-like or otherwise suitably sharp. The bar-like base member *o* rests upon the aforementioned ledge *j* and by the latter is prevented from being swung from the proper horizontal disposition represented in the drawings, while the approximately circular tongue embraces the threaded extremity of the bolt inside of the nut, and its chisel-like end has a detaining engagement with the inner face of the nut, which being turned against the elastic tongue develops a spring reaction in the latter, so that the sharpened end bites into the face of the nut, or it would engage in serrations or ratchet-teeth *t*, with which the inner face of the nut may be formed, as commonly practiced, it being manifest that the more tightly the nut is screwed to bind the joint the more certain will be the engagement which the fastening devices acquire in relation to the nut.

The side of the bar-like base member *o* is at the extremities thereof and toward the face of the upstanding member *g* inwardly deflected and formed acute-angled, as represented at *v*, so as to bite into the face of the joint portion *g* and add to the certainty of the retention in its proper place of the nut-fastening device.

The joint members once applied and fastened will not require replacement or disconnection for a very long time; but when it is desired to dismantle the joint the nut may be turned off by the employment of a strong and long-handled wrench, the fastening device giving way to the extraordinary force applied upon the nut.

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

1. In a rail-joint, in combination, a base-plate adapted to underlie the adjacent base portions of two rails, and provided at one side with an angular inwardly-extended and upstanding plate, adapted to engage over one side portion of the rail-base and to engage closely in the space between the rail-base and rail-head, having transverse bolt-holes, and having a ledge below the holes, the fish-plate adapted to fit at the opposite side of the rail, between the rail head and base, also having transverse bolt-holes, and a ledge next under each bolt-hole, bolts passed through the fish-plate, the rail-web, and the oppositely-arranged inwardly-located upstanding member, and having oblong heads each sidewise engaging said ledge, the nuts screwing on the extremities of the bolts toward the said upstanding plate and a nut-lock having a bar in engagement with the first-named ledge and having a spring-tongue engaging the inner face of the nut.

2. In a rail-joint, in combination, a base-

plate adapted to underlie the base portions of adjoining rails and provided at one side with an angular inwardly-extended and upstanding integrally-formed plate adapted to engage over one side portion of the rail-base and to fit closely in the space between the rail-base and rail-head, having transverse bolt-holes and having a ledge below the holes, the fish-plate adapted to fit at the opposite side of the rail, between the rail head and base, and also having transverse bolt-holes, the bolts extended through said holes of both plates, and the intermediate rail with their heads against the fish-plate, the nuts, and metallic devices each comprising a bar, arranged to rest on, and engage with, said ledge, and a curved spring-tongue normally deflected outwardly relatively to the outer face of said upstanding member and arranged to encircle the bolt and having its spring extremity in engagement with the inner face of the correspondingly-adjacent nut.

3. In a rail-joint, in combination, a base-plate adapted to underlie the base portions of adjoining rails and provided at one side with an angular inwardly-extended and upstanding integrally-formed plate adapted to engage over one side portion of the rail-base and to fit closely in the space between the rail-base and rail-head, having transverse bolt-holes and having a ledge below the holes, the fish-plate adapted to fit at the opposite side of the rail, between the rail head and base, and also having transverse bolt-holes, the bolts extended through said holes of both plates, and the intermediate rail with their heads against the fish-plate, the nuts, and metallic devices each comprising a bar arranged to rest on, and engage with, said ledge, having its extremities sharp and in engagement against the side of the said upstanding member, and a curved spring-tongue normally deflected outwardly relatively to the outer face of said upstanding member and arranged to encircle the bolt and having its spring extremity in detent engagement with the inner face of the correspondingly-adjacent nut.

4. In a rail-joint, in combination, a base-plate adapted to underlie the base portions of adjoining rails and provided at one side with an angular inwardly-extended and upstanding integrally-formed plate adapted to engage over one side portion of the rail-base and to fit closely in the space between the rail-base and rail-head, having transverse bolt-holes and having a ledge below the holes, the fish-plate adapted to fit at the opposite side of the rail, between the rail head and base, and also having transverse bolt-holes, and having a ledge along its outer side below the bolt-holes, the bolts extended through said holes of both plates, and the intermediate rail with their heads against the fish-plate, and in sidewise engagement with the fish-plate edge, the nuts, and metallic devices each comprising a bar

arranged to rest on, and engage with, said
ledge, having its extremities sharp and in-
wardly turned and in engagement with the
outer side of the upstanding member, and a
5 curved spring-tongue normally deflected out-
wardly relatively to the outer face of said up-
standing member and arranged to encircle the
bolt and having its spring extremity in detent

engagement with the inner face of the corre-
spondingly-adjacent nut.

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Signed by me at Springfield, Massachusetts,
in presence of two subscribing witnesses.

CHARLES O. MINOR.

Witnesses:

A. V. LEAHY,

WM. S. BELLOWS.