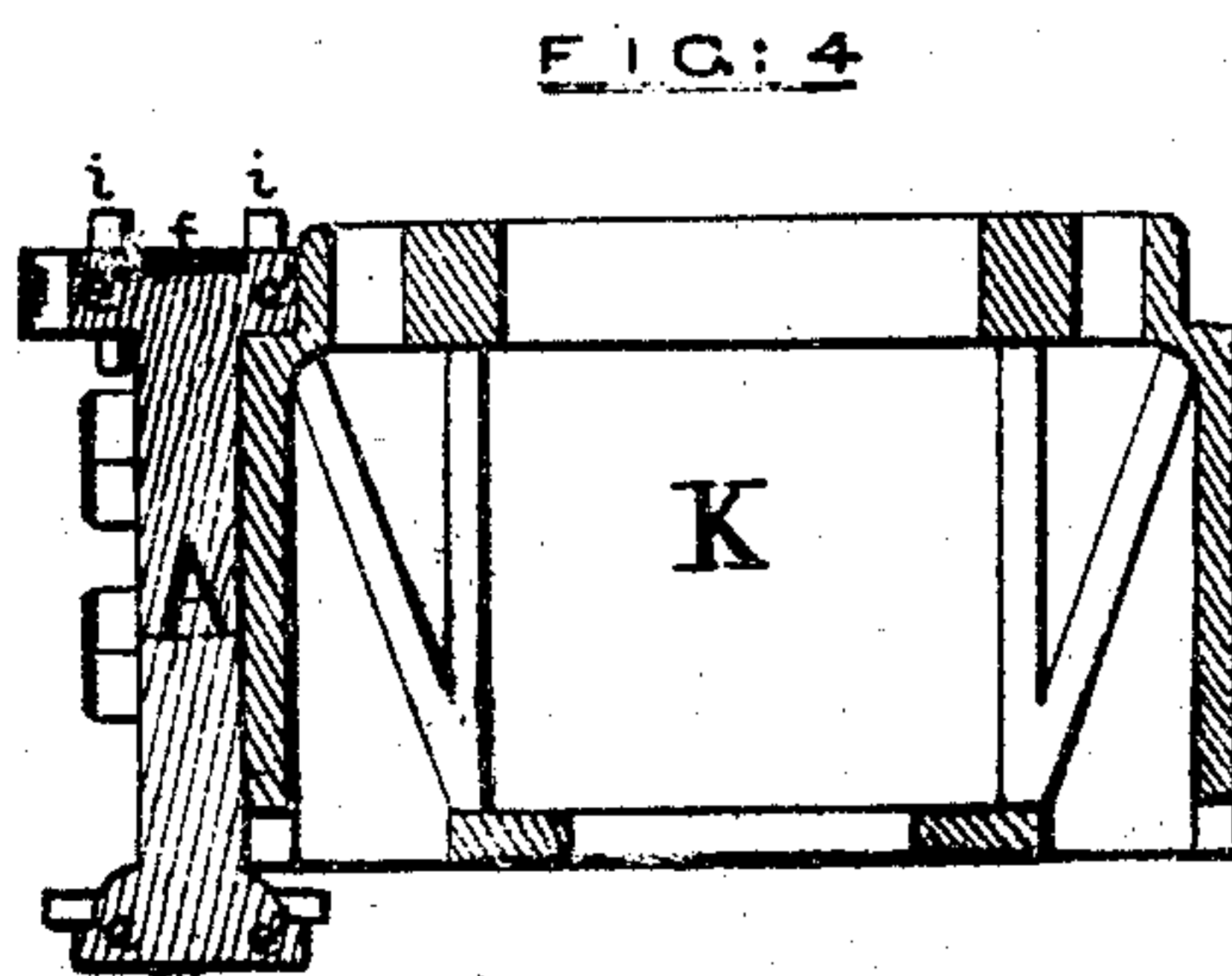
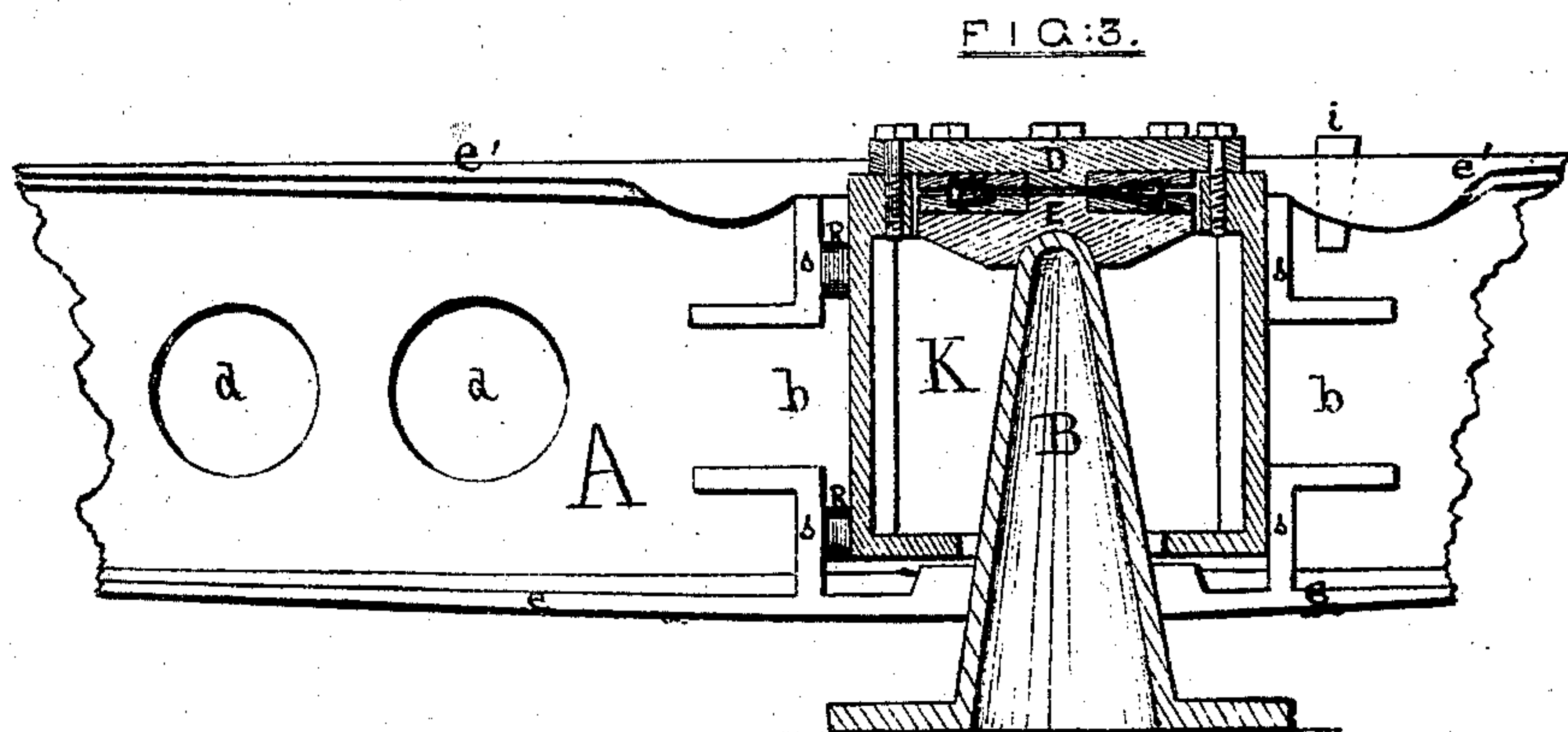
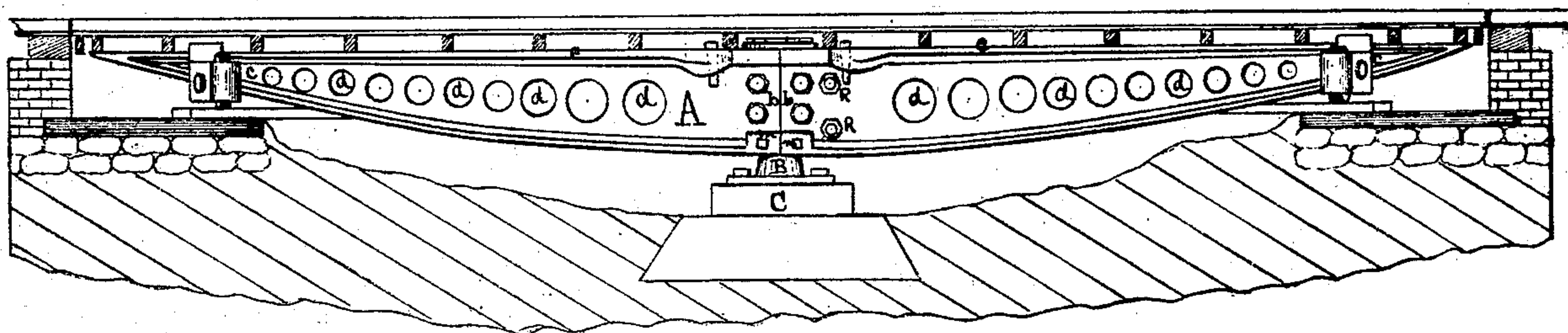
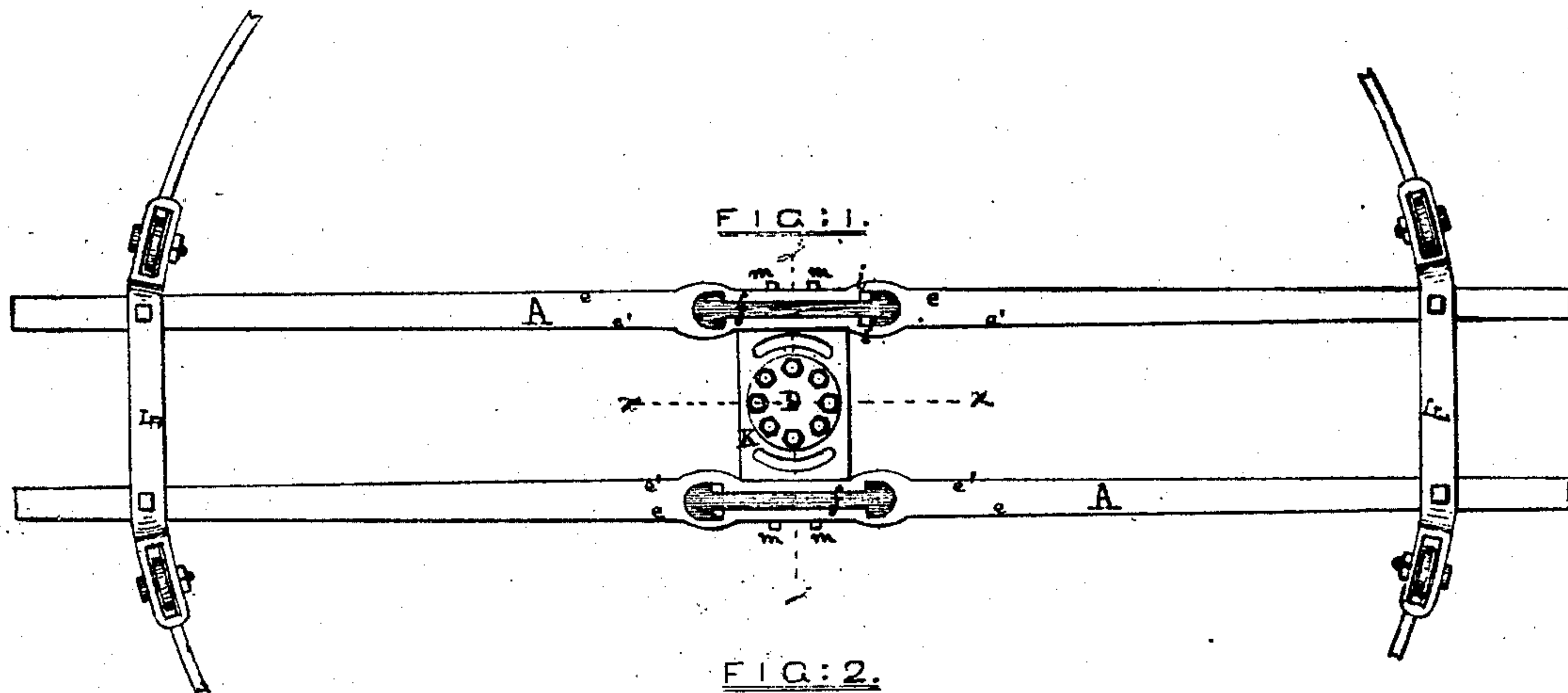


C. A. GREENLEAF'S

# Imp <sup>d</sup> R-R Turn-Table

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Wolments A. Greenleaf.  
Inventor -

By David A. Burr.  
Atty:

Wm. H. Young  
J. H. Smith



# United States Patent Office.

CLEMMENTS A. GREENLEAF, OF INDIANAPOLIS, INDIANA.

Letters Patent No. 99,667, dated February 8, 1870.

## IMPROVED TURN-TABLE.

The Schedule referred to in these Letters Patent and making part of the same.

I, CLEMMENTS A. GREENLEAF, of Indianapolis, in the county of Marion, and State of Indiana, have invented certain new and useful Improvements in the Construction of Turn-Tables for Railroads, Bridges, &c., of which the following is a specification.

My invention relates to the direct combination of the ends of the centrally-divided truss-beams in a turn-table with each other, as well as with a central supporting-box, in such manner, that when united, each beam shall be continuous, independently of the box, and be also more firmly secured thereto and suspended thereby, than in the turn-tables now in use, the object of my invention being to relieve the central box, upon which the table is balanced, from the strain of the load, causing it to be borne wholly by the truss-beams, and to guard also against accidental displacement of the connections of said beams by any sudden violent jar of the turn-table, without losing any of the advantages attendant upon such a construction of the table as enables it to be readily taken apart and put together to facilitate its transportation.

Figure 1, in the accompanying drawings, is a plan view of my improved turn-table, as constructed for railroads, with the rails and rail-timbers removed.

Figure 2, a side elevation thereof, with the rails laid thereon complete.

Figure 3, an enlarged vertical section, taken longitudinally in a line drawn centrally through the supporting-box, as indicated by dotted lines *x x*, in fig. 1.

Figure 4, an enlarged section taken centrally in a line indicated at *y y*, through the length of the supporting-box, the pivot-pintle and its socket-plates, and one of the truss-beams, being removed therefrom.

In the accompanying drawings—

*A A* are the two truss-beams of a turn-table. Each beam is cast in two divisions of equal length and similar configuration, so formed as that when brought together and secured end to end, the under side of the continuous beam thus obtained will present an arc, of which the upper flat side will form a chord, as illustrated in fig. 2 of the drawings.

Each division consists of a thin plate of metal, tapering from the inner wide end *b* to the outer narrow end *c* (fig. 2) thereof, with holes *d d* left in its sides to reduce its weight, and having a flange or rim, *e e*, projecting on each side, all around its edge, excepting at its inner end *b*.

The inner wide ends *b b* of the two divisions of each beam are properly faced, to fit very closely and exactly against each other, when their upper edges are so brought together, in a right line and in the same horizontal plane, as to form a continuous truss-beam, *A*, as illustrated in figs. 1 and 2.

The two divisions are connected and secured on top

by means of wide-headed tie-straps *f f*, extending across the joint, and let into the upper edges of the beams, as shown in fig. 1.

Keys or wedges *i i* are driven in between one of the heads of each strap and the counterpart shoulder of the recess, into which it is sunken, as illustrated in figs. 1, 2, and 3, so as to draw and tighten the joint of the beam as closely and securely as possible.

The divisions of the beam are also tied at the lower extremity of their joint by means of a cross tie-bar, whose ends are inserted into recesses pierced horizontally in each face of the joint, and which are caught and held therein by means of keys or wedges *m m*, inserted at right angles thereto, through transverse apertures in the beam, in register with like apertures in the ends of the tie-bar, so that the wedges, when properly driven, shall draw together the faces of the joint, and close the same firmly and securely.

The two truss-beams *A A*, thus constructed, are bolted centrally against or upon the ends of a hollow rectangular box, *K*, which is cast in one piece, with an enlarged aperture in the bottom thereof, to fit over and receive the pintle upon which the table is pivoted.

The ends of this central box *K* fit in snugly and accurately under the inwardly-projecting flanges *e* in the top edges of the beams, so that these flanges, overlapping and embracing the ends of the box, form a bearing or support for the beams thereon.

Projecting strips *s s*, fig. 3, are also cast upon the inner face of each division of the beams, parallel to their inner ends, to bear against the sides of the box.

They thus bear and fit closely against the side of the box, upon one side of the joint in each beam, but upon the other side are removed sufficiently to admit of the insertion of two wedge-shaped keys, *R R*, between them and the box, as illustrated in figs. 2 and 3. These wedge-shaped keys *R R* are inserted, one above the other, from the inner side, and their smaller ends project outwardly through apertures in the beam, and are threaded to receive nuts, by means whereof they are drawn up and tightened, or else loosened, at pleasure. They serve not only to clamp and tighten the beams laterally upon the ends of the central box *K*, but, being placed one above the other, on one side only of the box, may be used to level and adjust, with nicety, the upper surface of each beam, with reference to the axis of the pintle, and the surface of the cap-plate in the central box, resting thereon.

The upper flanges *e e* of the beams resting upon the upper outer edges of the box *K*, in combination with the side strips *s s* and wedges *R R*, embracing and clamping its side edges at each end thereof, afford such a bearing and support for the beams, independent of the bolts by which they are secured against the box,



as to measurably relieve the latter from the strain of the load thereon, and afford great security against damage from any sudden jars or strains.

The turn-table is suspended and pivoted, as usual, upon a conical pintle, B, projecting from a suitable solid base or pedestal, C.

This pintle projects up within the central box K of the table, and bears against a cap-plate, D, bolted on the top thereof, to cover a central opening therein.

A friction-box, consisting of two circular plates, (the one secured to the under side of the cap-plate D and the other to the upper side of a socket-plate, E, as shown in fig. 3,) which are separated by a series of interposed steel conical rollers running in a concentric groove formed between the faces of said plates, facilitates the revolution of the table. The upper end of the pintle B is rounded, as usual, so that the table may tip or vibrate thereon, as well as turn freely upon the rollers in the friction-box.

The outer ends of the two beams A A are connected in the usual manner, by cross-bars F F, provided with rollers, so arranged as to swing over a concentric track, and yet not touch the same except when the table is tipped out of its horizontal plane. The ends of the beams project through apertures in the cross-bars F F, as illustrated in figs. 1 and 2, and these are then secured thereon by bolts.

The turn-table thus swung and pivoted, is completed for use, in connection with a railroad-track, by securing cross-ties upon the beams and laying thereon sleepers and rails in the usual manner, as illustrated in fig. 2.

I am aware that turn-tables have been heretofore made and extensively used, in which a central hub or

box, pivoted upon a pintle, substantially as herein described, is interposed between the beams, to form a continuation thereof from end to end of the table, but my invention relates wholly to the improvement obtained in the construction of turn-tables of this description, by uniting the ends of the two divisions of each beam, one to the other direct, instead of to a box interposed between them, and in so combining the ends of the central box with the centre of the continuous beams thus obtained, as that they shall cover and overlap the joints between the divisions of said beams, as herein described.

I claim as my invention, in the construction of turn-tables—

1. Centrally-divided truss-beams A A, in combination with a central supporting-box B, when the two ends of each beam are brought together to form a continuous truss, independent of and exterior to said box, substantially in the manner and for the purpose herein set forth.

2. Projecting strips or lugs s s and flanges e' e', formed upon each division of a divided truss-beam, A, and combined with a central box, K, sustaining said beams, when said strips and flanges embrace, or partially embrace and overlap the edges or corners of said box, substantially as herein set forth.

The foregoing specification signed this 30th day of December, 1869.

CLEMENTS A. GREENLEAF.

Witnesses:

J. L. MOTHERSHEAD,  
ALEX. RARIG.