J. BEUGGER.

APPARATUS FOR LEVELING RAILS OF RAILROADS.

No. 188,846. Patented March 27, 1877.

Fig. 1.

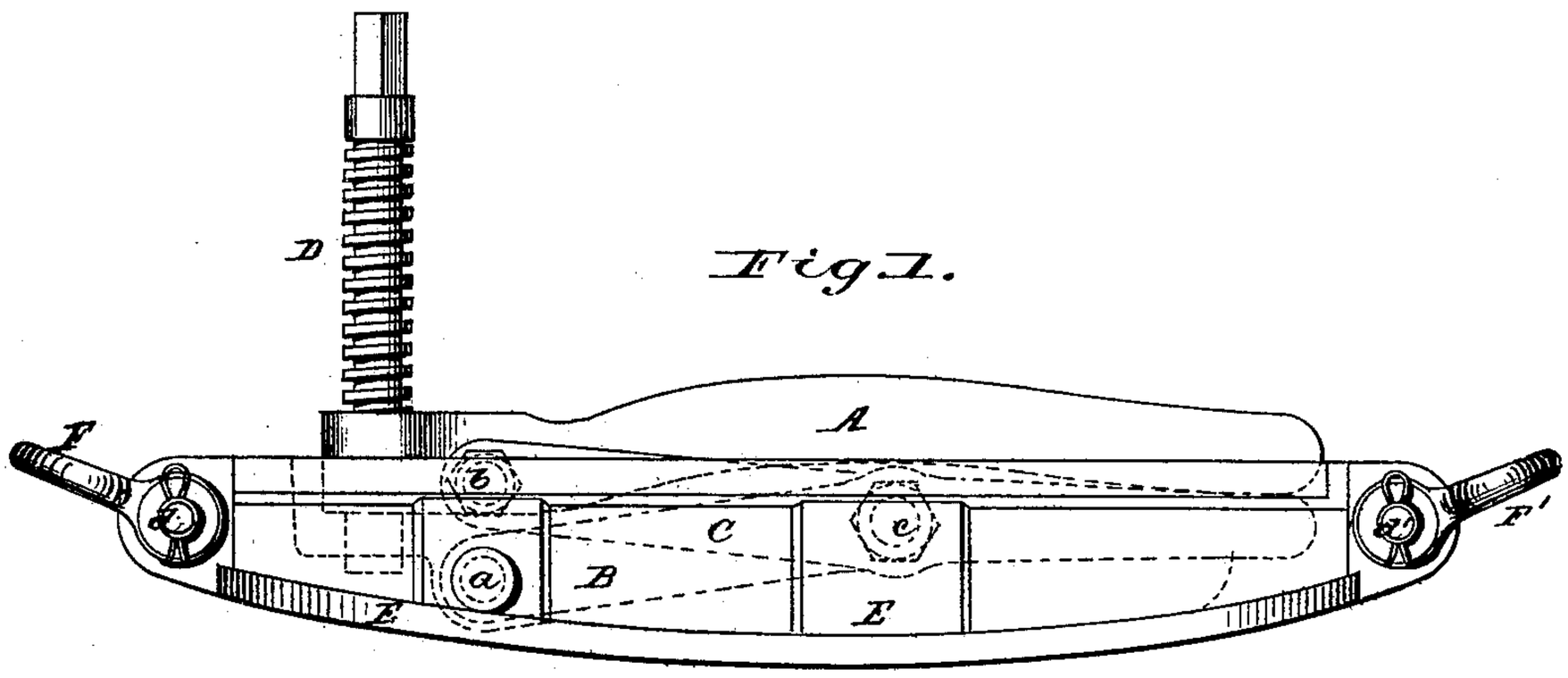


Fig. 2.

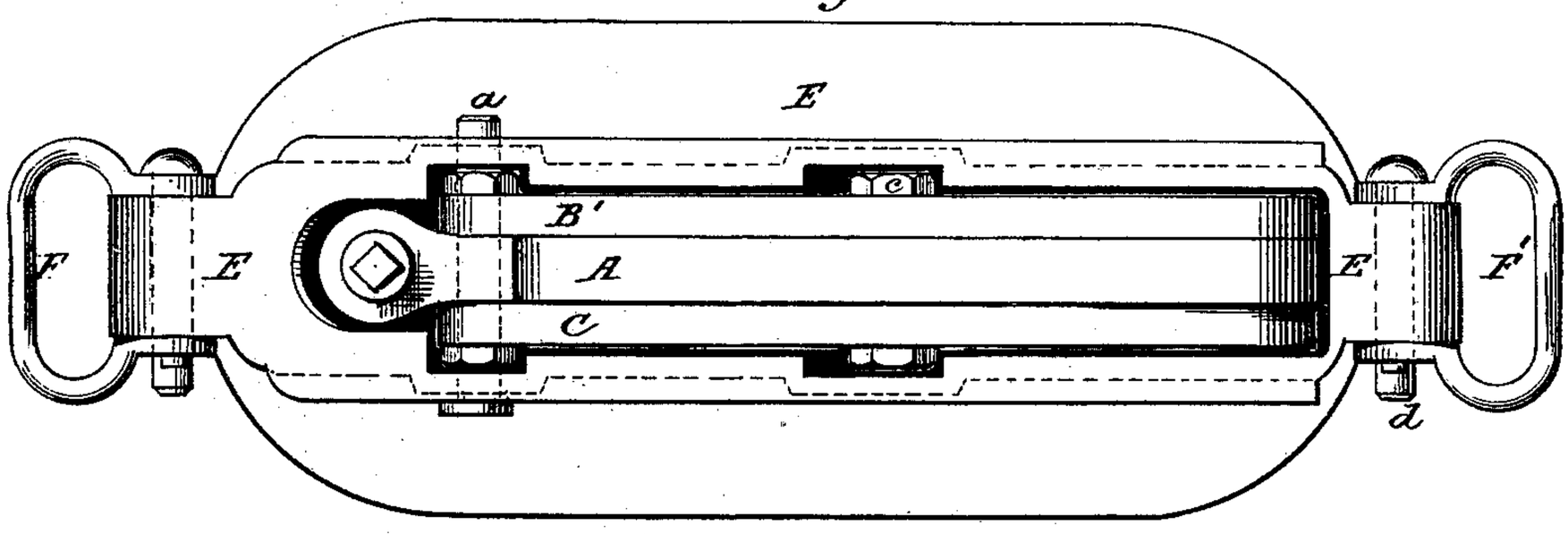
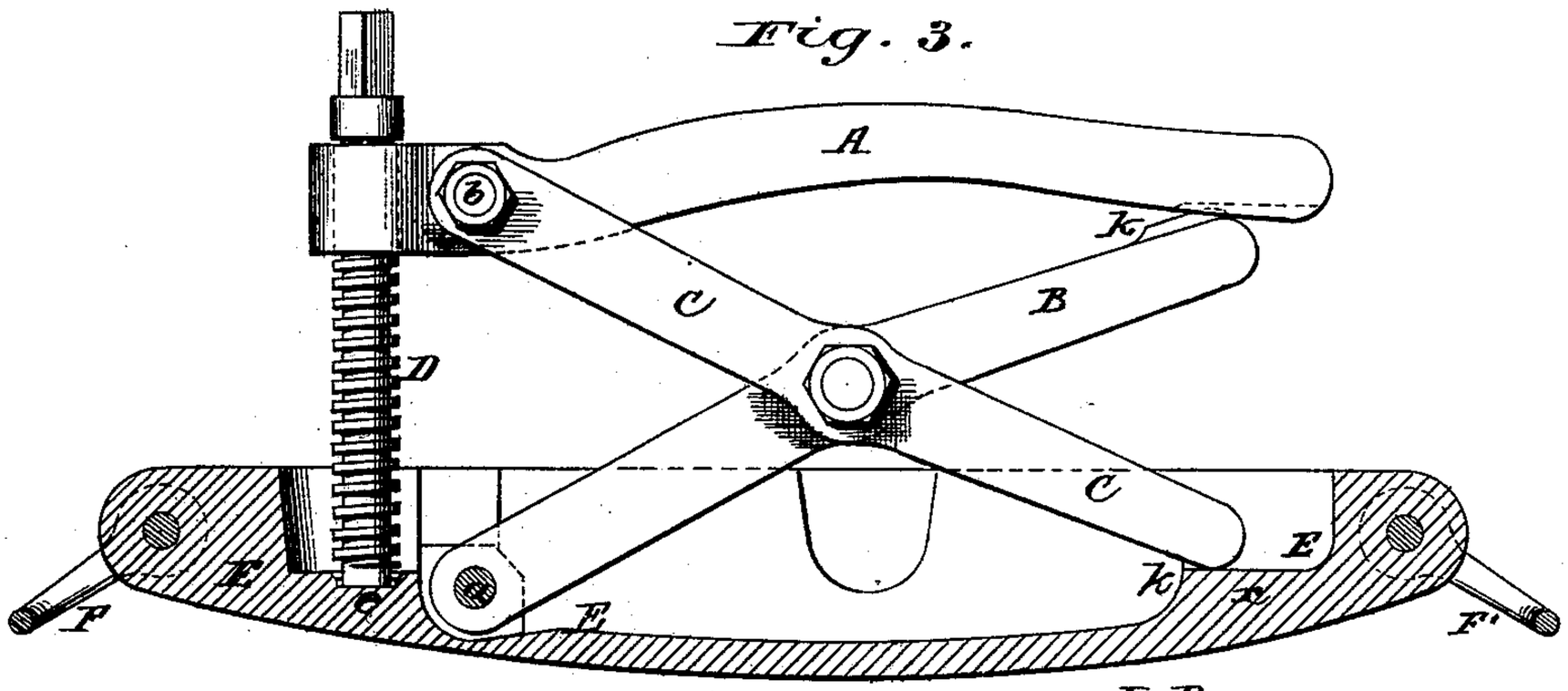


Fig. 3.



Attest:
H. C. Perrine
W. L. Coombs

J. Beugger.
Inventor.

By James L. Norris.
Attorney.

UNITED STATES PATENT OFFICE.

JOHANNES BEUGGER, OF WINTERTHUR, SWITZERLAND.

IMPROVEMENT IN APPARATUS FOR LEVELING RAILS OF RAILROADS.

Specification forming part of Letters Patent No. **188,846**, dated March 27, 1877; application filed January 30, 1877.

To all whom it may concern:

Be it known that I, JOHANNES BEUGGER, of Winterthur, in the Canton of Zürich, in the Republic of Switzerland, have invented certain new and useful Improvements in the Construction of Apparatus for Leveling the Rails of Railroads, of which the following is a specification:

My invention has for its object to enable the rails of railroads to be raised to, and adjusted at, their proper level with greater accuracy than could be done by any of the mechanical agencies hitherto employed for this purpose. It consists of a main lever or cross-head, by preference of a curvilinear shape, with an eye at one end through which a vertical screw passes, and sustained at the other end by an auxiliary lever which has its fulcrum in the same bottom plate upon or within which the spindle of the aforesaid screw is mounted; of two links supporting the auxiliary lever, one on each side thereof, which are connected with the cross-head at one end, and guided upon or within the bottom plate at the other; of a kerb on the auxiliary lever moving within a notch or groove at the bottom of the main lever or cross-head, and so completing the support of the said main lever by a folding cross consisting of one auxiliary lever and two links, that the various positions the main lever successively assumes when the vertical screw is turned must necessarily be parallel to one another.

In the accompanying drawing, Figure 1 is an elevation of my improved rail-leveler, with the various movable organs closed or folded up. Fig. 2 is a plan of the same apparatus, seen from above; and Fig. 3, an elevation, partly in longitudinal section, showing the apparatus with the main lever or cross-head in its highest position.

A is the main lever or cross-head, shown here of a curvilinear shape. B is the auxiliary lever, having at one end its fulcrum in the axis of the pin *a* passing through the bottom plate E, and guided at the other end by a kerb or shoulder piece, *k*, within a groove formed at the bottom of the main lever A. The auxiliary lever B is in its center connected, by an axis, *c*, with the links or arms B′ C, which are suspended on the main lever or cross-head A by means of the axis *b*, whilst their opposite ends slide within an opening, *x*, in the bottom plate E. At the other end *e* of the same bottom plate the screw D is fitted, which passes through the eye at the end of the main lever A. This screw D, being turned by means of a key, the lever A—and with it the rail placed thereon—is raised or lowered to the extent desired in each individual case, and being sustained by the combination of the lever B and the links B′ C, any one of its positions must necessarily be parallel to any other, so long as the bottom plate E remains in the same place. At the extremities of the bottom plate E the handles F′ F are hung on pins *d′ d*, so as to admit of the apparatus being carried from one place to another. Thus, if two or more specimens of my leveler be placed under a rail, or the rail placed on them while the ballasting is being rammed under the rails or sleepers, and if the levelers be subsequently removed from beneath them, the rails must necessarially, after the apparatus have been removed, preserve the level at which they have been placed; and it will be further seen that the perfect parallelism of the motion of the main lever A, which is owing to the simultaneous revolution of the screw D, and unfolding or collapsing of the cross of levers and links B B′ C, must obviate the drawbacks inseparable from those contrivances of the same kind in which the obliquity of the position of the lever often renders the operation extremely difficult.

Instead of the duplex link B′ C, a single link may be used, having its axis within the plane of the axes of the levers A B, and being made in the shape of a fork or staple, so far as these levers are to be held in it, so that the lower part thereof alone is solid, and guided within a groove made at *x* in the bottom plate E; or else the whole or part of the lever A and the center part of the lever B may be made fork or eye shaped, so as to close around a solitary central link, C, in which case the axes of A, B, and C all fall within the same plane.

Having thus described my invention, I wish

it to be understood that what I claim as new, and desire to secure by Letters Patent, is—

The combination of plate E, link C, lever B, pivoted to plate E, lever A, and screw D, upon which the lever A is arranged, the whole constructed and arranged substantially as and for the purpose described.

In testimony that I claim the foregoing, I have hereunto set my hand and seal in the presence of the subscribing witnesses.

JOHS. BEUGGER. [L. S.]

Witnesses:

E. S. CORNING,

F. G. VETTEY.