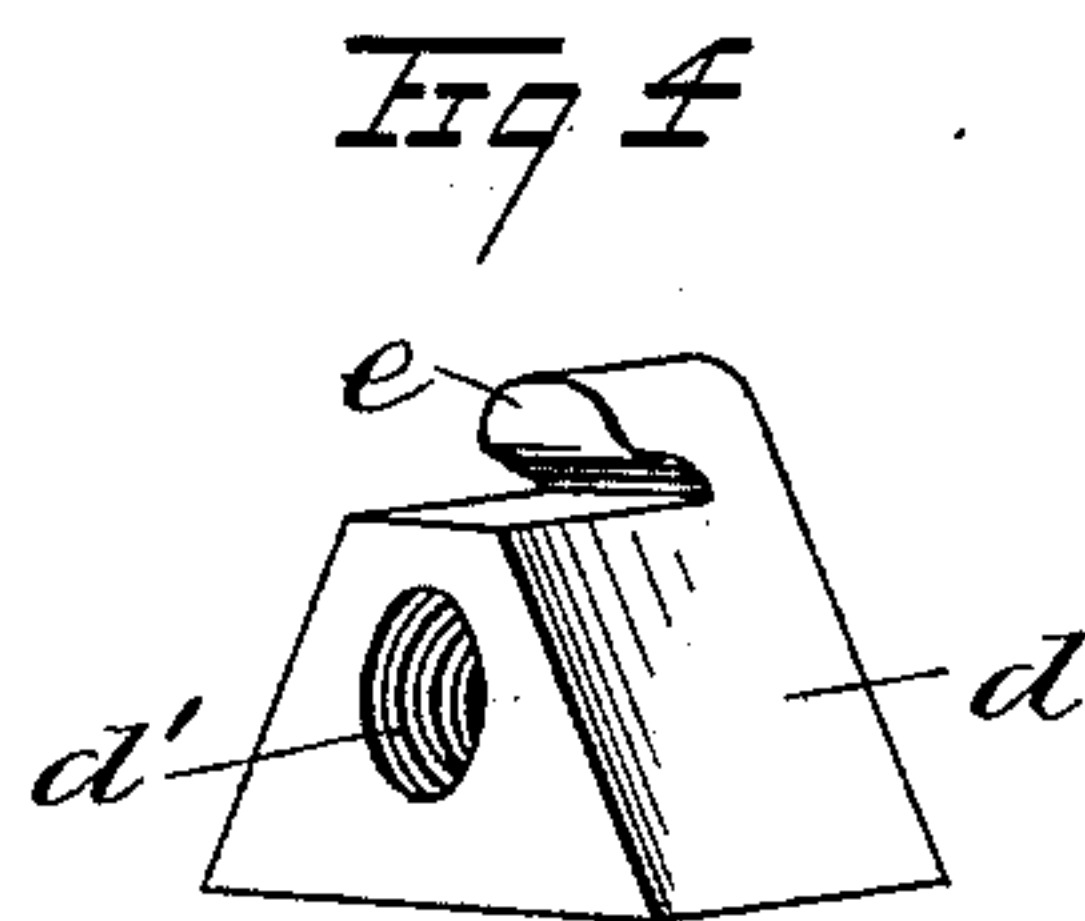
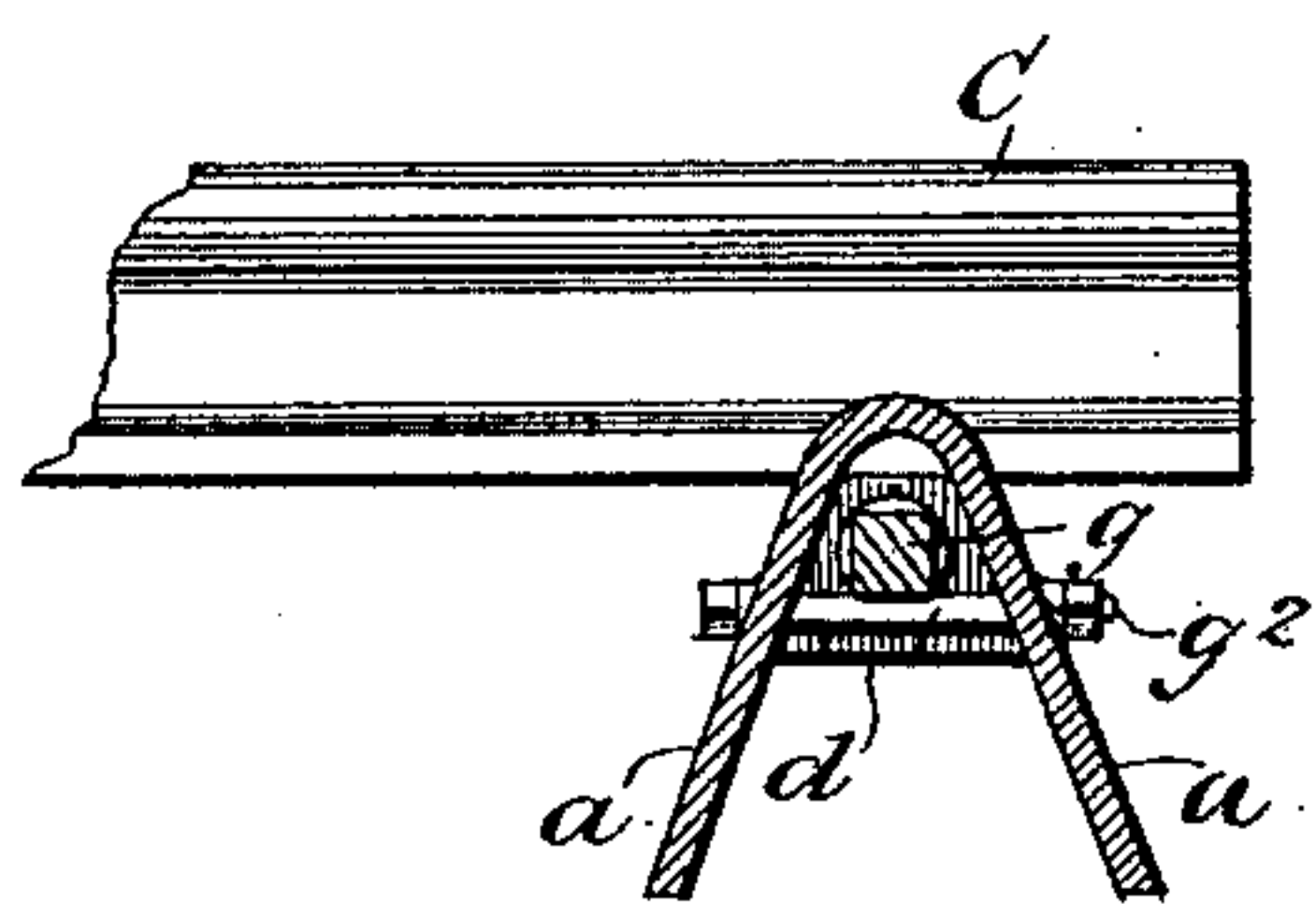
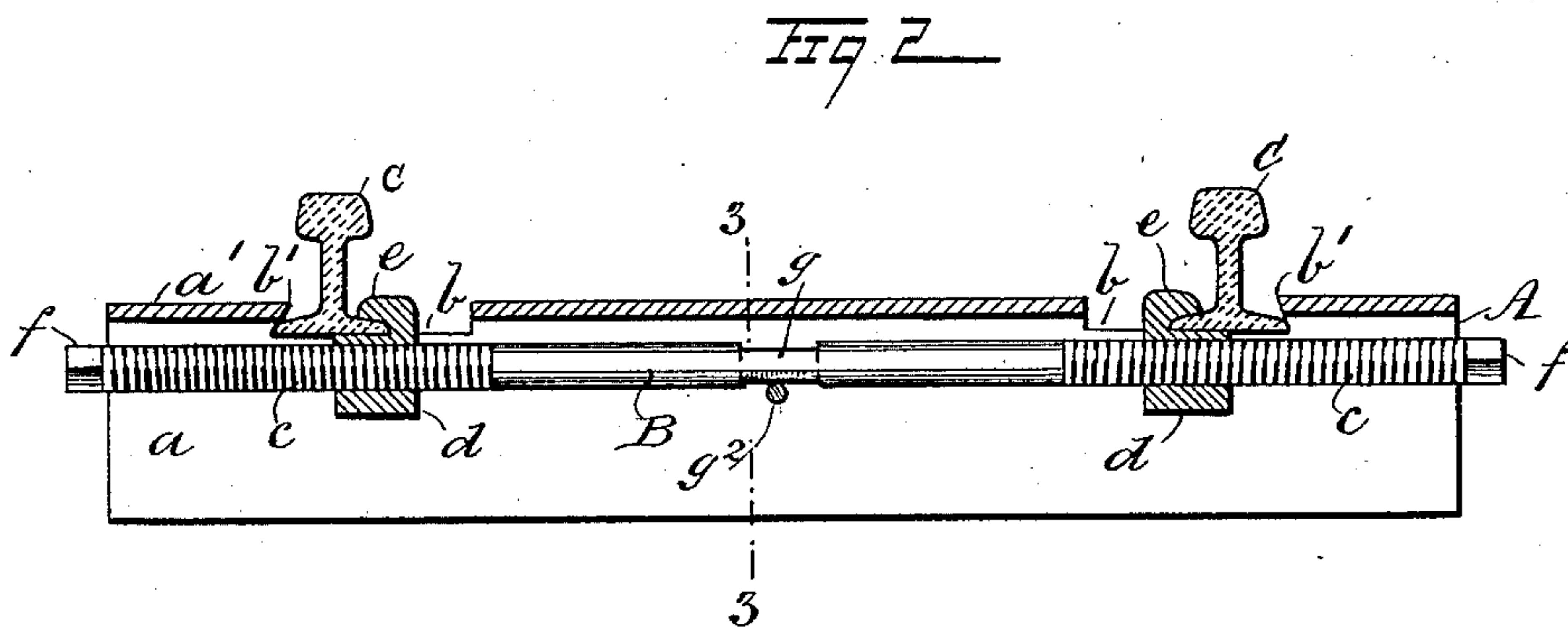
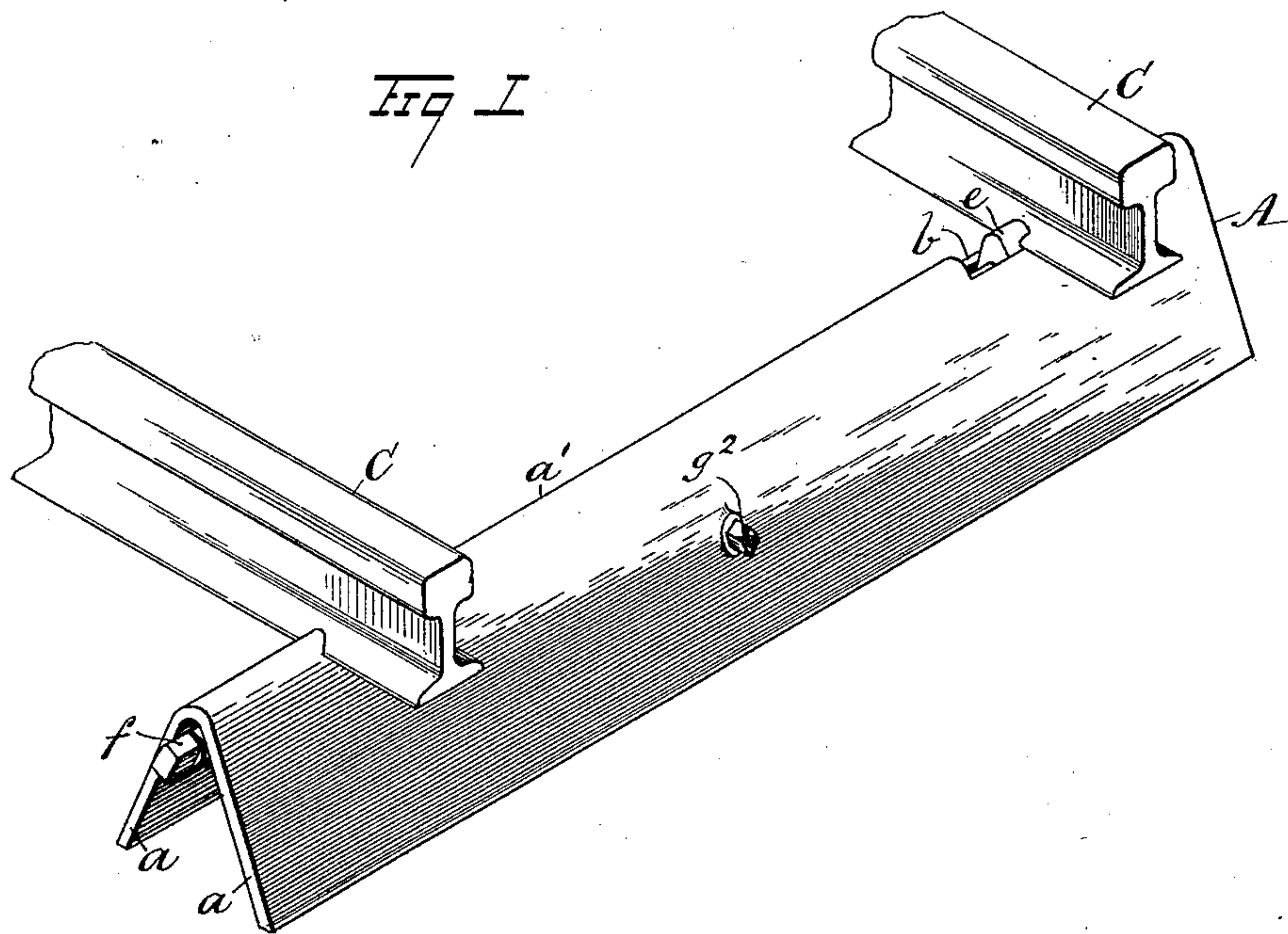


(No Model.)

J. P. TAYLOR.
METAL CROSS TIE FOR RAILROADS.

No. 428,869.

Patented May 27, 1890.



WITNESSES:
H. Walker
C. Sedgwick

Fig 3

INVENTOR:
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UNITED STATES PATENT OFFICE.

JAMES P. TAYLOR, OF FORT WORTH, TEXAS.

METAL CROSS-TIE FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 428,869, dated May 27, 1890.

Application filed January 23, 1890. Serial No. 337,836. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. TAYLOR, of Fort Worth, in the county of Tarrant and State of Texas, have invented a new and useful Improvement in Metal Cross-Ties for Railroads, of which the following is a full, clear, and exact description.

The objects of my invention are to produce a light, strong, and durable cross-tie from metal, which will afford proper support for the rails of a railroad, and embody means for the secure retention of said rails in position thereon, the necessary elasticity for prevention of injurious shocks to the rolling-stock being also provided for.

To these ends my invention consists in the construction and combination of parts, as hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the cross-tie in position and track-rails thereon. Fig. 2 is a central longitudinal section of the tie. Fig. 3 is a transverse section of the device on the line 3 3 in Fig. 2, with a track-rail in position; and Fig. 4 is an enlarged detached view of a detail.

A represents the body of the cross-tie. It is preferably made of wrought-iron plate, which is cut of proper length and width to afford material for the tie, said plate being bent longitudinally near its center of width, so as to produce two similarly-inclined walls *a* integrally joined at the apex *a'* of the angular tie-body thus formed.

At suitable points equidistant from the ends of the tie-body A longitudinal slots *b* are produced in the apex *a'*, and at the outer terminals of these slots integral lips or flanges *b'* are formed, which incline upwardly and inwardly, of a proper length to hook over the adjacent edge of the base-flange of a railroad-rail C when the latter is placed on the tie, and it will be seen that the removal of the material of the tie where the elongated slots *b* are formed affords a seat for the rails C at each slot.

Within the tie-body A a rod B is located, the length of which slightly exceeds that of

the tie-body. It is preferably made of rounded iron and is threaded at each end, the screw formed on one end being right-hand and the opposite end a left-hand pitch, both being cut with an equal number of threads to the inch.

The threaded portions *c* of the rod B extend inwardly beyond the inner terminal edges of the longitudinal slots *b*, and on them are mounted the blocks or nuts *d*, which are perforated, as at *d'* in Fig. 4, and are threaded to correspond with the screw ends of the rod. The inclined sides of the nuts *d* are adapted to correspond to the inner faces of the inclined walls *a* of the cross-tie body, and have loose contact therewith when the rod B is in position. A lug *e* is formed on each nut *d* by removal of a portion of their top edges and undercutting the remaining portions, or casting the same so that the lugs will fit upon the track-rails C when all parts are assembled and properly adjusted to form a track.

The outer ends *f* of the rod B are squared for the reception of a wrench, and near the longitudinal center of the rod a squared portion *g* is produced on it.

A transverse bolt *g*² is inserted in a suitable perforation formed below the squared portion *g* of the rod B, so that it will be in position to sustain the rod at the center of the tie. The squared portion *g* will retain the rod from rotation when in place sufficiently to prevent it from relaxing the lugs *e*, the rod yielding when turned by a wrench so as to adjust the parts and draw these lugs against the flanges on the track-rails.

In the construction of a railroad employing this improved cross-tie a series of said ties are arranged on a proper road-bed, preferably on stone ballast. The rails C are placed on the ties A, having the outer edges of their base-flanges inserted below the overhanging lips or flanges *b'*. The rods B of the cross-ties are now rotated so as to force the nuts *d* outwardly and cause the lugs *e* to engage the inner portions of the base-flanges of the rails, thus securely clamping them in place.

The form given the cross-tie body, if the same is located on proper ballast, will provide means for drainage of rainfall from the track to a side ditch, and if the ballast is tamped below the ties and filled in against their sides the inclination given the latter-

named will aid the ballast to retain the cross-ties in place.

By constructing the ties of sheet metal, either steel-plate or wrought-iron of a proper thickness, a light, strong, and elastic cross-tie is afforded, which if protected by coating with non-oxidizable composition or paint will be durable and far superior to an ordinary wooden cross-tie in durability, its elasticity absorbing shock or percussion on the same. Spreading of the rails is prevented, and serious accidents which result therefrom, when these ties are used in railway construction.

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

1. The combination, with a plate-metal cross-tie having inclined sides on which seats for track-rails are formed and integral lips which engage the flanges of track-rails on their outer edges, of a rod in the tie-body extended the length of said tie-body, nuts

placed on its oppositely-threaded ends that move outwardly when the rod is rotated in the proper direction, lugs on the nuts which will engage the inner edge portions of the track-rail base-flanges, and two track-rails, substantially as set forth.

2. The combination, with a plate-metal cross-tie body having inclined sides which are integrally joined at an apex and longitudinally slotted, forming rail-seats, and integral lips on said apex, of a rod oppositely threaded at its ends, nuts which fit in the cross-tie body and are adapted to engage the right and left hand threads on the ends of the rod, integral lugs formed on the nuts, means to rotate the rod, and means to lock the rod from rotation, substantially as set forth.

JAMES P. TAYLOR.

Witnesses:

A. SWARTWOOD,
B. L. SPENCER.