

No. 679,341.

L. T. SHEFFIELD.
RAILWAY APPLIANCE.
(Application filed Dec. 4, 1900.)

Patented July 30, 1901.

(No Model.)

2 Sheets—Sheet 1.

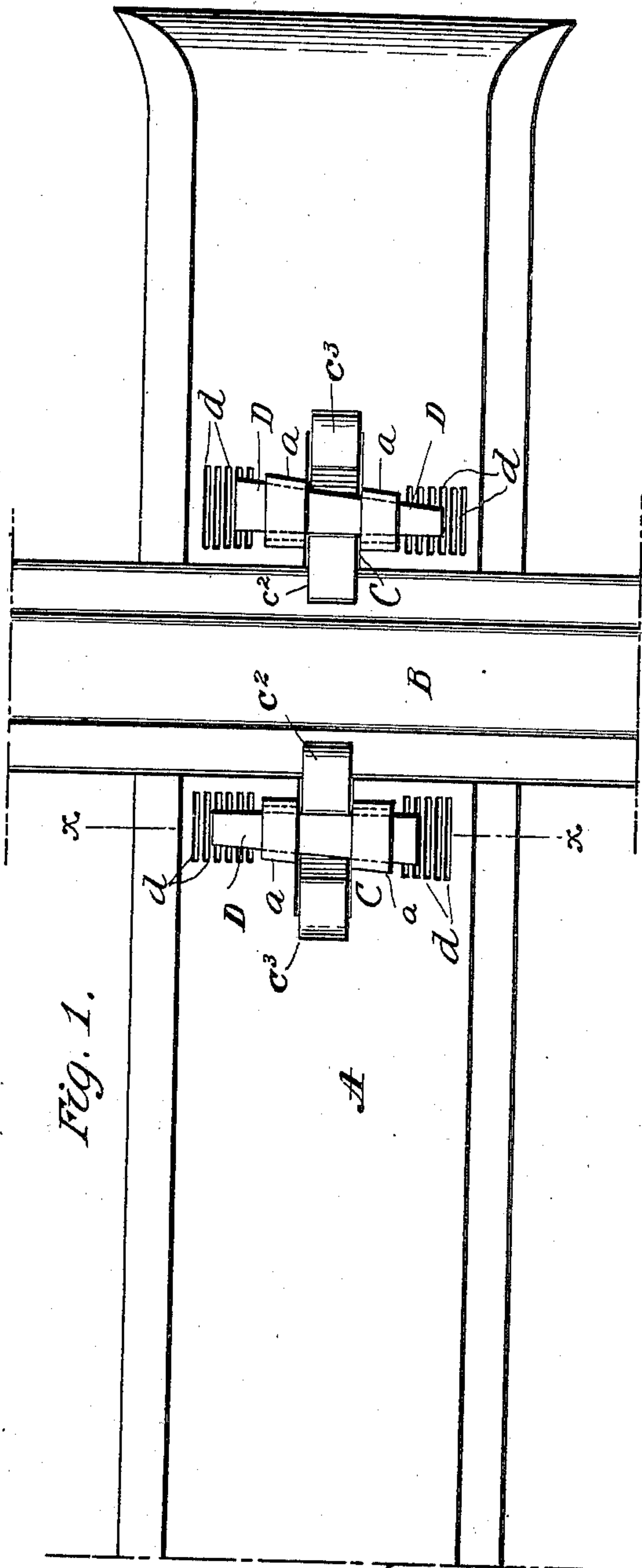


Fig. 1.

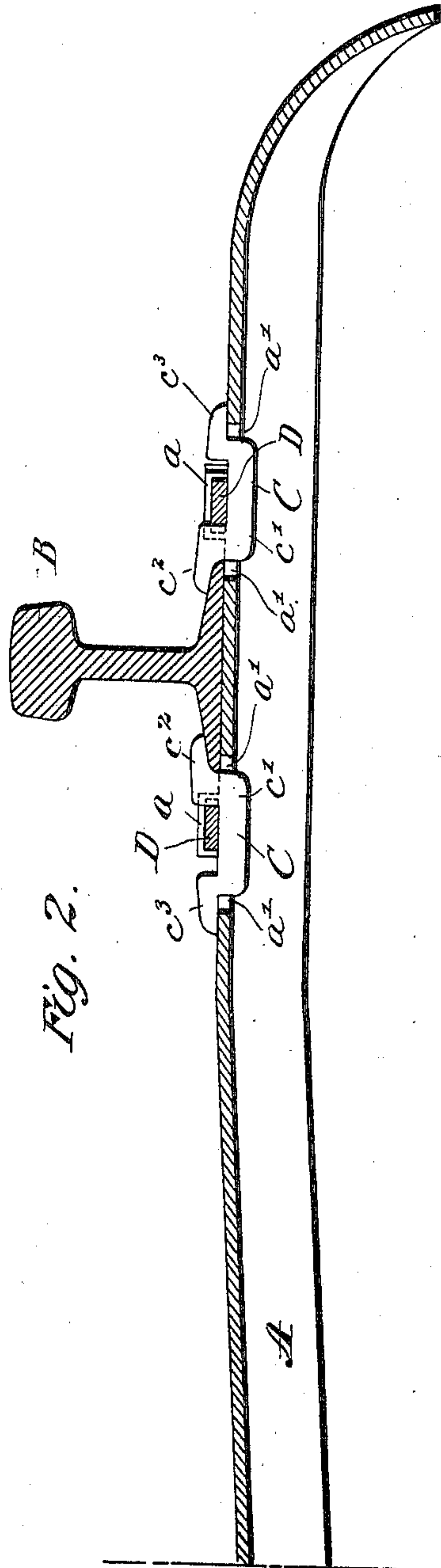


Fig. 2.

WITNESSES:

Frank L. Ober.
Geo. S. Meunier.

INVENTOR

Lucius T. Sheffield

BY

Wm. L. Thomas

ATTORNEY.

No. 679,341.

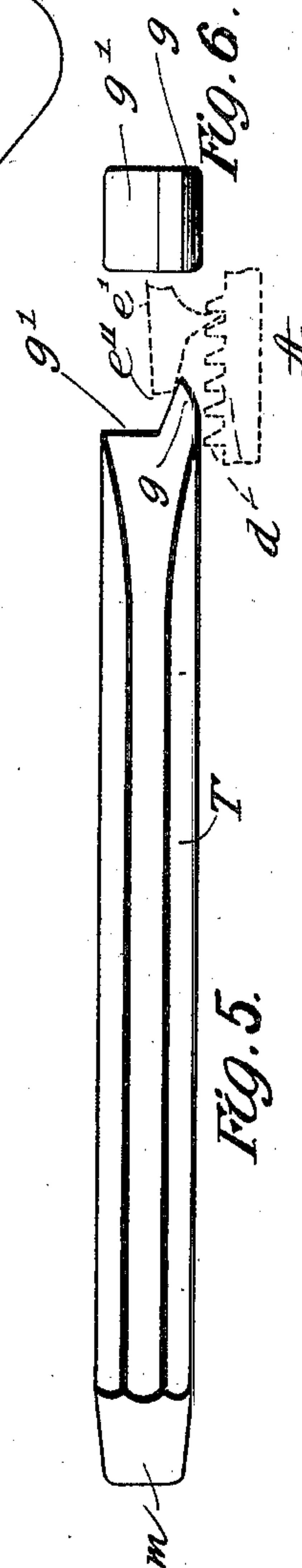
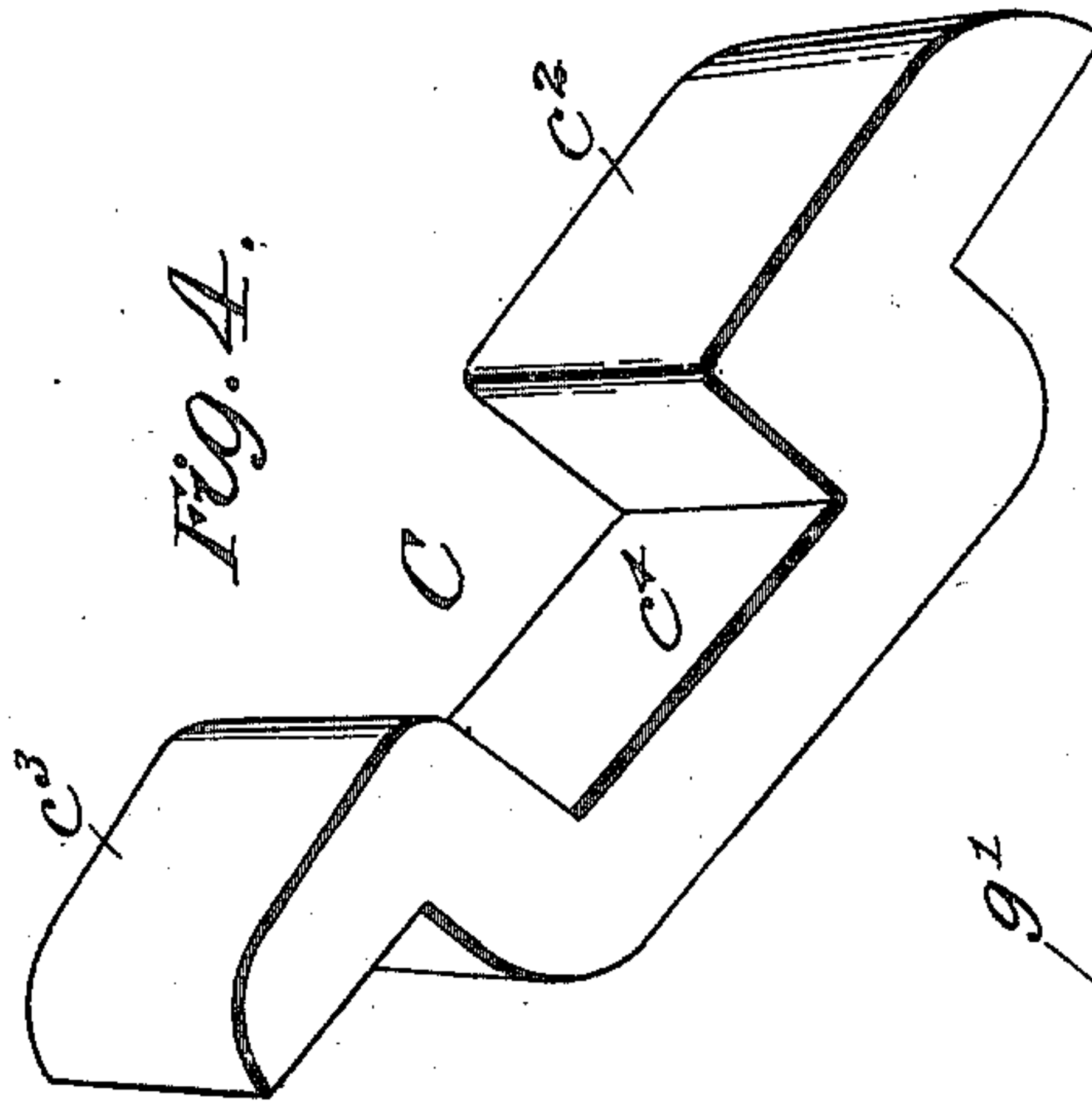
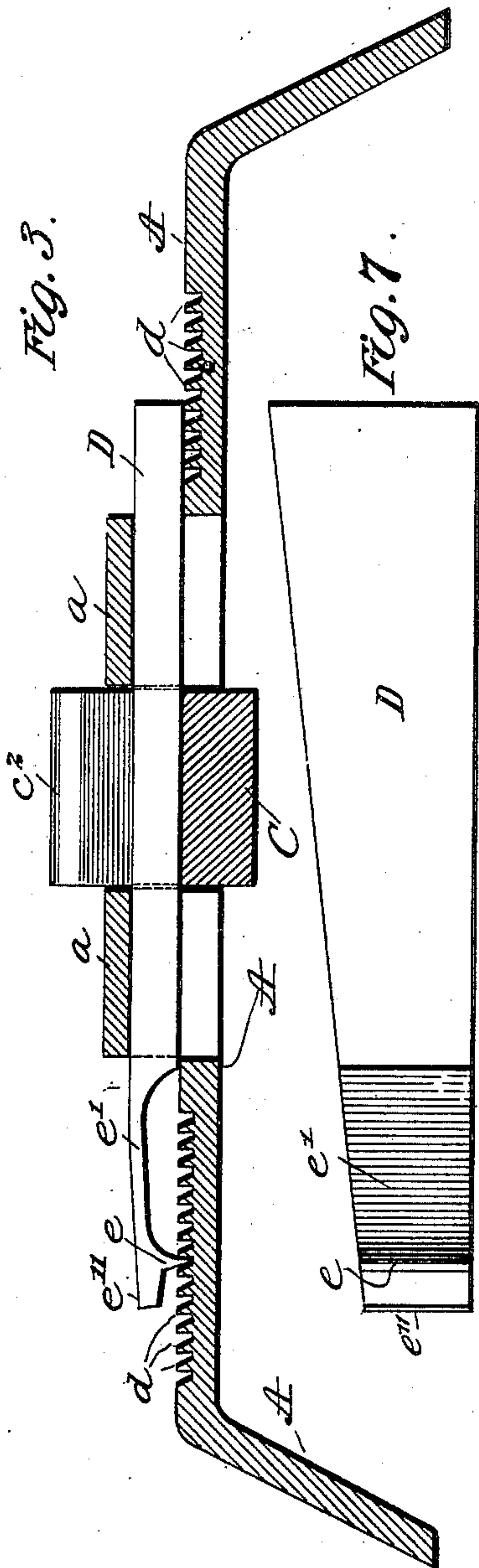
Patented July 30, 1901.

L. T. SHEFFIELD.
RAILWAY APPLIANCE.

(Application filed Dec. 4, 1900.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

Frank S. Ober
Geo. A. Measures.

INVENTOR

Lucius T. Sheffield
BY *[Signature]*
ATTORNEY.

UNITED STATES PATENT OFFICE.

LUCIUS T. SHEFFIELD, OF NEW YORK, N. Y.

RAILWAY APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 679,341, dated July 30, 1901.

Application filed December 4, 1900. Serial No. 38,672. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS T. SHEFFIELD, a citizen of the United States, residing in the borough of Manhattan, in the city and State of New York, have invented certain new and useful Improvements in Railway Appliances, of which the following is a specification.

My present invention relates to that class of devices by which the rails of a railway are secured to the ties upon which they are laid; and it consists in improvements whereby the parts and devices operating to hold the rail seated removably in the desired position upon the tie are adapted to coact with each other, so as to interlock when in final position, and thus obviate accidental loosening or other disturbance of the desired relation to each other. Thus more specifically my said invention may be said to relate to such forms of devices by which the rail is held in position upon the tie as are described in the specification and drawings of the Letters Patent previously granted to me therefor, No. 651,893, dated June 19, 1900.

The object of my present invention is to provide strong, simple, adjustable, inexpensive, easily-locked and with comparative difficulty unlocked, means whereby the rail and tie may be rigidly fastened together in the required relation to each other and in such a manner as to retain such relation as against all ordinary strains or shocks incident to the usual uses of the rail as such and also as against the ordinary ability of maldisposed persons to tamper with the stability of the railroad-line.

My present invention is particularly applicable to iron or metallic ties, though it may also be applied to ties of other material.

I attain, broadly speaking, the said objects of my invention by providing the securing-wedge, as well as certain of the surfaces against which it moves and abuts, with means coacting with each other to prevent retrogression and hinder withdrawal of the wedge.

The nature of my invention will more fully appear by reference to the accompanying drawings, made a part of this specification, in which—

Figure 1 is a plan of a part of a rail and of a part of a tie secured in the requisite relation to each other by the use of my said im-

provements. Fig. 2 is a part-sectional elevation of Fig. 1. Fig. 3 is a transverse part-sectional view, on an enlarged scale, of the tie and clip, taken on the line *xx* of Fig. 1, and a side elevation of the keyed wedge. Fig. 4 is an enlarged perspective view of one of the clips. Fig. 5 is a side elevation of an unlocking-key adapted for use with the device shown in Fig. 3, and Fig. 6 is an elevation of the end of Fig. 5. Fig. 7 is a plan of the under side of the wedge shown in Fig. 3.

Similar letters in each figure refer to similar parts.

A is the tie.

B is the rail.

C C are the clips.

D D are the wedge-shaped clip-holders or locking-wedges, and D' is a modification thereof.

a a are the raised pressed-up portions of the tie and which assist in the guiding, control, retention, and operation of the locking-wedge D. In the case of metallic ties these raised portions *a a* are preferably formed integral with the tie by pressing the same in any convenient manner out of the metal of which the tie is composed. Should the metal of the tie prove insufficiently thick to afford the thickness and strength required in such pressed-up portions, it may be locally thickened for that purpose at the required place in any convenient manner—as, for instance, by rolling the tie so as to present longitudinal ribs or portions of greater thickness at those locations where the pressed-up portions *a a* are to be formed. The tie also contains openings *a'*, through which the base or lower part *c* of the clip C passes, and which openings I now regard as preferable to the pressed-down channels *a' a'*, shown for a corresponding purpose in my previous patent. The clip C is provided with a flange *c³* on one side, which rests on the tie, and at its opposite extremity with a flange *c²*, which rests upon the rail. The clip C is centrally depressed, as at *c⁴*, Fig. 4, for the accommodation of the locking-wedge D, and its outward surfaces, which abut against the flange of the rail, thus present not only a horizontal flange-surface to press downwardly upon the horizontal portion of the foot of the rail, but also an approximately vertical engaging surface to

press laterally against the vertical portions of such foot, as shown in Fig. 2. The raised portions *a a* are preferably formed integral with the tie A, the same as disclosed in my said previous patent. The rail having been located in the desired position upon the tie, the clips are placed in position on either side thereof, as shown in Fig. 2, so as to abut against the flange of the rail. The locking-wedges D D are then inserted within the raised portions *a a* and overlying the clips and are crowded home, so as to bear against the rear of the clip-flanges *c² c²*, on the one hand, and, on the other, against the opposite inner vertical walls of the raised portions *a a*, and also preferably, on the one hand, against the inner horizontal surface of the raised portions *a a* and, on the other, against the upper surface *c⁴* of the depressed portions of the clips, thus securing the rail as against either lateral or upward vertical movement. Though the rail is thus secured with great firmness without the assistance of other devices, it is nevertheless desirable, in order to guard with entire effectiveness against displacement and any disturbance of the required relation of the parts to each other, that the wedges shall be additionally positively locked into position. This I accomplish by providing the upper surface of the tie with a group or series of parallel ribs or locking-flanges *d d*, extending longitudinally of the tie and transversely of the direction of movement of the wedge, and also by providing the small end of the wedge with a projecting flange *e*, Fig. 3, adapted to interlock, engage, and coact with the said ribs *d d* to prevent withdrawal of the wedge. The said retaining-ribs and their intervening depressions are preferably integral with the tie, and if the latter is of metal can be readily and economically produced therein during the manufacture thereof, as will be readily understood. The vertical thickness of the wedge D is at the narrow extremity of the latter attenuated, as at *e'*, Fig. 3, and to this attenuated portion carrying the projecting flange *e* is given a bent set, so as to spring the lower lip of the flange *e* normally below the tops of the parallel ribs or locking-flanges *d d* in the tie. When the wedge D is inserted and forced into position, the spring resulting from the attenuation of the portion *e'* insures sufficient yield to prevent the flange *e'* from preventing substantially free passage of the wedge over the clips C and under the raised portions *a a*; but as soon as the flange *e* ceases to pass over substantially plane surfaces and encounters the retaining-ribs *d d* beyond the raised portion *a* the spring in the attenuated portion *e'*, owing to the normal set thereof, causes the flange *e* to enter into the depressions between the ribs, and thus to engage against the latter and thus resist withdrawal of the wedge. The ribs *d d* are preferably of such form as to present inclined surfaces as against the forward move-

ment of the flange *e* and vertical or positively inclined surfaces as against its withdrawal, whereby forward progress of the flange is facilitated and retrogression additionally impeded. My locking-wedge thus provided with a spring-flange coacting with engaging ribs in the tie, as aforesaid, is, owing to the strength and rigidity of the materials, so firmly locked in position as to render it difficult if not impossible to release it without the assistance of special appliances or tools. I have accordingly found it convenient to provide the lesser extremity of the wedge with a projection or nose *e¹¹*, extending somewhat beyond and above the engaging flange *e*, the under surface of which is substantially above the top of the tie and beveled to admit of the insertion between them of the correspondingly-beveled lip of an unlocking-tool T. (Illustrated in Fig. 7.) The tool T is provided with a pushing face or shoulder *g'*, adapted to abut against the nose *e¹¹* of the wedge. The under or lifting lip of the tool T is of such length and beveled at such an angle as to insure the lifting of the flange *e* clear of the ribs *d d* before the pushing-face *g'* abuts against the nose *e¹¹* of the wedge when the tool is driven home. To unlock and withdraw the wedge D, the beveled lip of the tool T is inserted under the correspondingly-beveled nose of the wedge, as shown in Fig. 7, after which the tool is driven home, whereby the wedge is first lifted clear of its positive engagement with the tie, and when this has been accomplished the pushing-face of the tool is driven up into abutting contact with the nose of the wedge, and the latter thus driven backward out of its seat and engagement with the other parts of my device, as described, whereby the clip is released and thus also the rail.

It will be understood that the proportion, size, shape, and relation of the various parts may be varied and modified as compared with those illustrated in the drawings without departing from my invention; also, that the parts coacting to effect locking may be interchanged between the coacting elements—as, for instance, the flange *e* might be transferred to the tie and the coacting locking-flanges *d d* to the wedge.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is the following, viz:

1. The combination of a railway-tie, a rail on said tie, and means for removably and adjustably holding said rail thereon, said means comprising a clip having a flange engaging the rail and a depressed portion and a wedge passing under raised portions of said tie and over the depressed portion of the clip, said wedge being provided with a projection coacting with a correlated depression in the tie to positively lock the parts together, substantially as and for the purposes described.

2. The combination of a railway-tie, a rail on said tie, and means for removably and ad-

justably holding said rail thereon, said means comprising a clip having a flange engaging the rail and a depressed portion and a wedge passing under raised portions of said tie and
5 over the depressed portion of the clip, said wedge being provided with a spring projection coacting with a correlated depression in the tie to positively lock the parts together, substantially as and for the purposes de-
10 scribed.

3. The combination of a railway-tie, a rail on said tie, and means for removably and adjustably holding said rail thereon, said means comprising a clip having a flange engaging

the rail and a depressed portion and a wedge 15 passing under raised portions of said tie and over the depressed portion of the clip, said wedge being provided with a spring projection coacting with a correlated depression in the tie to positively lock the parts together, 20 said spring projection being provided with a nose having a substantially vertical pushing-face and a beveled under face, substantially as and for the purposes described.

LUCIUS T. SHEFFIELD.

Witnesses:

PHILIP C. PECK,
GEO. G. MEASURES.