

(No Model.)

J. P. WARNER.
METAL TIE AND NUT LOCK.

No. 508,664.

Patented Nov. 14, 1893.

Fig. 1.

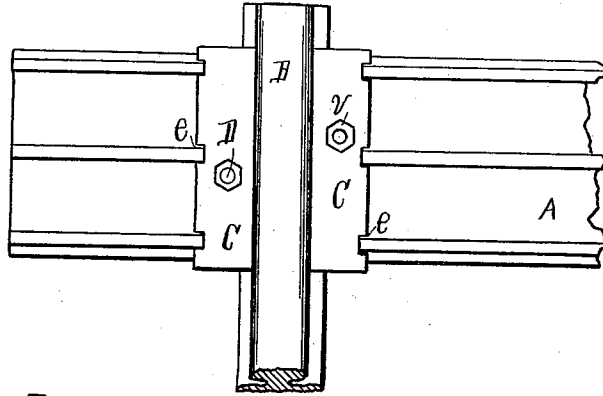


Fig. 2.

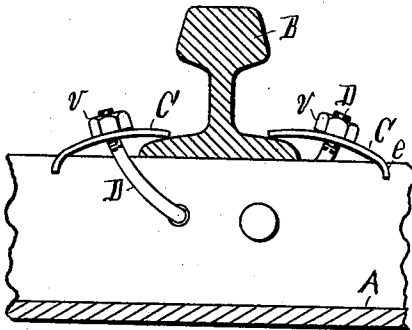


Fig. 3.

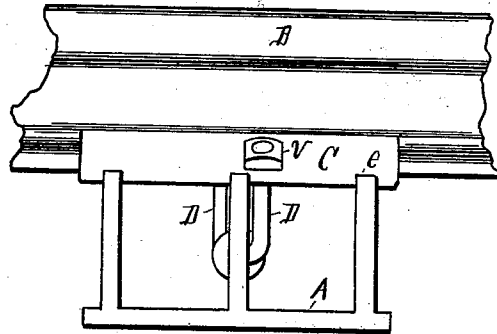
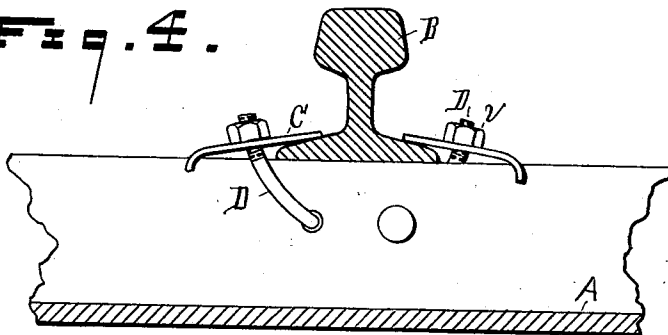


Fig. 4.



WITNESSES

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JASPER P. WARNER, OF DECATUR, MICHIGAN.

METAL TIE AND NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 508,664, dated November 14, 1893.

Application filed December 27, 1892. Serial No. 456,454. (No model.)

To all whom it may concern:

Be it known that I, JASPER P. WARNER, a citizen of the United States, residing at Decatur, county of Van Buren, State of Michigan, have invented a new and useful Metal Tie and Nut-Lock, of which the following is a specification.

The main object of this invention is to construct a metal tie, in connection with binding plates for securing the rails to said tie, which binding plates serve as nut locks, by their tendency to assume their normal shape after being bound.

In the drawings forming a part of this specification, Figure 1 is a broken plan view; Fig. 2 a longitudinal section near the center of Fig. 1; Fig. 3 an end elevation, looking from a point at the left of Fig. 1; and Fig. 4 is the same as Fig. 2, illustrating the operation.

The ties, A, consist of channeled metal, so placed that the channels open upward. The ties may be provided with one or more channels, two being here shown, and upon the upper free edges of the walls of the channels the rails, B, are mounted, and of course transversely thereto. Upon each side of the rail, B, and bearing upon the lower flange of said rail, is a binding plate, C, said plate being made of spring metal, of curved form in end view prior to being bound by the binding bolts, D. These plates are provided with notches, *e*, at their outer edge, which notches loosely fit over the upper free edges of the channeled tie, A.

The bolts, D, are passed through holes in one of the walls of the channeled tie, preferably in opposite directions to each other (two bolts being employed), the lower ends of said bolts being right-angled through the holes in said wall and headed so as not to draw out of said holes in said wall; and from thence said bolts extend obliquely upward and pass through holes in the binding plates C, the upper ends of said bolts being provided with binding nuts, *v*.

In the operation of binding the rails to the ties, Fig. 2 illustrates the appearance of the binding plates before the nuts, *v*, are screwed down, and Fig. 4 shows the flat appearance of the binding plates after the nuts *v* have

been screwed down; said plate being enabled to assume this form by slipping laterally on the edges of the channeled tie and on the upper face of the lower flange of the rail.

It will be readily seen that the tendency of the binding plates to assume their normal shape, as in Fig. 2, owing to their elasticity, will successfully prevent any jar from turning the nuts, hence forming a successful nut-lock.

More than two bolts, D, may be employed if deemed necessary, and as stated, the ties may have as many channels as deemed advisable; it being understood, of course, that if another set of bolts were used for binding each side of the binding plates, the other bolts would be passed into holes in the other walls of the channeled tie, the same as though they were passed through the central wall, as here shown.

By making the ties channeled they represent a larger area, with less weight and at less expense, and the attachment of the bolts thereto is made more convenient, with less expense in producing the bolts than would be the case if the channels in the tie were filled up. In attaching said binding bolts to the rails and tie, the notches, *e*, referred to, prevent endwise displacement of the binding plates.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of suitable ties, rails mounted thereon, spring metal binding plates, bowed upward when viewed in cross section, prior to being bound, and adapted to straighten after being bound, and binding bolts and nuts, whereby the tendency of the plates to assume their normal shape locks the nuts; substantially as set forth.

2. The combination of channeled metal ties, rails mounted upon said ties, elastic metal binding plates, provided with notches in their outer edges fitting over the upper free edges of the channeled ties, and binding bolts and nuts; substantially as set forth.

3. The combination of channeled metal ties, rails mounted thereon, elastic metal binding plates, having a spring resistance against

the binding pressure of the binding nuts, and
headed binding bolts right-angled through
one of the walls of the channeled tie and
from thence extending upward on opposite
5 sides of said wall, passing through the bind-
ing plates, and binding nuts on said bolts;
substantially as set forth.

In testimony to the foregoing I have here-
unto subscribed my name in the presence of
two witnesses.

JASPER P. WARNER.

Witnesses:

FRANK POTTS,
M. G. LINCOLN.