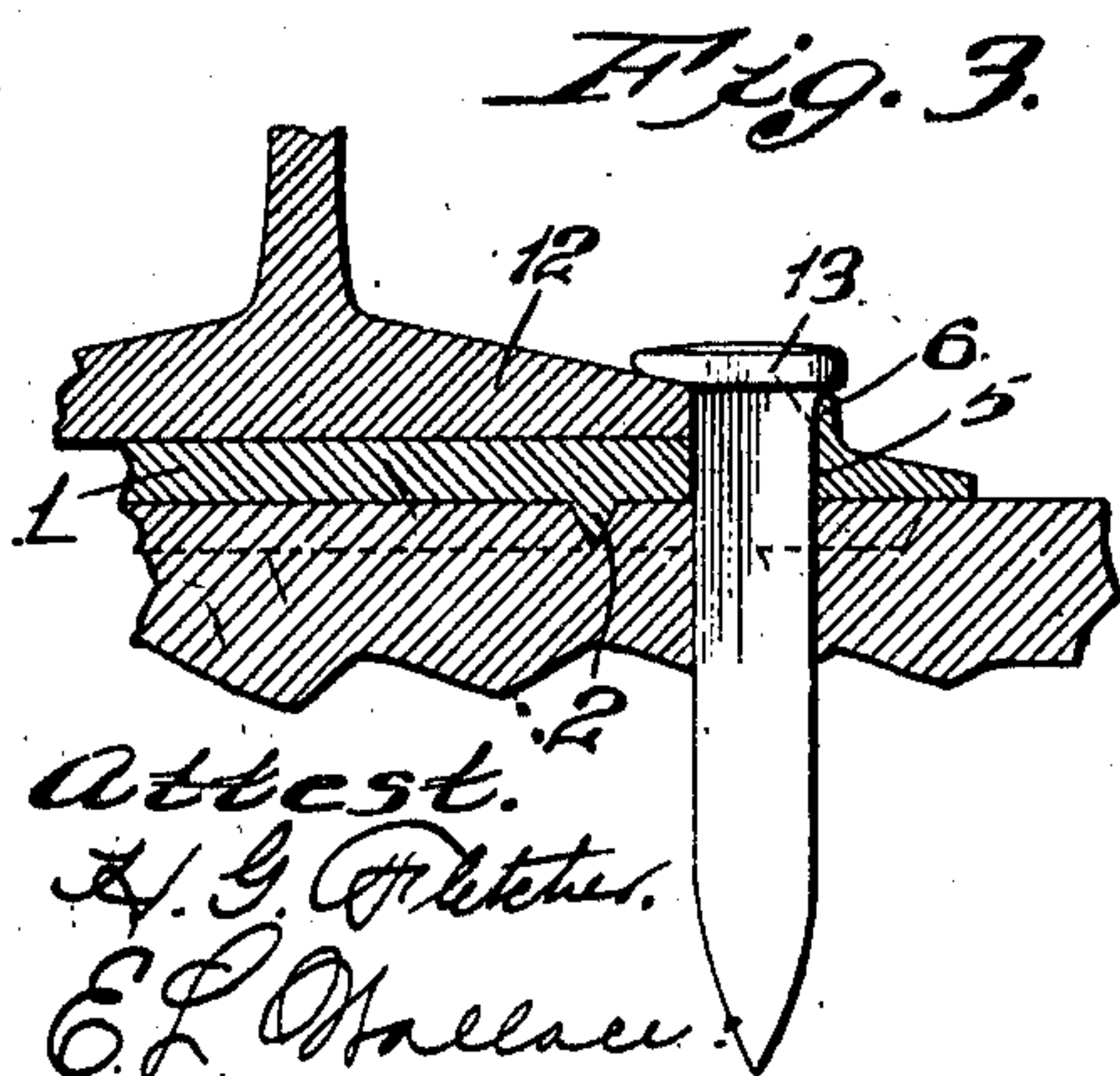
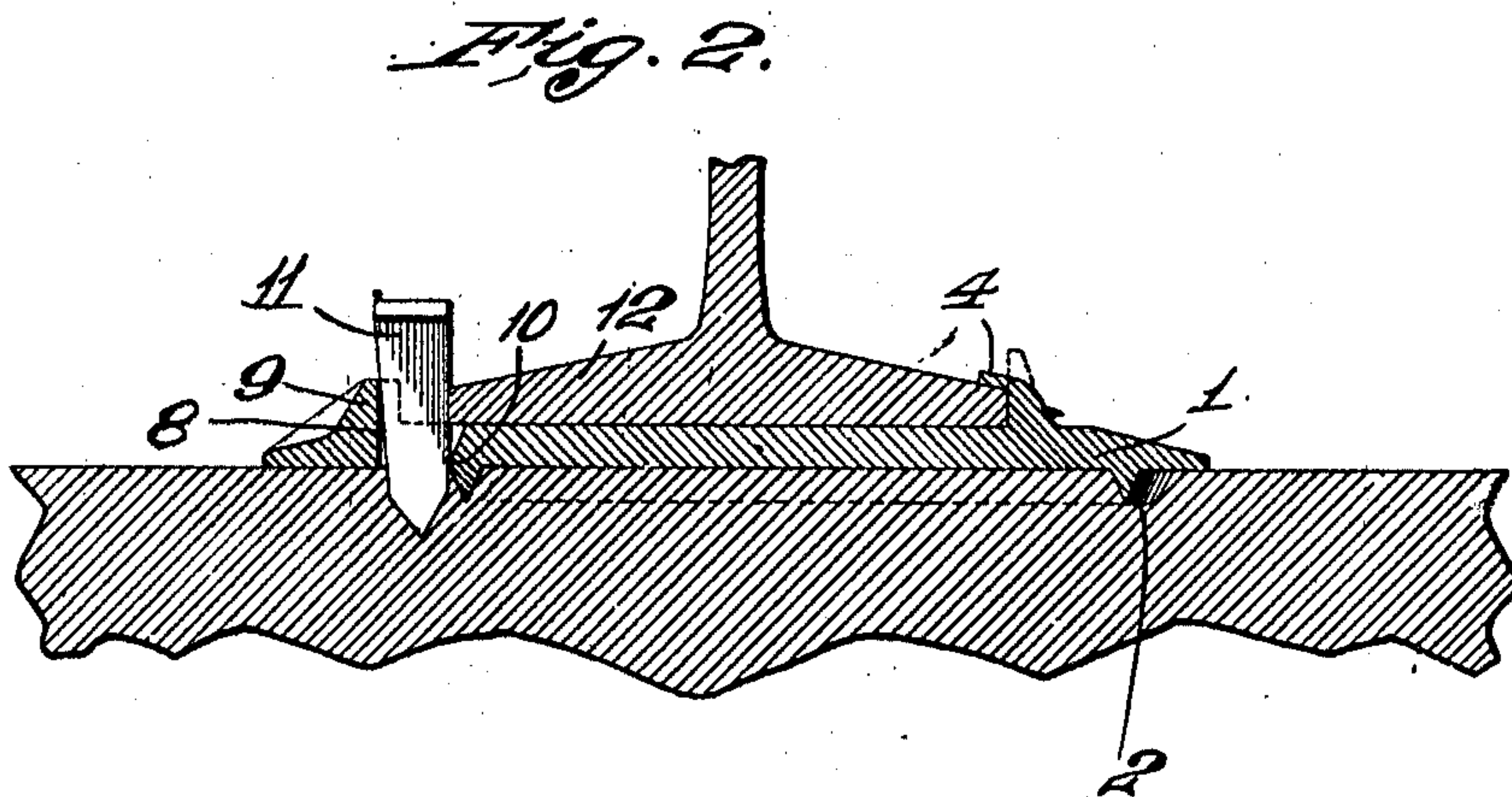
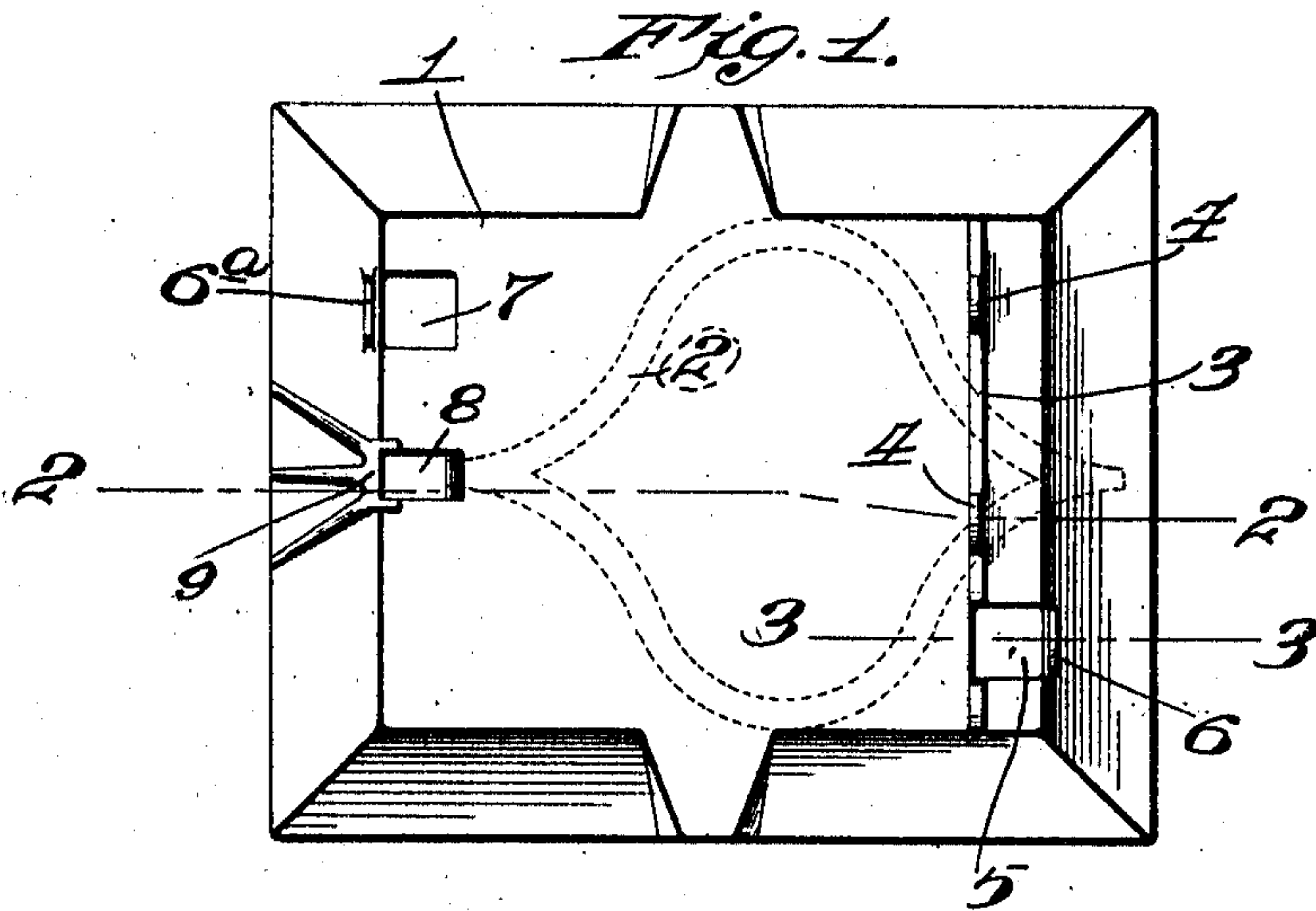


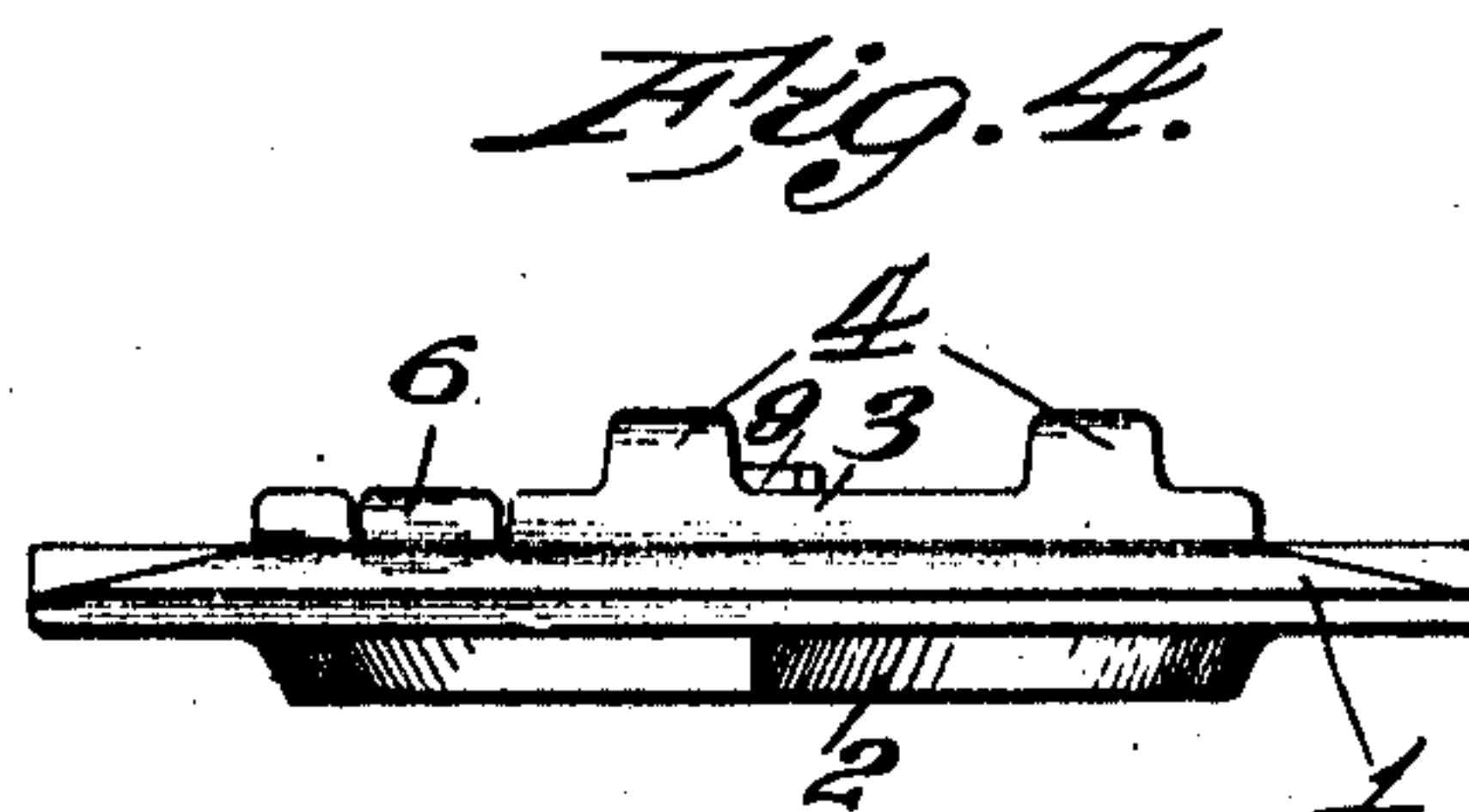
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 COMBINED TIE PLATE AND RAIL ANTICREEPER.
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UNITED STATES PATENT OFFICE.

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COMBINED TIE-PLATE AND RAIL ANTICREEPER.

953,193.

Specification of Letters Patent.

Patented Mar. 29, 1910.

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To all whom it may concern:

Be it known that we, MARCUS S. CLARKE and EDWARD L. ADREON, Jr., citizens of the United States, and residents of Houston, Texas, and St. Louis, Missouri, respectively, have invented certain new and useful Improvements in Combined Tie-Plates and Rail Anticreepers, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to a combined tie plate and rail anti-creeper, the principal object of our invention being to provide a construction whereby the tie plate is locked to the base of the rail, and also in constructing a tie plate provided with projected lips to prevent the base of the rail from being dislocated and riding on the lugs or shoulders of the tie plate; also, in providing a yielding backing for the spike as it is being driven and a rigid brace or backing under the head of the spike when it has been driven, whereby the spike when driven is held in engagement with the base of the rail, and also providing the under surface of the tie plate with a continuous rib, whereby when the same is seated on a tie it practically forms an inclosed chamber and prevents the plate from lateral movement on the tie.

To the above purposes, our invention consists in certain novel features of construction and arrangement of parts which will be hereinafter more fully set forth, pointed out in the claims and illustrated in the accompanying drawings, in which:

Figure 1 is a top plan view of the tie plate; Fig. 2 is a section taken on the line 2—2 of Fig. 1, the rail and a portion of the tie being in section; Fig. 3 is a section taken on the line 3—3 of Fig. 1; Fig. 4 is an end view of the shoulder end of the tie plate.

Referring by numerals to the accompanying drawings: 1 indicates a tie plate, which is preferably cast out of malleable material or stamped from soft steel or iron. The said plate is provided on its under surface with a continuous rib 2, having a variable outline of reverse curves, and is provided on its top surface adjacent its outer end with a shoulder 3, which shoulder preferably extends across the top of the plate. Arising from said shoulder and formed integral

therewith are projecting lugs 4. These lugs are capable of being bent, or having their angular relation relative to the shoulder changed or varied. Formed through the outer end of said plate is a spike opening 5, the inner wall of said spike opening being in alinement with the inside face of the shoulder 3. Located adjacent said spike opening and formed integral with the plate is a lug 6, the inner face of which lug is in line with one wall of the spike opening, or virtually forms a continuation of the back wall of the spike opening. Said lug has three functions: it provides an increased contact face for the back of the spike; it answers as a yielding brace for the spike while being driven; and after the spike has been driven it acts as a rigid brace underneath the back portion of the head of the spike, preventing the upturning or withdrawing of the spike from the base of the rail. Formed in the opposite end of said plate is an ordinary spike opening 7, which has a similar lug 6^a to the lug 6 heretofore described, and which lug 6^a is for the same purpose as the lug 6 heretofore described. Although we have only shown two spike openings, one in each end of the plate, we may provide the plate with any number of spike openings, and locate them wherever desired. Formed in the inner end of the plate is a key or wedge opening 8 having a shoulder 9 projecting above the surface of the plate, the wall of said shoulder being in alinement with one wall of said key or wedge opening. The wall of the key or wedge opening 8 opposite the shoulder 9 is inclined so that the length of the opening is greater at the top than at the bottom, said wall terminating in a reduced portion 10.

11 indicates a wedge which we employ in securing the tie plate 1 to the base of a rail, such as 12, it being noted in this connection, however, that the wedge 11 which we employ is merely for the purpose of fastening the plate to the base of the rail, as above stated, and for putting tension on the tie plate and preventing it from buckling or becoming curved.

In the practical operation of our invention, the tie plate 1 is secured to the tie by means of ordinary spikes, such as 13, inserted in the spike openings 5 and 7. As the spike is driven into the tie (reference being had to Fig. 3), the lug 6 formed on the tie

plate will act as a yielding brace against the back edge of the spike, and when said spike has been driven home into the tie, the upper end of said lug will rest beneath the head lying above the rear face of the spike and will hold and maintain the spike in intimate contact with the base of the rail. If desired, the lugs 4 are then bent downwardly, as illustrated in Fig. 2, over the top of the opposite flange of the rail. The wedge 11 is next inserted in the wedge opening 8, and is driven downward, and by referring to Fig. 2 it will be seen that there is a three-point contact between the wedge and shoulder 9, the inside edge of the rail base, and the reduced portion 10 of the wall of the opening. The forcing or driving of the wedge inwardly will, as it is readily apparent, impart a longitudinal strain on the tie plate, or, in other words, will put it under tension and prevent it from buckling or curving, and by putting it under tension said tie plate is firmly locked to the base of the rail. By firmly securing in this manner the plate to the rail base, said tie plate and rail base will move together, and there will be no wear from lost motion or vibration, which is the cause of worn spikes, worn ties, and generally loose track conditions.

By examining Fig. 2 it will be seen that the inclined wall of the key or wedge opening 8 lessens the contact surface between the wedge of said wall, and really affords or permits the full contact between the inside edge of the base flange of the rail and the wedge. In other words, the way this wall is cut away it does not materially interfere with the contact between said edge and the wedge, the reduced portion 10 of the wall acting more as a guide and a brace for the inside edge of the wedge.

The peculiar form of rib 2 which we employ is very advantageous in that it is a continuous rib, which when applied to a tie forms virtually a chamber between the bottom of the tie plate and the tie, and the same being of irregular and broken outline of reverse curves, forms a firm contact with the tie and prevents any lateral movement of the tie plate, and virtually forms an air cushion beneath the tie plate. It will also be observed that the marginal edges of the tie plate are tapered downwardly, the central portion of the tie plate, however, not being reduced, which gives a full width base transversely of the plate, preventing a rocking of the plate transversely.

We claim:

1. A combined tie plate and rail anti-creeper, comprising a base plate, a shoulder for the outside edge of a rail base formed on the top surface of said plate, lugs projecting from said shoulder, spike openings formed in said base plate, a wedge opening having a shoulder in line with one of its walls

formed in said base plate, and a wedge adapted to be inserted in said opening for securing the tie plate to the base of the rail.

2. A combined tie plate and rail anti-creeper, comprising a base plate, a continuous rib formed on the lower surface of said base plate, a shoulder formed on the top surface of said base plate, lugs projecting from said shoulder, spike openings formed in said base plate, a wedge opening having a shoulder in line with one of its side walls formed in said base plate, and a wedge adapted to be inserted in said opening for securing the tie plate to the base of the rail.

3. A combined tie plate and rail anti-creeper, comprising a base plate, a shoulder formed on the top surface of said base plate, lugs projecting from said shoulder, spike openings formed in said base plate, bracing lugs formed on said base plate in line with one of the walls of the spike openings, a wedge opening having a shoulder in line with one of its walls formed in said base plate, and a wedge adapted to be inserted in said wedge opening for securing the tie plate to the base of the rail.

4. A combined tie plate and rail anti-creeper, comprising a base plate, a continuous rib formed on the bottom face of said base plate, a shoulder formed on the top surface of said base plate, lugs projecting from said shoulder, spike openings formed in said base plate, bracing lugs formed on said base plate in line with one of the walls of the spike openings, a wedge opening having a shoulder in line with one of its walls formed in said base plate, and a wedge adapted to be inserted in said wedge opening for securing the tie plate to the base of the rail.

5. A combined tie plate and rail anti-creeper, comprising a base plate, a continuous rib formed on the bottom face of said base plate, a shoulder formed on the top surface of said base plate, lugs projecting from said shoulder, spike openings formed in said base plate, bracing lugs formed on said base plate in line with one of the walls of the spike openings, a wedge opening having a shoulder in line with one of its walls formed in said base plate, the wall of said opening opposite the lug being inclined, and a wedge adapted to be inserted in said wedge opening for securing the tie plate to the base of the rail.

6. A tie plate, provided with a continuous variable rib projecting from its under surface, a wedge opening formed through said plate, the inner wall of said wedge opening being inclined, a spike opening formed through said tie plate, and a yielding bracing lug rising upwardly from the rear wall of said spike opening and adapted to engage with and support the rear portion of the head of the spike while being seated, and

preventing the portion of the spike adjacent the head from bending rearwardly.

7. A tie plate provided with a continuous rib projecting from its under surface, a shoulder on its top surface, and projections arising from said shoulder, said projections capable of being bent inwardly over the edge of the base of the rail, the said plate being provided with suitable spike openings.

8. A tie plate provided with suitable spike openings a transversely disposed shoulder on its top surface and projections arising from said shoulder, said projections capable of being bent over the edge of the base of the rail.

9. A tie plate having its ends and a portion of its sides reduced in thickness, suitable spike openings formed through said plate, and a shoulder disposed transversely on the top surface of said plate and projections arising from said shoulder.

10. A tie plate provided with suitable spike openings, a yielding bracing lug arising upwardly from the rear wall of each of said spike openings, a transversely disposed shoulder on the top surface of said plate and projections arising from said shoulder, said projections capable of being bent over the edge of the base of the rail.

11. A combined tie plate and rail anti-creeper, comprising a base plate, a shoulder for the outside edge of the rail base cast on the top surface of said plate and extending

transversely across the rail bearing surface of the plate, spike openings formed in said base plate, a wedge opening having its inner wall inclined, a shoulder in line with one of its walls cast on said base plate, and a wedge adapted to be inserted in said opening for securing the tie plate to the base of the rail.

12. A combined tie plate and rail anti-creeper, comprising a base plate, a shoulder for the outside edge of a rail base formed on the top surface of said plate and extending transversely across the rail-bearing surface of said plate, spike openings formed in said base plate, a wedge opening having a shoulder in line with one of its walls formed on said base plate, and a wedge adapted to be inserted in said opening for putting said tie plate under tension and preventing it from buckling or curving, and securing the tie plate to the base of the rail.

In testimony whereof, we have signed our names to this specification, in presence of two subscribing witnesses.

MARCUS S. CLARKE.

EDWARD L. ADREON, Jr.

Witnesses to signature of Marcus S. Clarke:

SIDNEY HALVERTON,

OLE FINSTEAD.

Witnesses to signature of Edward L. Adreon, Jr.:

H. G. FLETCHER,

E. L. WALLACE.