

No. 778,064.

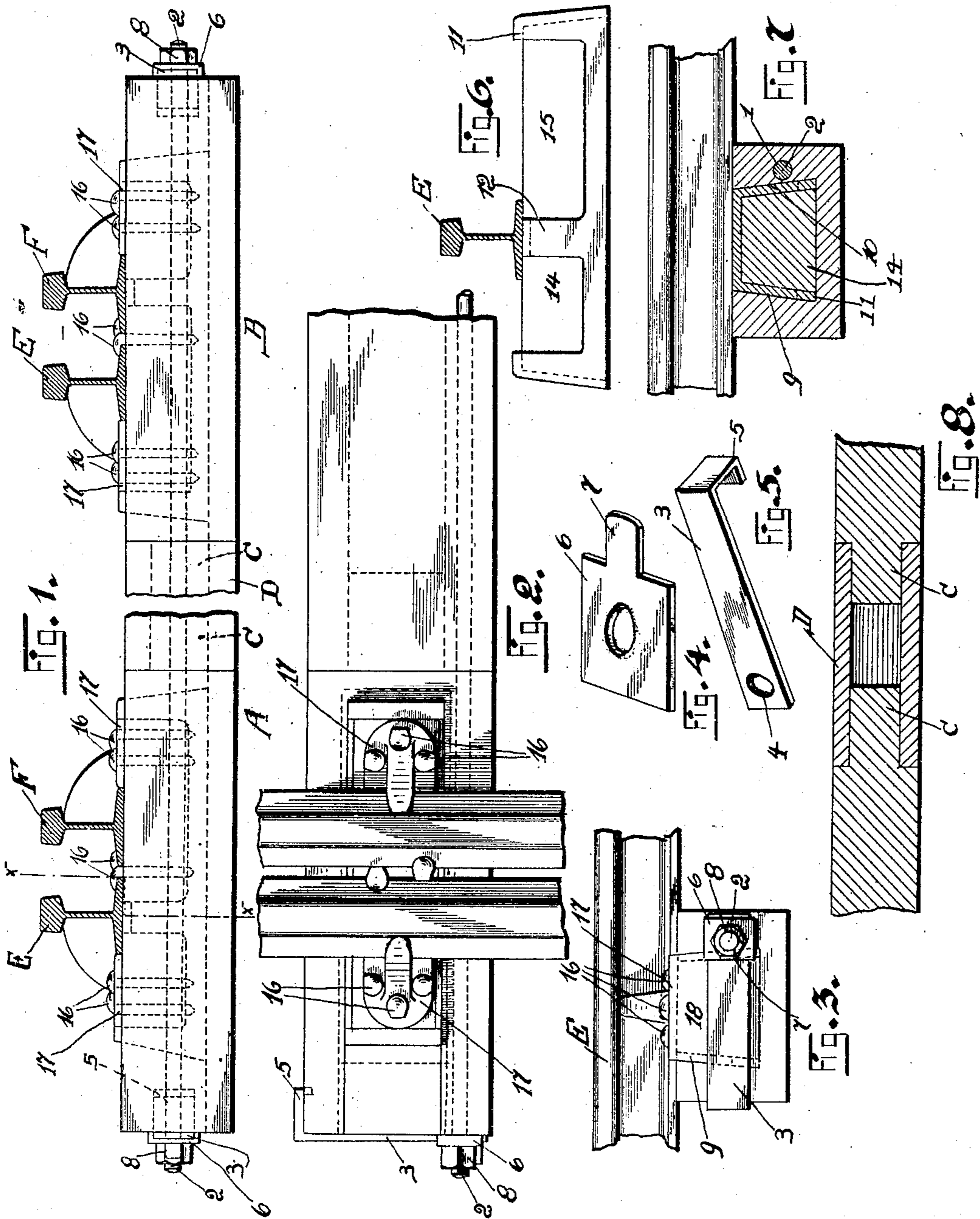
PATENTED DEC. 20, 1904.

T. S. NEWTON.
TIE.

APPLICATION FILED SEPT. 12, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:
C. Klottermann,
J. H. Butler.

Inventor,
Thomas S. Newton,
by H. E. Everett & Co.
Attorneys.

No. 778,064.

PATENTED DEC. 20, 1904.

T. S. NEWTON.

TIE.

APPLICATION FILED SEPT. 12, 1904.

NO MODEL.

2 SHEETS—SHEET 2.

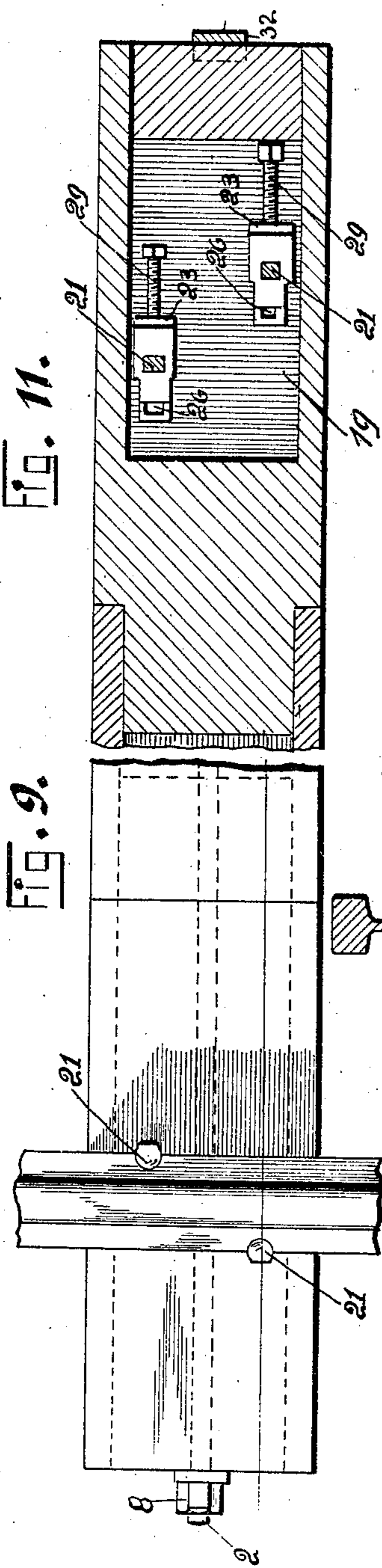


Fig. 12.

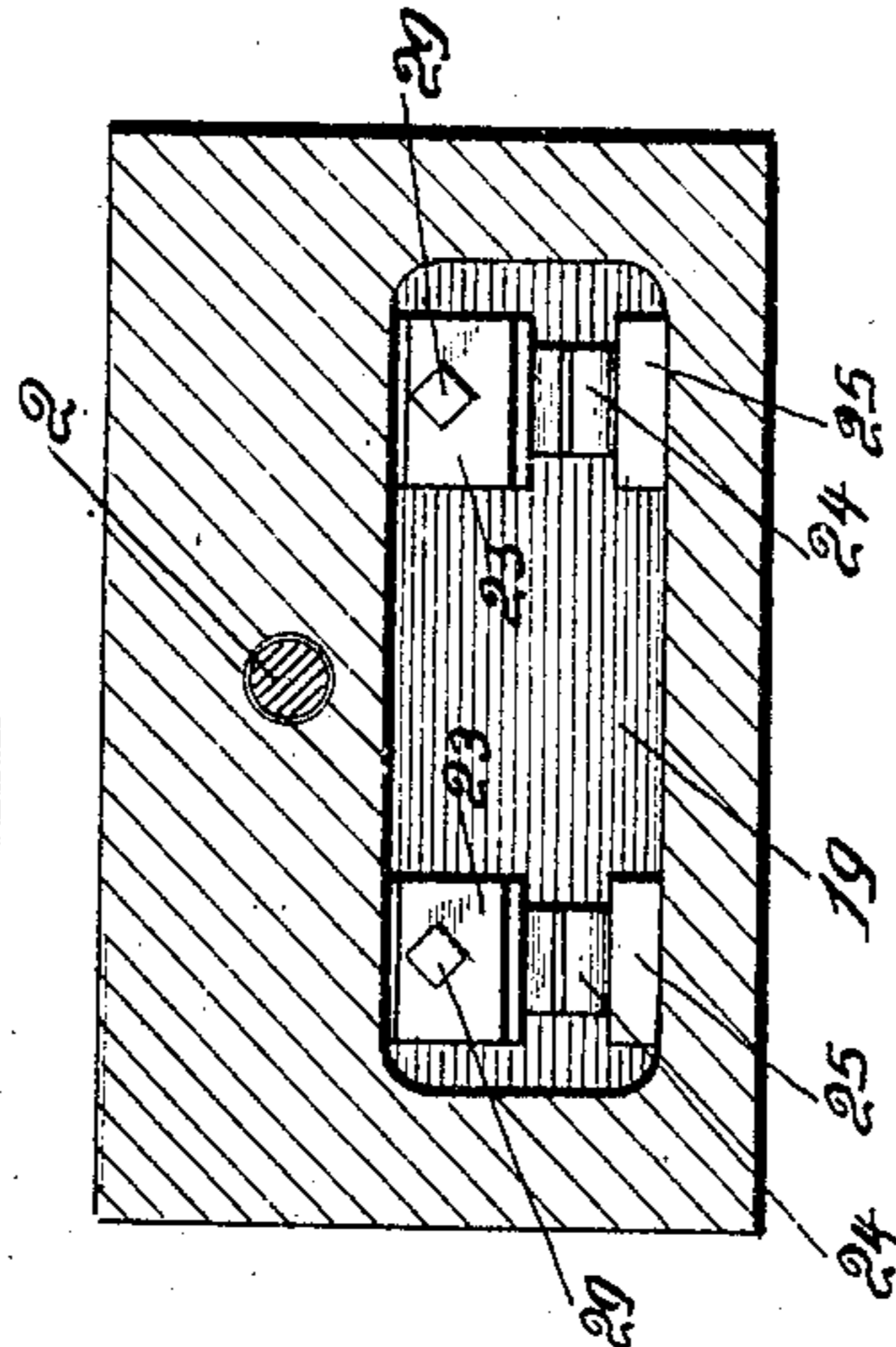


Fig. 14.

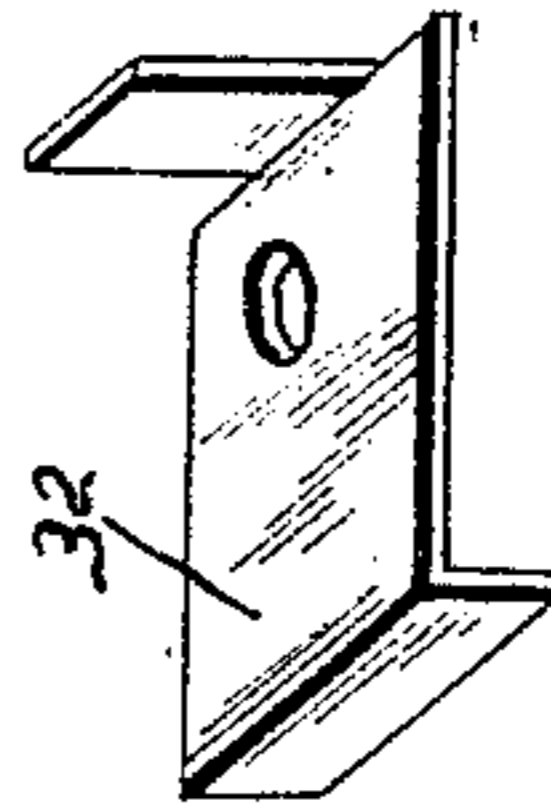


Fig. 10.

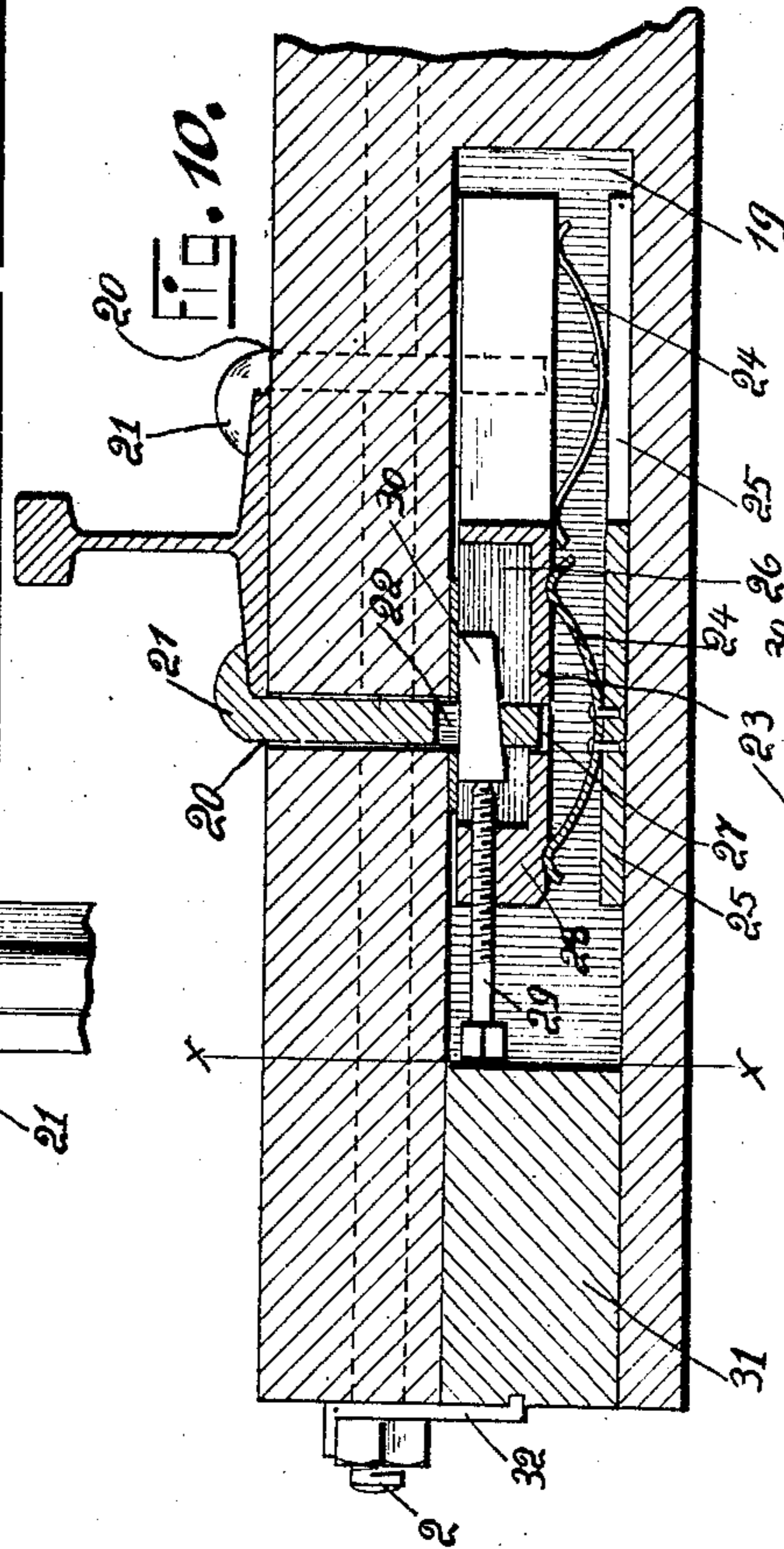
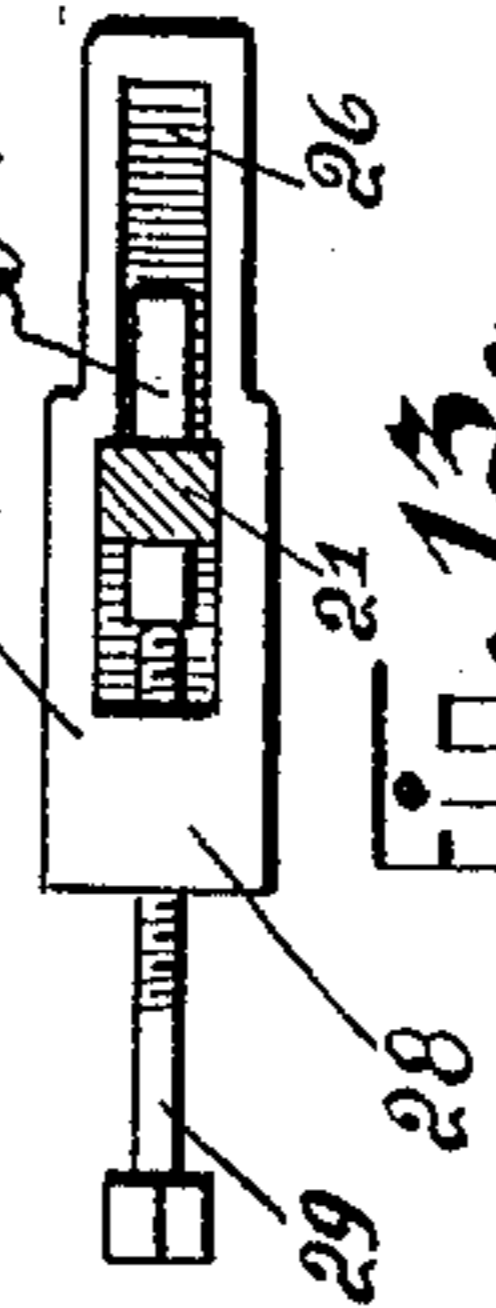


Fig. 13.



Witnesses:

C. Klostermann

J. H. Butler

Inventor.

Thomas S. Newton

by J. C. Everett & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

THOMAS S. NEWTON, OF PITTSBURG, PENNSYLVANIA.

TIE.

SPECIFICATION forming part of Letters Patent No. 778,064, dated December 20, 1904.

Application filed September 12, 1904. Serial No. 224,144.

To all whom it may concern:

Be it known that I, THOMAS S. NEWTON, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to ties, and more particularly to railroad-ties; and the object of the invention is to provide an inexpensive, durable, and serviceable tie.

The invention as contemplated by me consists of forming a tie of clay, the tie being formed in a suitable mold, and in the clay are embedded blocks of wood, into which the ordinary spikes may be driven to secure the rail-fasteners thereon.

20 In constructing my improved tie I preferably form the same of one or more sections which are adapted to be secured together. This construction permits of the easy and quick handling of the tie, and in connection with the tie I employ novel rail-fastening means which may be employed, if it be so desired.

30 The invention finally consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

Referring to the drawings accompanying this application, like characters of reference will be used to indicate like parts throughout the views, in which—

35 Figure 1 is a side elevation of my improved tie, the central portion thereof being broken away. Fig. 2 is a top plan view of a portion of my improved tie. Fig. 3 is an end view of the same. Figs. 4 and 5 are detail perspective views of parts used in connection with my improved tie. Fig. 6 is a side elevation of the metallic frame which is adapted to be embedded in my improved tie. Fig. 7 45 is a vertical sectional view of the same. Fig. 8 is a longitudinal sectional view of the central portion of my improved tie. Fig. 9 is a top plan view of a portion of the tie, showing a modified form of construction. Fig. 10 50 is a longitudinal sectional view of the same.

Fig. 11 is a horizontal sectional view of a portion of the tie. Fig. 12 is a vertical sectional view taken on the line *x x* of Fig. 10, and Figs. 13 and 14 are detail views of parts used in connection with my modified form of construction. 55

The railroad-tie as contemplated by me is constructed in one or more parts, and each part is adapted to be formed of clay, a low grade of clay—such as fire-clay, ball-clay, or the like—being employed, and the tie may be formed in one or more sections and assembled where the road is being constructed or may be formed in the vicinity of the track to be laid. 60 65

The tie comprises, as illustrated in the drawings, two sections A and B, the confronting end of each section being provided with contracted neck portions C C, and to secure the two sections together I employ a sleeve D, 70 which by referring to Fig. 8 of the drawings it will be seen engage the confronting ends of the tie-sections. In order to secure these sections together, I provide each section near its one side with a longitudinal opening 1, 75 these openings lying in alignment with one another when the sections are placed together, and through these openings a tie bolt or rod 2 is adapted to pass, and upon each end of the tie-rod I secure a brace and a nut-lock. The 80 brace is designated by reference-numeral 3 and comprises a strip of metal which in its one end is provided with an aperture 4, through which the end of the tie-bolt passes, while the other end of the strip is bent at right angles 85 and then bent inwardly, as indicated at 5, to engage in the opposite side of the tie from that in which the opening is formed. After placing the brace 3 upon the end of the rod a washer 6 is placed thereon, this washer being provided with a lip or tongue 7, which is adapted to be bent outwardly to engage one of the faces of the nut 8. As each end of the tie is identically the same in construction, I deem it only necessary to describe one end of 95 the tie, and reference will now be had to Figs. 1 to 3, inclusive, and 6 and 7.

In constructing my improved tie I employ a suitable mold, (not shown,) and in the formation of the clay comprising the body por- 100

tion of my improved tie I provide a recess 9 in each end thereof, this recess being formed with inwardly-tapering walls 10. In the recess 9 is adapted to be placed a metallic frame 11, this frame being formed of a casting of light sheet metal, and the frame is provided with a central bridge or stirrup 12, which may be clearly seen by referring to Figs. 6 and 7 of the drawings. In the metallic frame 11 are adapted to be placed wooden blocks 14 15, and when said blocks have been placed in the metallic frame the same is placed in the recess 9, and by the formation of the tapered sides of the recess the metallic frame will be prevented from becoming disengaged from the body portion of the tie—that is, it will be prevented from rising out of said recess. I have employed the wooden blocks 14 15, whereby spikes 16 may be driven into the same to secure the rail-fasteners 17 upon the tie. These rail-fasteners are of the ordinary type and are adapted to engage the rails E and F. In Fig. 1 of the drawings I have illustrated on each end of the tie a guard-rail, and in constructing the ends of the tie I have made provision for said guard-rail by employing the wooden block 15, upon which the guard-rail may be placed and secured thereon by the rail-fastener and spikes. When the metallic frame carrying the wooden blocks has been placed in the end of the tie, a follower 18 is placed in the end of the recess 9, and it is secured therein from endwise movement by the brace 3, which is clearly shown in Figs. 2 and 3 of the drawings. The follower is also preferably constructed of clay.

Reference will now be had to Figs. 9 to 14, inclusive, wherein I have illustrated a modified form of construction which may be employed in connection with my improved tie. The tie in this form is constructed upon lines similar to that heretofore described—namely, formed of clay—and the difference between this modified form and that previously described consists in the novel means I employ for securing the sections of rails upon the tie. The tie is formed of one or more sections, which are secured together by a tie-bolt, and in this modified form the tie-bolt, as designated by reference-numeral 2, is passed through the aperture formed near the top of the tie centrally of the width thereof. In each end of the tie I form an oblong recess 19, and communicating with said recess are the apertures 20 20, which are formed vertically in the body portion of the tie that lies between the top surface of said tie and the recess 19. Through these apertures are adapted to pass spikes 21, and in this form of tie I employ a particular form of spike. The spike, as illustrated in Fig. 10 of the drawings, is provided near its lower end with a slot 22, and to lock the spike within the recess 19 I employ a casting 23, this casting being supported against the upper face of the recess by a spring 24, which

is carried by a metallic plate 25, that rests upon the bottom wall of the recess. The casting 23 is provided with an oblong recess 26 in its upper face, and formed in the bottom wall of said recess is an aperture 27, through which the end of the spike may protrude. Passing through the end 28 of the casting is a headed screw 29, the inner end of which engages a key 30, that passes through slot 22 of the spike, this key being formed with a tapering side, the object of which will be hereinafter described. When the castings 23 have been secured within the recess formed in the end of the tie, a follower 31, similar in construction to follower 18, is placed in the end of the recess and an end thrust of this follower prevented by a brace 32, which is carried upon the end of the tie bolt or rod 2, said brace being similar in construction to that shown in Fig. 5 of the drawings and designated by reference-numeral 3.

By employing a novel form of rail-fastener such as that just described I am able to remove the rails without entirely removing the rail-fastener, and should the spikes 21 become loose at any time the same may be readily tightened and secured within the tie. To accomplish this, it is only necessary to remove the follower 31 and rotate the screw 29, at which time the key 30 will be moved in and out to raise or lower the spike. The castings 23 are employed, whereby the screw 29 may be supported, at the same time providing means whereby should there be any jar or movement of the spike the springs 24 will at all times maintain the castings in their relative positions to the spikes. It will thus be seen that by constructing my improved tie in the manner described the use of wood is almost entirely dispensed with and a tie provided that will have a much longer life than those heretofore used, at the same time maintaining a construction which will withstand the rough usages to which ties of this character are generally subjected.

A particular feature of my improved tie to which I desire to call attention resides in forming the same of one or more sections, whereby it may be easily transported or formed near the road-bed upon which the tracks are being laid.

While I have herein described the tie as being formed of clay, different grades of clay—such as vitrified clay, potters' clay, fire-clay, sewer-pipe clay, alabaster, and any plastic or semiflexible material—may be used which will provide a serviceable tie, and I do not care to confine myself to the specific construction shown and described and may vary the same as will be permissible by the appended claims.

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

1. A tie embodying a plurality of clay sections placed in alinement and having their ad-

jacent ends joined by an encircling sleeve, and a tie-rod passed through the tie from end to end, and means on the end of the tie-rod for binding the sections together.

5 2. A composite tie comprising a plurality of composition sections placed in alinement and having reduced adjacent ends, a sleeve mounted on said reduced ends, a tie-rod passing through the tie from end to end, and
10 means on the ends of said rod for binding the sections together.

3. In a composite tie, composition sections having recesses, blocks in said recesses, rail-

securing means passing into said blocks, followers in the ends of the recesses, a tie-rod 15 passing through the tie from end to end, and means on the ends of said rod binding the sections together and securing the followers in position.

In testimony whereof I affix my signature in 20 the presence of two witnesses.

THOMAS S. NEWTON.

Witnesses:

H. C. EVERT,
DAVID NEWTON.