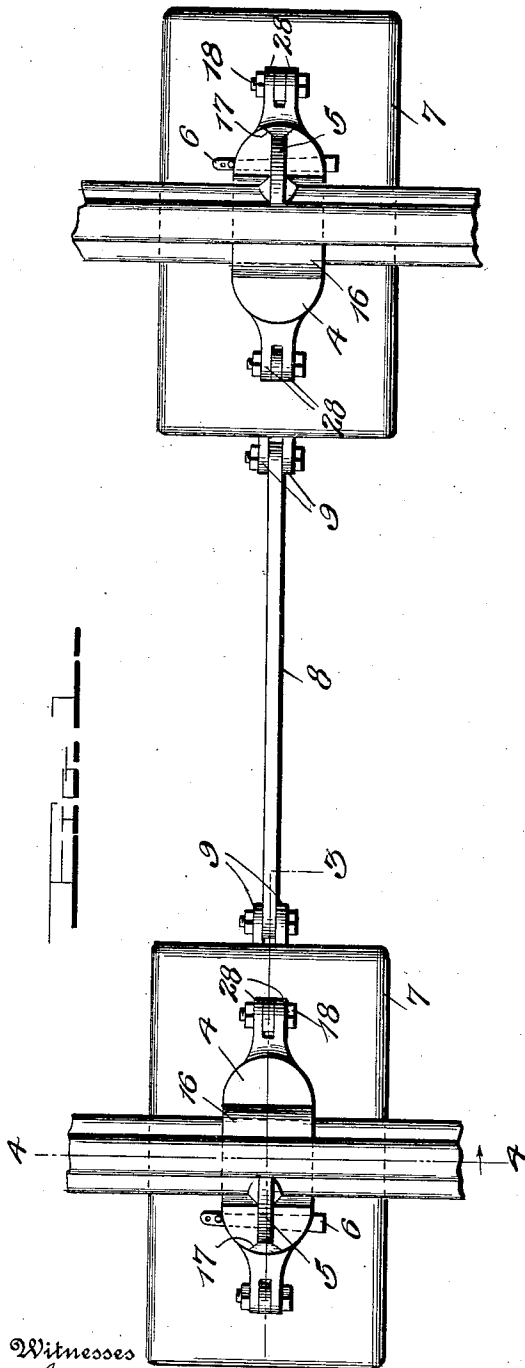


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APPLICATION FILED APR. 16, 1913.

1,065,313.

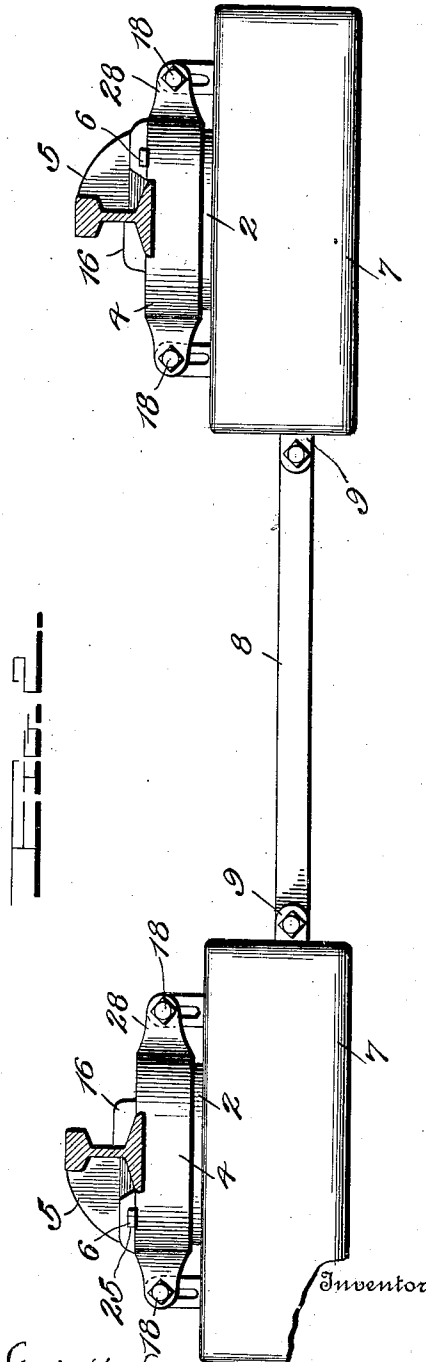
Patented June 17, 1913.

3 SHEETS—SHEET 1.



Witnesses

John C. Aukward  
Lester L. Sargent



Inventor

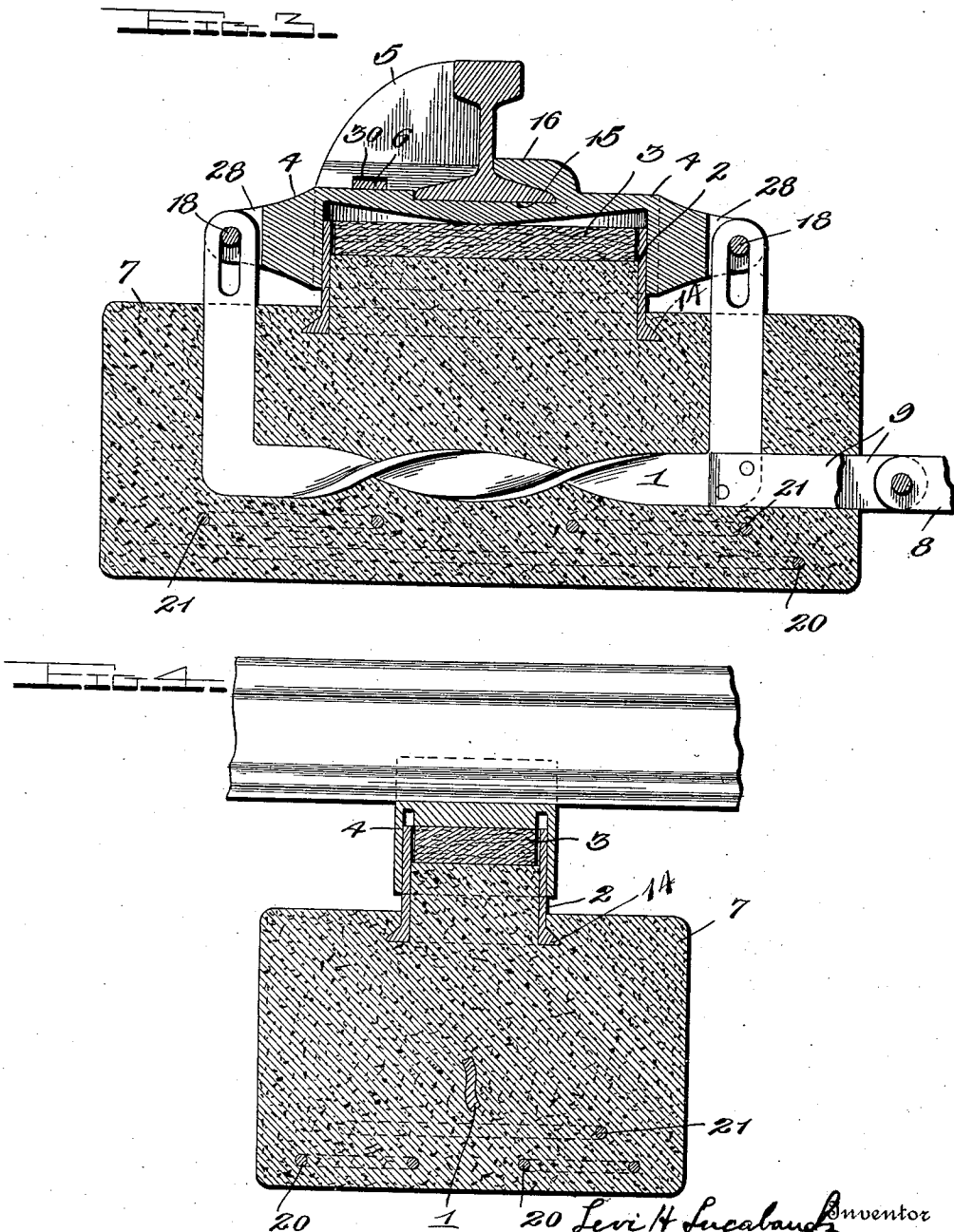
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By  
J. A. Mathews Attorney

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3 SHEETS—SHEET 2.



Witnesses

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*By J. A. Matthews*

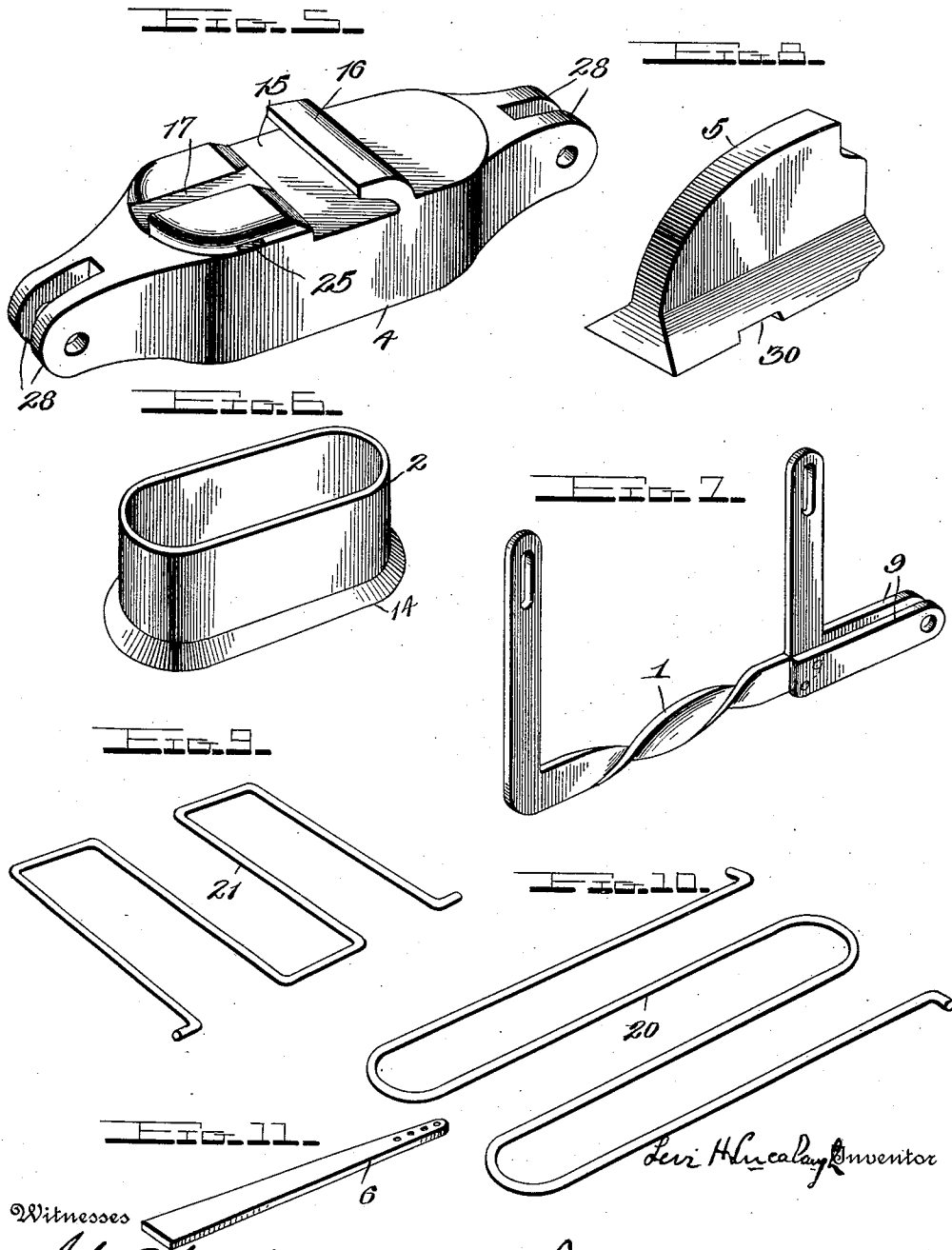
Attorney

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3 SHEETS-SHEET 3.



Witnesses

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 By *J. A. Matthews*  
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# UNITED STATES PATENT OFFICE.

LEVI H. LUCABAUGH, OF BLUFFTON, INDIANA.

CEMENT TIE WITH METAL RAIL-FASTENINGS.

1,065,313.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed April 16, 1913. Serial No. 761,562.

*To all whom it may concern:*

Be it known that I, LEVI H. LUCABAUGH, a citizen of the United States, residing at Bluffton, in the county of Wells and State of Indiana, have invented a new and useful Cement Tie with Metal Rail-Fastenings, of which the following is a specification.

My invention relates to railway ties of cement or cementitious material combined with rail-fastening mechanism.

The object of my invention is to provide a novel road-bed equipment comprising improved reinforced tie members of cementitious material combined with metal rail fastenings of improved construction as hereinafter set forth; to provide an effective mode of operation whereby a rail may be removed from the road bed for repair without disturbing the base members; to provide improved shock-absorbing mechanism in connection with my ties; and to provide ties of such form and construction that about one-third less ties per mile will be required than is necessary when wood ties are employed; and to provide a more efficient ballast for the rails; and to provide novel rail fastening mechanism, as hereinafter set forth.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of the entire machine; Fig. 2 is a side elevation; Fig. 3 is a longitudinal section on line 3—3 of Fig. 1; Fig. 4 is a transverse vertical section on line 4—4 of Fig. 1; Fig. 5 is a perspective of the hood member; Fig. 6 is a perspective of the crown member; Fig. 7 is a perspective of the stirrup or anchor member; Fig. 8 is a perspective of the rail dog; Fig. 9 is a perspective of the longitudinal tie-reinforcing member; Fig. 10 is a perspective of the transverse tie-reinforcing member; Fig. 11 is a perspective of the key.

Similar characters of reference refer to similar parts throughout the several views.

Referring to the drawings, it will be seen that I provide as base members the tie blocks 7 of suitable cementitious material, which may be varied somewhat in size or shape, but which are preferably constructed substantially as illustrated in Fig. 1, of approximately rectangular form with corners rounded.

Embedded in tie blocks 7 I provide a substantially elliptical crown member 2, pro-

vided with an anchoring rim 14 to insure its being secured firmly in the tie block 7. I further provide a hood member 4, of substantially elliptical form, corresponding in outline to crown member 2, over which it is adapted to be secured, as illustrated in Figs. 2 and 3. Crown member 2 and hood member 4 by reason of their elliptical form provide more supporting area for the rails than does the ordinary form of railway ties. Hood member 4 is provided with wrists 28, by means of which the hood member is secured to the stirrup or anchor member 1 by means of bolts 18. The anchor member is embedded in the tie block 7, as illustrated in Fig. 3 and is in part spirally formed, as illustrated, to afford greater resistance to strain. Anchor member 1 is provided with arms 9 which protrude from the tie blocks 7, as illustrated. I further provide a cross bar 8, which extends between opposite tie blocks and is secured to the protruding stirrup arms 9.

Crown member 2 is filled with cement inside, above the level of cement outside, as illustrated in Fig. 3. A cushion or shock-absorbing member 3 is provided within the crown member 2, of sufficient thickness so that hood member 4 can not rest on crown member 2 or on the tie block 7, the entire weight from the rail bearing on cushion member 3. The cushion member 3 is made of any suitable material such as shredded paper or wood pulp, pressed to support heavy weights. Tie blocks 7 are reinforced by a longitudinal tie-reinforcing member 20 and a transverse tie-reinforcing member 21, both constructed in looped form or approximately M-shaped as illustrated in the drawings (Figs. 9 and 10).

Hood member 4 is provided with a rail channel 15. The heavier portion of the hood member 4 is at its central portion, which is formed as illustrated in Fig. 3. Hood member 4 is provided with a tongue 16, the purpose of which is to overlap a flange of the rail and serve as a fastening member. I further provide in the hood member 4 a groove 17 of dove-tail form, in which is mounted an adjustable rail dog 5 which serves as a fastening member for the rail, opposite tongue 16. Rail dog 5 is provided with a groove 30, and hood member 4 is provided with a corresponding channel 25. In order to secure the rail dog 5 in locked position against the rail, a key 6

is provided and inserted through channel 25 and groove 30, as illustrated in Figs. 1 and 2. Key 6 is made slightly smaller at the end intended to be inserted.

5 In operation the rail is secured in channel 15 in hood member 4, with one of the rail flanges fastened by means of the overlapping tongue 16, while on the opposite side the rail is secured by the adjustable rail dog  
10 5, which is moved up in contact with the rail and firmly secured in that position by means of key 6. Hood member 4 fits over crown member 2, and rests on cushion member 3. Wrists 28 of hood member 4 are se-  
15 cured to the stirrup or anchor member 1 by means of bolts or the like which penetrate corresponding perforations in the wrists 28 and slots in the anchor member 1, as illustrated in the drawings. Opposite tie blocks  
20 are fastened together by means of a cross bar 8, secured to protruding stirrup arms 9 flush with the tie blocks 7 on the inner side.

In case it is desired to repair a tie, the bolts securing the wrists 20 of the hood member 4 to the stirrup or anchor member 1 are removed from eight or ten ties, the rail is raised with a jack so hood member 4 will pass over crown member 2, key 6 is withdrawn and the rail dog 5 thus loosened.  
30 Hood member 4 is then slid along on the rail between the tie blocks. The rail dog side or outer portion of the hood member is then lowered and the hood member will then come off.

35 What I claim is:

1. The combination of reinforced tie blocks of cementitious material, anchor members embedded in the tie blocks, protruding arms secured to the anchor members, a cross bar secured to the protruding  
40 arms of opposite tie blocks; and, in each tie block, a crown member having an anchoring rim embedded in the tie block, a shock-absorbing member disposed within the crown  
45 member, a channeled and grooved hood member shaped to correspond with and positioned over the crown member and adjustably secured to the anchor member, a rail-fastening tongue on the hood member, an  
50 oppositely positioned rail dog adjustably

secured in the grooved hood member, and means for locking the rail dog firmly against the rail, substantially as set forth.

2. The combination, in roadbed equipment, of opposite reinforced cement tie 55 blocks, stirrup members anchored in the tie blocks and having protruding stirrup arms, a cross bar member secured to protruding arms of opposite tie blocks, and rail-fastening means adjustably secured to the anchor 60 members.

3. Rail-fastening mechanism comprising a substantially elliptical hood member having a rail channel, a rail-fastening tongue, a groove disposed opposite to and at right 65 angles to the aforesaid tongue, and a transverse key channel, in combination with an adjustable rail-fastening dog having a key groove and mounted on the hood member, and a key to lock the rail-fastening dog to 70 the rail, substantially as described.

4. A plastic reinforced tie block having a crown member embedded therein, a cushion member positioned within the crown member, a hood member supported by the cushion 75 member and secured over the crown member, mechanism embedded in the cement to which the crown member is secured, a laterally-adjustable rail-fastening member mounted on the hood member and means for 80 locking the rail-fastening member, in combination with means disposed between and fastening opposite tie blocks.

5. The combination, in a roadbed equipment, of opposite cement tie blocks, each 85 having a longitudinally-disposed substantially M-shaped reinforcing member, a transversely-disposed substantially M-shaped reinforcing member, and a stirrup spirally 90 formed in part and having protruding stirrup arms; a cross-bar member secured to protruding arms of opposite tie blocks; and rail-fastening means adjustably secured to the anchored stirrup members, substantially as described.

LEVI H. LUCABAUGH.

Witnesses:

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