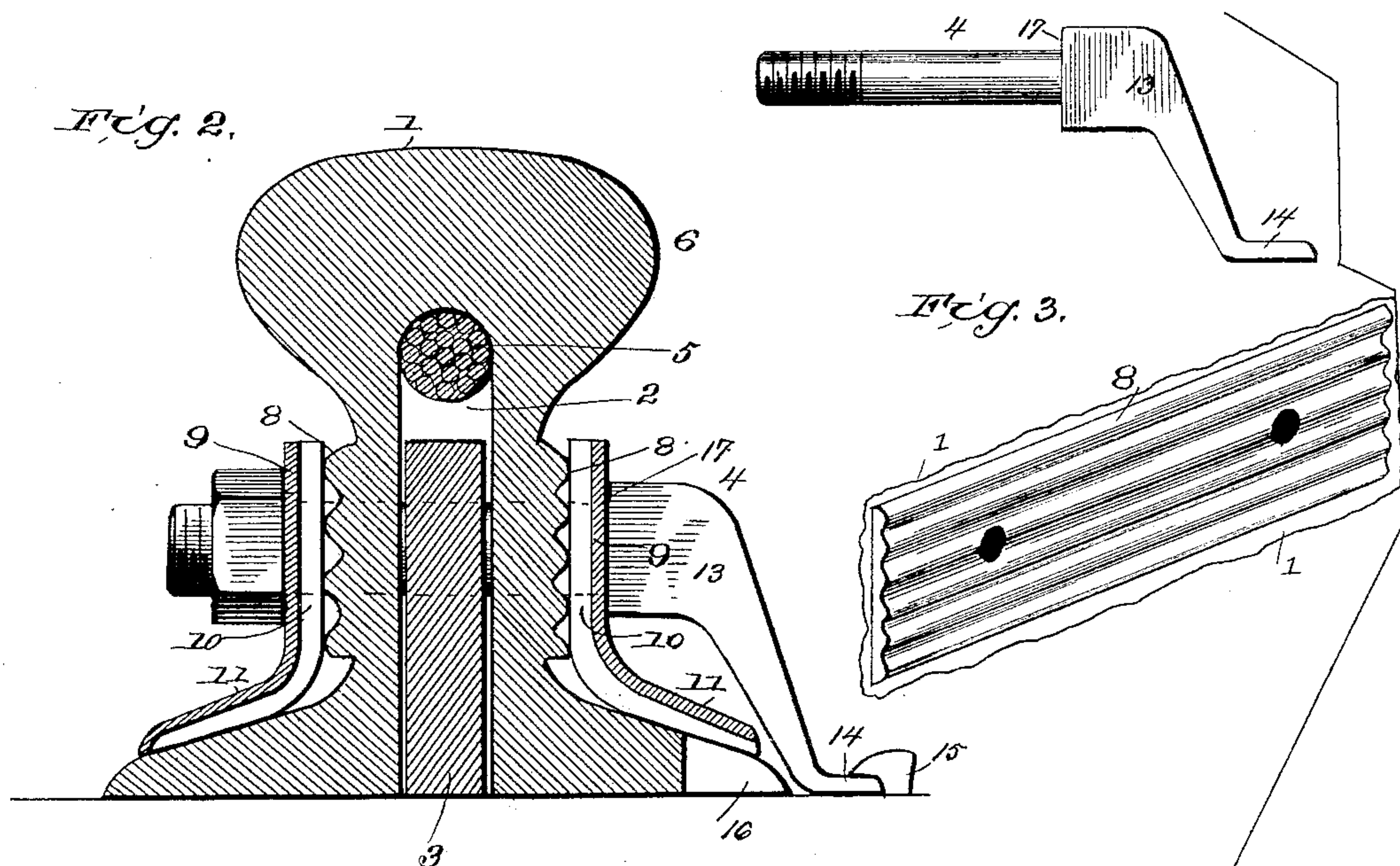
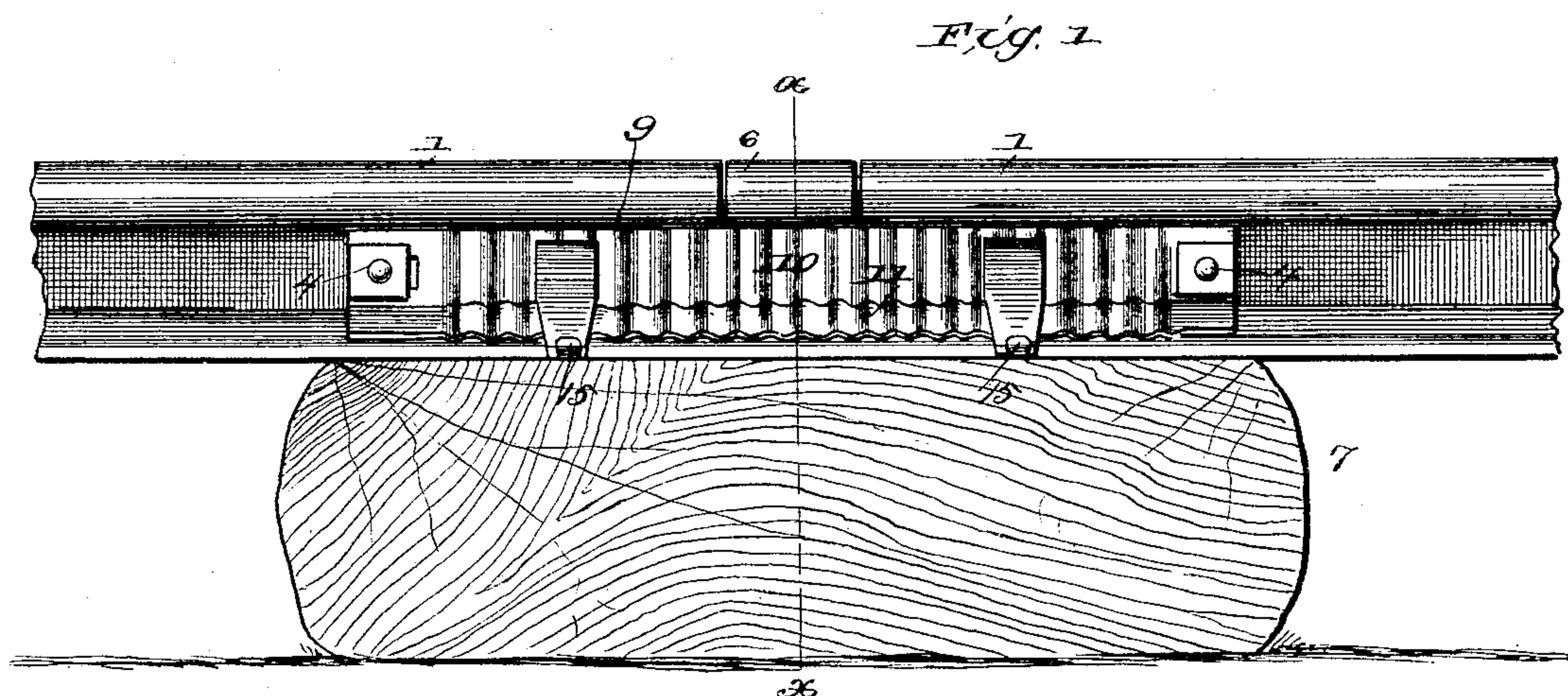


(No Model.)

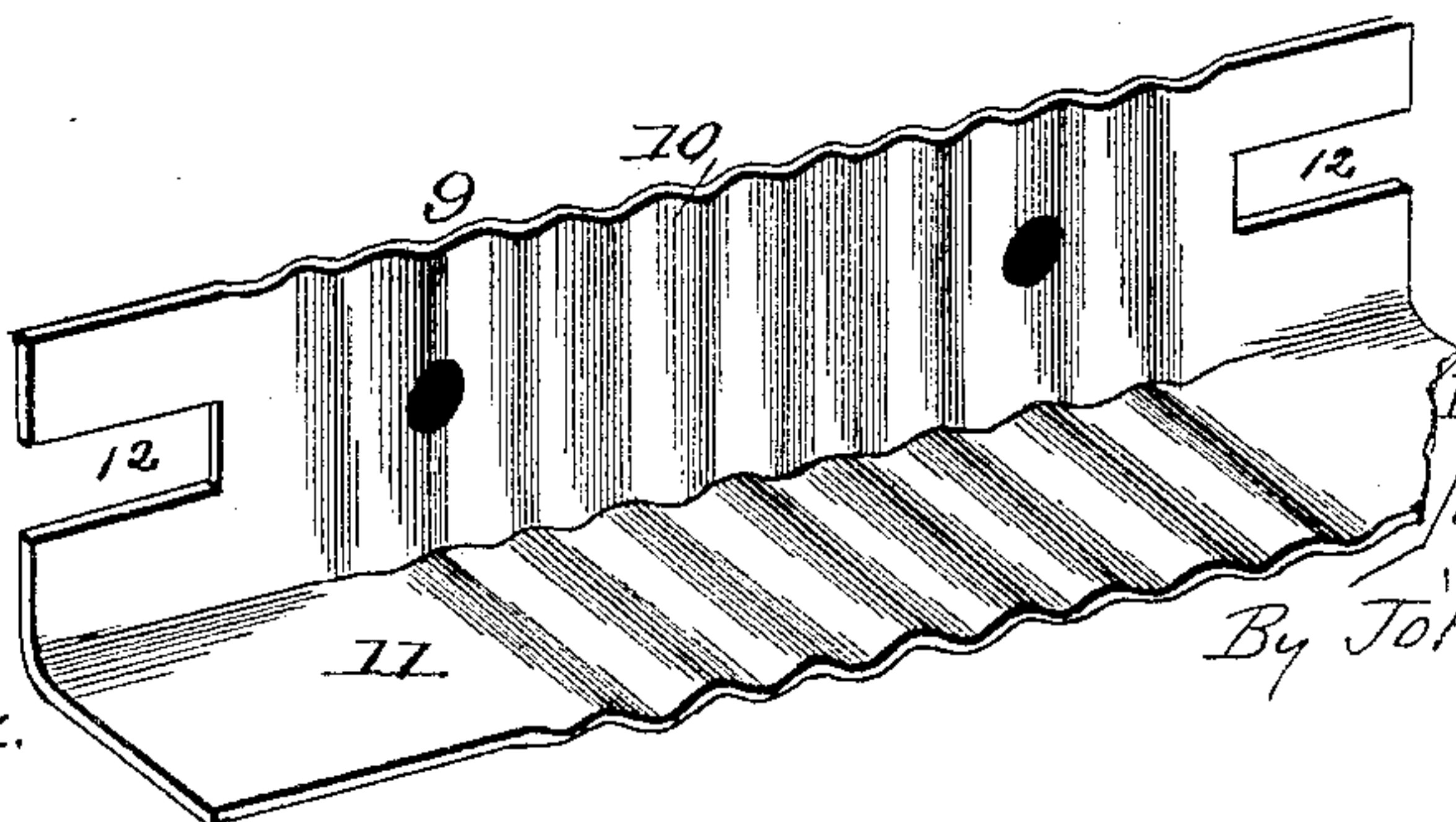
J. HAISH.
RAILROAD TRACK.

No. 384,620.

Patented June 19, 1888.



WITNESSES
Edwin D. Yewell
Joseph A. Ryan.



INVENTOR.
Jacob Haish.
By John G. Manahan
his Attorney.

UNITED STATES PATENT OFFICE.

JACOB HAISH, OF DE KALB, ILLINOIS.

RAILROAD-TRACK.

SPECIFICATION forming part of Letters Patent No. 384,620, dated June 19, 1888.

Application filed March 19, 1888. Serial No. 267,662. (No model.)

To all whom it may concern:

Be it known that I, JACOB HAISH, a citizen of the United States, residing at Ke Kalb, in the county of De Kalb and State of Illinois, have
5 invented certain new and useful Improvements in Railroad-Tracks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it apper-
10 tains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to improvements
15 in railroad-tracks; and it pertains more especially to an improved mode of effecting the junction of the ends of the rails therein, and to secure the permanency of the conformation of the crown of the rail at each end, so as to pre-
20 vent the battering down of the extreme ends of the rails, so common in the present construction, and which produces an objectionable unevenness in the crown of the track, and also to provide against the displacement of the rail
25 in case of its fracture.

In the drawings, Figure 1 is a side elevation of a portion of a railroad-track provided with my invention. Fig. 2 is a cross-section thereof in the line *x x* of Fig. 1. Fig. 3 represents details of bolts 4 and fish-plates 9 and
30 section of the rail 1.

1 is a rail, which has formed centrally in the base thereof a vertical slot or recess, 2, extending throughout the entire length of the
35 rail. A bar of iron, 3, of suitable size to substantially fill laterally the lower end of the recess 2, is placed edgewise therein, and extends any desired distance within the rail from the end thereof, and is held in position
40 by one or more transverse bolts, 4, passed through the adjacent sides of the rails 1 and through the bar 3, and seated and held in position as hereinafter described.

The placing of the bar 3 within the recess 2
45 prevents the displacement of said bar from any casual loosening of the bolts 4, it being obvious that such bar 3 will remain in place and perform its function reasonably well so long as even one of the bolts 4 remains in po-
50 sition, and will not fall away from the track 1, as is the case with the ordinary fish-plates when their bolts become loose.

The recess 2 is formed somewhat deeper vertically than the vertical diameter of the bar 3, and as the base of the bar 3 rests upon
55 the same plane as does the track 1 an unoccupied space is provided at the top of recess 2. In the extreme upper end of the recess 2 is firmly forced, and thereby seated, the wire rope 5, of a suitable diameter to be solidly em-
60 bedded within the upper end of the said recess 2.

The rope 5 can be extended entirely through the rail 1 and through the junction of the rails
65 1, if desired, whereby said rope affords further security in retaining the several rails 1 in line in case of any defect in or accident to the other devices for effecting the junction of said
70 rails; and said rope 5 will have the further function of holding the parts of the individual rails in proper line in case of casual fracture of the latter between their extremities. The
75 derailing of the train in case of broken rails is occasioned by the ends of the broken parts being pressed out of alignment with each other. Even in case of a fracture of the rail
80 1 between its extremities the rope 5 will hold the parts in alignment long enough for the detection of the fracture, and meanwhile prevent the broken parts from getting out of
85 alignment, and thereby save the train from leaving the track.

To provide against the battering down of the crown of the rails 1 at their extremities, I
90 interpose between the adjacent ends of said rails a short piece, 6, of hardened steel rail, having the same conformation as the rail 1, and provided also with a like recess 2. The bar 3 and rope 5 are projected longitudinally
95 through the interposed block 6, in the same manner and for the same purpose as hereinbefore described in reference to the rails 1.

It is impracticable to utilize rails 1 of the same degree of hardness as that which inheres
100 in the block 6, for the reason that the lateral rigidity of the rails 1 would occasion the breakage of the latter were they hardened to the above degree; but inasmuch as the block 6 is short, and can therefore yield slightly to lateral pressure, said block may be made of
105 any desired degree of hardness without exposure to fracture.

As by the interposition of the block 6 between the adjacent ends of the rails 1 there

are two spaces in lieu of the usual one, each of said end spaces may be narrower than that usually employed, and yet leave room for the necessary contraction and expansion of the rails 1, and there is thereby avoided the usual width of space which permits a slight drop of the wheels, resulting in battering down the adjacent ends of the rails. The block 6 is held in its relative position with the adjacent rails 1 1 by the bar 3 and rope 5, aforesaid.

7 is the usual tie, placed transversely of the track, under and extending each way from the point of junction of the block 6 and rails 1.

Sufficient space is reserved in the recess 2, and the same can be utilized for the reception and seating of properly-insulated telegraph and telephone wires. This would not only avoid the expense and delay caused by storms beating down the present poles and wires thereon, but would be extremely convenient for telegraphing to and from the passing trains.

To yet further strengthen and secure the point of junction of the rails 1, I provide the sides of said rails for a short distance inwardly from the ends thereof with the longitudinal corrugations 8. Lateral and external fish-plates 9 are also provided on each side of the rails 1, extending over the point of junction of the latter and held in place by the aforesaid transverse bolts 4.

On the inner impinging sides of the plates 9 are formed cross-corrugations 10, and when the plates 9 are laid in a horizontal position parallel with and on each side, respectively, of the rails 1, the corrugations 10 of the plates 9 will rest at right angles upon the corrugations 8 of the rails 1 and afford a certain degree of elasticity as against the tension effected through the bolts 4. The fish-plates 9 are formed with an outwardly-extending base or flange, 11, which latter, when the plates 9 are in position, rest upon the usual lateral outwardly-extending flange of the rails 1. The under side of the flange 11 of said plates is also provided with cross-corrugations corresponding with the vertical corrugations 10.

In each end of the vertical portions of the plates 9 is formed a horizontal longitudinal slot, 12, having open ends externally. The slots 12 are designed as the seats of the end bolts, 4, and are of such length and relation that the plates 9 can be passed in behind the heads of the bolts 4 or removed therefrom for the purpose of repairs, in the case of substitution of rails, or otherwise. One or more bolts 4, intermediate the slots 12, hold the plates 9 from displacement by horizontal shifting when said plates are in use, and to remove and replace the plates 9 it is necessary only to withdraw these intermediate bolts, 4.

The bolts 4 are formed with the head 13 extending obliquely downward, and are provided with external flanges, 14, which, when the bolt-head 13 rests upon the lateral flange of the rail 1 or upon the ties 7, is adapted to be held firmly down by the usual laterally-ex-

ending head of the ordinary railroad-spike, 15. A longitudinal slot, 16, can be formed in the lateral flange of the rail 1, and the head 13 of said bolt can be turned down in the slot 16 of the rail 1, and held from withdrawal by said slot, said head 13 being held from rotating out of said slot in the rail by a spike driven in the tie 7 behind the bolt-head, which prevents the bolt 4 rotating upward sufficiently to release its head from said slot in the rail.

Shoulders or external flanges, 17, are formed on the bolt 4 just within its head, which in the tightening of said bolt abuts against the outer side of the adjacent fish-plate 9, and affords means for the requisite tightening by means of the thread and nut on the opposite end of said bolt.

One half of the bolts 4 are inserted from the outside of the rails 1 and the other half to the inside thereof, and it is obvious that the spike 15 will hold the bolts 4 in position, even should the nut upon the latter be shaken off, and thereby the position of the central bar, 3, and fish-plates 9 will be secured, notwithstanding the loosening or displacing of all of the nuts on said bolts.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the rail 1, provided with the central longitudinal vertical slot, 2, a rope, 5, bar 3, and bolts 4, substantially as shown, and for the purpose described.

2. The combination of the rails 1, provided with central longitudinal vertical slots, 2, the bar 3, the interposed block 6, and the bolts 4, substantially as shown, and for the purpose described.

3. The combination of the rails 1, provided with central longitudinal vertical slot, 2, the bar 3, the rope 5, and bolts 4, and the interposed block 6, provided with slot 2, substantially as shown, and for the purpose described.

4. The combination of the rails 1, provided with the corrugations 8 and slot 2, the bar 3, bolts 4, and the plates 9, provided with corrugations 10, substantially as shown, and for the purpose described.

5. The combination of the rails 1, provided with corrugations 8, plates 9, provided with corrugations 10 and slots 12, bolts 4, provided with eccentric heads 13, tie 7, and spike 15, substantially as shown, and for the purpose described.

6. The combination of the rails 1, provided with corrugations 8, fish-plates 9, provided with transverse corrugations 10, and with end slots, 12, bolts 4, provided with eccentric heads 13 and lateral shoulders 17, tie 7, and spike 15, substantially as shown, and for the purpose described.

7. The combination of the rails 1, provided with lateral longitudinal corrugations 8 near the ends thereof, and external flange, 11, and slot 16 therein, the plates 9, provided with corrugations 10, bolts 4, provided with eccen-

tric heads 13 and lateral shoulders 17, spike 15, and tie 7, substantially as shown, and for the purpose described.

5 8. The combination of the rails 1, provided with central recess, 2, corrugations 8, and lateral flanges 11, fish-plates 9, provided with corrugations 10, and adapted to cross and be drawn against the corrugations 8, bolts 4, having eccentric heads 13, adapted to rest upon
10 the tie 7 or flange 11 and external flange, 14,

and spike 15, adapted to clamp the flange 14 of bolt 4 and hold the same rigidly upon the tie 7, substantially as shown, and for the purpose described.

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

JACOB HAISH.

Witnesses:

SAML. P. BRADSHAW,
DAVID BARR.