No. 762,638. PATENTED JUNE 14, 1904.

G. H. KIMBALL.

RAILWAY TIE.

APPLICATION FILED MAR. 25, 1902.

NO MODEL.

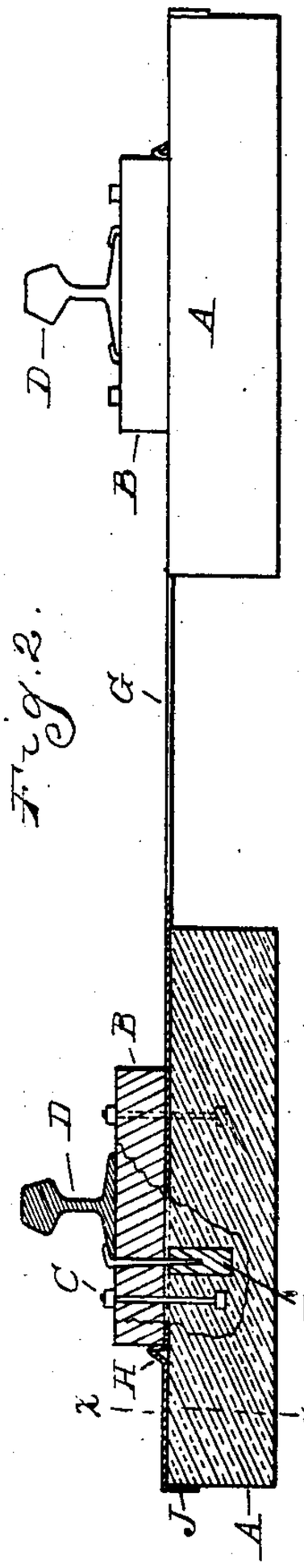

Fig. 2.

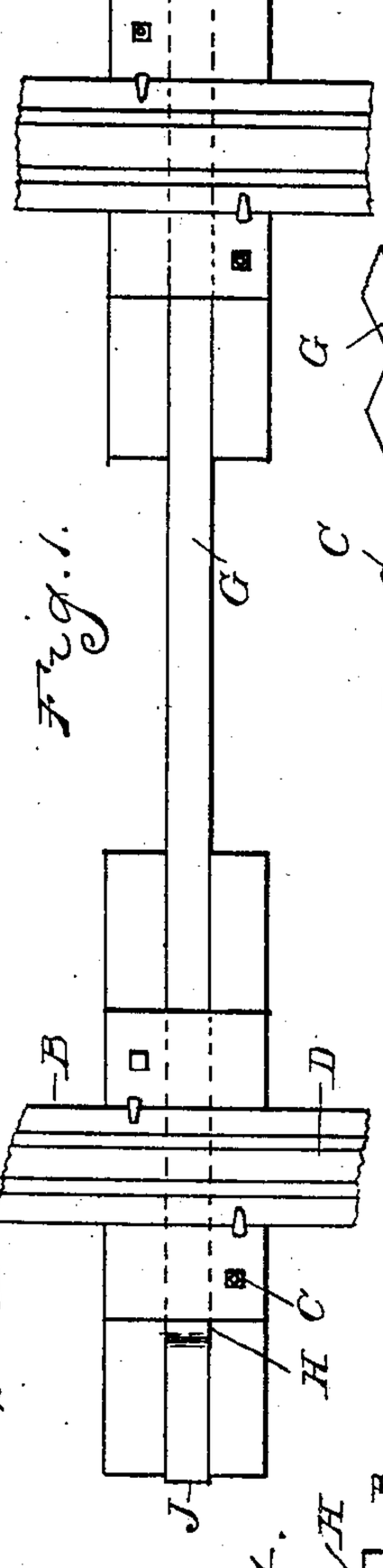

Fig. 1.

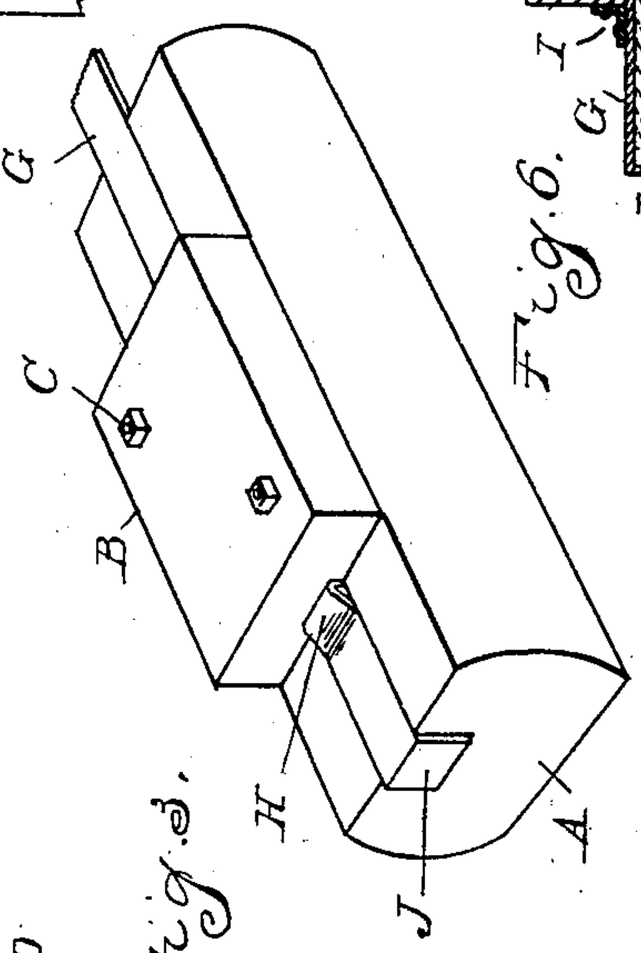

Fig. 3.

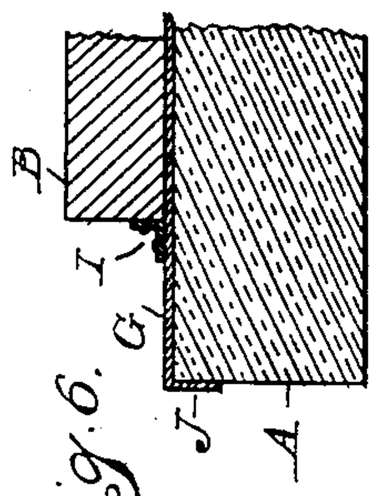

Fig. 6.

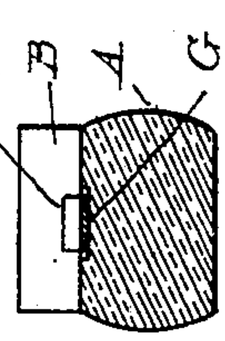

Fig. 4.

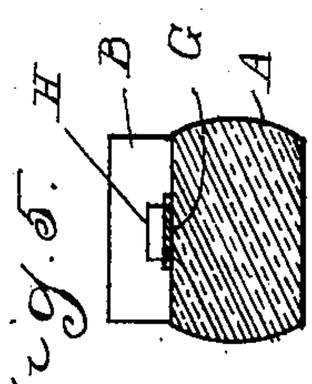

Fig. 5.

Witnesses
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No. 762,638. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

GEORGE H. KIMBALL, OF DETROIT, MICHIGAN.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 762,638, dated June 14, 1904.

Application filed March 25, 1902. Serial No. 99,840. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. KIMBALL, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, (whose post-office address is No. 72 Delaware avenue, Detroit, Michigan,) have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in railway-ties; and it consists in the construction of a tie comprising cement or concrete sleepers, a cushioning-block upon the sleepers, and a tie member which ties the rails together, all as more fully hereinafter described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a plan view of a tie embodying my invention. Fig. 2 is a sectional elevation thereof, one sleeper being shown in elevation and the other in section. Fig. 3 is a perspective view of one of the sleepers. Figs. 4 and 5 are sections on line *x x* of Fig. 2, showing different means of applying the tie member to the sleepers. Fig. 6 is a detail elevation illustrating a different manner of forming the thrust-block than is shown in the other figures.

A represents two sleepers, which may be made of concrete or cement. I use these words synonymously in the specification, as it is immaterial whether the sleeper is made of concrete or cement. These sleepers I make of such a length that the rail will bear substantially across the middle line thereof, and centrally upon each sleeper I employ a rail-block B, preferably of wood or other cushioning material and of such a length, width, and thickness that the load from the rail resting thereon will be transmitted uniformly throughout the base of the sleeper. With this construction the trackman can tamp the earth beneath the sleepers with a uniform pressure, for the center of load will be the center of form, and there will be no tendency (as in the present ties) to depress the outer end any more than the inner end thereof. The blocks B may be secured to the sleepers in any desired manner. I have shown and prefer to employ vertical bolts C, which may be cast into the sleepers and extend up therethrough and through the rail-blocks with suitable nuts upon their upper ends. The rails D may be secured by the usual spikes either by making the rail-blocks B of sufficient height so that those spikes may be driven in thereto or if the rail-block is not as high as the spike is wooden plugs E may be sunk in recesses in the sleepers, into which the ends of the spikes may be driven, substantially as shown in application Serial No. 89,144 filed by myself and John Doyle on January 10, 1902. In order to tie the sleepers together, it is desirable to retain as far as possible the sleeper-body unbroken by grooves or metallic tie members, and it is also desirable that the tie members shall be of such a character that the sleepers may assume a slightly angular relation to each other, due to the slight changes of settling in the track which occur, without danger of breaking the sleeper or the tie member. I therefore preferably employ an exterior tie, so that the sleepers may be solid blocks, and also prefer that that tie shall be of flexible material and so disposed as to permit of the assuming of slight angular relation to each other by the two sleepers.

The form which I prefer for the tie member is a flat bar G, resting upon the top of the sleepers and beneath the rail-block. In case the tie member rests upon the top of the sleepers the wear-block should be gained out, as shown in Fig. 5. I may, however, make a shallow groove or gain in the top of the sleeper, so that the tie member will lie flush with the surface of the sleepers, as shown in Figs. 1 to 4. Either form will answer the purpose.

I prefer to make on the tie member a thrust-bearing for the rail-block at the outer edge thereof. This I may do by forming the bend or shoulder H therein, as shown in Figs. 2 and 3 particularly, or I may secure to the tie member an angle-iron or other lug or block, as shown at I in Fig. 6. This lug or shoulder should be so located that it will bear against the outer end of the rail-block, so that it

would take up the outward thrust or the tendency of the rails to spread, due to the flanges of the wheels between the same.

I may bend down the ends of the tie members into a hook J; but this is not essential and may be omitted, if desired.

The only necessity of the tie members G is to hold the sleepers A in definite relation to each other and to prevent the rails from spreading, so it is evident that the particular form of these ties is not material so long as the solidity of the sleeper is not interfered with by the form of the tie employed and so long as the sleepers may have a slight independent angular movement in relation to each other in the track, which in this case is obtained, owing to the comparatively thin flat bar employed, which will bend sufficiently to permit this movement of the sleepers.

What I claim as my invention is—

1. The combination of two separated cement sleepers of a metallic tie member on the top thereof, cushioning-blocks centrally upon the sleepers and thrust-bearings or lugs on the tie member at the outer ends of the cushioning-blocks for the purpose described.

2. The combination of two separated cement sleepers, a wooden rail-block on each sleeper upon which the base of the rail is supported and to which the rail is spiked, the sleepers extending a substantially equal distance on each side of the rail-block and said blocks being of such thickness and length as to distribute the load throughout the sleepers, and a flexible metallic member connecting the sleepers, whereby the sleepers may have a slight independent angular movement relative to each other.

3. The combination of two separated cement sleepers, a wooden block on each sleeper, means for securing the rail-blocks to the sleepers, the rail-base being adapted to rest upon the tops of the rail-blocks and being secured thereto, and an exterior flexible metallic tie-bar connecting the sleepers, whereby the sleepers may have a slight independent angular movement relative to each other.

4. The combination of separated sleepers, a metallic tie member on the top thereof, cushioning-blocks upon the sleepers, and means integral with the tie member at the outer ends of the cushioning-blocks, for retaining the same in position.

5. The combination with separated sleepers, of a flexible tie member connecting the same, cushioning-blocks upon the sleepers, and lugs on the tie member, for the purpose described.

6. The combination with separated sleepers, of a metallic tie member connecting the same, and cushioning-blocks upon the sleepers, held in place by upwardly-struck portions of said tie member.

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

GEORGE H. KIMBALL.

Witnesses:

M. B. O'DOGHERTY,

H. C. SMITH.