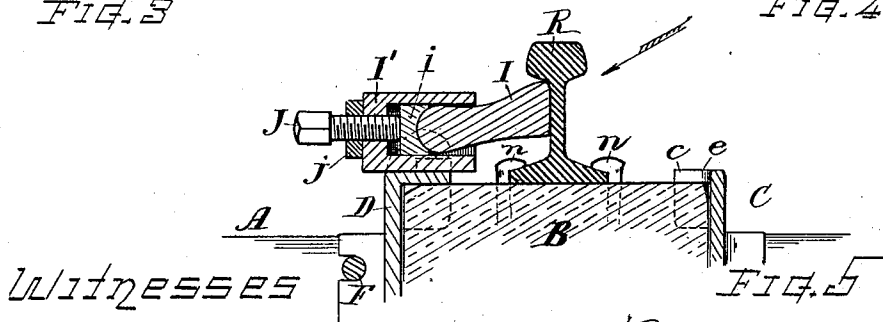
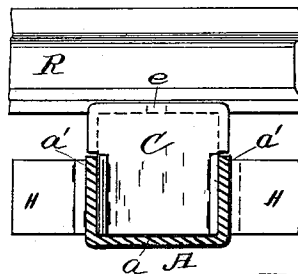
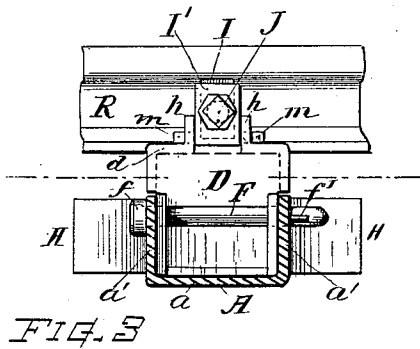
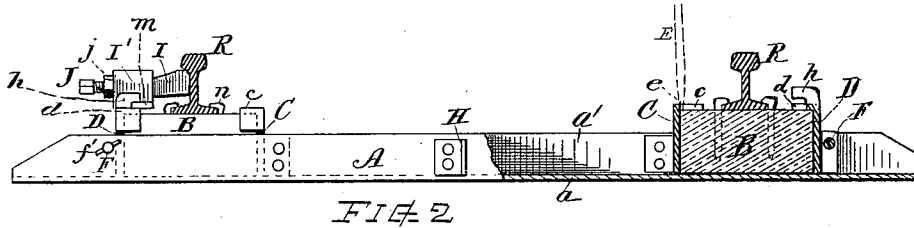
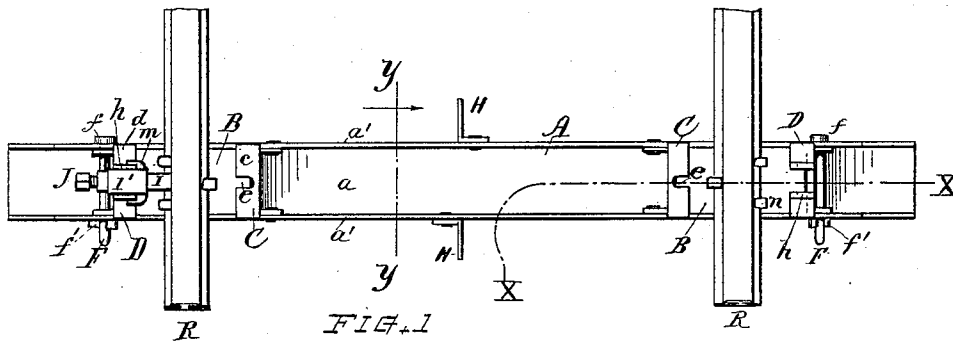


(No Model.)

A. B. FISHER.
RAILWAY TIE.

No. 461,571.

Patented Oct. 20, 1891.



Witnesses
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UNITED STATES PATENT OFFICE.

ALVAN B. FISHER, OF RUTLAND, MASSACHUSETTS.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 461,571, dated October 20, 1891.

Application filed June 6, 1891. Serial No. 395,346. (No model.)

To all whom it may concern:

Be it known that I, ALVAN B. FISHER, a citizen of the United States, residing at Rutland, in the county of Worcester and State of Massachusetts, have invented a new and useful Railway-Tie, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide a cheap and efficient railroad-tie; and it consists in the peculiar structure and arrangement of parts as hereinafter explained, and as illustrated in the drawings, wherein—

Figure 1 is a plan view of my improved railway-tie. Fig. 2 is a half side view and half longitudinal section of the same at line *x x*. Fig. 3 is an end view drawn to somewhat larger scale. Fig. 4 is a transverse section at line *y y*, and Fig. 5 is a vertical section of the adjustable brace on a somewhat larger scale.

In my improved railway-tie the main body A consists of a trough or channel-beam about eight inches (more or less) in width, formed of rolled iron or steel of the required length and having a thin horizontal web-plate *a*, with integral longitudinal sides or upright flanges *a'* along the edges thereof, said flanges being about four inches (more or less) in height. These can be formed by passing through suitable rolls or by bending up the edges from a flat rolled plate.

B B indicate removable rectangular blocks, of wood or other suitable material, upon which the track-rails R are seated. Said blocks are fitted within the hollow of the body and confined by means of flanged plates C and D, that abut against the ends of the blocks. The blocks are preferably thicker than the depth of the body, so that the top of the block will stand somewhat above the level of the earth when the body of the tie is buried. The plates C, disposed at the inner ends of the blocks B, have their upright edges flanged and are riveted or rigidly attached to the side flanges *a* of the body, thereby each providing a solid abutment against which the end of the respective blocks have support. The plates D at the outer end of the blocks are respectively fitted to the interior of the channel of the body

A, so as to abut squarely against the block, and are arranged to be conveniently removed, each plate being confined and sustained by a detachable fastening, preferably by the bar or bolt F, that passes transversely through openings in the body-flanges *a* adjacent to the back of the abutment-plate in the manner illustrated. Said bar has a head *f* at one end, and is secured by a pin or key *f'*, that passes through its opposite end. By knocking out the key and removing the bolt or bar F the plate D is freed, so that it can be taken out for releasing the block B, and thus facilitating the renewal of the same when required. The top edges and angles of the plates C and D are formed with overhanging lips or flanges *c* and *d*, respectively, which extend over the end angles of the blocks B for confining the blocks in position and preventing the splintering of their top edges. The plate C is fitted with a slot or recess *e*, through which a crow-bar can be inserted between the abutment-plate and the block. At the central part of the body lugs or wing-plates H are arranged on the outside of the tie, against which a bar can be placed for shifting the tie endwise without digging it entirely out of the earth. The lugs also help to support the tie when in the earth.

A feature of my invention consists in an adjustable brace for sustaining the rail against outward side pressure. (See Fig. 5.) Said brace comprises a movable bearer I, a supporting-socket I', and suitable means for effecting the adjustments. One end of the bearer I is formed to fit against the rail adjacent to its head, while its other end is supported within the fixed head or socket I', preferably fitted therein by a round joint that matches against a seat-piece *z*, while a screw J is threaded to the end of said socket behind the seat-piece for forcing forward the parts or permitting their retraction, thereby giving the requisite adjustment, so that the brace can bear against the rail with proper degree of resistance. The sides of the socket I' are best provided with engaging-lugs *m*, fitted to interlock with suitable ears *h*, formed on the outer abutment-plates D, whereby the adjustable brace devices are sustained at fixed position in relation to the tie in the manner substantially as illustrated. The rails R are

fastened to the blocks B by ordinary railway-
spikes *n* or in any suitable manner. The end
of the brace I which bears against the rail
can move up or down with the springing of
5 the rail as trains pass or to accommodate the
position as the rail wears into the seat-block
B, at the same time maintaining its bracing ac-
tion. This brace device may not be used in
all cases or on all of the ties, but can be put on
10 to such of the ties as will afford side support
for the rails at any required interval. The
socket or brace-head I' and the abutment-
plates being provided with interlocking ears,
the brace can be readily put on or removed
15 by first releasing the abutment-plate D and
then engaging or disengaging the ears and
lugs while the plate is some distance back
from its normal position. It will be under-
stood that the brace-socket can, if in any in-
20 stance desired, be secured in position by or-
dinary screw-bolts in lieu of the interlocking
ears and lugs.

It will be observed that with my improved
structure the blocks B can be removed and
25 replaced without disturbing the rail R or the
body of the tie, such operation simply requir-
ing the excavation of the earth or ballast in
the end of the tie and the removal of the bar
F and plate D. Then after the spikes have
30 been drawn a crow-bar is inserted behind the
block through the hole *e* and the block forced
out longitudinally from beneath the rail. A
new block can then be introduced and the
parts replaced as before.

35 Metal railway-ties of different construction,
comprising wooden blocks for rail-seats, hav-
ing been heretofore devised, it will be under-
stood that I do not herein claim such feature
as broadly of my invention.

40 I claim as my invention herein to be se-
cured by Letters Patent—

1. The within-described railway-tie, consist-
ing of the metal body A, having upright side
flanges *a'*, the transversely-disposed abut-

ment-plates C and D, having overhanging 45
flanges *c* and *d*, respectively, at their tops
and upright flanged edges fitting between the
upright sides of said body, the former rigidly
fixed in position by rivets through the side
flanges and the latter removably secured by 50
transversely-disposed bars F, inserted through
openings in the side flanges at the back of
plates D, and the rectangular wood blocks
fitted between said abutment-plates within
the channel of the body and confined by the 55
overhanging top flanges *c* and *d*, said parts
being constructed and combined all substan-
tially as shown and described.

2. In a railway-tie, the combination, with
the body A and the rail-seat block B, of the 60
transverse abutment-plate C, having its over-
hanging flange *c* provided with the recess *e*,
substantially as and for the purpose set forth.

3. The adjustable brace composed of the
movable bearer and the supporting-socket 65
provided with engaging-lugs, in combination
with the body of the tie and the abutment-
plate D, having ears that interlock with said
engaging-lugs for sustaining said brace-
socket, and means, substantially as described, 70
for securing said plate to the body of the tie,
for the purposes set forth.

4. In combination with the track-rail and
railway-tie, the adjustable rail-brace com-
posed of a head or socket sustained at fixed 75
position upon a stationary part of the tie, the
movable bearer seated in said socket and ca-
pable of limited upward and downward swing-
ing action, and the adjusting-screw fitted in
said socket and adapted for pressing forward 80
said bearer, substantially as set forth.

Witness my hand this 1st day of June, A.
D. 1891.

ALVAN B. FISHER.

Witnesses:

CHAS. H. BURLEIGH,
GEO. W. PEIRCE.