

No. 739,874.

PATENTED SEPT. 29, 1903.

J. M. C. HOWELL.  
RAILROAD TRACK LAYING APPARATUS.

APPLICATION FILED MAR. 3, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

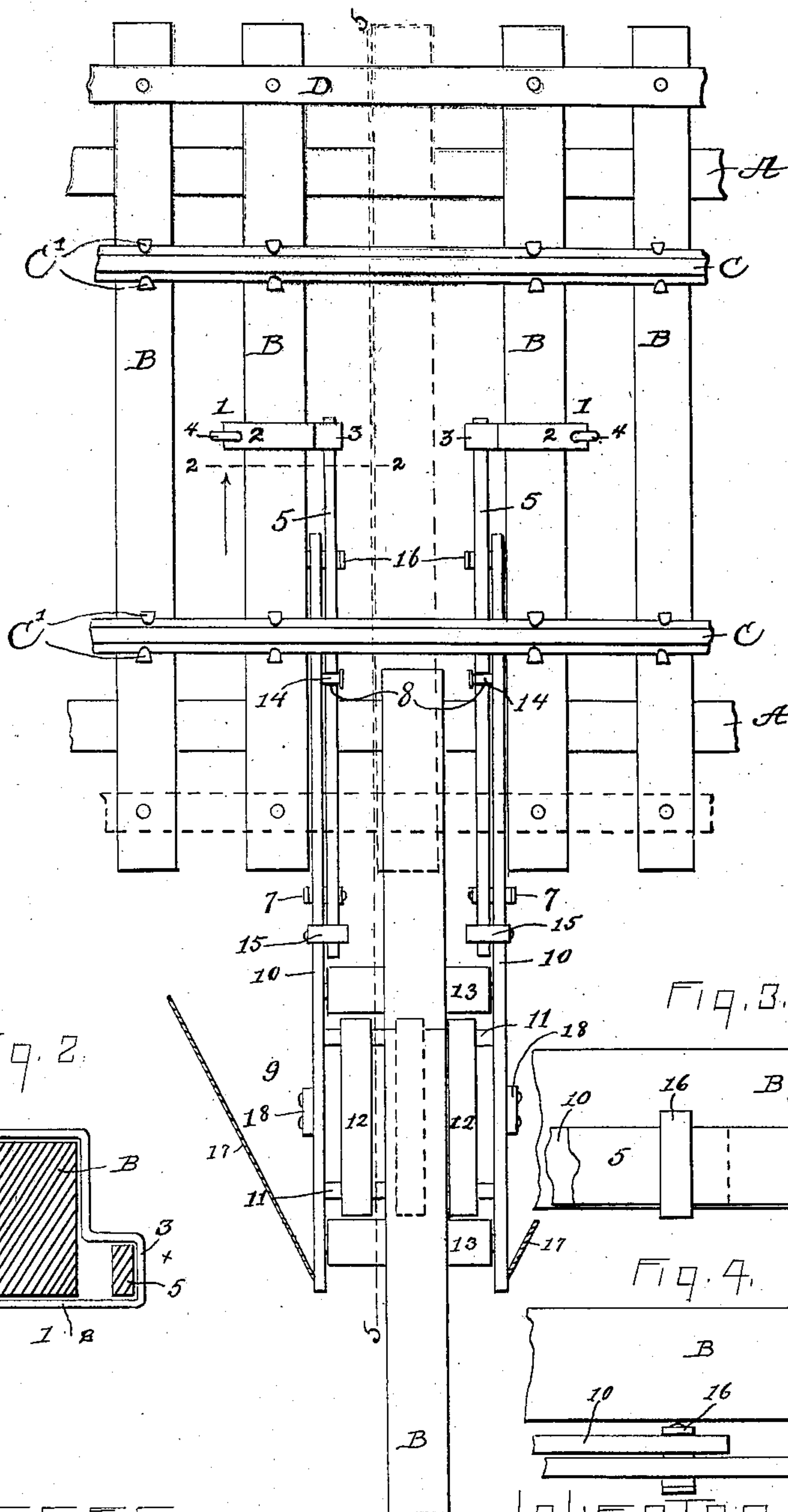


Fig. 2.

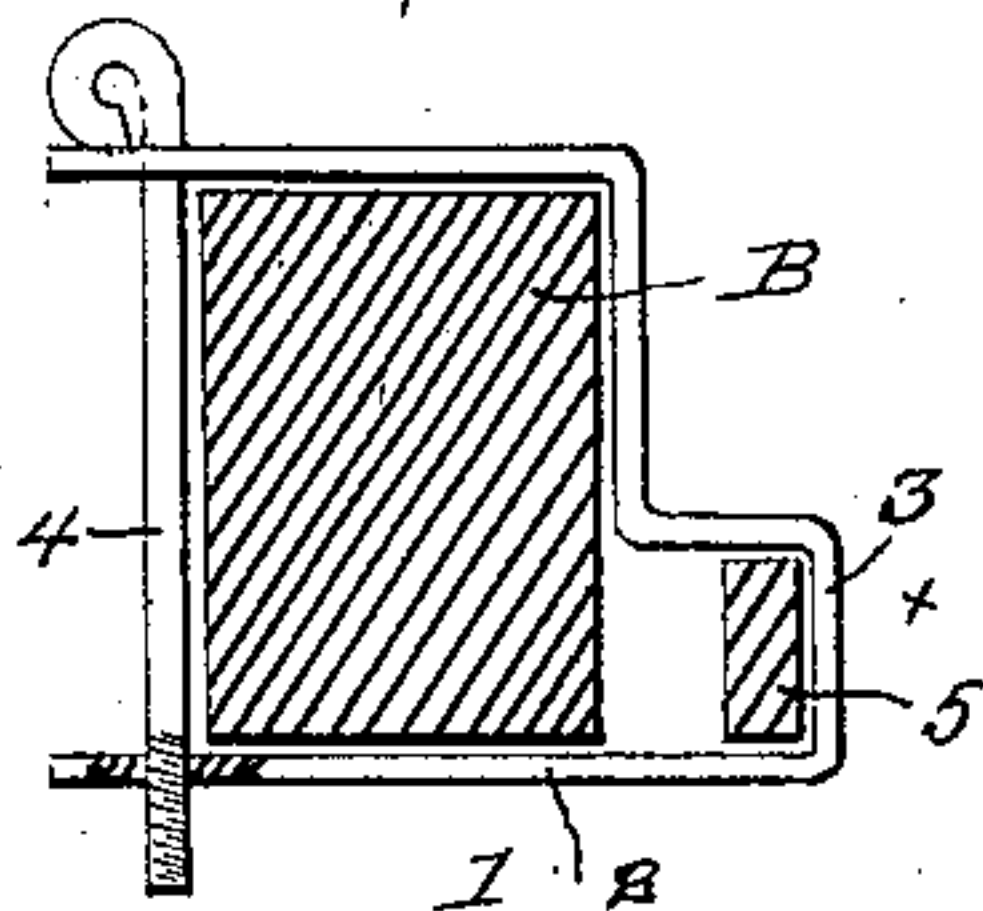


Fig. 3.

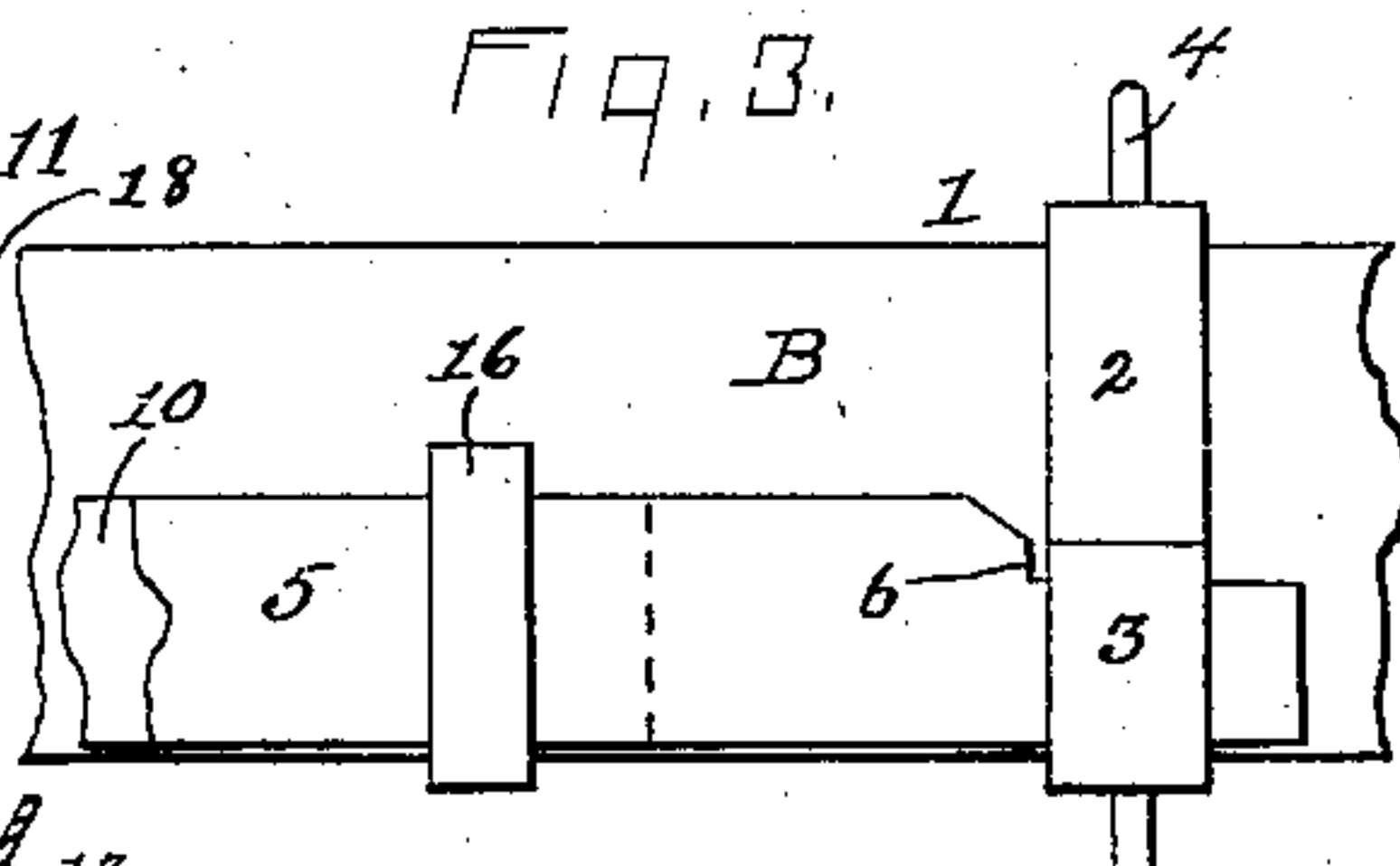
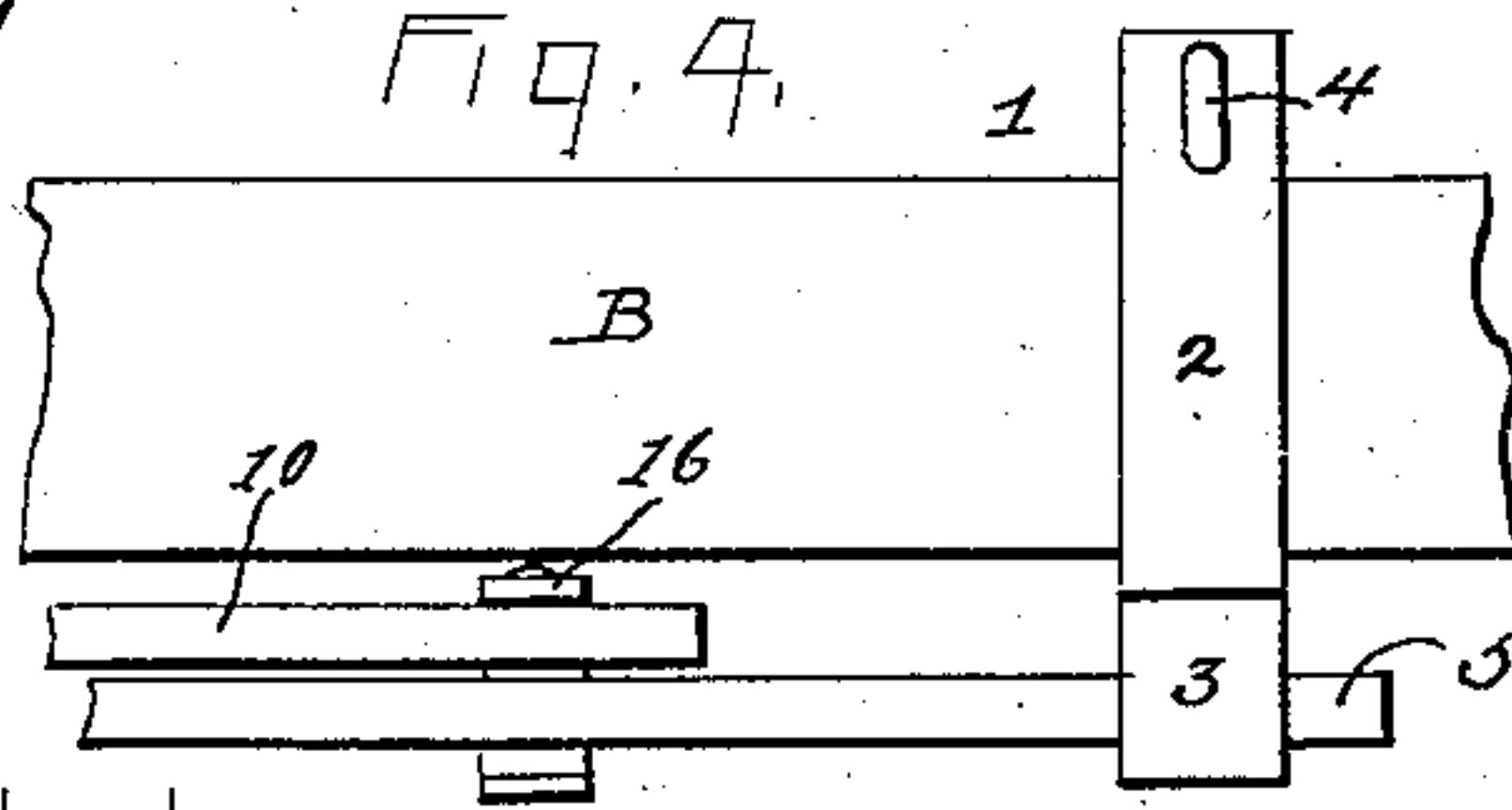


Fig. 4.



WITNESSES

Arthur B. Hyman

Carrie A. Ivy.

INVENTOR

John M. C. Howell

By Cyrus K. K. K. K.  
Atty.





# UNITED STATES PATENT OFFICE.

JOHN M. C. HOWELL, OF MASCOT, TENNESSEE.

## RAILROAD-TRACK-LAYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 739,874, dated September 29, 1903.

Application filed March 3, 1902. Serial No. 96,375. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. C. HOWELL, a citizen of the United States, residing at Mascot, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Railroad-Track-Laying Apparatus; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to railroad-track-laying apparatus, and particularly to an improved apparatus for removing and replacing ties on railroad trestles and bridges.

The object of the invention is to provide a simple and convenient mechanism by the use of which worn-out ties on railroad trestles and bridges may be removed and replaced without the removal of the track-rails and without the consequent interruption of the use of the track for the passage of trains. At present when worn-out ties are to be removed and replaced by new ties on railroad trestles and bridges danger-flags are set upon the track in both directions from the point of operation and the track-rails and guard-rails beneath which the defective tie or ties rest are removed. Then the defective tie or ties are taken up and the new tie or ties put into place. Then the track-rails and guard-rails are again replaced. The labor of removing and replacing the track-rails and guard-rails is much greater than the objective task to be performed—namely, the removing and replacing of the defective tie or ties. Furthermore, during this tedious operation a section of the track has been taken out, and trains cannot pass.

By the use of my improved apparatus the track remains continuous, and the operation may be suspended at any time for the passage of a train. One of the guard-rails is removed, and the tie which is to be removed is released by the withdrawal of its spikes and the slight raising of the adjacent ties, (with, of course, the track and guard rails.)

In the accompanying drawings, Figure 1 is a plan showing my apparatus in position and

supporting a tie just withdrawn from beneath the rails. Fig. 2 is a detail section of the line 2 2 of Fig. 1 looking in the direction of the arrow. Fig. 3 is a detail elevation looking from the space from which the tie has been removed, as shown in Fig. 1, toward the line on which the section is taken for Fig. 2. Fig. 4 is a plan of the portion of the apparatus illustrated by Fig. 3. Fig. 5 is a vertical section on the line 5 5 of Fig. 1, the hinged section of my apparatus being in the vertical position—the position into which said section is placed for insertion or removal. Fig. 6 is a detail plan illustrating the manner of joining the fixed and hinged side bars of my apparatus. Fig. 7 is a side elevation of the fixed side bar shown in Fig. 6.

Referring to said drawings, A A are the longitudinal sills or girders of a railway trestle or bridge.

B B are the ties resting transversely upon the sills. Said ties are preferably provided with notches B' in their under faces, into which the sills extend.

C C are the track-rails.

C' C' are the spikes, by means of which the rails C are secured to the ties.

D D are the guard-rails.

In the form illustrated by the drawings, but which may be varied, my apparatus consists of three principal factors—stirrups applied to the ties, relatively fixed side bars secured in part by said stirrups, and a tie-receiving section or frame hinged to said side bars. The stirrups (designated 1 1) are secured to the ties at each side of the tie which is to be removed. Each of said stirrups is composed of a rigid piece 2, shaped to extend around one side and the top and bottom of a tie and having at its lower portion a lateral extension 3 and a bolt or pin 4, extending loosely through the ends of the piece 2. If said part 4 is a bolt, its lower end may be tapped into the lower end of the piece 2, so that when said stirrup is placed into position around a tie the stirrup may be tightened to the tie by turning said bolt. Side bars 5 5 support said hinged section. One end of each such side bar enters the lateral extension 3 of the stirrup 1. Said end of said side bar is preferably provided with a shoulder 6, which serves to limit the movement of said



bar into said stirrup. Said bar rests upon the sills A, adjacent to which the guard-rail has been removed, and extends outward away from the track beyond said sill, and the portion of said bar at the outer side of said sill is lowered, so as to bring the upper edge of said bar substantially to a level with the upper face of said sill. Each bar 5 has at the inner side of said sill a shoulder or stop 5<sup>a</sup>, which prevents the movement of said bar across said sill away from the stirrup. Near its outer end said bar has a stirrup 7, extending downward around said bar and being opened sufficiently at the side of said bar away from the longitudinal middle line of said apparatus to receive the side bar of the hinged section. Near its middle the upper edge of said side bar is provided with a notch 8. Said hinged section is designated by 9. Said section is in the form of a frame composed of side bars 10 10, cross-bars 11 11, slats 12 12, and rollers 13 13. Each of said side bars has a journal 14, adapted to rest in one of the notches 8 of the side bars 5 5. Each of said side bars 10 rests upon the adjacent stirrup 7, and each side bar 10 has adjacent to the free end of the adjoining side bar 5 a stirrup 15, extending over the side bar 10 and the adjacent side bar 5, and each side bar 10 has at its free end a stirrup 16, extending beneath said side bar and the adjacent side bar 5. By this arrangement of said stirrups said hinged section 9 is permitted to turn from the horizontal to the vertical position, and vice versa, the outer end moving in an arc above the horizontal plane; but said section is prevented from descending at its outer end below the horizontal. In other words, the side bars 10 are securely held to the side bars 5 by said stirrups when said hinged section has been lowered into the horizontal position.

When a tie is to be removed, the stirrups 1 and the side bars 5 are put into position at opposite sides of said tie, as shown in Figs. 1 and 5, the guard-rail D, adjacent to the free ends of said side bars, being removed. The hinged section 9 is then placed vertically into the position shown by Fig. 5, the free ends of the arms of the side bars 10 10 passing downward between the adjacent sill A and the track-rail C, and the journals 14 being placed into the notches 8. This may be easily accomplished by men standing upon the structure, no portion of said section at the time extending laterally beyond the trestle or bridge. The upper end of said section is then allowed to move outward, said section turning upon said journals. For convenience in lowering said section, staying the tie while in the horizontal position, and afterward drawing it again into the vertical position for removal guy-ropes 17 may be applied at each side of the outer end of said section.

To free the tie to be removed, its spikes are withdrawn and the adjacent ties are by any suitable means raised from the sills A A sufficiently to permit the raising of said tie

so as to disengage the sills from the notches B'. By means of picks or any other suitable tools the tie to be removed is then drawn lengthwise out upon the section 9 until the inner end of the tie has passed the rail C which is adjacent to said section. The portion of said section comprising the rollers 13 and the slats 12 constitutes a surface for receiving the tie. The tie is then engaged in any suitable manner and drawn upward upon the track or dumped away from the bridge or trestle. The new tie is then placed upon said section in the position shown in Fig. 1 and drawn inward beneath the rails C C into the position occupied by the tie just removed. Spikes are then driven into said new tie and the guard-rail replaced. The lowering of the adjacent ties and the removal of the apparatus completes the operation.

If at any time during the progress of the operation a train comes, the operation may be suspended long enough to permit the train to pass, the track being capable of supporting the train notwithstanding the removal of one tie.

If the side bars 10 10 of the hinged section 9 are not high enough to prevent the lateral movement of the tie while on said section, guards 18 18, rising above said side bars, may be applied to said section.

The section 9 and the bars 5 may be regarded as a single structure, the bars 5 and the bars 10 being considered as compound arms of the section 9. It will be observed that when the apparatus is in the working position said bars 5 really serve as continuations of the bars 10, and the stirrups 1, applied to the bars 5, serve essentially the same as they would if applied directly to the bars 10. The sectional frame 9 may be regarded as a bifurcated structure, one of each of its two arms being adapted to enter the space at each side of the tie.

I claim as my invention—

1. In a railroad-track-laying apparatus, a frame or support having a tie-receiving surface and two side bars parallel to each other and extending away from said surface in a plane higher than and parallel to the plane of said surface and suitably separated from each other to enter the spaces at each side of a tie in a railroad bridge or trestle.

2. A railroad-track-laying apparatus consisting of a bifurcated structure having arms or side bars suitably separated to extend over a sill and at each side of a tie and said structure having a tie-receiving surface lower than the portions of said arms which are to rest on the bridge-sill, substantially as described.

3. A railroad-track-laying apparatus consisting of a bifurcated structure having arms or side bars suitably separated to extend over a sill and at each side of a tie, and mechanism for securing said arms to the bridge or trestle structure, substantially as described.

4. A railroad-track-laying apparatus consisting of a bifurcated structure having arms



or side bars suitably separated to extend over a sill and at each side of a tie, and means for hinging said bifurcated structure to the bridge or trestle structure, substantially as described.

5. In a railroad-track-laying apparatus, the combination of bars, 5, adapted to be secured in adjacent spaces between ties in a railroad bridge or trestle, and a section, 9, having a tie-receiving surface and two side bars parallel to each other and extending away from said surface in a plane parallel to the plane of said surface and hinged to said bars, 5.

6. In a railroad-track-laying apparatus, the combination of bars, 5, stirrups, 1, for securing said bars, and a section, 9, hinged to said bars, substantially as described.

7. In a railroad-track-laying apparatus, the combination of bars, 5, adapted to be secured in adjacent spaces between ties in a railroad bridge or trestle, and a section, 9, having a tie-receiving surface and two side bars parallel to each other and extending away from said surface in a plane parallel to the plane

of said surface, said bars, 5, and the side bars of said section being provided with inter-engaging bearings and journals.

8. In a railroad-track-laying apparatus, the combination of members consisting of a pair of bars, 5, and a section, 9, hinged to said bars, and stirrups supported by said members for limiting the movement of said members upon each other, substantially as described.

9. In a railroad-track-laying apparatus, the combination of bars, 5, having shoulders, 5<sup>a</sup>, and a section, 9, hinged to said bars, substantially as described.

10. In a railroad-track-laying apparatus, the combination of bars, 5, having shoulders, 5<sup>a</sup>, and, 6, stirrups, 1, and a section, 9, hinged to said bars, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 21st day of February, in the year 1902.

JOHN M. C. HOWELL.

Witnesses:

CYRUS KEHR,

ROBERT PFLANZE.