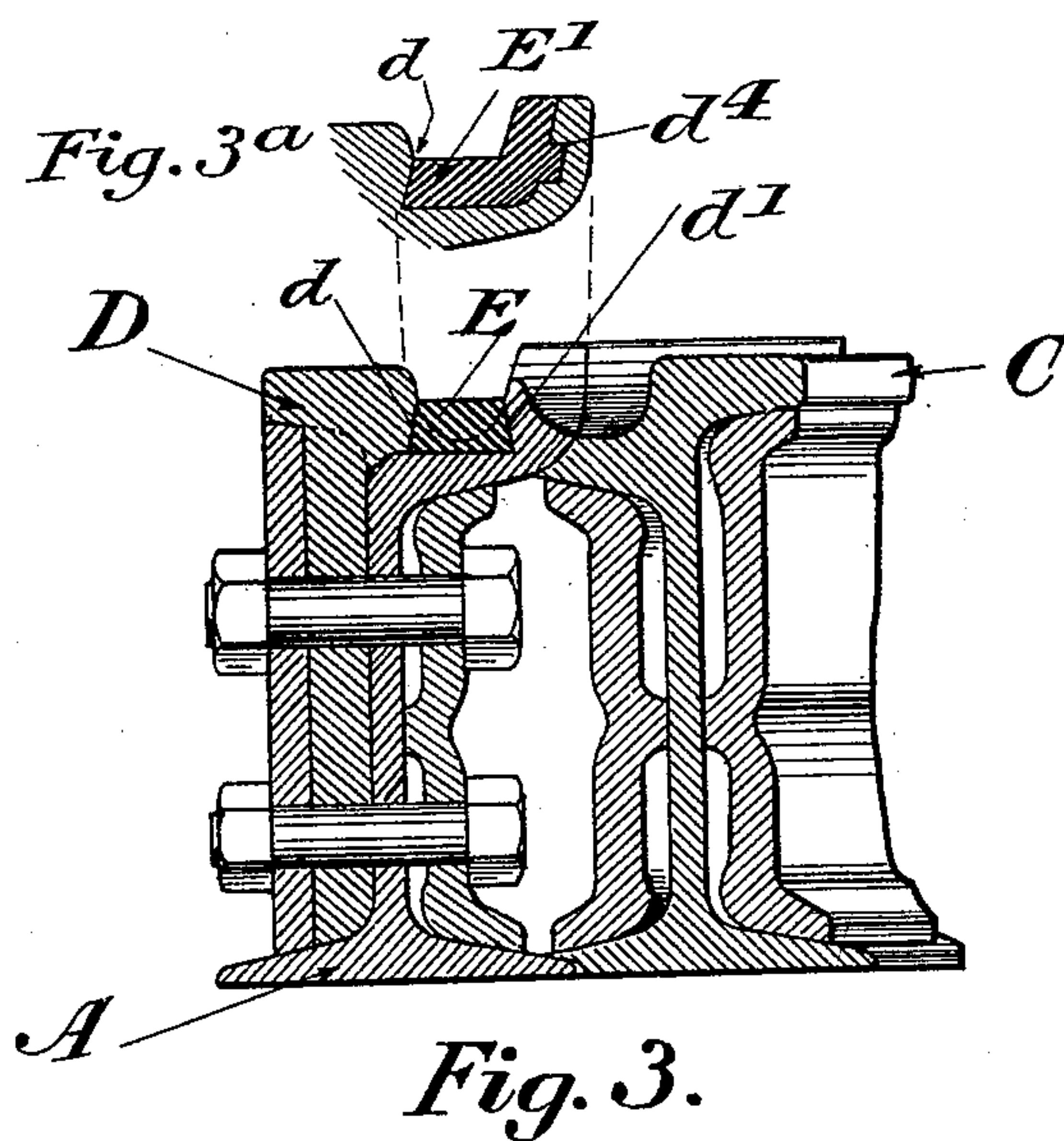
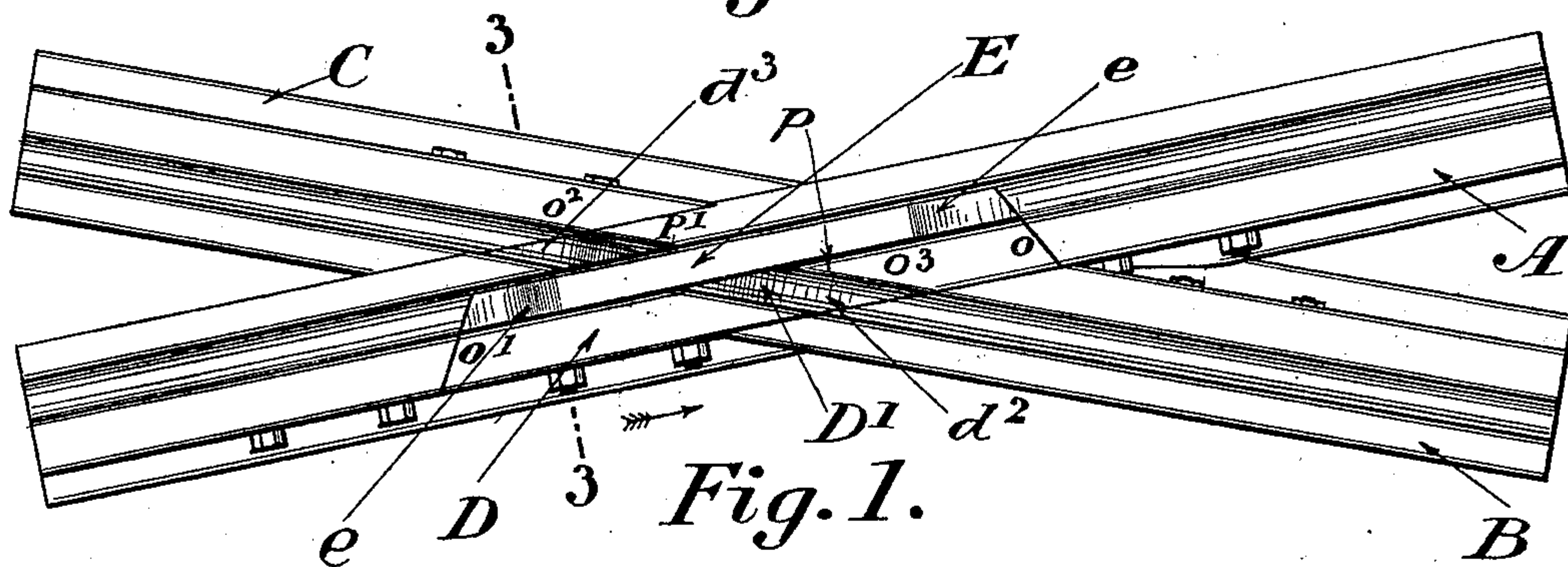
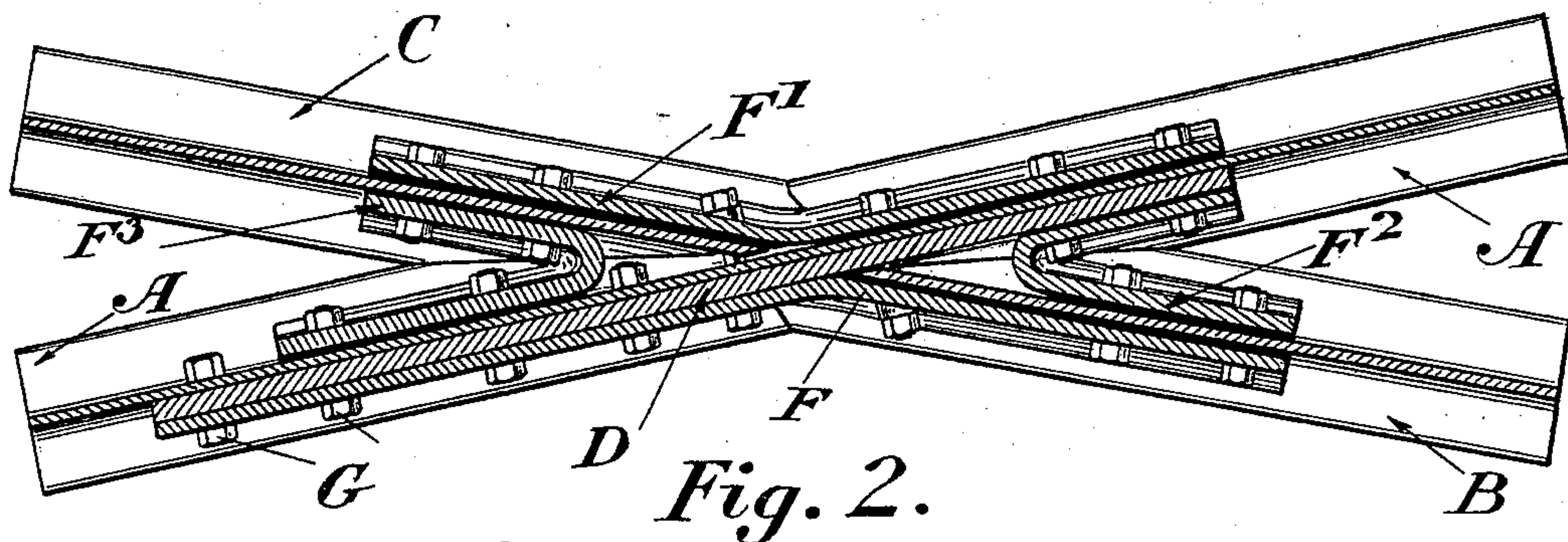


(No Model.)

F. NATHER.
RAILWAY TRACK STRUCTURE.

No. 602,264.

Patented Apr. 12, 1898.



WITNESSES:
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RAILWAY TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 602,264, dated April 12, 1898.

Application filed December 11, 1897. Serial No. 661,580. (No model.)

To all whom it may concern:

Be it known that I, FRANK NATHER, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Railway Track Structures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to track structures for railway-crossings, and belongs to that class of built-up track structures in which such parts of the structure as are subject to the greatest wear are made of a harder material than the rails.

Usually this class of structure has either been very expensive or has lacked some essential to a lasting and durable structure. In the former large plates or chocks have been generally used as the hardened member, and these have been expensive to harden, have with difficulty been secured in position, and have required much cutting and fitting of the rails. A cheaper type has had only the points of the crossing of hardened metal; but the point is not the only part of the structure which is subject to excessive wear.

My invention consists in the provision of a member which is secured to one rail of the crossing and has a head which occupies a space formed by the removal of a suitable length of the head of the said rail and has an inclined floor portion cut diagonally through its head, and in the provision of a hardened floor-plate, preferably a small bar, in the groove of the main track. With this construction, due reference being had to the detailed description hereinafter, I am enabled to present hardened surfaces at all portions of the crossing which are subject to more than ordinary wear. With this construction also there is no jolt given to the vehicle in either direction of travel. I obtain these advantages with a structure which is of light weight and of simple construction.

Referring to the drawings, Figure 1 represents a plan view of a track structure embodying the features of my invention. Fig. 2 is a horizontal section through the center of the structure. Fig. 3 is a vertical section on the lines 3 3 of Fig. 1, and Fig. 3^a is a sec-

tional detail which shows a slightly-modified form of construction.

A is the rail of one track, which for convenience of description will be hereinafter referred to as the "main" track. This rail is a continuous one as regards its web.

B and C are the rails of what I will call the "branching" track.

I prefer that all the rails should be guard-rails.

As clearly shown by reference to Figs. 1 and 3, the main rail A where adjacent to rails B and C has its head portion cut away.

D is a member of harder material, which is formed with a thick vertical web and a head of the same shape as the rails of the crossing. This head fits neatly into the space made by the removal of the head of rail A, and the web bears against the side of the web of rail A and upon the top of the lower flange thereof.

The inside of the head of the member D has the finished surface d , and the inside of the guard of the rail A has a similar length of finished surface d' . Between these surfaces is dovetailed the bar E, which is made of extremely hard material and forms a floor-plate for the flanges of the wheels of the moving vehicle, the inclined ends e of this bar forming gradual approaches to the floor-level.

Where the rails B and C abut the through-rails A, the flanges of all the rails and the head and webs of the rails of the branching track are cut to make a neat fit. The through-rail and the crossing-rails are secured together by angular splice-bars F , F' , F^2 , and F^3 and bolts G , which pass through the rail, the splice-bars, and the member D, the web of the latter being made considerably longer than its head, so that it may extend to the ends of the splice-bars F and F' , which bear against the outside of this web.

In alinement with the grooves of rails A and B is a groove D' , which passes diagonally through the members D. At d^2 this groove is inclined. d^3 represents a similar incline in a groove cut out of the guard of the through-rail.

The operation and advantages of my invention may now be clearly seen. If the vehicle

is traveling on the main track in the direction of the arrow, the wheel-flange rises upon one of the inclined ends e of the plate E and rides on this plate until it reaches the other inclined end e , when it descends to its normal level. The tread of the wheels is thus deprived at o' of its usual bearing and does not again support the weight of the vehicle until it reaches o , when it once more bears upon the head of the track. In its passage across the track intersection the tread of the wheel has been kept above the track, so that it has not borne against the point p and does not bear upon the track until it has a full width of head at o . If the passage of the vehicle in the opposite direction or in either direction on the branching track be examined, it will be seen that the floor is so arranged that the operation is similar and the tread of the wheel always has a full width of the rail-tread beneath it, as at o' , o^2 , and o^3 .

In Fig. 3^a I show a modified form of the floor-plate member. Here the guard of rail A is partially cut away, and the floor-plate E' has an upward projection which serves as a guard and is fitted to the guard of rail A at d^4 .

This construction has the advantage of presenting a hard point at p' , so that if travel on the crossing-track is heavy and there is apt to be much tendency toward a lateral movement of the wheel-flanges the durability of the structure may be considerably increased. This construction is also useful in that it provides a hard bearing for the wheel-tread in case the floor cut through the guard of rail A wears unduly and allows the tread of the wheel to bear against the track immediately after its passage across the floor-plate E.

I do not limit myself to the specific details which I have described, as various modifications within the scope of this invention will readily suggest themselves to those skilled in the art.

What I claim, and desire to protect by Letters Patent, is—

1. The combination of the continuous rail having a suitable length of its tread portion removed, the crossing-rails secured to the continuous rail, and a separate member also secured to the continuous rail and having a head occupying the place of said removed tread.

2. The combination of the continuous rail having a suitable length of its tread portion removed, the crossing-rails secured to the continuous rail, and a separate member paralleling the continuous rail and having a tread portion taking the place of said removed portion.

3. In a railway-crossing, the combination with the rails thereof, one of which has a suitable length of its tread portion removed, of a member having a web and head, the said head occupying the place of the said removed tread and the said web secured to the web of the same rail.

4. In a railway-crossing the combination with the rails thereof, one of which has a suit-

able length of its tread portion removed, of a member having a web and head, the said head occupying the place of the said removed tread and the said web paralleling and secured to the web of the same rail.

5. In a track structure the combination with a continuous rail having a suitable length of its tread portion removed, of a member paralleling, and secured to, said rail and having a head occupying the place of said removed tread, and a floor-plate secured between the said member and the guard of the said rail.

6. The combination of the continuous rail having a suitable length of its tread-surface removed, the crossing-rails secured to the continuous rail, a separate member also secured to the continuous rail and having a head occupying the place of said removed tread, and a floor-plate lying between the said member and the guard of the continuous rail.

7. The combination of a rail having a suitable length of its tread portion removed, a member having a head taking the place of said removed portion, and a floor-plate dovetailed between the guard of the rail and the aforesaid member.

8. The combination of a continuous rail, having a suitable length of its head removed, a pair of crossing-rails, a member having a head and web, the former taking the place of said removed head, a bar dovetailed between the guard of the continuous rail and the head of the said member, and means for securing all the foregoing parts together.

9. In a railway track structure the combination of the rails A, B and C, the member D having a groove in alinement with the grooves of rails B and C, the floor-plate E, and means for securing the whole together.

10. In a railway track structure, a member having a head portion occupying a space formed by the removal of a suitable length of one of the crossing-rails and having a groove across its head portion in alinement with the groove of the other of said crossing-rails.

11. In a railway track structure, a rail having a suitable length of its tread portion removed, in combination with crossing-rails secured thereto, and a member having a head portion taking the place of said removed tread, and an inclined groove across its head in alinement with the groove of the crossing-rails.

12. The combination with the recessed main rail, the crossing-rails secured thereto, the member fitting into the said recess, a groove in said member and in the main rail in alinement with the grooves of the crossing-rails, and a floor-plate in the groove of the main rail.

13. In a railway track structure, the combination with the recessed main rail, the crossing-rails secured thereto, the member fitting into the recess of the main rail, a groove in said member alining with the groove of the crossing-track and having an inclined floor,

a similar groove with inclined floor in the guard of the main rail, and a floor-plate in the groove of the main rail.

5 14. The combination of a continuous rail having a recess, a tread member inserted in said recess, crossing-rails abutting opposite sides of the tread member, and a groove in the tread member in alinement with that of the crossing-rails.

10 15. The combination of a continuous rail having a recess, a tread member inserted in said recess, crossing-rails abutting opposite sides of the tread member, a groove in the tread member in alinement with that of the crossing-rails, and a floor-plate lying beside 15 the tread member and in the groove of the continuous rail.

20 16. The combination of a continuous guard-rail having a recess, a tread member inserted in said recess, crossing-rails abutting opposite

sides of the tread member, inclined grooves across the tread member, said grooves being in alinement with the grooves of the crossing-rails, and a floor-plate between the side of the tread member and the guard of the 25 continuous rail.

17. In a railway track structure, the combination with the recessed main rail and the crossing-rails, of a member having a web and head, the web lying beside that of the main 30 rail and the head fitting into the recess therein, splice-bars engaging the rails and the outside of said web, and bolts securing the whole together.

In testimony whereof I have affixed my signature in presence of two witnesses. 35

FRANK NATHER.

Witnesses:

RICHARD EYRE,
H. W. SMITH.