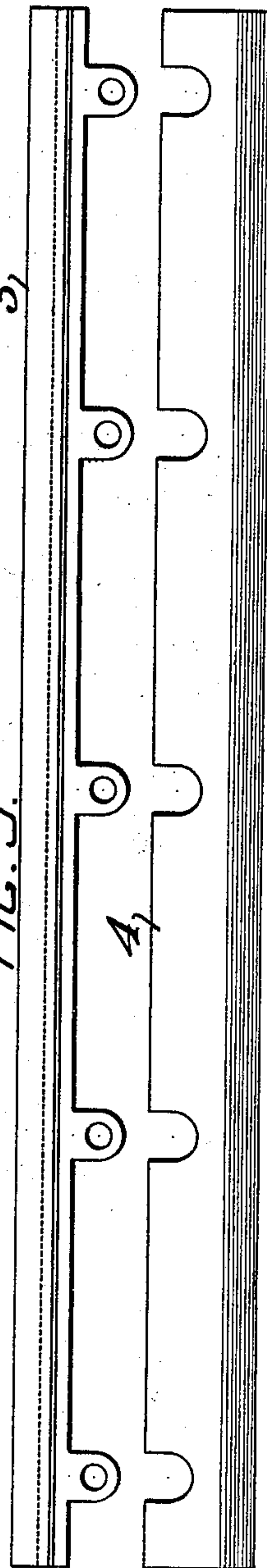
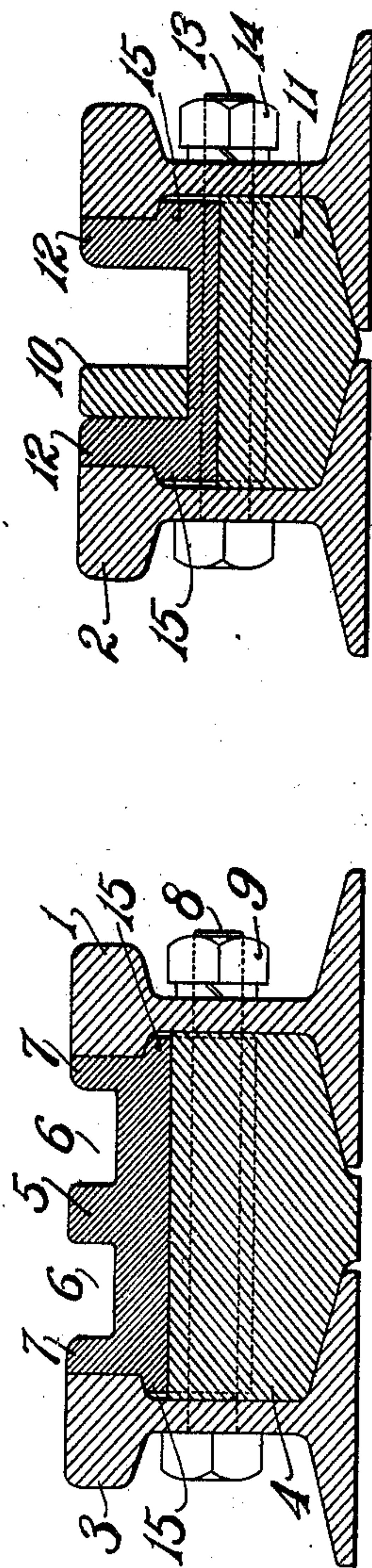
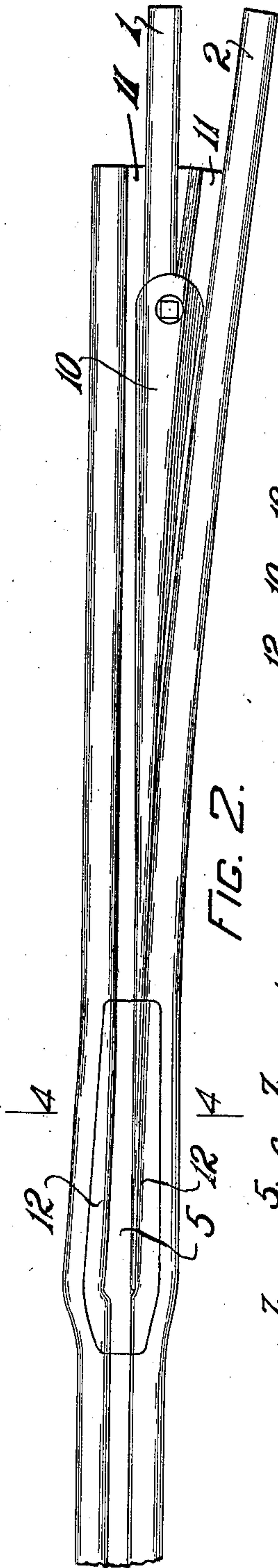
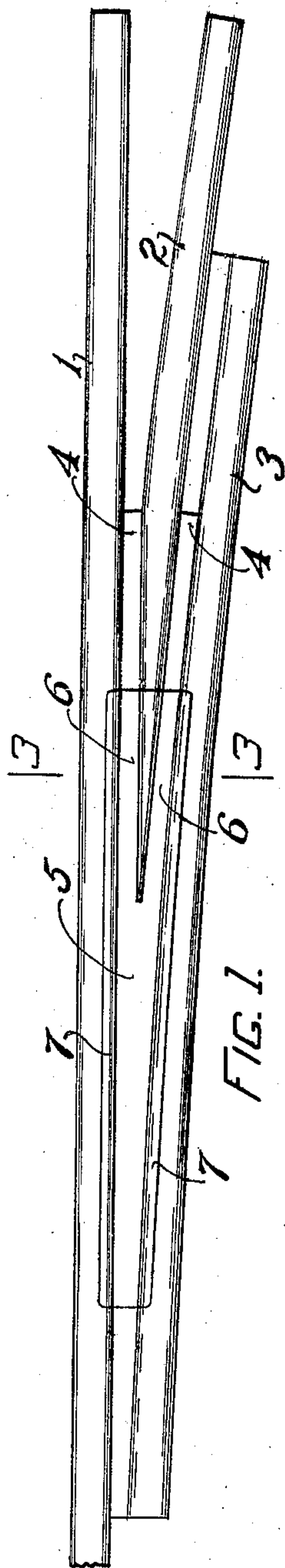


F. H. ELLIS.  
RAILWAY SWITCH STRUCTURE.  
APPLICATION FILED MAR. 27, 1909.

976,056.

Patented Nov. 15, 1910.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## RAILWAY-SWITCH STRUCTURE.

976,056.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed March 27, 1909. Serial No. 486,290.

*To all whom it may concern:*

Be it known that I, FRANK H. ELLIS, a citizen of the United States, residing in Somerville, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Railway-Switch Structures, of which the following is a specification, reference being had to the drawings accompanying the same and forming a part thereof.

My invention relates to that class of switch structures having a hardened plate with track surfaces formed thereon, so formed and arranged as to be secured in recesses in the heads of rail sections and supported by a chock fitting between the webs of the rails, the whole being secured together by bolts in such manner that the hardened plate may be easily removed and another one substituted in its place, without the labor of refitting and realining the chock and rails.

The object of my invention is to construct a switch structure formed of a plurality of rail sections having a hardened plate removably attached thereto to take the place of a portion of the tread of the rails at the points of greatest wear in the structure.

In the drawings—Figure 1 represents a plan of a switch mate; Fig. 2 represents a plan of a switch; Fig. 3 is a cross section taken on line 3—3 Fig. 1; Fig. 4 is a cross section taken on line 4—4 Fig. 2; Fig. 5 is an edge elevation of the hardened plate; and Fig. 6 is an edge elevation of the chock to support the hardened plate.

The mate and switch are made up of the track rail 1, meeting rail 2, and the guard-rail 3, which parts are held in proper alignment by means of the chock 4 which is inserted between their webs, as shown in Fig. 3, and provided with the top surface upon which the plate 5 rests, the plate 5 being provided with the grooves 6, 6, and the tread portions 7, 7, which take the place of the inside of the heads of the rails 1 and 3, so that a portion of the wear at the point of the mate is received by the surfaces 7, 7. When the track surfaces of the plate 5 are worn badly it may be taken out and a new plate inserted without disturbing the rest of the structure.

In a switch mate the chock 4 is made of such width as to fill the space between the webs of the rails 1 and 3 and rest upon the

top of the bottom flanges. The chock 4 is secured between said rails by the bolts 8, 8, etc., and are provided with nuts 9 for tightening them. In the case of a switch, the tongue 10 is a prolongation of the main rail 1, the point of greatest wear of the tongue being at the thin end. The plate 5 is removably inserted at that point to take the place of the portions of the head of the rail which are cut out, as well as to provide a replaceable reinforcement for the end of the tongue 10. The plate 5 is supported by the chocks 11 inserted between the webs of the rails; the sides 12, 12, of the plate 5 form substantially the gage line of the track. The structure is provided with the bolts 13, etc., having nuts 14 for tightening them. In both plates there are projecting portions 15, 15, which lap under the heads of the rails and serve to more firmly lock the plates 5 and 16 in position. This is a desirable feature as there is a liability of the nuts on the bolts becoming loosened so that if the outer edges of the plates 5 and 16 were vertical they would be liable to play up and down somewhat on the chock. The under-lapping portions 15, 15, etc., effectually prevent this taking place.

Having described my invention what I claim is—

1. In a railway switch structure, the combination with a plurality of rail sections having recesses in their heads; a hardened plate having track surfaces formed thereon formed to fit in the recesses in the rail heads; and a chock to support said hardened plate secured between the webs of the rail sections.

2. In a railway switch structure, the combination with a plurality of rail sections having recesses in their heads; a hardened plate having track surfaces formed thereon fitting within the recesses in the rail heads and having a projecting rim near the bottom of said plate to fit under the rail heads; and a chock to support said hardened plate, secured between the webs of the rails.

3. In a railway switch structure, the combination with a plurality of rail sections having recesses in their heads; a hardened plate having track surfaces formed thereon fitted to the recesses in the rail heads; projecting ribs near the bottom of said hardened plate; transverse ribs on the bottom of

said hardened plate having holes there-through; a chock to support said hardened plate having recesses corresponding to the ribs on the bottom of the hardened plate; and bolts for securing the rail sections to the chocks and hardened plate.

In testimony whereof, I have hereunto set

my hand, in the presence of two subscribing witnesses, this the 4th day of Febr'y, A. D. 1909.

FRANK H. ELLIS.

Witnesses:

A. H. SPENCER,  
H. M. KELSO.