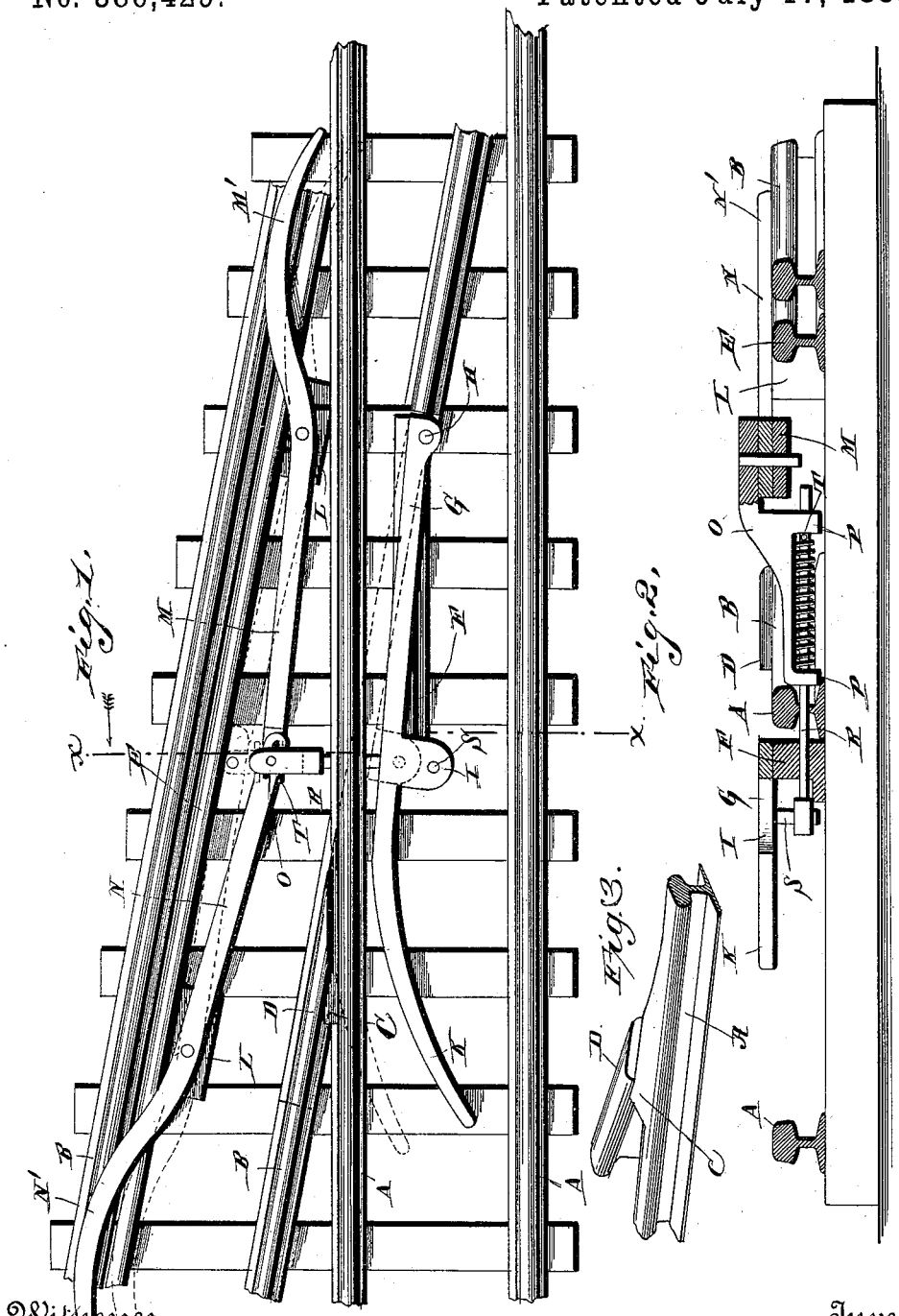
(No Model.)

A. M. GRUBBS.

RAILWAY CROSSING.

No. 386,429. Patented July 17, 1888.



Witnesses.
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UNITED STATES PATENT OFFICE.

ALBURT MARION GRUBBS, OF MENTONE, INDIANA.

RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 386,429, dated July 17, 1888.

Application filed January 7, 1888. Serial No. 260,079. (No model.)

To all whom it may concern:

Be it known that I, ALBURT MARION GRUBBS, a citizen of the United States, residing at Mentone, in the county of Kosciusko and State of Indiana, have invented a new and useful Improvement in Railway-Crossings, of which the following is a specification.

My invention relates to an improvement in railway-crossings; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a railway-crossing embodying my improvement, showing the switch-rail set for the main track, and showing the switch set for the side track in dotted lines. Fig. 2 is a vertical transverse section of the same taken on the line *x x* of Fig. 1. Fig. 3 is a detail perspective view of a portion of one of the main-track rails provided with the frog.

A represents the rails of the main track, and B represents the rails of the side track.

C represents a frog, which is formed integrally with one of the main-track rails, and is provided with a head or flange, D, that is raised above the level of the top of the main track. On the inner side of the outer rail of the side track, B, and opposite the frog, is a guard-rail, E. At a suitable distance from and on the inner side of one of the main-track rails is arranged a block, F, which is equal in height to the tops of the main rails, and on the outer end of the said block is pivoted a frog-rail, G, by means of a vertical bolt, H. The said frog-rail is adapted to ride over the adjacent main rail, so as to effect a junction with the flange D of the frog, and has near its free end, on its inner side, a laterally-extending lug or ear, I. At the free end of the frog-rail is a curved extension-arm, K.

L represents a pair of supporting-blocks, which are arranged at a suitable distance apart on the inner side of the guard-rail, and on the said blocks are pivoted a pair of switch-levers, M N, which are toggle-jointed at their inner ends and have their outer ends provided with curved arms M′ and N′, respectively. To the toggle-joint of these levers is connected a bracket, O, having a pair of depending ears, P.

R represents a rod, which has its inner end connected to a bolt, S, that depends from the ear I, and has its outer portion extending through a pair of aligned openings which are made in the ears P. A coiled extensile spring is arranged on that portion of the rod which is between the said ears, and one end of the said spring bears against the inner end, and the opposite end of the spring bears against a pin, T, which is arranged transversely in the rod R. This spring permits a slight degree of lost motion of the bracket O on the rod R.

The operation of my invention is as follows: When a train running on the side track approaches the main track, the flanges of its wheels strike the arm N′ of the lever N, and thereby throw said lever and lever M and frog-rail G into the position illustrated in dotted lines in Fig. 1, the said frog-rail being moved over the adjacent main-track rail and caused to engage the flange D of the frog, and thereby align with the side track. The train passes over the inner side-track rail onto the frog-rail, and therefore no necessity exists for cutting the main-track rail for the passage of the flanges of the wheel, as is now the common practice.

When a train leaves the main track and proceeds on the side track, its advance wheels before reaching the crossing engage the arm M′ of the lever M and throw the levers and the frog-rail into the position just described. When a train passing in either direction approaches the crossing and the frog-rail is set for the side track, the advance wheels of the train engage the said frog-rail and throw the same to the position indicated in solid lines in Fig. 1, thereby effectually clearing the main track.

From the foregoing it will be understood that my improved crossing is automatic in operation and enables me to dispense entirely with the dangerous and frangible frogs now in common use.

Inasmuch as the frog-rail and the frog-levers are raised above the level of the track-rails and are adapted to be operated by the flanges of the wheels of the train, the same are not liable to be frozen and rendered inoperative in cold weather, or covered by snow-storms which are not sufficient to obstruct and arrest the passage of trains.

Having thus described my invention, I claim—

1. In a railway-crossing, the combination of the main-track rails, the side-track rails, the fixed frog at the junction of the main and side track rails, and having the flange D raised above the level of the main track, the frog-rail G, adapted to ride over the adjacent main-track rail, and the toggle-jointed frog levers arranged on the inner side of the side track, pivoted near their outer ends, and connected directly to the frog-rail, said frog-rail and levers having the arms or extensions adapted to be operated by the flanges of the wheels of passing trains, substantially as described.

2. The combination, in a railway-crossing, of the main track, one of the rails of which is provided with a fixed frog, C, having the raised flange D, the side-track rail in line with the frog, the pivoted frog-rail G, having the arm K at its free end, said frog-rail being adapted to move over the top of the adjacent main rail and connect with flange D, the guard-rail on the inner side of the outer side-track rail, the toggle-jointed pivoted levers M N, having the extensions or arms at their outer ends, and connections between the jointed inner ends of said levers and the frog-rail, substantially as described.

3. The combination of the main and side tracks, the pivoted frog-rail G, having the arm K, the pivoted toggle-jointed levers M N, having the extensions or arms at their outer ends, for the purpose set forth, the bracket O, connected to the joint of said levers and having the ears P, the rod R, connected to frog-rail G, and having its outer end extended through ears P, the extensible spring bearing against one of the ears P, and the pin extending through rod R, bearing against the free end of the spring and adapted to strike the other ear P, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ALBURT MARION GRUBBS.

Witnesses:
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