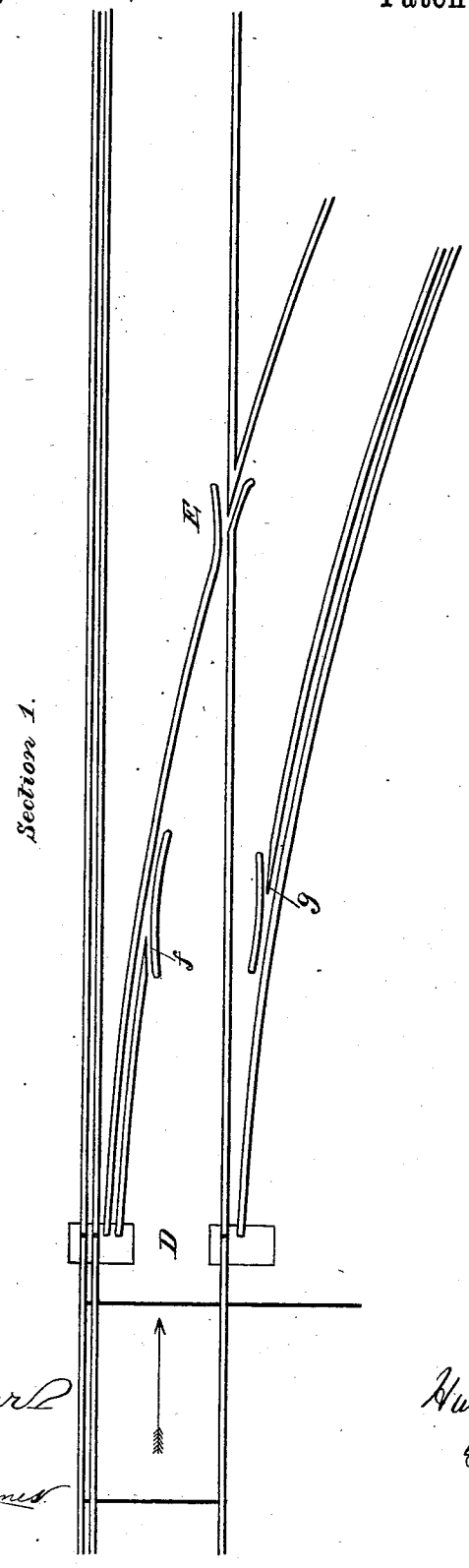
(No Model.) 2 Sheets—Sheet 1

H. McDONALD.

UNITING AND SEPARATING FROG.

No. 254,673 Patented Mar. 7, 1882.



Witnesses:

J. W. Garner

W. S. D. Gaines

Inventor:

Hunter McDonald

by H. A. Thom.

Attorney.

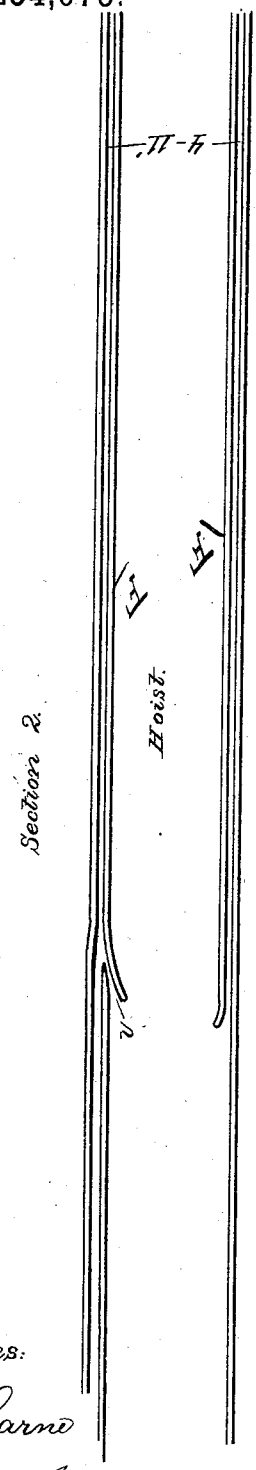
N. PETERS. Photo-Lithographer. Washington, D. C.

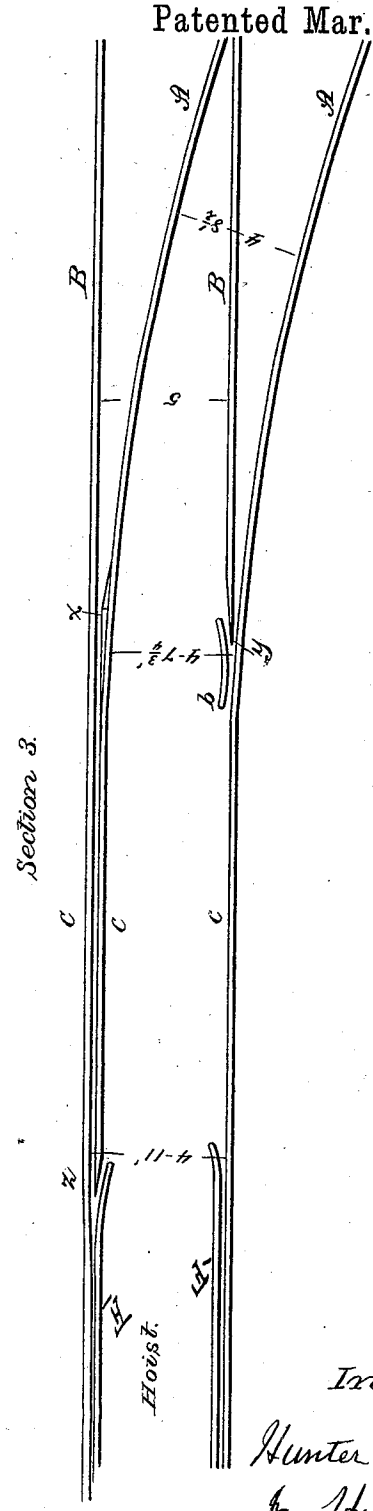
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J. W. Garner

W. S. D. Baines

Inventor:

Hunter McDonald,

by H. A. Lyon,

Attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

HUNTER McDONALD, OF NASHVILLE, TENNESSEE.

UNITING AND SEPARATING FROG.

SPECIFICATION forming part of Letters Patent No. 254,673, dated March 7, 1882.

Application filed November 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, HUNTER McDONALD, a citizen of the United States of America, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Uniting and Separating Frogs; 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 or figures of reference marked thereon, which form a part of this specification.

My invention relates to frogs for three-rail tracks; and it consists of an automatic device for transferring the different trucks onto the compromise gage and back to their respective gages after hoisting.

The drawings represent sections of tracks arranged according to my invention. The top of section 1 joins the bottom of section 2, and the top of section 2 joins the bottom of section 3.

My invention may be described as follows:

Whenever a railroad of the standard—four feet eight and one-half inches—gage crosses or joins a five-feet-gage road, it becomes necessary, in order to haul the same car over both roads, to transfer the car-body from the broad or five-feet gage trucks to the standard trucks, or vice versa. To do this various devices are used for hoisting the car bodies up and for lowering the trucks from under the bodies that they may be exchanged. In all these devices for transferring, the center lines of the different cars must travel in the same line so that the holes in the center plates will come directly under the king-bolts of the cars. To accomplish this the cars of both gages are run on what is called a "compromise gage," (four feet and eleven inches.) This gage is a little tight for the five-feet trucks, and narrow enough to allow the treads of the standard-gage trucks to bear on the rails about two inches on each side. This would not be safe for the narrow-gage cars unless a guard, F, were laid on each side to hold the trucks from sluing around and dropping between the tracks.

My invention provides an automatically-acting switch or frog for transferring cars of different gages onto this compromise gage. It is also used where a narrow or standard gage joins a five-feet gage and a three-rail track is used. It also obviates the necessity of having a three-rail frog in the main track by transferring the third rail from one side to the other, and by using a common frog. This transfer is made between the switch and the frog.

The drawings represent my frog in its several capacities.

The tracks A A (four feet eight and one-half inches) and tracks B B (five feet) are shown uniting or coming together before the hoist. It is necessary to place the cars of each gage on the three-rail track C C C. This is usually done by throwing a switch; but my arrangement is automatic. Take, for instance, a broad-gage car approaching on the track B B. Before reaching the point *y* of the left-hand rail B, and after the flange on the right wheel has passed the guard-rail *x*, the flange on the left strikes the guard-rail *b*, thus drawing the wheel over, so that the tread rests on the left-hand rail A, before the wheel has fully passed the point *y*. The car is now on the broader gage of the three-rail track. For the narrow-gage cars the track here is continuous, except that directly opposite the guard-rails *b* and *x* the gage is laid to four feet seven and three-fourths inches. Follow the standard gage on through the hoist. At the frog *z* the flange strikes the guard-rail F on the right, and is drawn over onto the outer rail before it passes the sharp point of the third rail C. On the opposite side (left) the flange is drawn over until it bears against the guard-rail F, the tread of the wheel still remaining on the outer rail. The track for the broad gage is drawn in one inch on the right just before it reaches *z*, making a compromise gage of four feet eleven inches. It is seen that here the cars of both gages traverse on a common center line. When the frog *v* is reached the cars again take their respective gages. The guard-rail F on the left is laid a little close to the outer rail, opposite the frog *v*, so that the flanges of the narrow-gage cars are drawn to the left of the point *v*, while the broad-gage cars remain on the outer rail. When the cars are approaching the hoist in the opposite direc-

tion the narrow gages will be switched onto the compromise gage by the frog *v*, back onto the third rail by the frog *z*, and the track for them is then continuous. The narrowing of the gage at the frog to four feet seven and three-fourths inches operates to throw the flanges to the outside of the point *y*. The broad-gage cars will have their right wheels held against the rail by the guard-rail *x*, and the left wheels will safely pass onto the left track, B. A train of mixed cars approaching the switch D in the opposite direction (shown by the arrow) can be either carried forward on the main track to the hoist or switched off onto the side tracks. If switched off onto the side tracks the broad-gage cars will have a clear track. The narrow-gage cars will strike the guard-rail of the frog *f*, and will be drawn over to the outside rail on the left and past the point of frog *g*, so that they run with the third rail on the right. This arrangement does away with the use of a three-rail frog at the point E. When approaching on the side track from the opposite direction the trucks will cross the single rail of the main track on the frog E, and will then be switched onto the third rail on the opposite side, as shown.

I do not confine myself to the use of the arrangement and construction of the side track shown in section 1, but provide that a side track can join the main track, as shown in section 3.

The advantages of this arrangement are that the cars of different gages mentioned can safely pass from each respective gage onto the compromise gage without the throwing of a switch. The cars can be handled with more rapidity, and both gages are separated safely and rapidly, and the use of a three-rail frog is done away with by shifting the third rail from one side to the other before the rails cross the single rail of the main track.

What I claim is—

1. An automatically-acting switch for joining standard and broad gage cars upon a compromise track and to separate the same upon their respective tracks, consisting of the rails C C C, the point *y* of the rail B, guards *b* and *x*, point-rails *v z*, and the hoist guard-rails F F, all arranged to operate substantially as shown and described.

2. The guard-rails F F of the hoist, in combination with the point-rails *v* and *z*, and the rails C C C, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

HUNTER McDONALD.

Witnesses:
J. M. KEEBLE,
T. H. D. SAUSSURE.