

(No Model.)

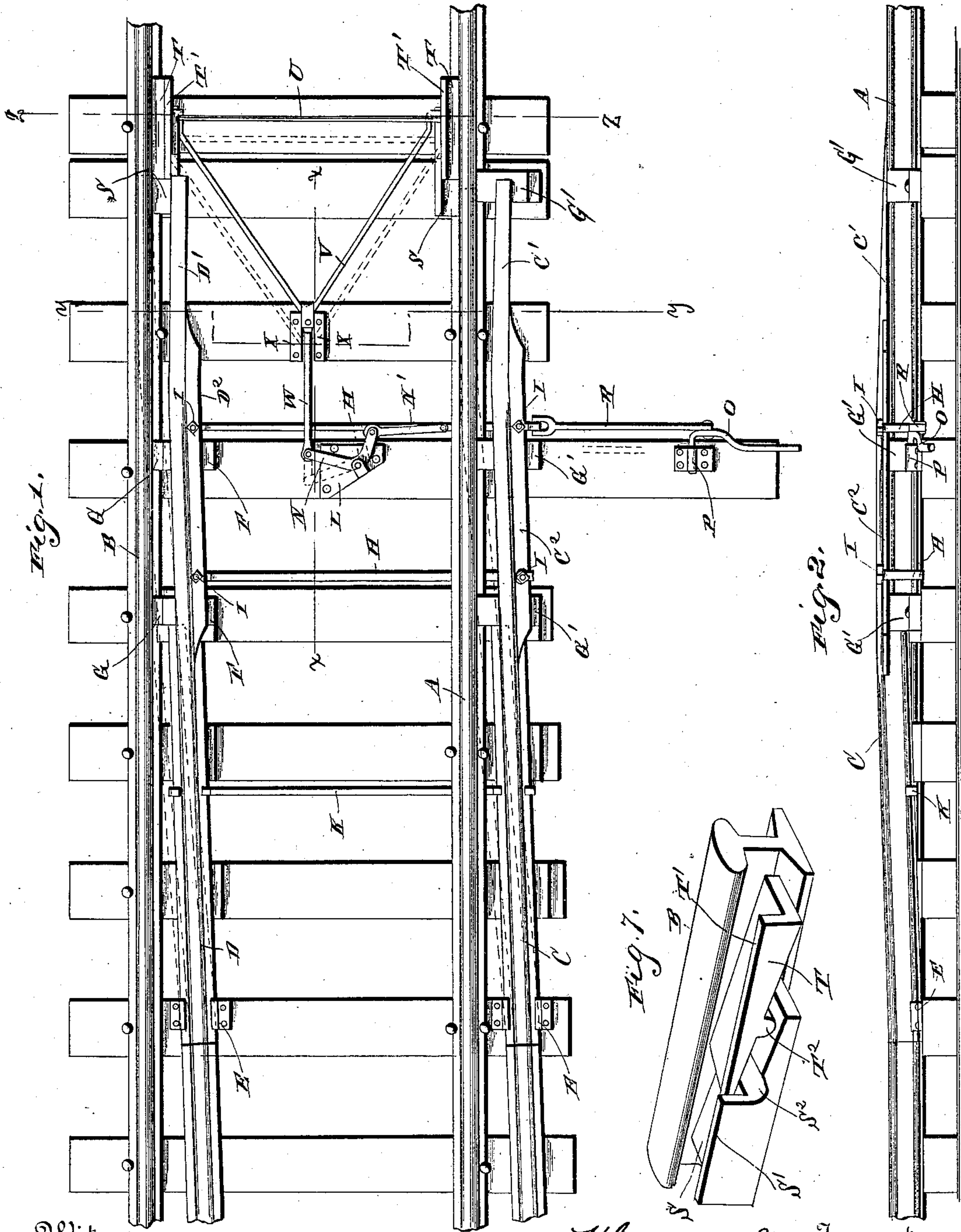
2 Sheets—Sheet 1.

U. S. LUTZ.

AUTOMATIC SNOW CLEANING RAILWAY SWITCH.

No. 370,797.

Patented Oct. 4, 1887.



Witnesses

Chas. B. Taylor
E. G. Siggers

Ulysses S. Lutz Inventor

By his Attorneys

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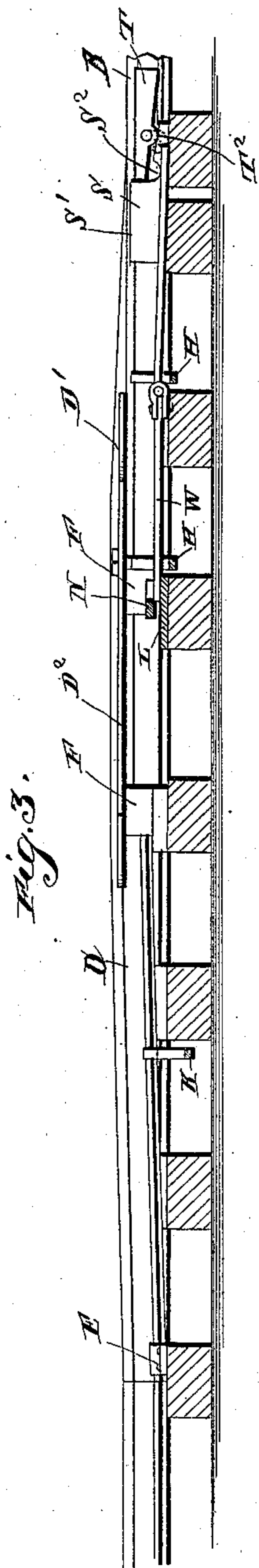


Fig. 3.

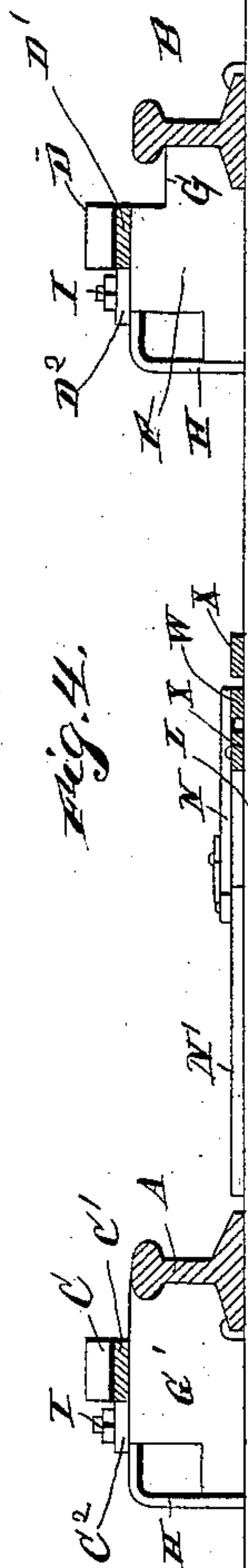


Fig. 4.

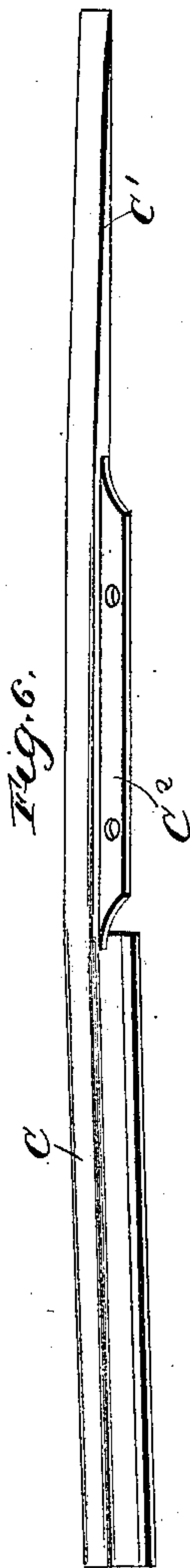


Fig. 6.

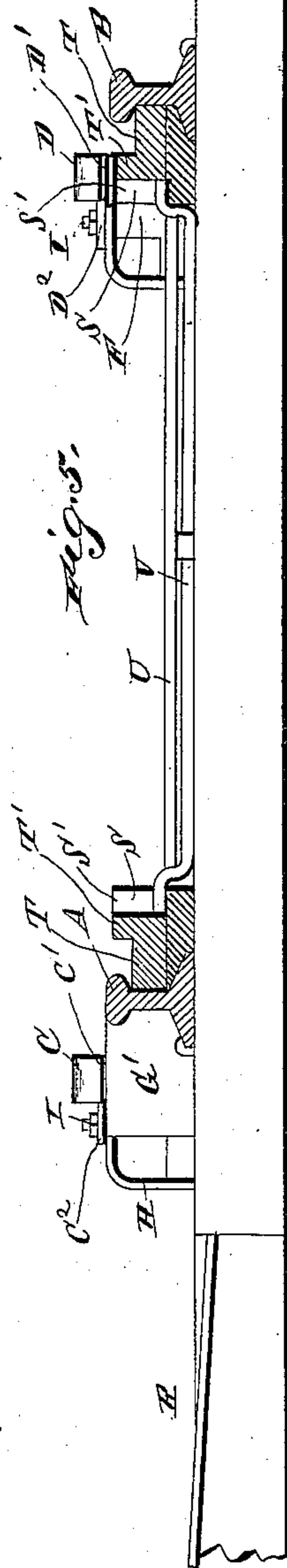


Fig. 5.

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UNITED STATES PATENT OFFICE.

ULYSSES S. LUTZ, OF BLOOMSBURG, PENNSYLVANIA.

AUTOMATIC SNOW-CLEANING RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 370,797, dated October 4, 1887.

Application filed February 28, 1887. Serial No. 229,226. (No model.)

To all whom it may concern:

Be it known that I, ULYSSES S. LUTZ, a citizen of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented a new and useful Improvement in Automatic Snow-Cleaning Railway-Switches, of which the following is a specification.

My invention relates to an improvement in automatic snow-cleaning railway-switches; 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 drawings, Figure 1 is a top plan view of a railway-switch embodying my improvements, showing the switch-set for the main line in solid lines and for the siding in dotted lines. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal central sectional view taken on the line *xx* of Fig. 1. Fig. 4 is a vertical transverse sectional view taken on the line *yy* of Fig. 1. Fig. 5 is a similar view taken on the line *zz* of Fig. 1. Fig. 6 is a detail view of one of the switch-rails. Fig. 7 is a detached view of one of the wedge-shaped guide-blocks.

A B represent the parallel rails of the main track.

C and D represent the switch-rails, which are arranged on one side of the main rails and are pivoted at one end, as at E. On the inner side of the rail B are a number of supporting-blocks, F, the upper sides of which are level with the top of the said rail, and the said blocks are provided with transverse grooves G alongside the rail, through which the flanges of the wheels of passing trains may run. The free end of the switch-rail D has its web or shank and its base cut away for a suitable distance, thereby providing an extending head, D', for the switch-rail, which head rests upon the upper sides of the blocks F, and is thereby adapted to move over the upper side to the contiguous rail B. The extreme free end of the switch-rail D is inclined downwardly to a point, as shown at Fig. 3. The head D' is also provided on its inner side for a suitable distance with a laterally-extending flange or web, D², which bears upon the blocks F when the point of the switch-rail rests on top of the rail B.

On the outer side of the rail A, and in line with the blocks F, are similar blocks, G', which support the free end of the switch-rail C, the latter being similar in construction to the switch-rail D and provided likewise with the head C', having the wedge-shaped point, and the laterally-extending head or flange C². Stay-rods H have their extremities upturned and pivotally connected to the webs C² and D² by means of bolts I, the said stay-rods serving to connect the free ends of the switch-rails together. The switch-rails are also connected together by a stay-rod, K, which has bifurcated extremities that engage opposite sides of the bases of the switch-rails.

L represents a metallic plate, which is secured on the upper side of one of the cross-ties between the rails A B and at a suitable distance from the free end of the switch-rails. On this plate is fulcrumed a bell-crank lever, N, one arm of which is connected to one of the stay-rods H by means of a pitman, N'.

O represents a lever, which is fulcrumed in a bearing, P, that is attached to the outer end of the extended tie to which the plate L is secured, and the said lever is connected to the rod H by means of a pitman, R. By means of the said lever O and the connecting-rods, hereinbefore described, it will be understood that the switch-rails may be moved laterally toward and over the rails of the main track or moved from the said rails of the main track. It will be also understood that as the free ends of the switch-rails sweep directly over the upper sides of the main rails, they will brush snow from the said main rail and will not be obstructed by the same, and thus the switch is adapted to be operated in all kinds of weather.

On the opposing inner sides of the rails A B and at the free ends of the switch-rails are secured wedge-shaped guide-blocks S, the inclined upper sides of which are higher at the ends which are nearest the switch-rails. The said guide-blocks are provided on their inner sides with vertical flanges S', and across the upper sides of the said blocks at the outer ends of the flanges and at a point nearly midway in the blocks are made grooves or recesses S².

T represents a pair of wedges or lifting-blocks, one of which is arranged on the upper

side of each of the guide-blocks S. The said lifting-blocks are provided on their inner sides with raised flanges T', which bear against the inner sides of the flanges S', the inner sides of the said lifting-blocks bearing against the inner sides of the track-rails. On the lower sides of the lifting-blocks are transverse shoulders or offsets T², which are adapted to enter the recesses S² of the guide-blocks.

U represents a cross-bar, which connects the lifting-blocks together, and V represents a bail or yoke, which is attached to the said cross-bar near the ends thereof. The front side of this bail is connected to the long arm of the bell-crank lever N by means of a rod, W, which rod has its free end working in guide-ways X, arranged transversely on one of the cross-ties. When the switch-rails have their free ends moved onto the upper sides of the main rails, the cross-bar U is drawn forward by the bell-crank lever and the lifting-blocks T are moved forward on the inclined guide-blocks S, so that the said lifting-blocks are raised nearly to the same plane as the tops of the track-rails.

The operation of my invention is as follows: When a train approaches the switch from the direction indicated by the arrow in Fig. 1 and is to be thrown upon the side or switch track, the lever O is turned so as to cause the free end of the switch-rails to be moved over and rest upon the upper side of the rails A and B, and at the same time the lifting-blocks T are moved forward on the inclined guide-blocks, as before described. When in this position, the shoulders or offsets T² on the lower sides of the lifting-blocks engage the recesses S² on the upper sides of the guide-blocks, and thus the lifting-blocks are held firmly in position thereon and are prevented from slipping. When the wheels of the train arrive at points on the main track opposite the lifting-blocks, the flanges of the said wheels bear upon the latter, and, owing to the inclination at which the said lifting-blocks are supported by the said guide-blocks, the treads of the wheels as they travel toward the switch-rails are raised above the tops of the main rails and also over the extreme reduced ends of the switch-rails where the latter come to a point, and thereby the points of the said switch-rails are prevented from being mashed and worn by the wheels. When the wheels have passed the lifting-blocks, they are lowered upon the switch-rails at a considerable distance from the extreme pointed ends thereof and at points on the switch-rails which are sufficiently thick to easily withstand the strain exerted upon them.

The main object of my invention is to provide a switch which will automatically clear

itself of snow and other matter that may accumulate on the track. The heads of the switch-rails are arranged above the level of the rails of the main track, so that when the switch-rails are worked they move entirely across the rails of the main track and push off snow, &c., accumulating thereon.

Having thus described my invention, I claim—

1. In a railway-switch, the combination of the main rails A B, the blocks F and G' on the sides thereof, and the switch-rails having the extended treads at their free ends supported on the blocks F and G' and adapted to sweep over and rest upon the upper sides of the main rails, substantially as described.

2. The combination, in a railway-switch, of the main rails, the switch-rails having their free ends adapted to bear upon the main rails and reduced to a wedge-shaped point, and the inclined lifting-blocks on the inner sides of the main rails adapted to engage the flanges of the wheels and raise the treads of the latter from the main rails onto the switch-rails and to clear the extreme thin-pointed ends thereof, for the purpose set forth, substantially as described.

3. The combination of the main rails, the switch-rails having their free ends adapted to pass over and rest upon the tops of the main rails, the lever connected to the said switch-rails to operate the same, and the longitudinally-movable lifting-blocks arranged on the inner sides of the main rails and connected to the operating-lever, and thereby movable simultaneously with the switch-rails, for the purpose set forth, substantially as described.

4. The combination, in a railway-switch, of the inclined guide-blocks S on the inner sides of the main rails, and the lifting-blocks T, supported on the said blocks S and adapted to raise the treads of the wheels from the tops of the rails, the said lifting-blocks being movable on the supporting-blocks, substantially as described.

5. The combination, in a railway-switch, of the inclined blocks S on the inner sides of the main rails and having the recesses S² on their upper sides, and the longitudinally-movable lifting-blocks T on the blocks S and having the offset T², adapted to engage the recesses S², for the purpose set forth, substantially as described.

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

ULYSSES S. LUTZ.

Witnesses:

C. B. BROCKWAY,
ANDREW CAMPBELL.