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Patented Sept. 23, 1902.

A. M. ACKLIN.  
OVERHEAD TRAMWAY.

(Application filed Feb. 27, 1902.)

(No Model.)

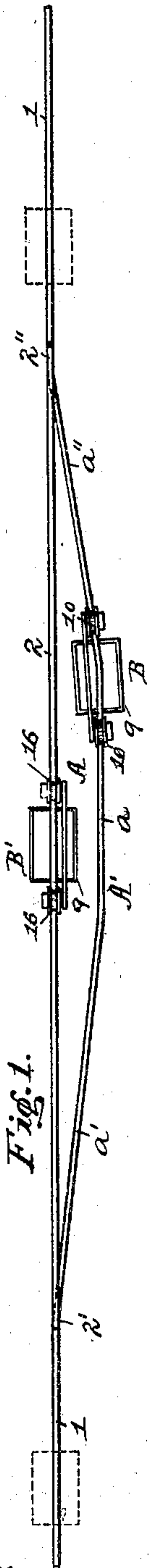


Fig. 1.

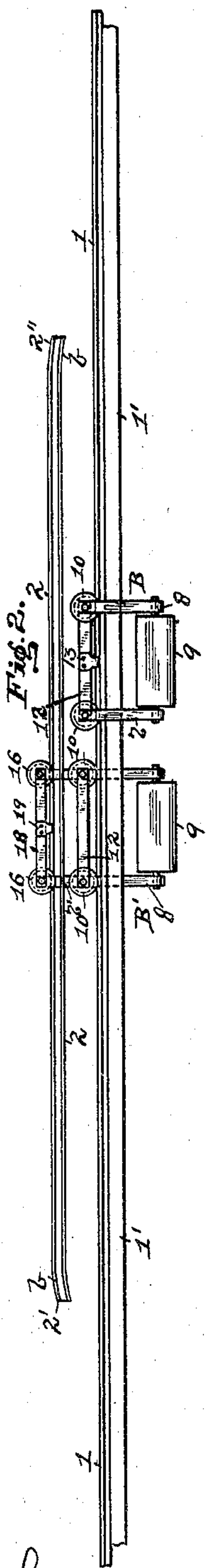


Fig. 2.

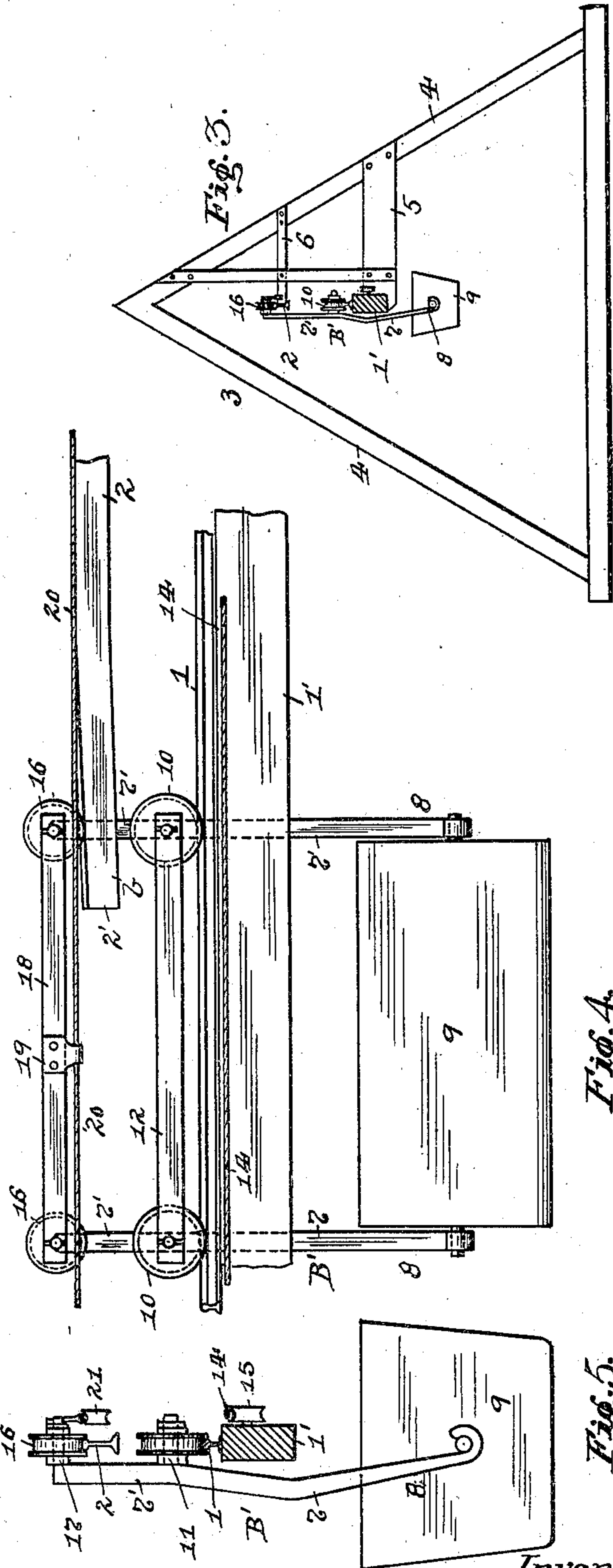


Fig. 3.

Fig. 4.

Fig. 5.

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# UNITED STATES PATENT OFFICE.

ALFRED M. ACKLIN, OF PITTSBURG, PENNSYLVANIA.

## OVERHEAD TRAMWAY.

SPECIFICATION forming part of Letters Patent No. 709,692, dated September 23, 1902.

Application filed February 27, 1902. Serial No. 95,959. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED M. ACKLIN, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, (whose post-office address is 828 Adelaide street, in said city, county, and State aforesaid,) have invented a new and useful Improvement in Overhead Tramways; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to what are known as "overhead tramways," and has special reference to such tramways for carrying loaded buckets along the same in one direction and returning the empty buckets along the same in the opposite direction.

The object of my invention is to provide a simple and effective overhead tramway for the purposes intended and to do away with some of the rails or tracks usually employed in these tramways, thereby cheapening the cost of erecting and maintaining them.

My invention consists, generally stated, in the novel arrangement, construction, and combination of parts, as hereinafter more specifically set forth and described, and particularly pointed out in the claims.

To enable others skilled in the art to construct and use my improved overhead tramway, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a plan view of my improved overhead tramway. Fig. 2 is an elevation of the same. Fig. 3 is an enlarged end view of the same, showing the manner of supporting the rails. Fig. 4 is an enlarged side view of one of the trolley buckets and rails, and Fig. 5 is an end view of the same.

Like symbols of reference herein indicate like parts in each of the figures of the drawings.

As illustrated in the drawings, 1 represents the lower or main rail, which extends from the loading-point to the unloading-point and above which is the upper or auxiliary rail 2, while both of these rails 1 and 2 are supported in the supporting-frame 3, composed of the upright or triangular frames 4, having the side pieces or supports 5 and 6 thereon. The lower side support 5 is connected to and supports the beam 1', upon which the

lower rail 1 is secured, and the upper side support 6 is secured to and supports the upper rail 2. The upper rail 2 is only used at the passing-point A, and the rail 1 is bent or crooked sidewise at the point A, so as to form the throw-out portion A', having the outwardly-extending portions  $a'$   $a''$ , respectively, therein, and between these portions  $a'$   $a''$  is the straight portion  $a$ . The upper rail 2 only extends from the ends of the portions  $a'$   $a''$ , and the front and rear ends  $2'$   $2''$  thereof are bent or inclined downwardly, as at  $b$ .

The trolley bucket-frames are shown at B B', and each frame is composed of the upright standards 7 for forming the bail 8 to support each of the buckets 9 therein, while each of the frames B B' have the wheels 10, journaled in bearings 11, formed on each of the standards 7, and such bearings 11 are connected by the side frame or brace 12. A clamp 13 is secured to this brace 12 on the frame B, so as to extend down and have the hauling line or rope 14 secured thereto, which rope 14 passes over idlers or pulleys 15, mounted on the beam 1', and is connected to a suitable drum operated by power in any approved manner, if desired. The bucket-frame B' has the wheels 16 thereon, which are journaled in bearings 17, formed on the extensions 7' of the standards 7, and such bearings 17 are connected by the side frame or brace 18. A clamp 19 is secured to the brace 18 on the frame B', so as to extend down and have the hauling line or rope 20 secured thereto, which rope passes over idlers or pulleys 21, mounted upon the upper side supports 6 and is connected to a suitable drum operated by power in any approved manner, if desired.

The use and operation of my improved overhead tramway are as follows: The two trolley bucket-frames B B', carrying the buckets 9, are adapted to travel or be moved along the rails 1 and 2, and when one of the frames B B', with its bucket 9, is at the loading-point the other one is at the unloading-point. The loading and unloading of the buckets 9 on the frames B B' can be performed in any suitable manner and by any suitable means, and when the bucket 9 in the frame B at the loading-point is filled and the bucket 9 in the frame B' is emptied at the unloading-point and it is desired to move the frame B, containing



the filled bucket 9, along the track 1 to be emptied, as well as the empty bucket 9 in the frame B' along the tracks 1 and 2 to be refilled, all that is necessary is to move or haul  
 5 on the ropes 14 and 20, connected to said frames B B', respectively, in the opposite directions, so as to move said frame B, carrying the filled bucket 9, from the loading-point along the rail 1 by its wheels 10, and the frame  
 10 B', carrying the empty bucket 9, from the unloading-point along the rail 1 by its wheels 10. When the frame B, carrying the loaded bucket 9, reaches the end of the portion *a'* on the throw-out portion A', it will pass along  
 15 said portion *a'* until it reaches the portion *a* on said throw-out portion A', and when frame B', carrying the empty bucket 9, reaches the end 2'' of the upper rail 2 over the end of the portion *a''* the upper wheels 16 on the frame B'  
 20 will travel up the inclined portion *b* on said end 2'', which will cause the lower wheels 10 on said frame B' to leave the rails 1 and such frame B' be supported by the wheels 16 on the upper rail 2, and when the frame B' travels  
 25 along the rail 2 by its wheels 16 and reaches a position opposite the frame B on the portion *a* of the rail 1 in the passing-point A the said frames B B' will pass each other. After this is done the frame B, carrying the  
 30 loaded bucket 9, will pass along the portions *a* and *a''* of the throw-out portion A' onto the main rail 1 by its wheels 10 and pass along the same to the unloading-point to have its bucket 9 emptied, while the frame B', carry-  
 35 ing the empty bucket 9, will pass along the upper rail 2 by its wheels 16, and when it reaches the end 2' of the inclined portion *b* thereon the wheels 16 will leave said rail 2 and the frame B' will be lowered, so that the  
 40 lower wheels 10 thereon will engage with the main rail 1 and such frame B' be moved along said rail 1 to the loading-point to have its bucket 9 refilled. After the bucket 9 in the frame B' has been refilled and the bucket 9 in  
 45 the frame B has been emptied the direction of movement of the hauling-ropes 14 and 20 are reversed, and the frame B', carrying the loaded bucket 9, and the frame B, carrying the empty bucket 9, will move along the main rail 1 by  
 50 their wheels 10 in the opposite direction from each other from that above described, and the upper wheels 16 on the frame B', carrying the loaded bucket 9, will pass onto the end 2' of the inclined portion *b* and up the same onto the rail  
 55 2, thereby lifting the wheels 10 thereon from the rail 1, while the frame B, carrying the empty bucket 9, will pass onto the portion *a''* of the throw-out portion A' by its wheels 10, and such frames B B' pass each other in the  
 60 passing-point A when they are opposite each other on the rail 2 and portion *a*. After this is done the frame B', carrying the loaded bucket 9, continues along the rail 2 by its wheels 16, and when it reaches the end 2'' of  
 65 the inclined portion *b* the wheels 16 leave the rail 2 and the wheels 10 catch such frame B' as it is lowered and move the same along the

rail 1 to the unloading-point to have its bucket emptied, while the frame B, carrying the empty bucket 9, is moving along the portions  
 70 *a* and *a'* of the throw-out portion A' to the main rail 1 by its wheels 10, and thence along said rail 1 to the loading-point to have its bucket filled. Each of the buckets 9 of the frames B B' are thus filled and moved along  
 75 the rails 1 and 2 to be emptied, and it will be evident that a number of frames carrying buckets can be connected together or be moved together in the form of trains and pass  
 80 each other at the passing-point A when loaded and empty, if desired. It will also be obvious that, if desired, for a long line or increased capacity a number of throw-outs or passing-points to carry a number of buck-  
 85 ets or a number of trains can be used and that the main rail or track can be made in a straight line at the passing-point and the bend or curve to form throw-out made in the aux-  
 90 iliary rail, while various other modifications and changes may be made in the design, construction, and operation of the various parts of the device without departing from the spirit of the invention or sacrificing any of its advantages.

The apparatus is easily and quickly oper-  
 95 ated and contains few parts, while its use will greatly simplify these overhead tramways over the ordinary constructions.

What I claim as my invention, and desire  
 100 to secure by Letters Patent, is—

1. An overhead tramway comprising a single or main rail or track, two trolley-frames carrying buckets adapted to be moved in both directions on said rail or track, and an auxiliary rail vertically above said main rail or  
 105 track adapted to engage with one of said trolley-frames to enable it to pass the other trolley-frame at a given point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends  
 110 of said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

2. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with  
 115 the main rail or track and be moved along the same in both directions, and an auxiliary rail vertically above said main rail or track and at one side of the same at the passing-point for engaging with one of said trolley-frames  
 120 to enable it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of said auxiliary rail being adapted to lift one  
 125 of the trolley-frames from the main rail.

3. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with  
 130 the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track at the passing-point, and another set of wheels on one of said trolley-frames adapted to engage



with said auxiliary rail to enable it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

4. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track and at one side of the same at the passing-point, and another set of wheels on one of said trolley-frames adapted to engage with said auxiliary rail to enable it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

5. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track at the passing-point having downwardly-inclined ends thereon, and another set of wheels on one of said trolley-frames adapted to pass up said inclined ends to raise said trolley-frame from engagement with the main rail or track and permit it to pass the other trolley-frame at the said passing-point.

6. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track and at one side of the same at the passing-point having downwardly-inclined ends thereon, and another set of wheels on one of said trolley-frames adapted to pass up said inclined ends to raise said trolley-frame from engagement with the main rail or track and permit it to pass the other trolley-frame at the said passing-point.

7. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track at the passing-point, and another set of wheels on one of said trolley-frames and above the first-named wheels, said second-named wheels being adapted to engage with said auxiliary rail to enable it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of

said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

8. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track and at one side of the same at the passing-point, and another set of wheels on one of said trolley-frames and above the first-named wheels, said second-named wheels being adapted to engage with said auxiliary rail to enable it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

9. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track at the passing-point having downwardly-inclined ends thereon, and another set of wheels on one of said trolley-frames and above the first-named wheels, said second-named wheels being adapted to pass up said inclined ends to raise said trolley-frame from engagement with the main rail or track and permit it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

10. An overhead tramway comprising a single or main rail or track, two trolley-frames having wheels thereon adapted to engage with the main rail or track and be moved along the same in both directions, an auxiliary rail vertically above said main rail or track and at one side of the same at the passing-point having downwardly-inclined ends thereon, and another set of wheels on one of said trolley-frames and above the first-named wheels, said second-named wheels being adapted to pass up said inclined ends to raise said trolley-frame from engagement with the main rail or track and permit it to pass the other trolley-frame at the said passing-point, one of said trolley-frames being adapted to travel on both the main and auxiliary rails, and both ends of said auxiliary rail being adapted to lift one of the trolley-frames from the main rail.

In testimony whereof I, the said ALFRED M. ACKLIN, have hereunto set my hand.

ALFRED M. ACKLIN.

Witnesses:

J. N. COOKE,  
LEO MARKS.