May 17, 1938. P. R. COWLES 2,117,790

MOVING TRACK

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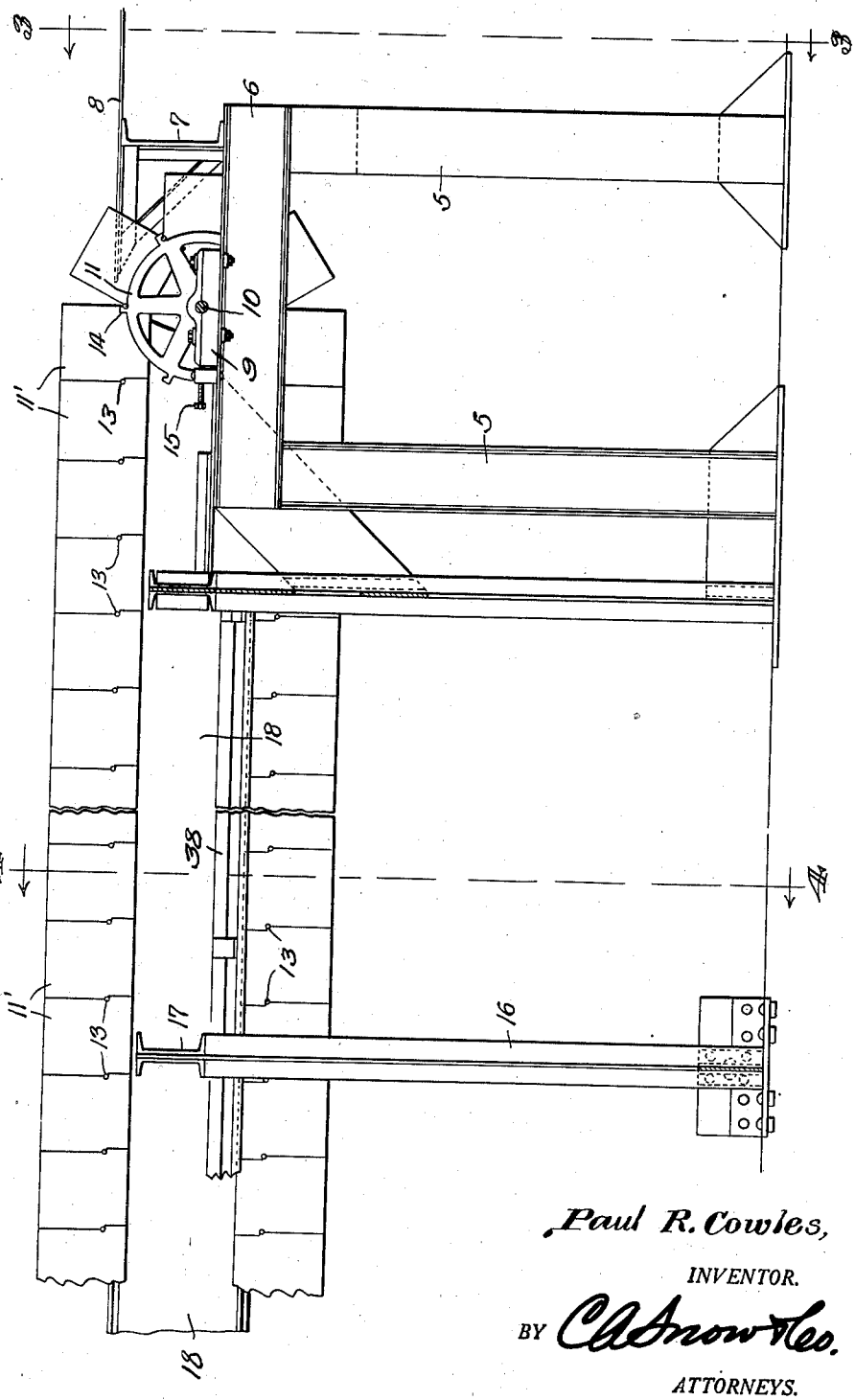



Fig. 1.

Paul R. Cowles,

INVENTOR.

BY C. A. Snow & Co.

ATTORNEYS.

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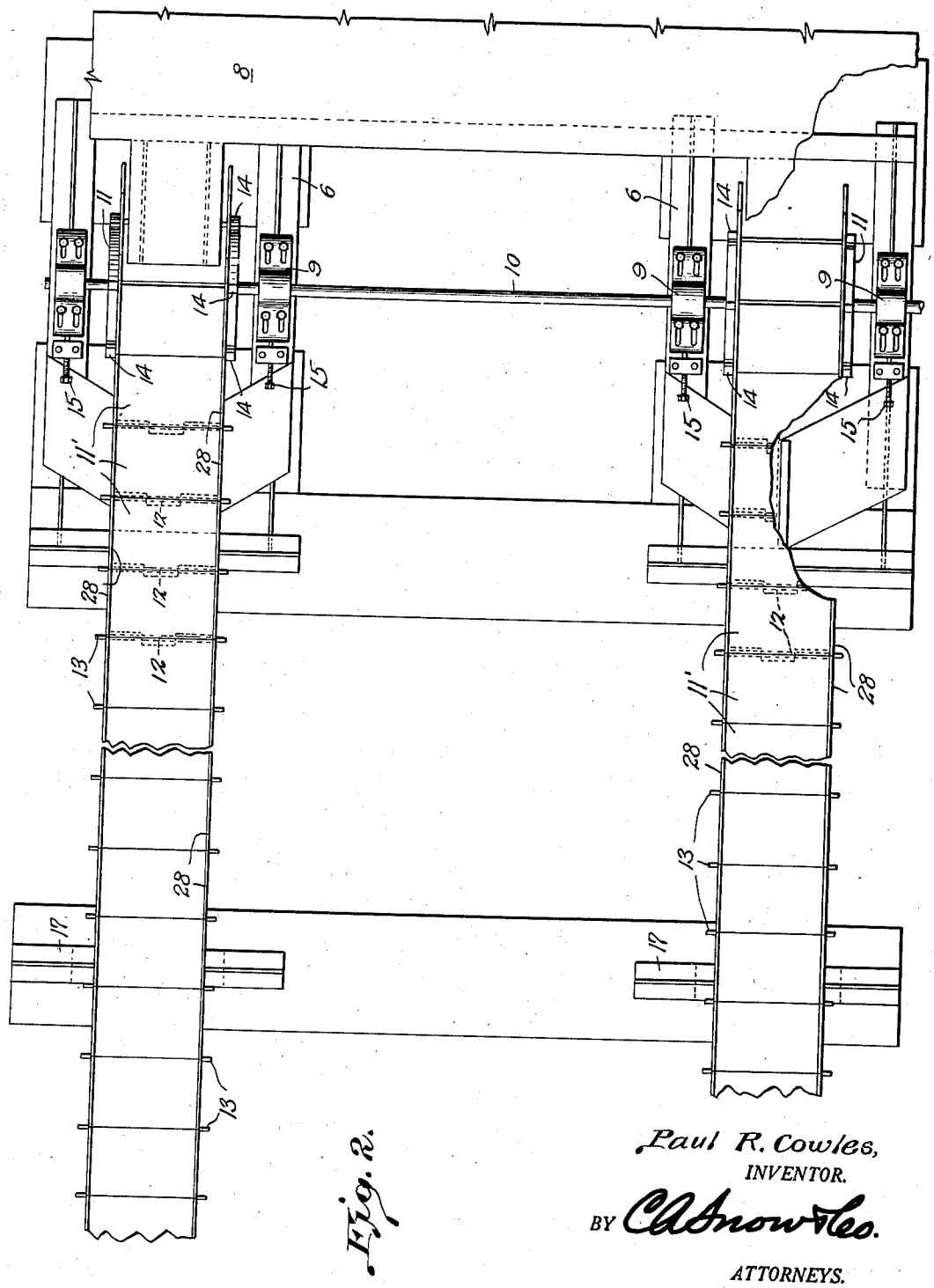



Fig. 2.

Paul R. Cowles,
INVENTOR.
BY Cromwell & Co.
ATTORNEYS.

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Fig. 3.

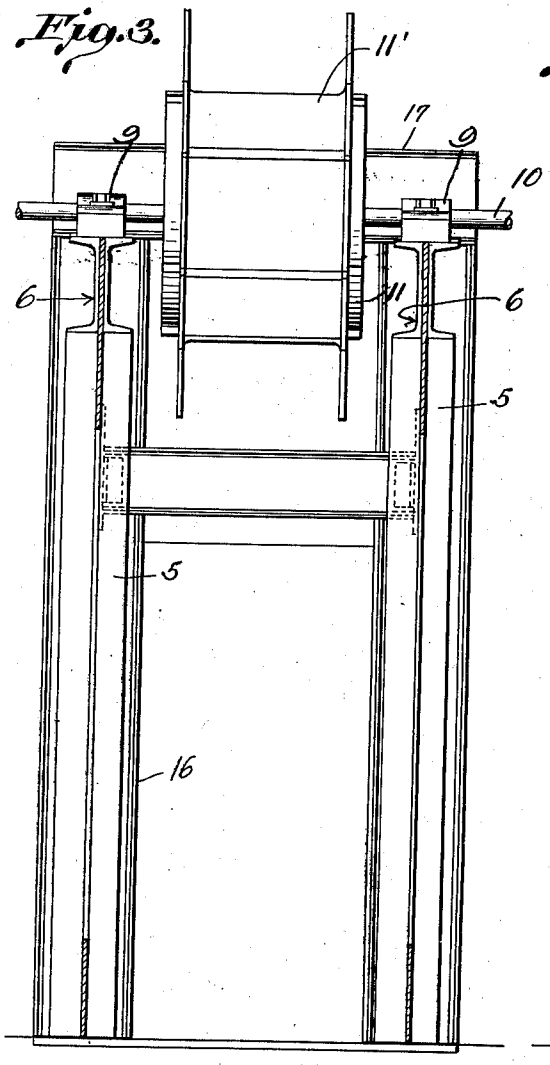



Fig. 4.

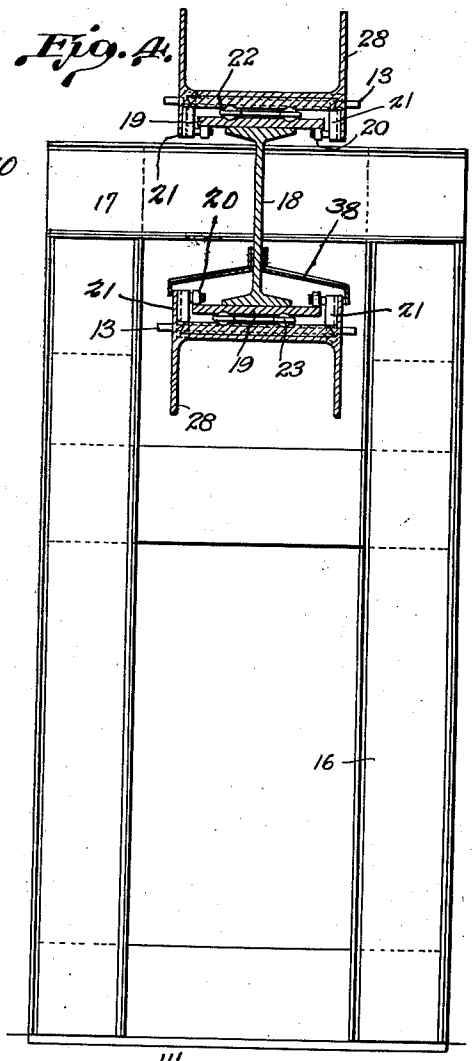



Fig. 5.

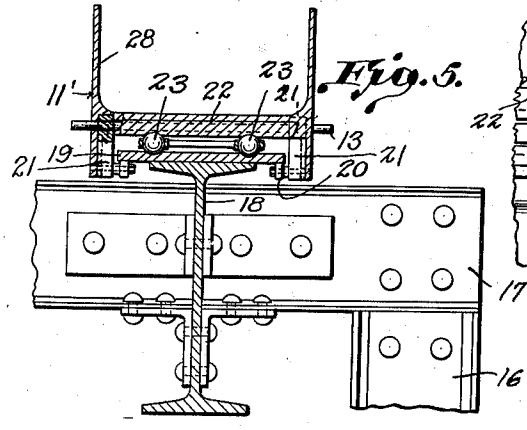
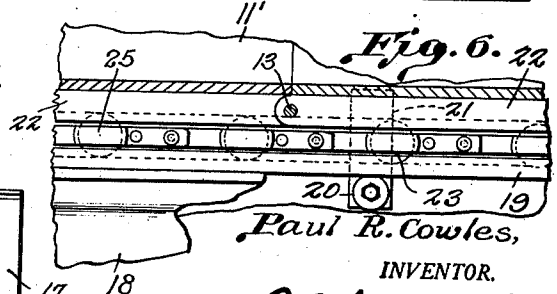



Fig. 6.




Paul R. Cowles,
INVENTOR.
BY C. A. Snow & Co.
ATTORNEYS.

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Fig. 7.

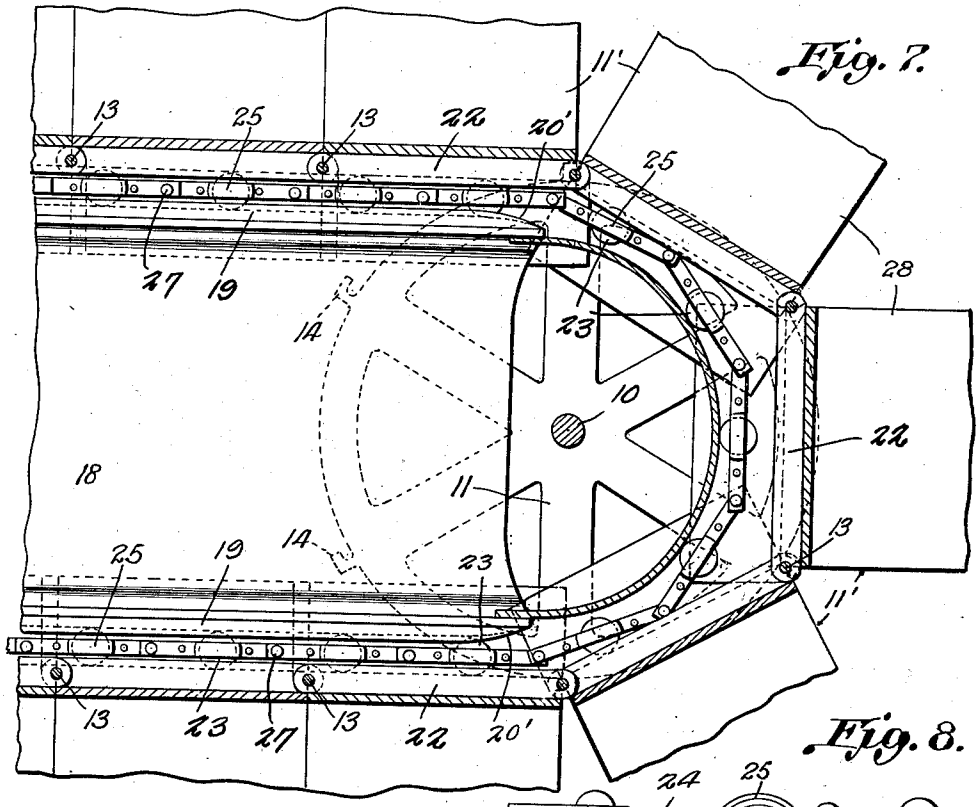



Fig. 8.

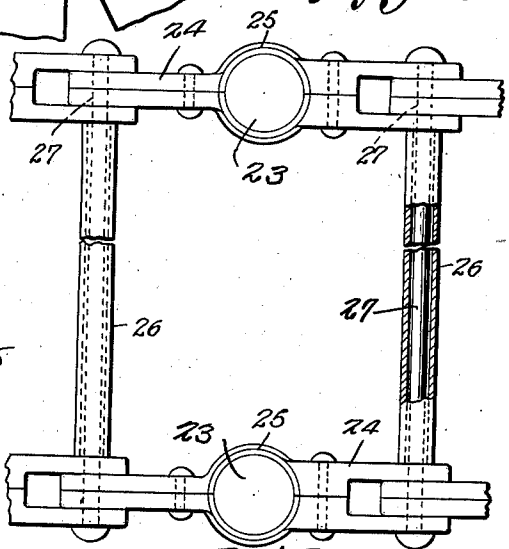
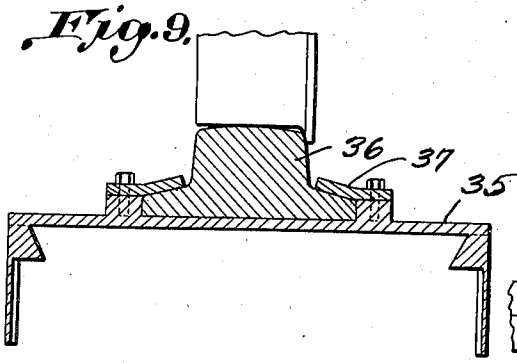



Fig. 9.




Paul R. Cowles
INVENTOR.

BY Cl Snow & Co.

ATTORNEYS.

Patented May 17, 1938 2,117,790

# UNITED STATES PATENT OFFICE

2,117,790

## MOVING TRACK

Paul R. Cowles, Oakland, Calif.

Application August 9, 1937, Serial No. 158,246

5 Claims. (Cl. 104—137)

This invention relates to an apparatus designed for use in constructing, inspecting, repairing, servicing or maintaining motor or rail vehicles or the like, the primary object of the invention being to provide an apparatus of this character whereby the constructing, inspecting, repairing, servicing or maintenance operations may be carried out with facility.

An important object of the invention is to provide an apparatus wherein the various construction, inspection, repairing, servicing and maintenance operations will be placed on a mass operating basis.

Another object of the invention is to provide an endless track or conveyor on which the vehicles under operation are supported, and moved along with the endless track to the various construction, inspection, repairing, servicing and maintenance stations where the operators will have ready access to the various parts of the motor or rail vehicle under operation.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a fragmental elevational view of an apparatus constructed in accordance with the invention.

Figure 2 is a fragmental plan view thereof.

Figure 3 is an end view taken on line 3—3 of Figure 1.

Figure 4 is a sectional view taken on line 4—4 of Figure 1.

Figure 5 is an enlarged detail view illustrating the track section and its support, in section.

Figure 6 is an enlarged detail view of one side of the device.

Figure 7 is a modified form of the invention.

Figure 8 is an enlarged plan view illustrating a portion of the chain supporting the ball bearings.

Fig. 9 shows an alternative form of track section for use in servicing railway rolling stock.

Referring to the drawings in detail, the apparatus comprises a main frame including frame sections, each of which embodies vertical channel posts or columns 5, which are connected at their upper ends by means of the horizontal I beams or channel 6. In the construction of the apparatus, there are a plurality of these sections embodying the vertical posts or columns 5 and horizontal beams 6 arranged in pairs and spaced transversely, at each end of the apparatus, as clearly shown by Figure 2 of the drawings. Mounted on the horizontal beams 6, and connecting the pairs of sections, at each end of the apparatus, is a channel bar indicated by the reference character 7, which channel bar also provides a support for the runway indicated by the reference character 8, and which extends to the ground surface, so that a motor vehicle may be readily moved thereover, to be positioned on the endless track to be hereinafter more fully described.

Bearings indicated by the reference character 9 are mounted on the horizontal beams 6, and provide a support for the shaft 10, to which the wheels 11 are secured, the wheels 11 being spaced apart so that the endless track may operate therebetween. It will of course be understood that the apparatus includes two of these endless tracks, spaced apart so that they will contact with the tires or wheel flanges of a vehicle, and since these endless tracks are identical in construction, only one of the tracks will be described in detail.

Each track comprises a plurality of sections 11', the adjacent track sections being pivotally connected by means of the shafts 12 which are of lengths so that the ends thereof extend slightly beyond the side faces of the track sections, providing extensions 13. Hooks 14 are formed on the peripheries of the wheels 11, and are adapted to engage the extensions 13, moving the endless track to accomplish the purpose of the invention.

It might be further stated that the bearings 9 are adjustable by means of the set screws 15, to insure the true operation of the apparatus.

A plurality of supports including vertical posts 16, connected by means of the horizontal beams 17 are arranged throughout the length of the apparatus, and provide supports for the I beams 18 that are horizontally disposed, and which provide support for the endless track sections. Secured to the upper and lower surfaces of the I beams 18, are wear plates 19 constructed of hardened steel to withstand the wear directed to the apparatus, by the ball bearing chain to be hereinafter more fully described. These wear plates 19 are of widths to extend appreciable distances beyond the side edges of the I beams 18, where they are engaged by the rollers 20, that are carried by the leg of a hard steel lug 21 forming a part of and locking the track sections 11'

together, the rollers 20, acting to hold the track sections on the wear plates 19.

Each of the track sections 11', is supplied with a wear plate indicated by the reference character 22, the upper and lower plates 19 being provided with curved ends 20' so that the balls 23, which move in spaced grooves formed in the wear plates 19, will be guided to the grooves.

The ball bearing chain embodies spaced link members 24 pivotally connected at their ends, each link member being formed with a circular opening 25 for the reception of a ball bearing. It will of course be understood that these chain sections embody spaced chains, as clearly shown by the drawings, the chains being held in spaced relation by means of the tubular spacers 26 that are mounted on the pins 27 which connect the chains.

A guard plate indicated by the reference character 28, acts as guard for wheel and lower portion protects the endless track sections and balls against foreign matter such as water and grease. In the form of the invention as shown by Figure 9 of the drawings, the track sections 35 are provided with rail sections 36 that are held in position by means of the plates 37. These track sections are substituted for section 11' and are so constructed that they provide a continuous track should it be desired to use the device for servicing railway rolling stock.

Thus it will be seen that as the endless track moves over the wear plates, the ball bearings will act to insure a free and easy movement of the track sections. It might be further stated that the sections of which the endless tracks are formed, can be constructed of varying widths, and guard plate 28 on either side omitted as may be required to accommodate trucks or busses with dual wheels and varying treads. The guard plates are spaced apart so that they will receive the wheels of a motor vehicle, the guard plates 28 preventing the wheels from leaving the moving track.

The motive power is supplied by standard speed reducing gearing arranged to transmit rotary movement to the shafts 10 at the ends of the frame of the apparatus, and the speed of the shafts will be such as to cause the endless track sections to move at stated intervals of time or at continuous and varying speeds, as required by the operation to be accomplished.

From the foregoing it will be seen that due to the construction of the apparatus, ample space is provided between the tracks and at the side of the tracks to afford a maximum of space and ease for mechanics to operate in, under, at the side of and on top of the vehicle, in the constructing, inspecting, servicing, repairing and maintenance of the motor or rail vehicles moving over the apparatus. Ample space, under each moving track and between supports or columns 16, is provided for working equipment and tools and for workmen to pass under when necessary. In the use of the apparatus, it is contemplated to provide platforms at various working elevations as required to facilitate any particular construction, inspection, servicing or maintenance work.

Motor or rail vehicles to be constructed, serviced, repaired or inspected, are rolled or driven over the runways 8, and pass onto the endless track sections, which are moving at a slow rate of speed, as described. Mechanics or operators, are stationed throughout the length of the track sections, at predetermined points, each mechanic or operator having a particular work to perform. As the motor or rail vehicles pass the operators, they may be readily worked and serviced, with the result that by the time the vehicles pass throughout the length of the apparatus, the work will have been completed and the motor vehicles may be moved over the ramp or runway at the opposite end of the apparatus and removed from the endless track, making room on the track for other motor or rail vehicles to be serviced.

Having thus described the invention, what is claimed is:

1. In a device of the character described, a main frame, an endless track comprising a pair of spaced parallel track sections operating over the frame, said endless track comprising pivotally connected track members, wear plates on the track members, wear plates on the frame, endless chains operating between the wear plates of the track members and frame, balls mounted in the chains and contacting with the wear plates supporting the track members, and means for operating the endless track sections.

2. In a device of the character described, a main frame, a pair of spaced parallel track sections operating over the main frame, a wear plate mounted on the main frame, endless chains operating over the main frame and including links having openings, balls mounted in the openings and resting on the wear plate, said track sections resting on the balls, and means for operating the track sections.

3. In a device of the character described, a main frame, including spaced I beams extending longitudinally of the frame and providing a support, an endless track section operating over each I beam, said track sections including pivotally connected members, wear plates supported on the I beams, roller bearings moving over the wear plates and on which the endless track sections are mounted, and means for operating the endless track sections in a pair, to give trackage for wheels of motor or rail vehicles.

4. In a device of the character described, a main frame including I beams extending throughout the entire length of the frame, wear plates secured to the I beams, an endless chain comprising pivotally connected sections operating over each I beam, a wear plate on each section, endless chains having openings, balls held within the openings and disposed between the wear plates, said wear plates having grooves for the reception of the balls, wheels at the ends of the frame, and means including hooks on the wheels adapted to engage the endless chains for moving the endless chains.

5. In a device of the character described, a main frame, I beams extending throughout the length of the frame, wear plates secured to the I beams, a pair of spaced parallel tracks operating over the I beams, wear plates on the tracks, ball bearings disposed between the wear plates of the I beams and tracks and rollers carried by the tracks and engaging the wear plates, holding the tracks to the wear plates, wheels over which the tracks operate, and means on the wheels for moving the endless tracks, to give trackage for wheels of motor or rail vehicles.

PAUL R. COWLES.