A. H. NELLER & W. LOUDEN.

ELEVATED CARRIER.

APPLICATION FILED SEPT. 3, 1907.

900,681. Patented Oct. 6, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

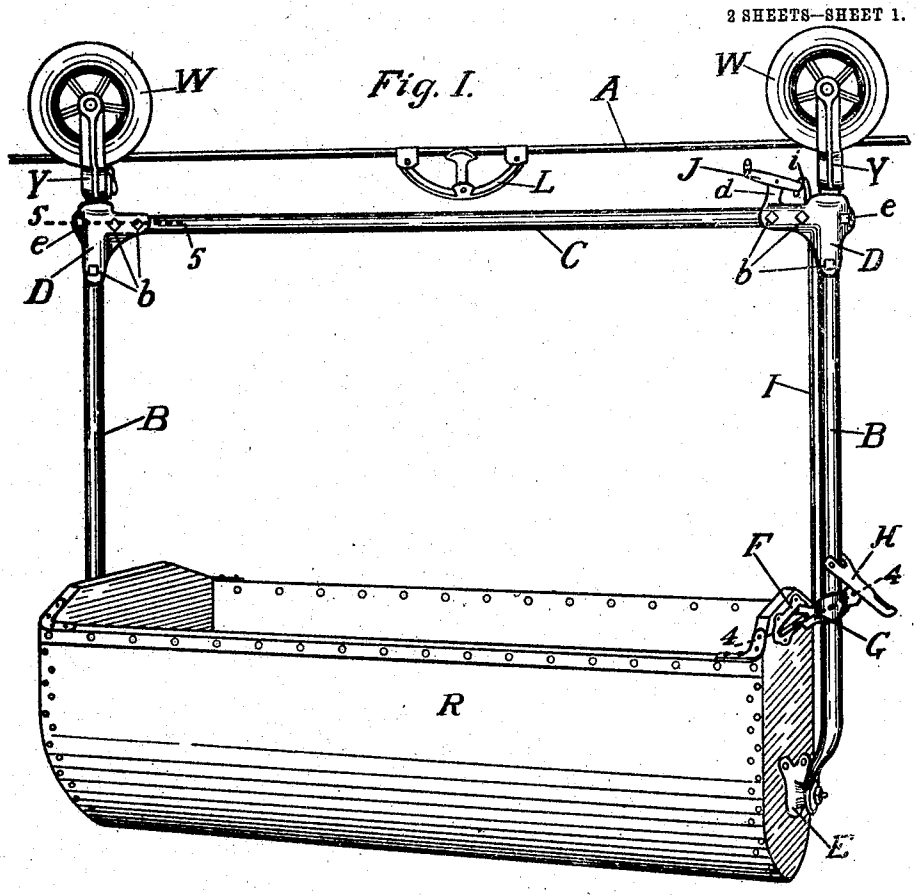


Fig. 4.

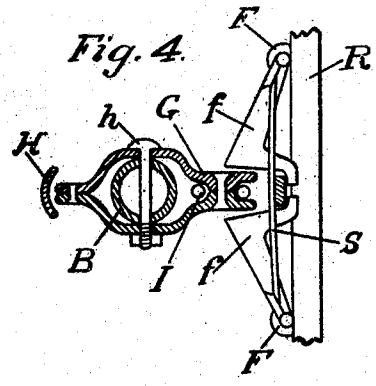


Fig. 6.

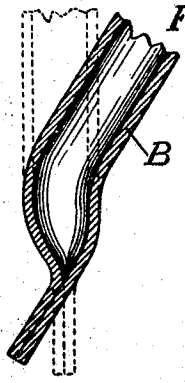
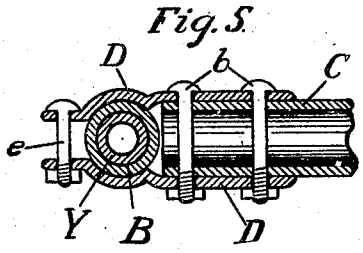


Fig. 5.



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2 SHEETS-SHEET 2.

Fig. 2.

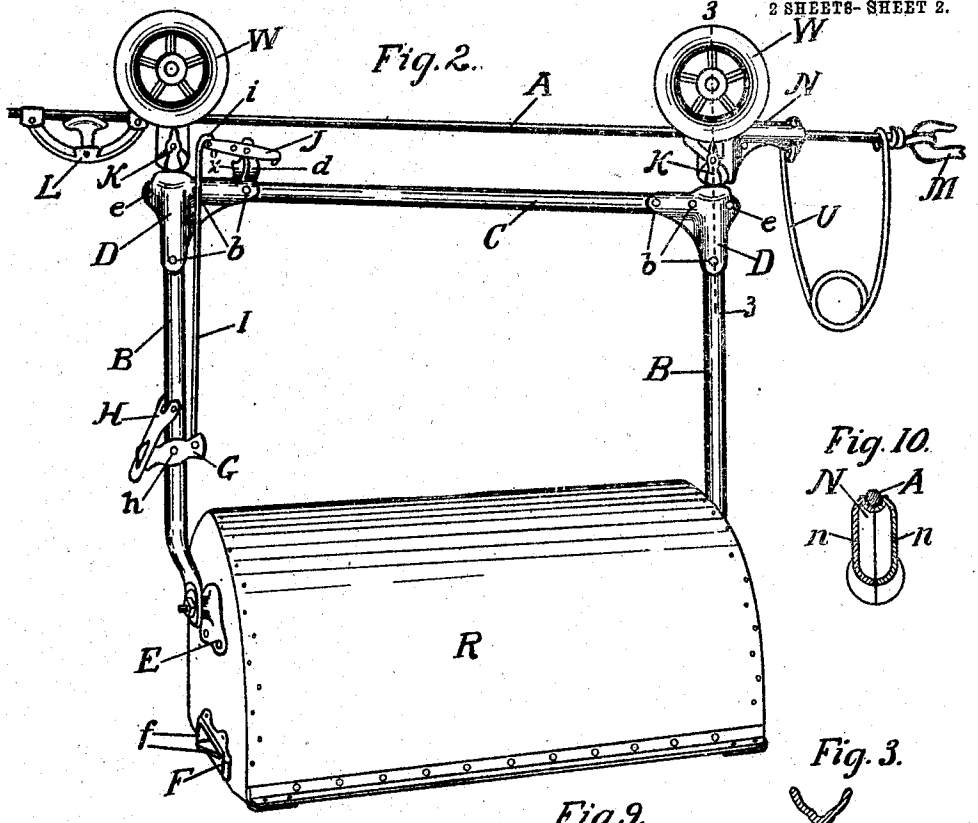


Fig. 10.

Fig. 3.

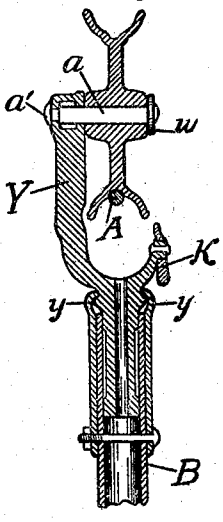


Fig. 9.

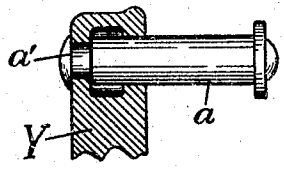


Fig. 7.

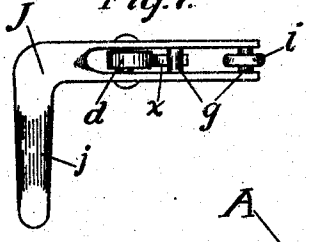
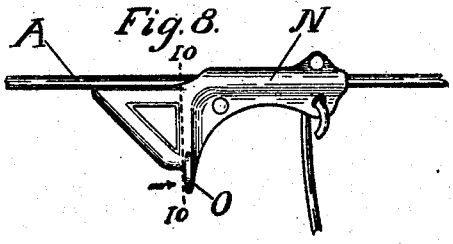


Fig. 8.



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UNITED STATES PATENT OFFICE.

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ELEVATED CARRIER.

No. 900,681. Specification of Letters Patent. Patented Oct. 6, 1908.

Application filed September 3, 1907. Serial No. 390,998.

To all whom it may concern:

Be it known that we, ALBERT H. NELLER and WILLIAM LOUDEN, citizens of the United States, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented a new and useful Improvement in Elevated Carriers, of which the following is a specification.

Our invention relates to that class of elevated carriers adapted to run on an elevated track, and to carry material from one place to another, and to automatically dump it and then return to the starting place; and it consists of an improvement in the construction and combination of parts set forth in this specification and definitely pointed out in the claims.

In the accompanying drawings forming a part of this specification, Figure 1 is a side perspective of a carrier embodying our invention. Fig. 2 is the same showing the carrier in dumped position. Fig. 3 is a transverse section on line 3—3 of Fig. 2. Fig. 4 is an enlarged horizontal section on line 4—4 of Fig. 1, the ends of the woodwork being broken away and the figure being in reversed position. Fig. 5 is an enlarged horizontal section on line 5—5 of Fig. 1. Figs. 6, 7, 8 and 9 are enlarged detailed views. Fig. 10 is a transverse section on line 10—10 of Fig. 8, looking in the direction of the arrow.

Referring to the drawings, A represents a suspended wire or cable track, and W, wheels adapted to run thereon. The wheels are mounted in yokes Y, the lower ends of which are inserted in the upper ends of tubular hangers B, and adapted to swivel therein. The upper ends of the hangers are connected together by means of a bar or pipe C and between their lower ends a receptacle R is supported by means of pivots which permit it to turn upside down and discharge its load. The connection of the hangers B with the bar or pipe C is effected by means of plates D which are made to fit their outer surfaces and hold them at substantially right angles with each other, perforations being made in the plates, hangers and bar, and bolts *b* being used to clamp them together. To hold the plates more securely together their edges are extended beyond the outer sides of the hangers and bolts *e* are used to clamp the outer edges of the plates more firmly together. The upper portions of the plates D are extended above the upper ends of the hangers B to receive the yokes Y. On the upper portions of the lower ends of the yokes annular lips or ribs *y* are formed and recesses are formed on the inner faces of the portions of the plates D which extend above the hangers so as to fit over the annular ribs on the yokes and to permit them to swivel therein. In this way the hangers carrying the receptacle will be securely held by the yokes by means of the plates while the yokes will be free to swivel in the hangers so as to permit the wheels to run around curves in the track. It is also preferable to make the lower ends of the yokes tubular and to recess the central outer portions of said lower ends so that the bearings in the hangers will be only at the upper and lower portion of said inserted ends.

To prevent the wheels from jumping off the track wire, the portion of the yoke immediately below the wire is brought across and extended up, and a keeper K is pivoted upon this upwardly extending end. The lower end of this keeper is preferably made heavy so it will overbalance and hold the smaller end upright in which position it will be in close proximity to the lower edge of the wheel, so that the wire will be prevented from getting out. Also, in passing over a switch, or where the wire may have a side support, the upper end of the keeper will be free to turn out of the way and leave a free opening, as may be required, and then to immediately and automatically close said opening.

The wheels W are mounted on axles *a* having shouldered ends. The opening in the upper end of the yoke to hold the axle is made on the inner side of the proper size to admit the body of the axle while on the outer side it is made of the proper size to admit one of the shouldered ends as plainly shown in Figs. 3 and 9. The central part of the hole is recessed so that the axle will have bearings only near the edges. The axle may be held in position by a rivet bur *a'*, or in any other suitable way. On the outer shouldered end of the axle a washer *w* is placed so as to prevent the wheel from coming off. The axle can be cheaply constructed in this way, and will have the greatest strength and will be securely held in the yoke.

The receptacle R is provided with two pivot castings E which are mounted on each end near the centers thereof and adapted to rest in perforations in the lower ends of the hangers B. The hangers are held by the bar

C and plates D so they will be wider apart than the pivots and their lower ends are set inwardly so they can engage the pivots. The hangers being tubular, their lower ends are flattened, as shown by dotted lines in Fig. 6, and then the flattened ends are bent so as to stand even with one of the tapered sides, and the main part of the hanger is then bent so as to stand parallel with this end. In this way the main part of the hanger will be at a little distance from the end of the receptacle so as to allow room for a latching device.

Near the upper edge of one end of the receptacle, a plate F is secured, and in it two oppositely set inwardly projecting fingers *f* are pivoted so as to leave an opening between them, and a spring *s* is used to hold them in operative position. Upon the hanger adjacent to this plate a latch G is pivoted. It is preferably made in two parts and riveted together so as to surround the hanger, to which it is pivoted by means of a bolt *h* near its center. Above it a holder H is pivoted to the hanger so as to engage the outer end of the latch. The inner end of the latch is adapted to drop between the fingers *f* so as to hold the receptacle in loaded position. A latch rod I is pivoted to the inner end of the latch at its lower end, and at its upper end to a trip lever J, which in turn is pivoted to an extension *d* formed on one of the plates D.

An eye is preferably formed on the lower end of the rod and arranged to encircle the central portion of the inner end of the latch where the pieces are riveted together, while its upper end is preferably fitted with an open hook *i* to catch over one end of the trip lever J. This end of the trip lever is preferably made forked with two cross pins *g* joining the forks together. The hook of the latch rod catches over the outer one of these pins and the inner one is used to come in contact with a shoulder *x* on the extension *d*, so as to prevent this end of the trip lever from dropping too low. The other end of the trip lever represented by *j* is set at right angles to the track wire on which the trip block L is mounted. The ends of this trip block are upwardly inclined and the end of the lever *j* is arranged to come in contact with the block L and to be pushed down with it. At the same time the other end of the lever J is raised, which lifts the rod I and the inner end of the latch G connected to it. This raises the end of the latch from between the fingers *f* and permits the receptacle R to turn on its pivots and dump its load.

Sometimes the receptacle is so nearly on a balance that it will not tip promptly, and in such cases the latch would be liable to drop back between the fingers *f* as soon as the end *j* had passed the stop block, and thus prevent the discharge of the load. This liability is overcome by the holder H. When the inner end of the latch is lifted by the rod I, its outer end will be caught by the holder H and will be held down until released, so that its inner end can not drop between the fingers *f*. The outer end of the latch is preferably made with a diamond shaped head, and the lower end of the holder is fitted with a slot so it will drop over and hold down this head. When the receptacle is to be placed in loaded position the latch is easily released, by raising the outer end of the holder so it will free the head and permit the inner end of the latch to drop between the fingers *f*.

The track-wire A may be supported in any suitable manner, but at the end where the carrier is unloaded it is usually set higher than the end in the building where it is loaded. The loaded carrier is given a long steady shove which will cause it to run out to the trip block L where the trip mechanism will be operated and the load discharged, as already described. Sometimes it will run past the block L and will be liable to run on to the looped end of the track-wire or on to the tension bolt M, where it may be derailed or otherwise damaged. In order to prevent this, and to insure the safe and positive arrest of the movement of the carrier before it comes in contact with the looped end of the track-wire, we provide a stop block N which is adapted to catch in the yoke Y and prevent its further movement, and at the same time, hold it in such a way that the wheel can not jump the track. This stop is preferably made in two parts *n* (see Fig. 12) bolted together so it may be easily applied to the track wire or removed therefrom. The end next the carrier is made pointed and beveled below the wire so it will pass into and fill the open part of the yoke, while above the wire this end is cut away to permit the wheel to run thereon. It is also provided with a downwardly projecting rib O which will catch against the side of the yoke and prevent it from becoming wedged on the tapering end of the stop. The sides of the stop where it is cut away are widened so as to almost come in contact with the flanges of the wheel W. In this way should the stop become twisted to one side of the wire the flange will press down the higher side until they are even and the stop is in the right position to enter the opening of the yoke. By this means no matter how the carrier may be run, nor what the position of the stop, it will always enter the opening of the yoke and safely arrest the movement of the carrier.

The stop is preferably provided with a spring U so that the arrest of the movement of the carrier will not be too sudden. When a spring is used an opening should be made in the stop so it will fit loosely and slide readily upon the wire and be responsive to the movement of the spring. A groove formed in each of the pieces *n* of which the stop is preferably composed, as shown in Fig. 10 so as to admit

the track-wire A, will answer the purpose. In this way the stop will be free to slide back and forth along the wire to the extent of the spring, to ease off the arrest of the movement of the carrier, and the rebound of the spring will start the carrier back on its return trip.

What we claim is;—

1. In elevated carriers, an overhead track, wheels to run on the track, yokes to carry the wheels, a receptacle, hangers for the receptacle having tubular upper ends, the lower ends of the yokes being inserted in the tubular ends of the hangers and adapted to swivel therein, and plates applied to the outer circumference of the hangers and extended above them so as to hold the yokes in operative position.

2. In elevated carriers, an overhead track, wheels to run on the track, yokes to carry the wheels, a receptacle, hangers for the receptacle having tubular upper ends, the lower ends of the yokes being inserted in the tubular ends of the hangers and provided with annular ribs on the upper portions of said ends, and plates having recesses to fit over said ribs being applied to the outer circumference of the hangers and extended above them so as to hold the yokes in position and permit them to swivel.

3. In elevated carriers, an overhead track, wheels to run on the track, yokes to carry the wheels, a receptacle, hangers for the receptacle having tubular upper ends, the central outer circumference of the lower ends of the yokes being recessed and being inserted in the upper ends of the hangers and adapted to swivel therein, and plates being applied to the outer circumference of the hangers and extended above them so as to hold the yokes in operative position.

4. In elevated carriers, an overhead track, yokes carrying wheels to run on the track, a receptacle, hangers having their lower ends pivoted to each end of the receptacle and their upper ends connected to the yokes, a connecting bar placed between the upper ends of the hanger and plates applied to opposite sides of the adjoining ends of the connecting bar and hangers so as to hold them together.

5. In elevated carriers, an overhead track, yokes carrying wheels to run on the track, a receptacle, hangers having their lower ends pivoted to each end of the receptacle and their upper ends connected to the yokes, a connecting bar placed between the upper ends of the hanger, plates applied to opposite sides of the adjoining ends of the connecting bar and hangers so as to hold them together, the outer ends of the plates being extended beyond the hangers and bolts passed through the extended ends to clamp them more securely together.

6. In elevated carriers, an overhead track, yokes carrying wheels to run on the track, a receptacle, tubular hangers having their lower ends pivoted to each end of the receptacle and their upper ends connected to the yokes, a tubular connecting bar placed between the upper ends of the hanger and plates having perforations co-inciding with similar perforations in the adjoining ends of the connecting bar and hangers, and bolts passed through said perforations to clamp the parts together.

7. In elevated carriers, an overhead track, wheels to run upon the track, yokes to carry the wheels, a receptacle, hangers for the receptacle having tubular upper ends, a connecting bar for said upper ends, the lower ends of the yokes being inserted in the tubular ends of the hangers and adapted to swivel therein and plates clamped upon the opposite sides of the adjoining ends of the bar and hangers, so as to join them together and the plates being extended above the hangers so as to hold the yokes in operative position.

8. In a device of the character described, an overhead track, a wheel to run on the track; a yoke to carry the wheel, the upper portion of the yoke being set to one side of the track and a lower portion being brought under the track and formed with an end extending upwardly on the opposite side, and a keeper pivoted upon said upwardly extended end, said keeper having an attenuated upper end and an enlarged lower end by means of which it will be normally held in upright position and the upper end will be normally held in close proximity to the flange on the lower side of the wheel.

9. In a device of the character described, an overhead track, a carriage to run on the track, a receptacle and a tubular hanger pivoted to each end of the receptacle, the lower ends of the hanger being flattened and set in a different alinement as described so the bodies of the hangers will stand away from the ends of the receptacle.

10. In a device of the character described, an overhead track, a carriage to run on the track, a receptacle, a tubular hanger pivoted to each end of the receptacle, the lower ends of the hanger being flattened and set in a different alinement as described so the bodies of the hangers will stand away from the ends of the receptacle, a catch applied to an end of the receptacle, and a latch pivoted to the adjoining hanger and adapted to engage the catch.

11. In elevated carriers, an overhead track, a yoke connected to the carrier and having a horizontally disposed opening in its upper end, said opening being smaller at its outer end than at its inner end and being recessed in its center, an axle pin having its body adapted to fit the inner end of the opening, and its outer end shouldered to fit the outer end of the opening, a wheel mounted upon

the axle and means to hold the axle and wheel in operative position.

12. In elevated carriers, an overhead track, a yoke connected to the carrier and having a horizontally disposed opening in its upper end, said opening being smaller at its outer end than at its inner end and being recessed in its center, an axle pin having its body adapted to fit the inner end of the opening, and both of its ends being shouldered, the inner shouldered end being adapted to fit the outer end of the opening, a wheel mounted upon the axle, a washer fitted upon the inner shouldered end and means to hold the washer in position.

13. In a device of the character described, an overhead track, a stop on the track, a carriage having downwardly projecting hangers, a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch pivoted in a substantially horizontal position to the adjacent hanger and its inner end adapted to engage the catch and hold the receptacle in loaded position, means to automatically disengage the latch by contact with the stop on the track, and a holder to keep the latch disengaged from the catch.

14. In a device of the character described, an overhead track, a stop on the track, a carriage having downwardly projecting hangers, a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch pivoted in a substantially horizontal position to the adjacent hanger and its inner end adapted to engage the catch and hold the receptacle in loaded position, and a trip lever pivoted in the upper part of the carriage in line of contact with the stop, and a trip rod connecting the inner end of the latch with the trip lever.

15. In a device of the character described, an overhead track, a stop on the track, a carriage having downwardly projecting hangers, a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch pivoted in a substantially horizontal position to the adjacent hanger and its inner end adapted to engage the catch and hold the receptacle in loaded position, and a holder pivoted to the hanger above the latch and having an opening in its free end adapted to catch over the outer end of the latch and hold it out of engagement with the catch, and means to automatically disengage the latch by contact with the stop on the track.

16. In a device of the character described, an overhead track, a stop on the track, a carriage having downwardly projecting hangers a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch adapted to surround the adjacent hanger and pivoted thereto in a substantially horizontal position, its inner end being adapted to engage the catch and means to automatically disengage the latch by contact with the stop on the track.

17. In a device of the character described, an overhead track, a stop on the track, a carriage having two downwardly projecting hangers and a connecting bar at their upper ends, a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch pivoted to the adjacent hanger and adapted to engage the catch and hold the receptacle in loaded position, plates applied to the opposite sides of the adjoining ends of the hangers and connecting bars so as to hold them together, an upwardly projecting lug on one of the plates, a trip lever pivoted to the lug in line of contact with the stop on the track and a trip rod connecting one end of the latch and the trip lever together.

18. In a device of the character described, an overhead track, a stop on the track, a carriage having two downwardly projecting hangers, a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch pivoted to the adjacent hanger, a trip lever pivoted to an upper part of the carriage, and having one end set in line with the stop on the track, the other end being bi-furcated and having pins joining the bi-furcated ends together, and a trip rod having an open hook catching into the bi-furcated end of the trip lever and being connected to the inner end of the latch.

19. In a device of the character described, an overhead track, a stop on the track, a carriage having two downwardly projecting hangers, a receptacle pivoted between the lower ends of the hangers, a catch secured to an end of the receptacle, a latch pivoted to the adjacent hanger, a holder pivoted to the hanger to hold the latch out of engagement with the catch, a trip lever pivoted to an upper part of the carriage and having one end set at an angle to its body and in line with the stop on the track, and a trip rod connected to the other end of the trip lever and to the inner end of the latch.

20. In elevated carriers, an overhead track, a carriage having a yoke fitted with a wheel to run on the track, and a stop applied to the track and having a pointed end adapted to run into the yoke and arrest the movement of the carrier.

21. In elevated carriers, an overhead track, a carriage having a yoke fitted with a wheel to run on the track, and a stop applied to the track and having a pointed end adapted to run into the yoke and a rib to come in contact with the side of the yoke and arrest the movement of the carrier.

22. In elevated carriers, an overhead track, a carriage having a yoke fitted with a wheel to run on the track, and a stop slidable

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upon the track, and having a pointed end to run into the yoke and a spring applied to the track to ease the arrest of the movement of the carrier and to cause a rebound of the same.

23. In elevated carriers, an overhead track, a carriage having a yoke fitted with a wheel to run on the track, and a two part stop having a pointed end adapted to run into the yoke and a rib to come in contact with the side of the yoke and arrest the movement of the carrier.

24. In elevated carriers, an overhead track, a carriage having a yoke fitted with a wheel to run on the track, a two-part stop slidable on the track and having a pointed end adapted to run into the yoke and a spring applied to the track to ease the arrest of the movement of the carrier and to cause a rebound of the same.

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