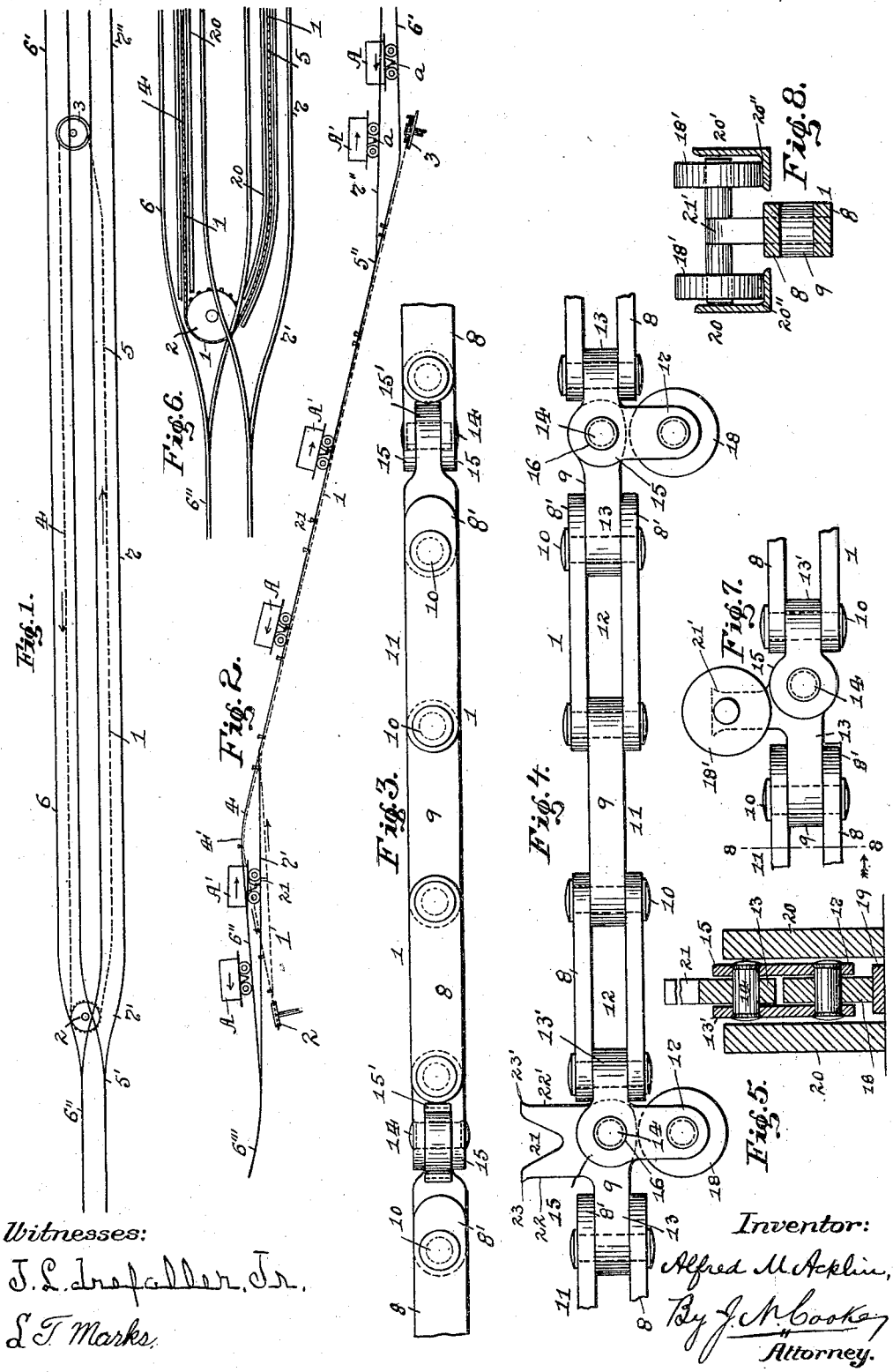
No. 709,691. Patented Sept. 23, 1902.

# A. M. ACKLIN.

## CAR HAUL.

(Application filed Feb. 18, 1902.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

ALFRED M. ACKLIN, OF PITTSBURG, PENNSYLVANIA.

## CAR-HAUL.

SPECIFICATION forming part of Letters Patent No. 709,691, dated September 23, 1902.

Application filed February 18, 1902. Serial No. 94,578. (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 Car-Hauls; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-hauls, and has special reference to such car-hauls as are used for moving loaded cars to a point near which the contents are discharged and returning the empty car toward the point of loading.

The object of my invention is to do away with the separate chain usually employed for controlling or moving the empty cars, and thereby provide a more cheap, simple, and effective apparatus.

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 which my invention appertains to construct and use my improved car-haul, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a plan view of my improved car-haul. Fig. 2 is an elevation of the same. Fig. 3 is an enlarged plan view of a portion of the chain employed. Fig. 4 is a side view thereof. Fig. 5 is a cross-section through the chain. Fig. 6 is an enlarged plan view of a portion of the car-haul. Fig. 7 is a side view of a modification of the chain-support, and Fig. 8 is a section of the same on the line 8 8.

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

In the greater number of cases where this class of apparatus is applied, the loaded cars are moved up an inclined plane and the empty cars are let down the inclined plane to be refilled, so will therefore describe the invention as applied to such conditions.

As illustrated in said drawings, the endless chain 1 passes around the upper sprocket-wheel 2 and lower wheel 3, so as to travel continuously, and is composed of the up-haul portion 4 and down-haul portion 5. The up-haul portion 4 is located between the up-haul tracks 6, and the down-haul portion 5 is located between the down-haul tracks 7, the four rails or tracks on which the cars travel in both directions being in or substantially in the same plane, while the chain 1 is composed of the ordinary outer straps 8 and inner straps 9, which are hinged or joined together near their ends by the pins 10 to form the links 11. The sprockets on the sprocket-wheel 2 engage with the chain 1 by their passing into the spaces 12, formed between the outer straps 8 and the ends of the inner straps 9 in the usual manner, and some of the inner straps, such as 9′, are formed in two pieces or portions, as at 13 13′, which are joined together by means of a pin 14, passing through the overlapping ends 15 on the portion 13′ and through the end 15′ on the portion 13 in order to form the hinged joint 16 at right angles to the axes to hinged joints connecting the straps 8 and 9 of said chain 1. Projecting out from the overlapping ends 15 of the hinged joints 16 are the supports or bearings 17 and between which are mounted the wheels or rollers 18, which travel upon the tracks 19 between the guideways 20 and act to support the chain 1. Extending out from the ends 15′ on the portions 13 of the hinged joint 16 are the projections or hooks 21, which are provided with the engaging faces 22 22′ on sides thereof and the outer ends of which terminate in the outwardly-curved portions 23 23′.

The up-haul tracks 6 connect at the lower end thereof with the tracks 6′, which carry the loaded cars A to the up-haul tracks 6, while the upper end of the up-haul tracks 6 connect at a point 4′ with the tracks 6″, which preferably run downward at an incline from the tracks 6 and terminate in the curved grade 6‴ at their ends, such inclined tracks 6″ having located therein suitable mechanism for engaging with the loaded cars A to dump or discharge the contents thereof at any convenient point desired. The down-haul tracks 7 connect at their upper ends thereof with the tracks 6″ at a point 5′ by means of the throw-out tracks 7′, which extend below the tracks 6″, and the lower end of the down-haul

tracks 7 are connected at a point 5″ to the tracks 7″, located above the tracks 6′, for carrying the empty cars A′ from the tracks 7.

The use and operation of my improved car-haul are as follows: The loaded cars A are brought to the foot or lower end of the up-haul tracks 6 on the tracks 6′, where a pin or bar *a* on each side of the cars A is caught by the engaging face 22 on the hooks 21 on the up-haul portion 4 of the endless chain 1, which moves continuously around the wheels 2 3 through the medium of power preferably applied to the upper wheel 2 in any suitable manner or means, and the chain 1 moves in a course in the direction of the arrows shown in Fig. 1 by the sprocket-wheel 2 engaging the spaces 12 in the links 11 of said chain 1. As the bar *a* on the car A is thus engaged by the hooks 21 on the chain 1 the car so caught will travel with the up-haul portion 4 of the chain 1 up the up-haul tracks 6, and when the loaded car A is hauled up such inclined or up-haul tracks 6 and has reached the point 4′ the bar *a* on said car A will be automatically disengaged from the engaging face 22 on its engaging hook 21 by the continuous movement of the chain 1, when such car can travel by gravity down the inclined tracks 6″ to some suitable point thereon and the contents of such car discharged thereupon. The car A′ after having its contents discharged can then travel by gravity down the inclined tracks 6″ toward the curved grade 6‴, and in so doing acquire a sufficient momentum to ascend the grade 6‴ some slight distance, which will cause such empty car A′ to drop back and give it sufficient momentum to travel along said tracks 6‴ and pass a suitable automatic switch located therein, so as to guide said car A′ down onto the throw-out tracks 7′, and when said car reaches a point on the tracks 7′ it will be caught by the engaging face 22′ on one of the hooks 21 of the chain 1 and be carried to the down-haul tracks 7 and be let down the down-haul tracks 7 by such hook on the down-haul portion 5 of said chain 1 and at the same speed as such chain. As the empty car A′ thus travels down the down-haul tracks 7 by the hook 21 on the down-haul portion 5 of the chain 1 it will become disengaged from the engaging face 22′ of said hook 21 at the point 5″ and be free to pass along the tracks 7″ to the point where it is to be loaded or any other point desired. The up-haul tracks 6 and the down-haul tracks 7 are located side by side and upon the same substantially inclined plane with each other for the greater part of their distance, as well as the up-haul portion 4 of the chain 1 within the tracks 7 and the down-haul portion 5 of said chain within the down-haul tracks 7, and such portions 4 and 5 of said chain 1 are supported in the guideways 20 within the tracks 6 and 7 by the wheels 18 on said chain 1 traveling on the tracks 19, located below said chain, while the hinged joints 16 on said chain 1, carrying the wheels 18 and hooks 21, permit the said chain 1 to conform to the different curves in the course or guideways 20, and in order to support portion 13 of the strap 9 on the hinged joint 16 one end of the outer straps 8 are extended some distance beyond the pin 10, as at 8′, in order to form a greater bearing upon the portion 13 of the inner strap 9.

If desired, the endless chain can be supported from above, as shown in Figs. 7 and 8, in which case the wheels 18′ can be journaled or mounted in the hooks 21′, so as to travel upon angle-bars 20′, forming tracks 20″, and supported in any suitable manner, and various other modifications in the construction, design, and arrangement of the various parts of my improved car-haul may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

The device is cheap and simple in its construction and operation, and by its use a single chain can be operated in hauling the loaded cars for dumping or discharging the contents of the same and returning them for refilling, thereby effecting a great saving in devices for accomplishing these ends.

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

1. A device for moving or controlling the movement of cars, comprising an endless chain, so arranged that a portion of said chain will move the cars in one direction, while another portion is moving or controlling the movement of cars in the opposite direction, so that the cars traveling in one direction will move alongside of the cars traveling in the opposite direction, hinged or pivoted joints within the links to said chain to enable the same to conform to the different curves or courses in its movements, hooks on one side of said hinged or pivoted joints for engaging the cars moving in both directions, and wheels or rollers mounted on the opposite side of said hinged or pivoted joints and adapted to travel on tracks to support the chain in its movements.

2. A device for moving or controlling the movement of cars, comprising an endless chain, so arranged that a portion of said chain will move the cars in one direction, while another portion is moving or controlling the movement of cars in the opposite direction, so that the cars traveling in one direction will move alongside of the cars traveling in the opposite direction, hinged or pivoted joints within the links of said chain to enable the same to conform to the different curves or courses in its movements, hooks on one side of said hinged or pivoted joints for engaging the cars moving in both directions, and bearings on the opposite side of said hinged or pivoted joints having wheels mounted therein adapted to travel on tracks and support the chain in its movements.

3. A device for moving or controlling the movement of cars, comprising an endless chain, so arranged that a portion of said chain will move the cars in one direction, while an-

other portion is moving or controlling the movement of cars in the opposite direction, so that the cars traveling in one direction will move alongside of the cars traveling in the opposite direction, hinged or pivoted joints within the links of said chain to enable the same to conform to the different curves or courses in its movements, hooks on one side of said hinged or pivoted joints for engaging the cars moving in both directions, and wheels or rollers mounted on the opposite side of said hinged or pivoted joints and directly beneath the said hooks, said wheels or rollers being adapted to travel on tracks and support the chain in its movements.

4. A device for moving or controlling the movement of cars, comprising an endless chain, so arranged that a portion of said chain will move the cars in one direction, while another portion is moving or controlling the movement of cars in the opposite direction, so that the cars traveling in one direction will move alongside of the cars traveling in the opposite direction, hinged or pivoted joints within the links of said chain to enable the same to conform to the different curves or courses in its movements, hooks on one side of said hinged or pivoted joints for engaging the cars moving in both directions, bearings on the opposite side of said hinged or pivoted joints and directly beneath the said hooks, and wheels or rollers mounted in said bearings and adapted to travel on tracks to support the chain in its movements.

5. A device for moving or controlling the movement of cars, comprising an endless chain, so arranged that a portion of said chain will move the cars in one direction, while another portion is moving or controlling the movement of cars in the opposite direction, so that the cars traveling in one direction will move alongside of the cars traveling in the opposite direction, means on one of the links of said chain for engaging the cars moving in both directions, means for supporting the chain in its movements, and hinged or pivoted joints within the links of said chain containing the engaging means and between and in line with the engaging and supporting means to enable said chain to conform to the different curves or courses in its movements.

6. A device for moving or controlling the movement of cars, consisting of a single chain adapted to engage with cars for moving the same along an up-haul track and for moving or controlling the movement of the cars along a down-haul track, the portion of said chain carrying the last-named cars being substantially on the same inclined plane as the portion carrying the first-named cars, hinged or pivoted joints within the links of said chain to enable the same to conform to the different curves or courses in its movements, hooks on one of said hinged or pivoted joints for engaging the cars in both directions, and wheels mounted on said chain adjacent to the hinged or pivoted joints therein and traveling on tracks for supporting said chain in its movements.

7. A device for moving or controlling the movement of cars, consisting of a single chain adapted to engage the cars for moving the same along an up-haul track and for moving or controlling the movement of the cars along a down-haul track, the portion of said chain carrying the last-named cars being substantially on the same inclined plane as the portion carrying the first-named cars, hinged or pivoted joints within the links of said chain to enable the same to conform to the different curves or courses in its movements, hooks on one side of said hinged or pivoted joints for engaging the cars in both directions, and bearings on the opposite side of said hinged or pivoted joints having wheels mounted therein adapted to travel on tracks and support the chain in its movements.

8. As a new article of manufacture, a chain having some of its links provided with pivoted or hinged joints therein, the axes of which are at right angles to the hinged or pivoted joints connecting the ends of the links together, hooks on one side of said chain, and wheels mounted on the opposite side of said chain and directly beneath said hooks for traveling on tracks to support said chain.

9. As a new article of manufacture, a chain having some of its links provided with hinged or pivoted joints therein, the axes of which are at right angles to the hinged or pivoted joints connecting the ends of the links together, hooks on one side of said chain, and wheels mounted on the opposite side of said chain, said hooks and wheels being in line with said hinged joints.

10. As a new article of manufacture, a chain having some of its links provided with hinged or pivoted joints therein, the axes of which are at right angles to the hinged or pivoted joints connecting the ends of the links together, and extensions on the ends of said connecting-links adapted to bear on said hinged or pivoted links to support the same.

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

ALFRED M. ACKLIN.

Witnesses:
J. N. COOKE,
J. L. TREFALLER, Jr.