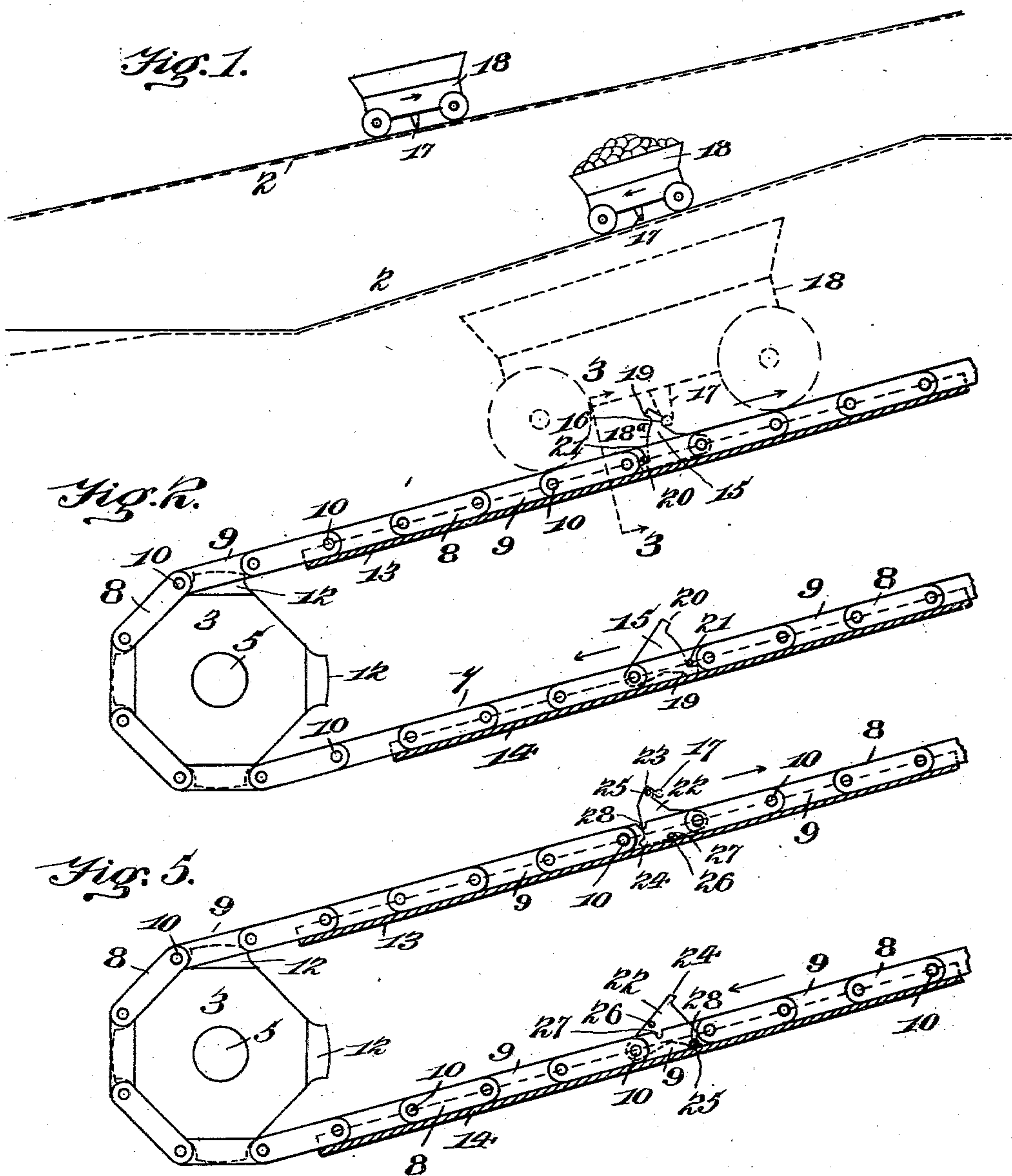


A. M. ACKLIN.
CAR HAUL.

APPLICATION FILED MAR. 20, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses.

Robert C. Totten

H. G. Dieterich

Inventor.

Alfred M. Acklin

By Kay & Totten

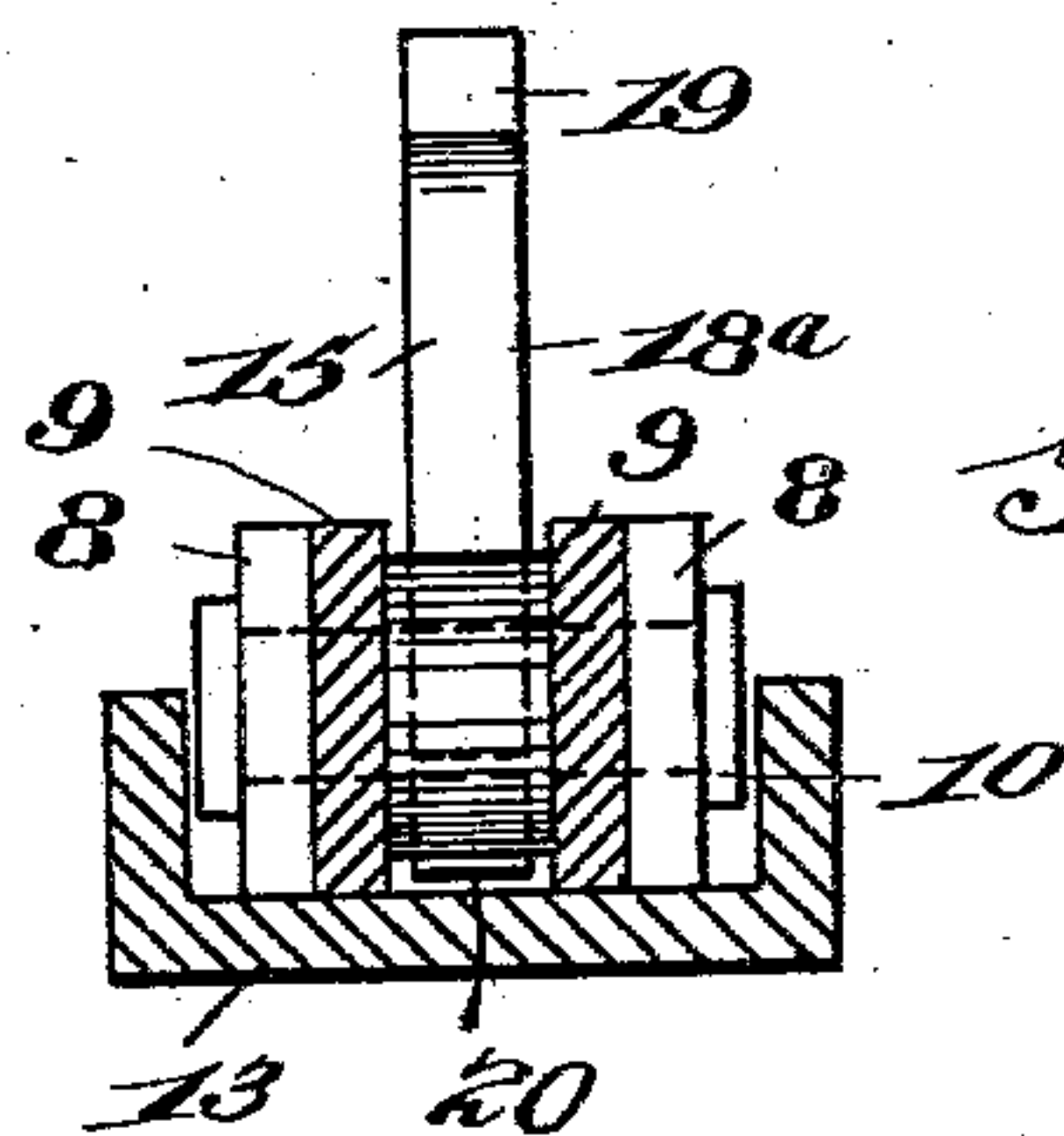
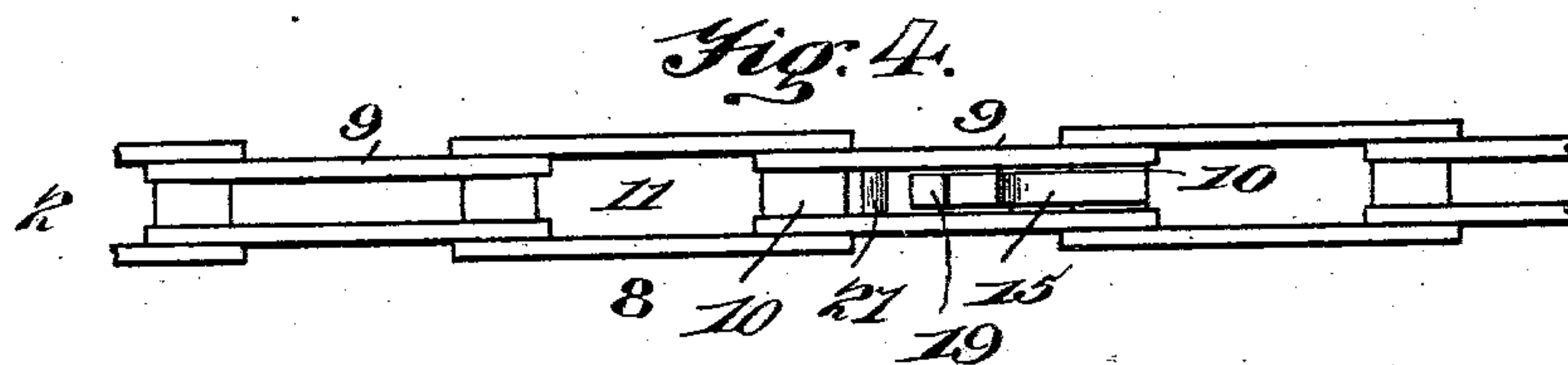
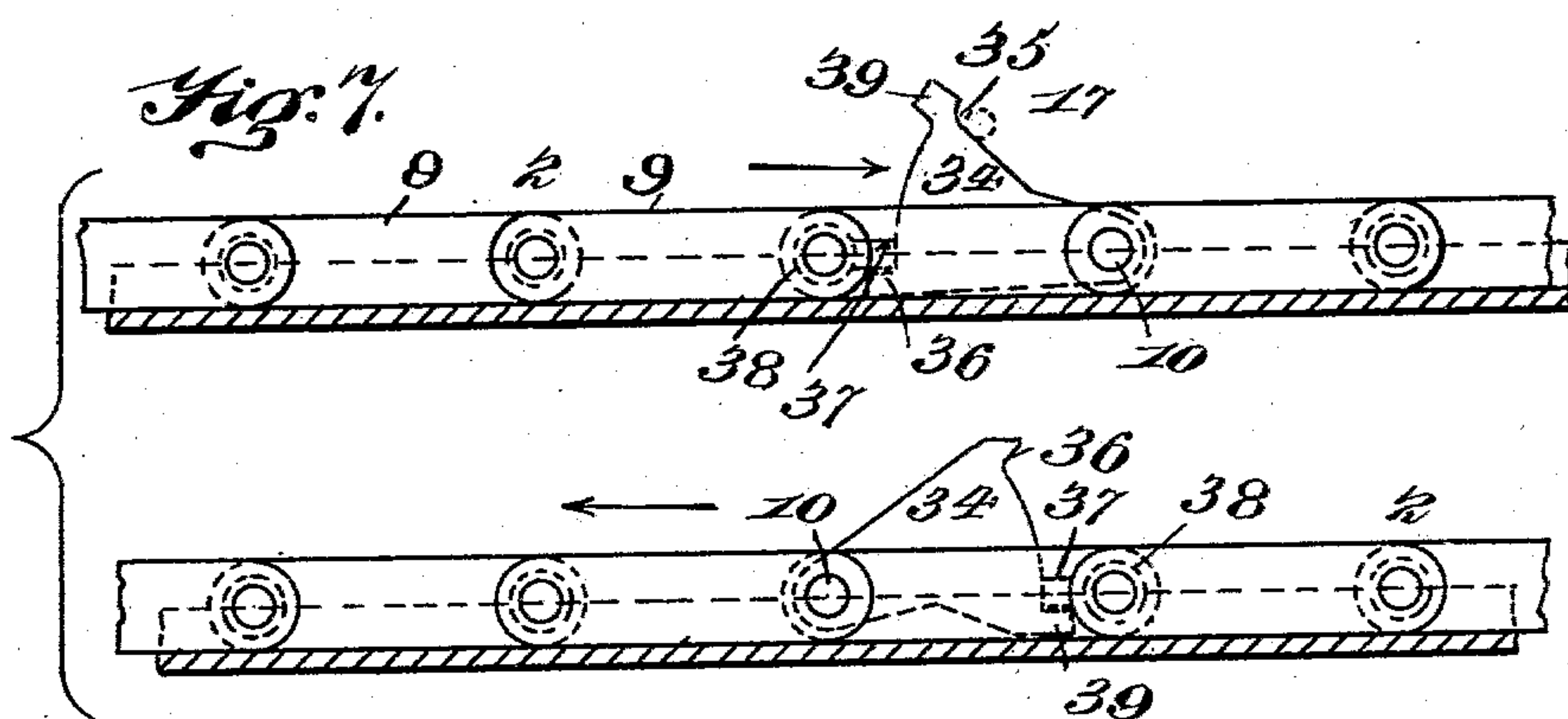
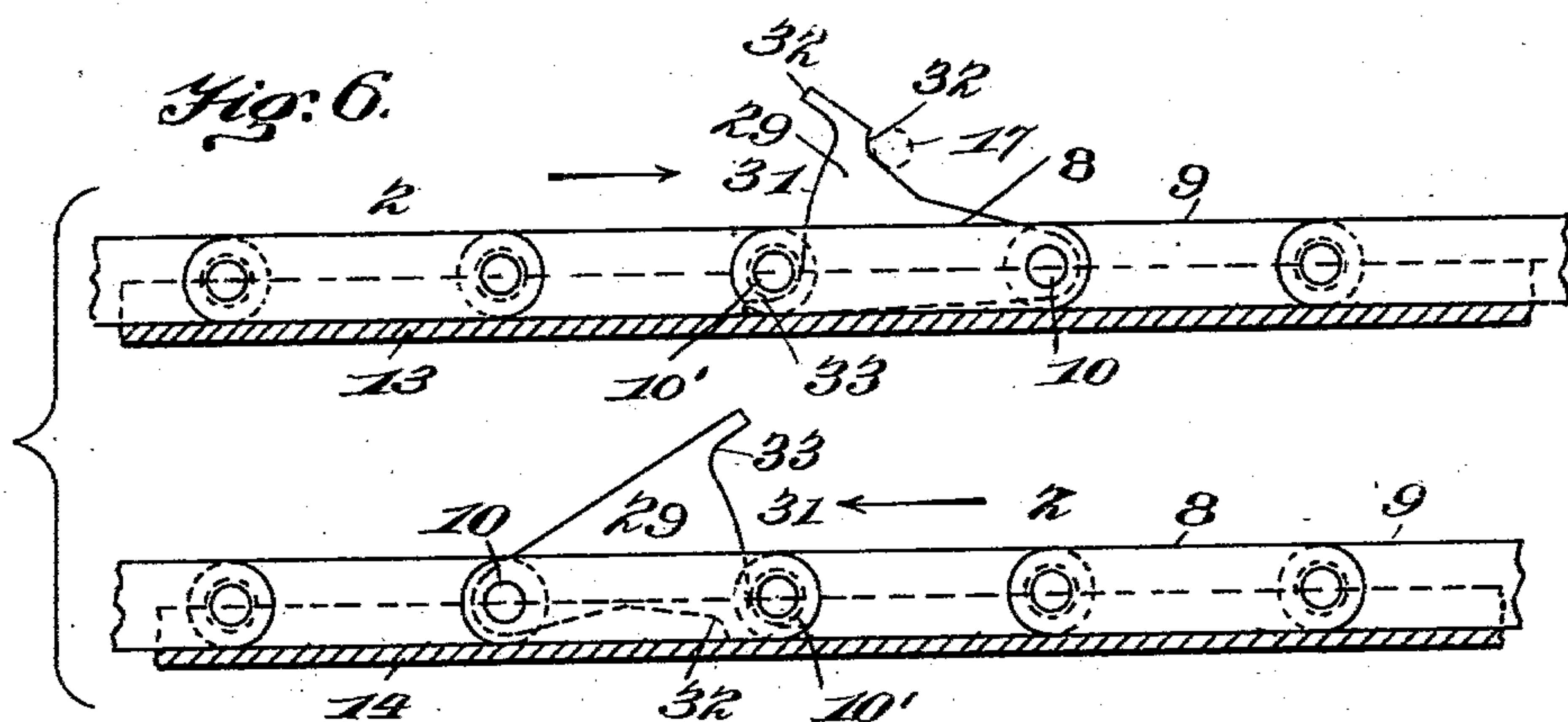
Attorneys.

A. M. ACKLIN.
CAR HAUL.

APPLICATION FILED MAR. 20, 1903.

NO MODEL

2 SHEETS—SHEET 2.



Witnesses:
Robert C. Lott
H. G. Dieterich

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UNITED STATES PATENT OFFICE.

ALFRED M. ACKLIN, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO HEYL & PATTERSON, OF PITTSBURG, PENNSYLVANIA, A COPARTNERSHIP.

CAR-HAUL.

SPECIFICATION forming part of Letters Patent No. 743,611, dated November 10, 1903.

Application filed March 20, 1903. Serial No. 148,664. (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, 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 more especially to that form of car-haul illustrated and described in Letters Patent of the United States granted to me on the 18th day of February, 1902, No. 693,483. In said patent there is illustrated an endless chain provided with hooks or projections on each side thereof, so arranged that the hooks on one side thereof traveling in one direction are adapted to engage the cars and move them in same direction, while the hooks on the other side of the chain traveling in the opposite direction are also adapted to engage the cars, so that by the use of one chain cars may be moved in opposite directions at the same time.

The object of my present invention is to provide a car-haul chain in which the same hooks or projections which act to move the cars in one direction may be brought into position to move the cars in the opposite direction.

To these ends my invention comprises, generally stated, a car-haul chain having swinging hooks or projections arranged at intervals thereon adapted to engage cars moving in opposite directions, a guide or trough within which said chain travels and which supports said hooks, and means for controlling the movement of said hooks.

To enable those skilled in the art to make and use my invention, I will describe the same, referring to the accompanying drawings, in which—

Figure 1 is a diagrammatic view of a portion of a car-haul embodying my invention. Fig. 2 is a side view of a portion of the endless chain. Fig. 3 is an enlarged cross-section on line 3 3, Fig. 2. Fig. 4 is a plan view of portion of chain. Figs. 5, 6, and 7 are modified forms of my invention.

Like numerals refer to like parts in each of the figures.

In the drawings the numeral 2 designates

the chain portion of a car-haul, such as set forth in said Letters Patent above referred to, where the chain acts to move the cars in both directions. The sprocket-wheel 3 of suitable construction is mounted on shaft 5, and at the opposite end of the haul is a like wheel.

The car-haul chain 7 is made up of the outer links 8 and the inner links 9, connected by pins or bolts 10. The space 11 between the inner links 9 is adapted to receive the teeth 12 of the sprocket-wheels when the chain is driven thereby. The chain 7 is arranged to travel in the guides 13 14, said guides consisting of channel-beams or other construction suitable for the purpose of supporting and guiding said chain. The upper guide 13 supports the chain as it travels up in the direction of the arrow, while the lower guide 14 supports the chain on its return or downward movement.

Mounted on the pins or bolts 10 and between the inner links 9 at suitable intervals are the swinging dogs or hooks 15. The dog 15 is provided with the hooked portion or shoulder 16, adapted to catch or engage the bar 17 or other suitable portion of the car 18. (Shown in dotted lines.) The dog 15 is further provided with a recess 18^a, with shoulders or stops 19 20 at each end thereof. The stop 19 is adapted to engage the bar 17 on the downward movement of the car.

Between the inner links 9 are the stops or lugs 21, adapted to be engaged by one or other of the shoulders 19 20 of the swinging dog 15, according to the position of said dog, and acting to limit the movement of said dog.

The operation of my improved car-haul is as follows: Where my invention is used in connection with a car-haul such as set forth in my aforesaid patent, the empty cars are brought into position to be engaged by the chain 7 and carried up the incline to the point of loading. One of the swinging dogs 15, traveling in the guide 13, is held by said guide up in position to engage the bar 17 of the car 18, and accordingly the hook portion 16 catches said bar and the car is carried along by said chain up the incline, whence it may pass by a suitable track to the point of loading. The dog 15 is held down within the

guide 13 by means of the shoulder 20 engaging the stop 21, so that there is no liability of the uplifting of the dog to free it from the bar 17. As the dog 15 reaches the sprocket-wheel at the upper end of the chain said dog becomes disengaged from the bar 17 and said car is released and passes on by gravity to point of loading, just as soon as the dog 15 passes beyond the guide 13, said dog being unsupported through the space 11 between links 9 until the shoulder 19 engages the stop 21. The dog 15 passes around the sprocket-wheel and is thus inverted, so that when the links carrying said dog pass into the lower guide 14 the hook portion 16, which formerly was uppermost, travels in contact with the guide 14, while the shoulder 20, which formerly traveled in contact with the guide, is uppermost and in position to be engaged by the bar 17 of the descending car. By the inverting of the dog 15 the stop 21, which formerly was engaged by the shoulder 20, is now engaged by the shoulder 19, so that the dog 15 is held down to sustain the weight of the loaded car bearing against it at its upper end and is prevented from uplifting.

By the above construction it is apparent that the cars in their ascent are engaged by dogs which are automatically inverted, so that the same dogs are employed for engaging with the cars on their descent, while at the same time provision is made to prevent the rising of the dog from its guide when acted on by the weight of the car either in ascending or descending. Furthermore, by my invention I am enabled to employ a support or guide with a plain bottom for the chain and at the same time provide for the engagement of the chain with the cars traveling in opposite directions, whereby a much more serviceable and stronger construction is obtained.

In Fig. 5 I have shown a modified form of my invention, in which the dogs 22 are mounted to swing on pins or bolts 10 between the inner links 9, as before. The dog 22 has the hooked portion 23 adapted to engage the bar 17 of the car on its ascent and the hook portion 24 adapted to engage the bar 17 on the descent of the car. The dog 22 is further provided with the studs 25 and 26 at opposite points on said dog, said studs extending out from both sides thereof. The inner links 9 are provided with the seats or recesses 27 28, formed in the upper and lower edges thereof and adapted to receive the studs 25 26, respectively, according to the position of the dog 22. By the engagement of the studs 25 and 26 with the seats 27 and 28 the rising or uplifting of the dog is prevented and liability of its disengagement with the car avoided.

In Fig. 6 I have illustrated another modified form of my invention, in which the dog 29 is mounted to swing, as before, on the pin or bolt 10 between the outer links 8. The dog 29 has the hook portion 30 adapted to engage the car on its ascent and the recess

31 forming the projections 32 33. The hook portion 30 is adapted to engage the bar 17 of the car on its ascent, while the projection 33 engages the pin or bolt 10', and so prevents the lifting or rising of the dog when in engagement with the bar 17 of the car. When the dog is inverted, the projection 33 forms the hook portion with which the bar 17 engages, while the projection 32 engages the pin or bolt 10' and prevents the rising of the dog.

In Fig. 7 I have illustrated still another form of my invention, in which the dog 34 is mounted to swing on the pin or bolt 10 between the outer links 8, as before. In this case the dog has the hook portion 35 adapted to engage the bar 17 of the car on its ascent and the hook portion adapted to engage the lug or step 37 on the link-pin 38 and prevent the rising of said dog. A hook portion 39 is formed on the dog 34, so that when said dog is inverted on the descent said hook portion 39 will engage the lug or stop 37 to prevent the rising of the dog, while the hook portion 36 is engaged by the bar 17 of the car.

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

1. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to engage the object to be moved in either direction, and a guide or support on which said chain travels.

2. In a car or like haul, an endless traveling chain, and an invertible dog on said chain adapted to engage the object to be moved in either direction.

3. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, and means for holding said dog in its operative position.

4. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, and a support for holding said dog in its operative position.

5. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, means for holding said dog in operative position, and a stop adapted to prevent the rising of said dog.

6. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars in opposite directions, a support for holding said dog in operative position, and a stop on said chain adapted to prevent the rising of said dog.

7. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, a support for holding said dog in operative position, a stop on said chain, and a projection on said dog adapted to engage said stop.

8. In a car or like haul, an endless traveling chain, a swinging dog on said chain be-

tween the links adapted to swing into position to engage cars moving in opposite directions, a support for holding said dog in operative position, a stop between said links, and
5 a projection on said dog adapted to engage said stop.

9. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, a support for holding said dog in operative position, projections
10 on said dog and a stop in the path of said projections.

10. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, a support for holding said dog in operative position, a recess in said dog, and a stop on the chain engaging
15 said recess whereby the movement of said dog is limited.

11. In a car or like haul, an endless traveling chain, a swinging dog on said chain adapted to swing into position to engage cars moving in opposite directions, and means for limiting the swing of said dog.
25

12. In a car or like haul, an endless traveling chain, a swinging dog mounted on the

link-pin and between the inner links of said chain and adapted to swing into position to
30 engage cars moving in opposite directions, and means for limiting the swing of said dog.

13. In a car or like haul, an endless traveling chain, an invertible swinging dog mounted on said chain, said dog having a hook portion adapted to engage the object to be moved in one direction, and a hook portion adapted to engage an object moving in the opposite direction.
35

14. In a car or like haul, an endless traveling chain, a swinging dog adapted to swing into position to engage cars moving in opposite directions, and a plain-surfaced support upon which said chain and dog travel.
40

15. In a car or like haul, an endless traveling chain, a swinging dog adapted to swing into position to engage cars moving in opposite directions, and a plain-surfaced support on which said chain and dog travel in opposite directions.
45

In testimony whereof I, the said ALFRED M. ACKLIN, have hereunto set my hand.
50

ALFRED M. ACKLIN.

Witnesses:

ROBERT C. TOTTEN,
G. KREMER.