

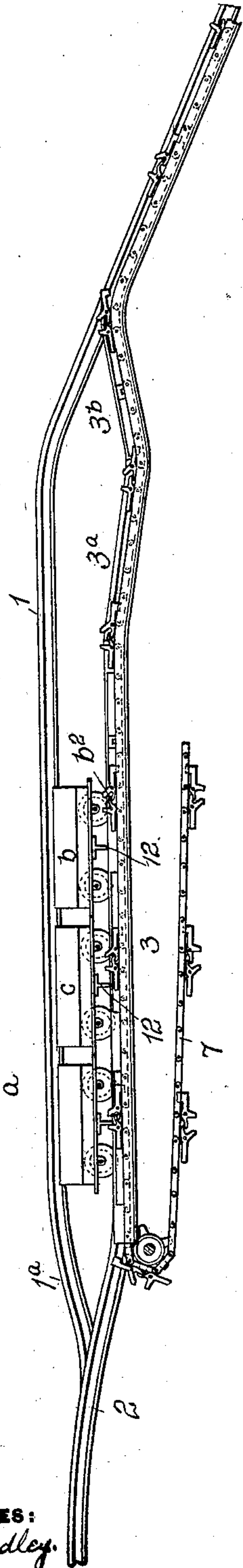
No. 699,022.

Patented Apr. 29, 1902

C. L. E. SCHENK.
DOWNHAUL FOR MINES.
(Application filed Feb. 10, 1902.)

(No Model.)

FIG. 1.



WITNESSES:
Herbert Bradley.
Fred Hrabman.

FIG. 2.

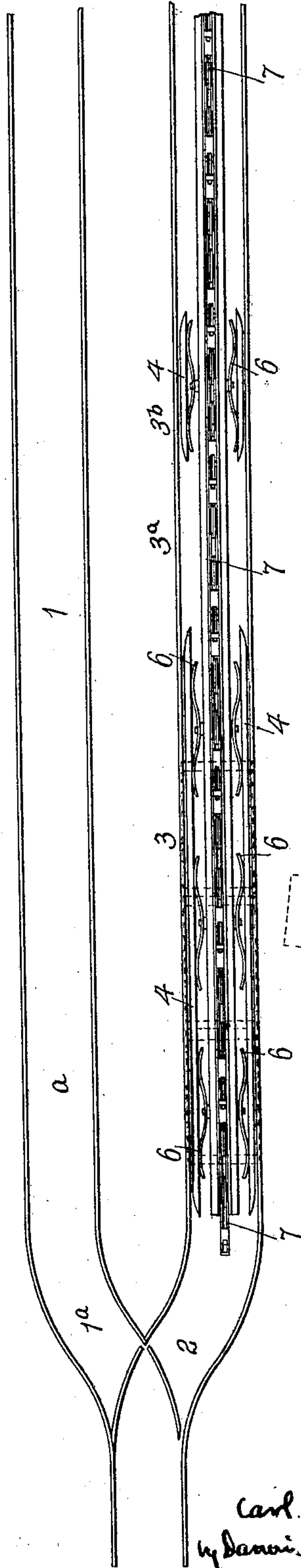


FIG. 4.

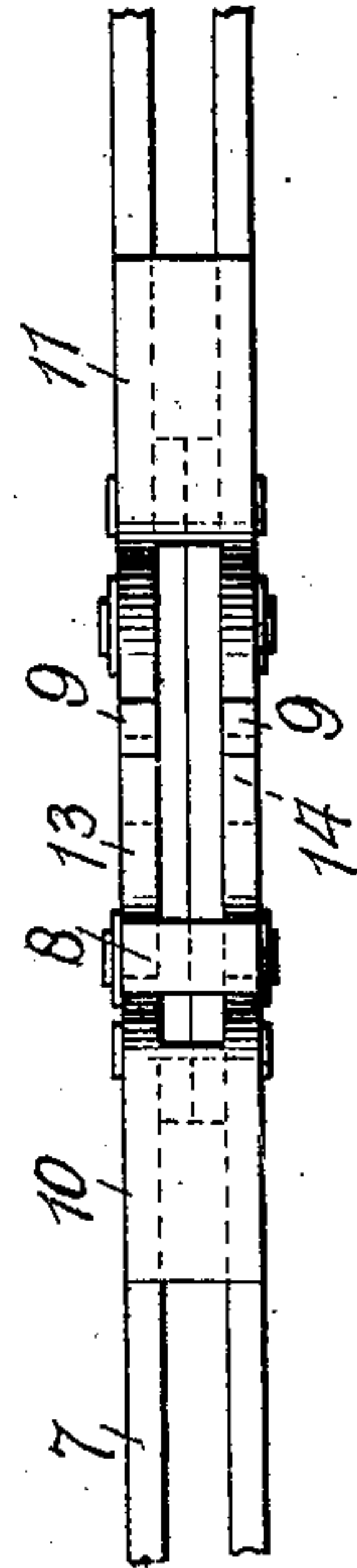
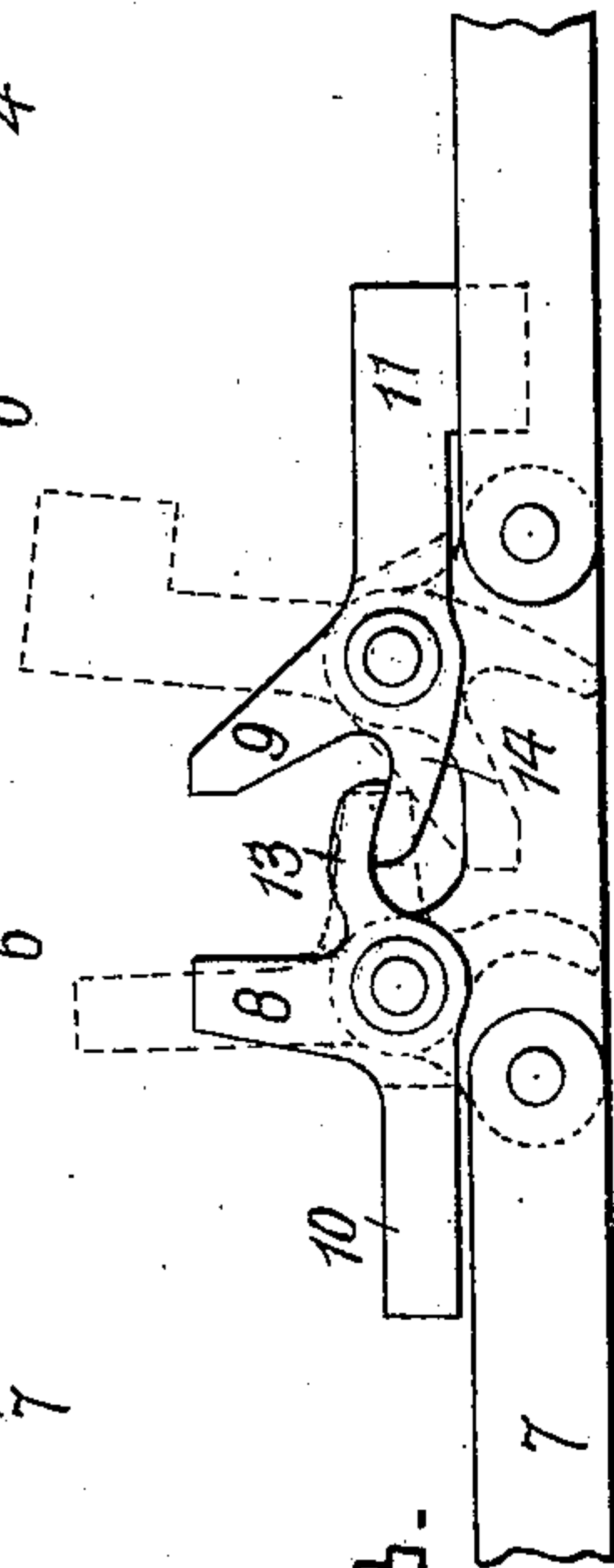


FIG. 3.



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UNITED STATES PATENT OFFICE.

CARL L. E. SCHENK, OF WALKERS MILLS, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO TATE, JONES & COMPANY, INCORPORATED, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

DOWNHAUL FOR MINES.

SPECIFICATION forming part of Letters Patent No. 699,022, dated April 29, 1902.

Application filed February 10, 1902. Serial No. 93,437. (No model.)

To all whom it may concern:

Be it known that I, CARL L. E. SCHENK, a citizen of the United States, residing at Walkers Mills, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Downhauls for Mines, of which improvements the following is a specification.

The invention described herein relates to certain improvements in downhauls for cars, and has for its object certain improvements in mechanism for connecting each car to the downhaul-chain and in means for effecting the automatic engagement of such mechanism with the cars.

The invention is hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is an elevation of the unloading and car-return tracks for a coal-mine. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of a portion of the downhaul-chain with the car-connecting mechanism, and Fig. 4 is a plan view of the same.

In the practice of my invention the loaded cars are drawn up from the mine onto the track 1. As the cars reach to point *a*, the load is discharged and the car allowed to run free down the inclined track 1^a onto the kick-off track 2, which is oppositely inclined, so that the car will run back and onto the storage-track 3, which forms a portion of the down-track into the mine. The cars are stopped on this portion of the track preparatory to their being connected to the downhaul-chain. The stoppage of the cars is effected by a track-brake of the usual or any suitable construction—such, for example, as that shown in Fig. 2, consisting of pieces of timber 4, resting on the cross-ties and yieldingly held against the inner sides of the rails by spring 6, so that when the cars run onto this portion of the track the flanges of the wheels will be gripped between the rails and the pieces of timber.

The downhaul-chain 7 is provided at suitable intervals with two dogs or fingers 8 and 9, pivotally connected to the chains, so as to swing in opposite directions. These dogs 8

and 9 are provided with weighted portions 10 and 11 at one side of their pivotal point, adapted to hold the dogs or pins in operative position with relation to a rib or flange-like projection 12 from the bottom of the cars. The dogs are provided with fingers 13 and 14, respectively, said fingers overlapping each other, as shown in Fig. 3. By reason of this construction when a car passes over the chain in the direction of movement of the latter it will strike the pin 8, turning it down to the position shown in dotted lines in Fig. 3, and through the medium of the fingers 13 and 14 the dog 9 will also be turned down to a similar position, so that the flange-plate or projection on the car will pass over the dogs without engaging them. If, however, the car is stationary while the chain moves in the direction of the arrow in Fig. 3, or the chain moves faster than the car, the dog 9 will strike the flange-plate or projection and be turned down without affecting the dog 8, so that as soon as the dog 9 passes beyond the projection it will be turned up by its weight, so as to inclose the plate or projection between the two dogs, thereby locking the car to the chain. The pair of dogs are arranged on the chain a distance apart a little greater than the length of the car, as shown in Fig. 1.

It sometimes happens that the speed of the cars passing down off the kick-off onto the storage track will be greater than that of the chain and that dogs of the chain will engage only the last car of such series of cars standing bumper to bumper on the storage-track, as shown in Fig. 1. In order to provide for the engagement of the chain with each of the preceding cars, a portion 3^a of the track adjacent to the storage-track is given a downward slope or inclination, so that when the car *b*, which is not connected with the chain nor with adjacent car *c*, reaches the pitch of such incline it will run ahead of the preceding dogs of the chain and will pass up onto the upwardly-inclined portion 3^b of the track, which is preferably provided with track-brakes, so as to stop or check the car on such upwardly-inclined portion. During its accelerated movement the flange-plate of the car *b* will pass beyond the grip *b*², and by the

stoppage or checking of the car the grip b^2 of the chain will overtake the car and pass along under the projecting plate or flange. The dog 9 will be depressed in the manner stated, 5 so that the flange-plate or projection can be engaged by both dogs. As soon as the car c reaches the inclined portion 3^b it will also run ahead of the connecting mechanism on the chain, be stopped on the inclined portion 10 3^b , so that this connecting mechanism can overtake and be caused to operatively engage the flange-plate or projection on the car.

It is characteristic of the improvements described herein that in order to effect an engagement between the chain and the car the 15 chain must move ahead faster than the car.

I claim herein as my invention—

1. A downhaul for cars, having in combination, a chain having oppositely-swinging 20 dogs, a car provided with a flange-plate or projection and track portions having opposite inclinations whereby the car is caused to

move faster than the chain and then checked, substantially as set forth.

2. A downhaul for cars, having in combination, a chain having oppositely-swinging 25 dogs, a car provided with a flange-plate or projection, a track having a downwardly-inclined portion adapted to impart to the car a speed greater than that of the chain and means for 30 reducing the speed of the car below that of the chain, substantially as set forth.

3. A downhaul for cars, having in combination, a chain, oppositely-swinging dogs 35 mounted on the chain, said dogs being provided with overlapping fingers, substantially as set forth.

In testimony whereof I have hereunto set my hand.

CARL L. E. SCHENK.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GATHER.