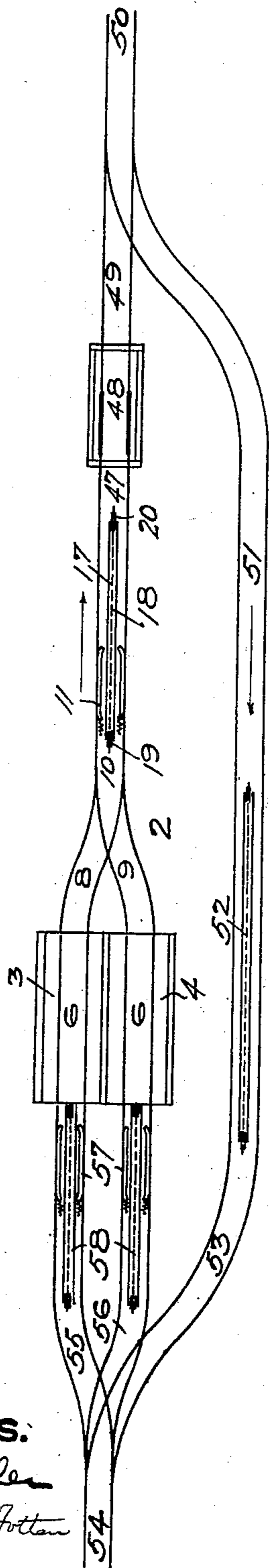


No. 890,700.

W. J. PATTERSON. PATENTED JUNE 16, 1908.
CAR HANDLING APPARATUS.
APPLICATION FILED JAN. 24, 1908.

2 SHEETS—SHEET 1.

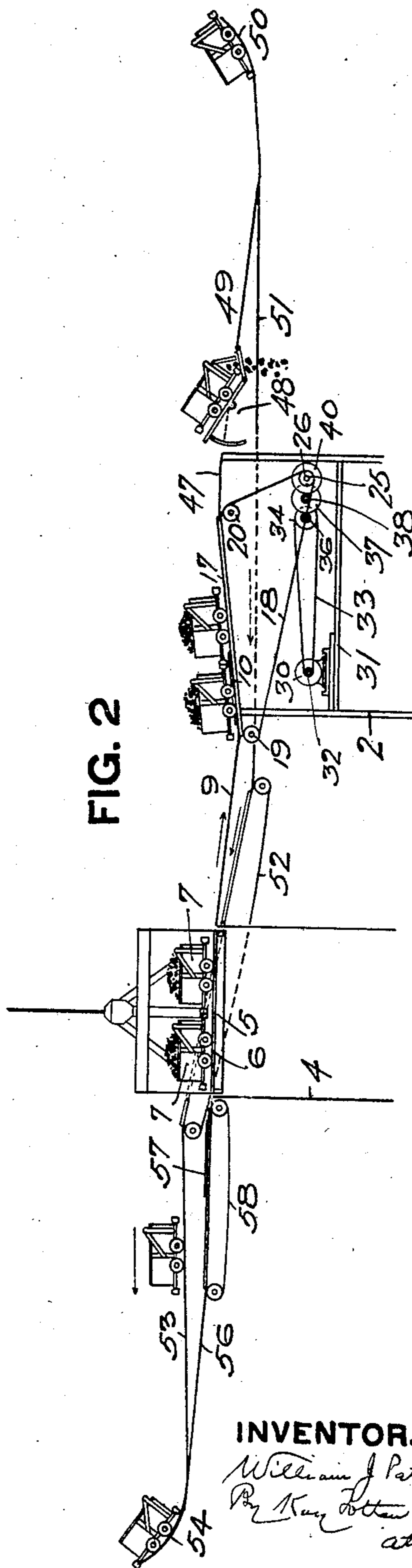
FIG. 1



WITNESSES:

J. R. Keller
Robert C. Fottan

FIG. 2



INVENTOR.

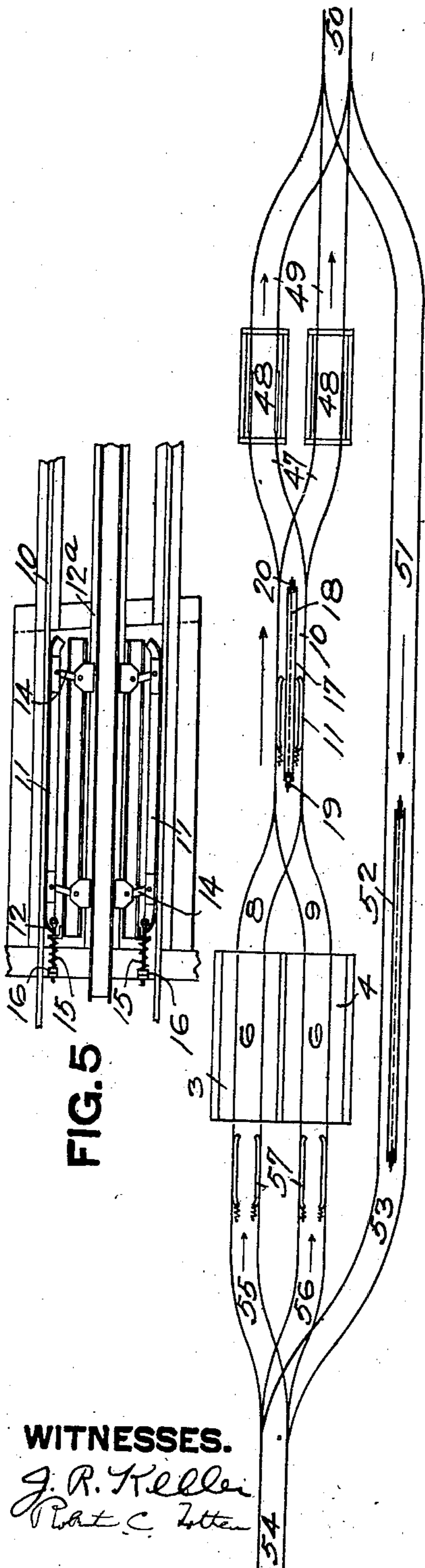
William J. Patterson
By *Robert C. Fottan* *Attorney*

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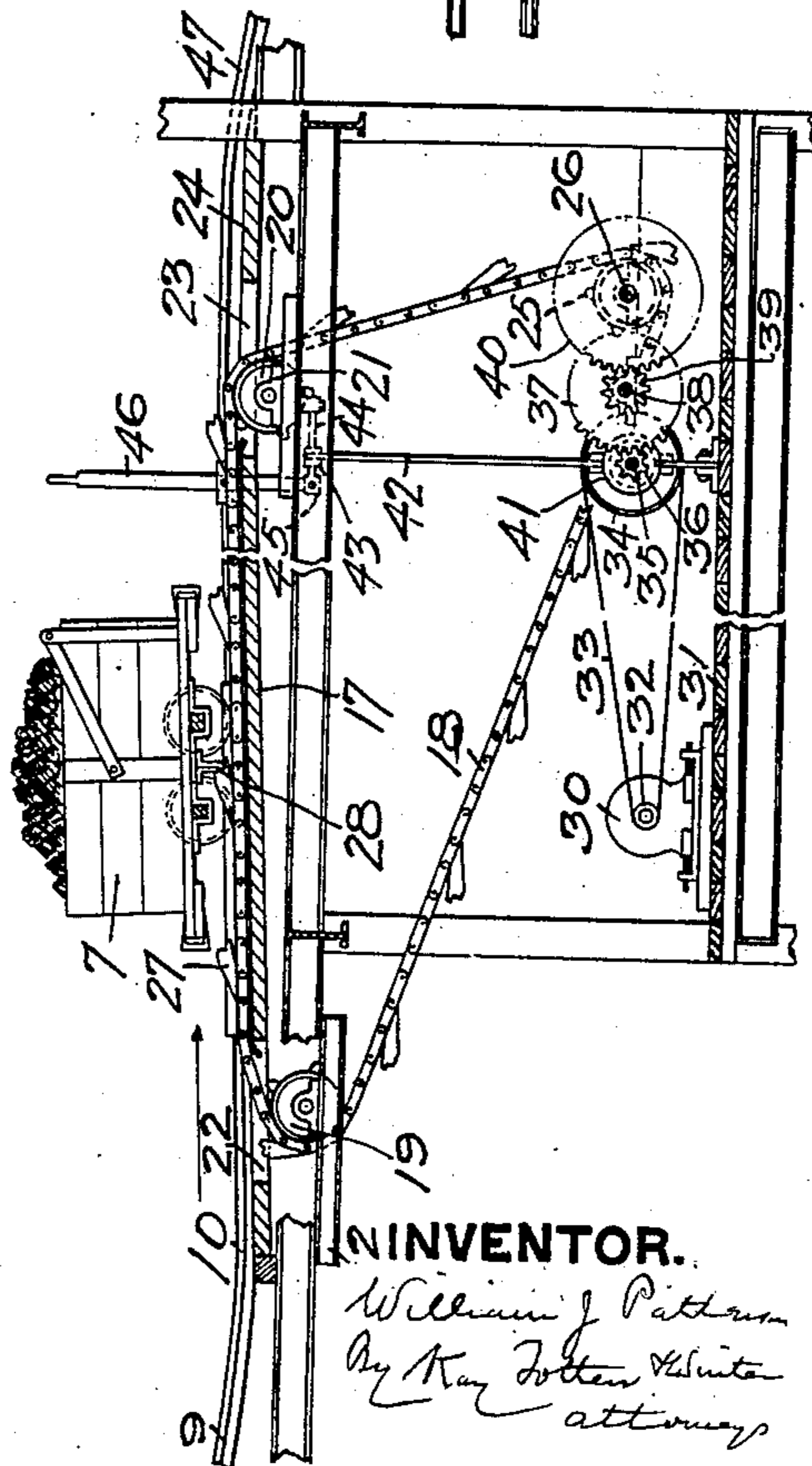
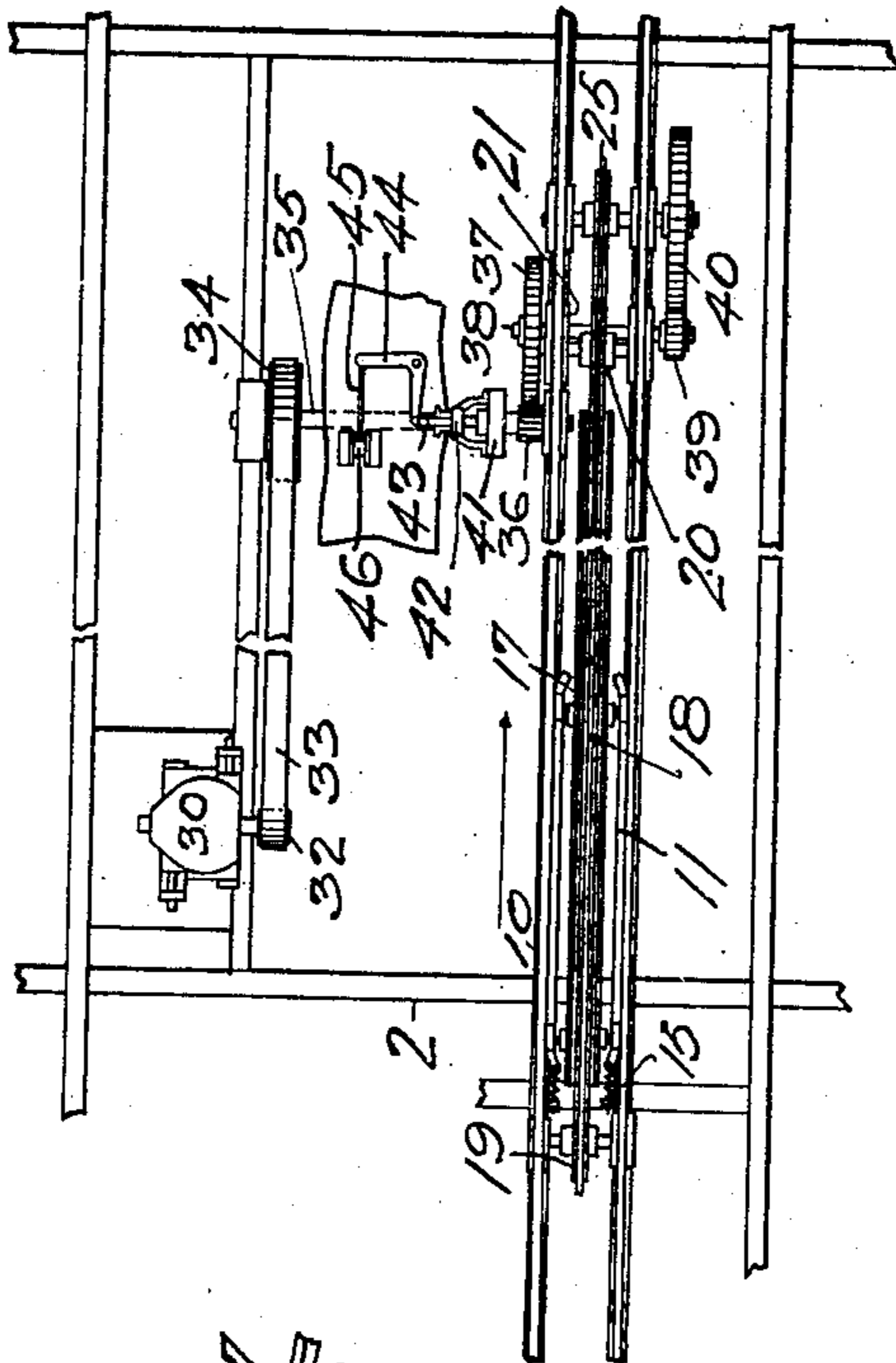
WITNESSES.

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FIG. 4

FIG. 6

FIG. 3



INVENTOR.

William J. Patterson
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UNITED STATES PATENT OFFICE.

WILLIAM J. PATTERSON, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO HEYL & PATTERSON INCORPORATED, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

CAR-HANDLING APPARATUS.

No. 890,700.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed January 24, 1908. Serial No. 412,459.

To all whom it may concern:

Be it known that I, WILLIAM J. PATTERSON, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Handling Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to apparatus for handling mine cars, its object being to provide for the quick and expeditious handling of the cars as they pass from the elevator shaft and the feeding of them continuously one by one to the dumping apparatus, the cars being controlled in such a manner as to regulate their movement so as to prevent congestion, and feed them in a regular manner to the dump.

My invention therefore comprises the novel features hereinafter set forth and claimed.

In the accompanying drawings Figure 1 is a plan view largely diagrammatic of my improved apparatus; Fig. 2 is a side view thereof; Fig. 3 is an enlarged side view partly in section of the feeder for feeding the cars to the dump; Fig. 4 is a plan view of the same; Fig. 5 is an enlarged plan view of the car checking rails; Fig. 6 is a plan view of a modified form of my invention.

In the drawings the numeral 2 designates an elevated structure or coal tippie of the proper size and dimensions for use in connection with my invention, said structure of course varying according to conditions and requirements of different plants. As my invention is used in connection with vertical mine shafts, the numerals 3 and 4 designate suitable shafts through which the cars are raised and lowered into the mine, said shafts being provided with any suitable form of elevator or lift 5 for raising and lowering the cage to and from the mine. These elevators 5 have the track sections 6 laid thereon to support the mine cars when carried thereby. In the present instance I have illustrated these tracks of a length sufficient to accommodate two mine cars 7. In the form of apparatus illustrated in Fig. 1 tracks 8 and 9 are laid on the structure 2, said tracks being in alinement with the track 6 on the elevators 5 so as to receive the cars as they are discharged from said elevators. These tracks 8

and 9 are slightly inclined, as shown in Fig. 2, and they converge and unite in the single track 10 which is slightly upwardly inclined.

Located in the track section 10 are the check rails 11 which are adapted to engage the wheels of the car as it passes from the tracks 8 and 9 onto the track 10. These check rails lie adjacent to the rails of the track 10 and are inwardly curved at their ends, as at 12. The rails 11 are connected to the supporting frame 12^a by means of the toggle arms 14, and springs 15 are connected at the ends of the rails 11, said springs being connected to a lug 16 on the structure 2. These springs tend to hold the check rails 11 in such position with reference to the rails of the track section 10 that the flanges of the wheels of the cars will be wedged between said check rails and the rails 10 so as to check the movement of the car and retard it. To move the car, however, as against the resistance offered by the check rails 11 it is only necessary to overcome the resistance of the springs 15.

Located beneath the track section 10 is the feeder 17. This feeder comprises the chain 18 which passes around the sprocket wheels 19 and 20 which are journaled in suitable bearings 21 in the frame work, said sprocket wheels being located opposite the openings 22 and 23 in the platform 24. The chain 18 also passes around the sprocket wheel 25 mounted on the shaft 26 which is supported by the frame-work. At suitable intervals on the chain 18 are the dogs 27 which are adapted to engage the projections 28 on the cars and move the same along the track section 10.

In order to drive the feeder 17 I provide the motor 30 which is supported on the platform 31. On the motor shaft is the pulley 32 which is connected up by the belt 33 to the pulley 34 on the shaft 35. A pinion 36 on the shaft 35 meshes with the gear wheel 37 on the shaft 38. A pinion 39 on the shaft 38 meshes with the gear wheel 40 on the shaft 26. A suitable clutch mechanism 41 is mounted on the shaft 35. A rod 42 is connected with the clutch mechanism 41 and at its upper end by the arm 43 to the bell crank 44. This bell crank 44 is connected by the arm 45 to the lever 46. It has not been

deemed necessary to illustrate this clutch mechanism in detail, as any suitable form of clutch mechanism may be employed and it forms no part of my invention.

5 Connecting with the track section 10 is the track section 47 which leads to the dump 48. This dump may be of any suitable construction adapted for the purpose and it has not been deemed necessary to describe the same
10 in detail.

Leading from the dumping apparatus is the track section 49 which is slightly inclined and which leads to the kick-back 50. Leading from the kick-back 50 is the return track
15 51 by means of which the empty cars are returned and in this return track 51 is the car-haul 52 which carries the car up the incline and at the upper end of the car-haul is the track 53, by means of which the empty cars
20 are run down to the kick-back 54. Leading from the kick-back 54 are the tracks 55 and 56 which lead to the elevators 5. In these tracks 55 and 56 are check rails 57 similar to those described in connection with the
25 track section 10. Suitable pushing mechanism 58 may be employed in the track sections 55 and 56 to feed the empty cars onto the elevators 5.

When my improved apparatus is in use,
30 one of the elevators 5 lifts two loaded cars, and it is the usual practice to have one of the elevators descending with two empty cars while said loaded cars are being lifted. When the cars have reached the upper end of
35 the elevator shaft the cars are pushed onto one of the tracks 8 or 9 and this movement of the loaded cars from the elevator is usually accomplished by the pushing of the empty cars upon the elevator. The loaded cars as
40 they pass onto the track section 8 run by gravity down said track and move onto the track section 10 where they are retarded by the check rails 11. Power having been applied to operate the feeder 17, the chain 18
45 travels around and one of the dogs 27 will engage one of the cars and the cars will be moved by said feeder in a positive manner until the leading car has passed onto the track section 47, whereupon an operator at
50 that point will lift the coupling pin to release the cars, whereupon the first car will pass quickly to the dump and be dumped, as indicated in Fig. 2, while the second car is being fed onto the track section 47 and by
55 the time the first car has been dumped and has passed onto the track 49 the second car will follow in quick succession to the dump to be dumped. In case the cars, in passing onto the track section 10, should come in
60 contact with one of the dogs 27 the said dog will yield, owing to the flexibility of the chain and be depressed so as to permit the car to pass over the same without difficulty. After the car has passed over the dog, how-
65 ever, said dog will rise in position as the

chain moves forward to engage the car and carry it along. In the meantime the elevator in the other shaft has brought up two loaded cars which are shifted onto the track section 9 and they pass to the feeder to be
70 fed to the dump in the manner above described. In this manner the cars are handled in quick succession so that no time is lost. The operator standing by the lever 46 has the feeder under his control at all
75 times so that if there is any hitch in the operations he can readily stop the feeder and prevent accident. By this control he is able to feed the cars in a regular and continuous manner to the dump. After the cars are
80 dumped they pass to the kick-back 50 whence they return over the track 51 to the car-haul 52 to be delivered to the kick-back 54, whence they are carried by the tracks 55 and 56 back onto the elevator. 85

In Fig. 6 I have illustrated another form of my invention in which two dumps are employed with a single feeder, the cars being fed by the feeder to the different dumps
90 alternately.

What I claim is:

1. In apparatus for handling mine cars, the combination with an elevated structure and a shaft therein, of an elevator in said shaft, a fixed track leading from said shaft to the
95 dump, and feeding mechanism interposed between said shaft and the dump.
2. In apparatus for handling mine cars, the combination with an elevated structure and a shaft therein, of an elevator in said shaft, a
100 downwardly inclined track leading from said elevator, means for checking the movement of the cars beyond said incline, a dump, and feeding mechanism located between said inclined track and said dump. 105
3. In apparatus for handling mine cars, the combination with an elevated structure and a shaft therein, of an elevator in said shaft, a
110 downwardly inclined track leading from said elevator, an upwardly inclined track, a dump beyond said upwardly inclined track, and feeding mechanism located at said upwardly inclined track section.
4. In apparatus for handling mine cars, the combination with an elevated structure and
115 a shaft therein, of an elevator in said shaft, a downwardly inclined track leading from said elevator, an upwardly inclined track, means for checking the movement of the car in said
upwardly inclined track section, feeding
120 mechanism located in said upwardly inclined track section, and a dump beyond said upwardly inclined track section.
5. In apparatus for handling mine cars, the combination with an elevated structure and
125 a shaft therein, of an elevator in said shaft, a track leading from said shaft to the dump, an endless chain interposed between said elevator and said dump, dogs on said chain in
such position with reference to said track as 130

to engage the cars and feed them to said dump.

6. In apparatus for handling mine cars, the combination with an elevated structure and a shaft therein, of an elevator in said shaft, a downwardly inclined track laid from said elevator, an upwardly inclined track, a car-feeder located in said upwardly inclined track section, a level track section just be-

yond said feeder, and a dump beyond said 10 level track section.

In testimony whereof, I the said WILLIAM J. PATTERSON have hereunto set my hand.

WILLIAM J. PATTERSON.

Witnesses:

ROBERT C. TOTTEN,
J. R. KELLER.