April 22, 1924. **1,491,060**

E. O'TOOLE

CAR DUMPING APPARATUS

Filed Oct. 14, 1922 5 Sheets-Sheet 1

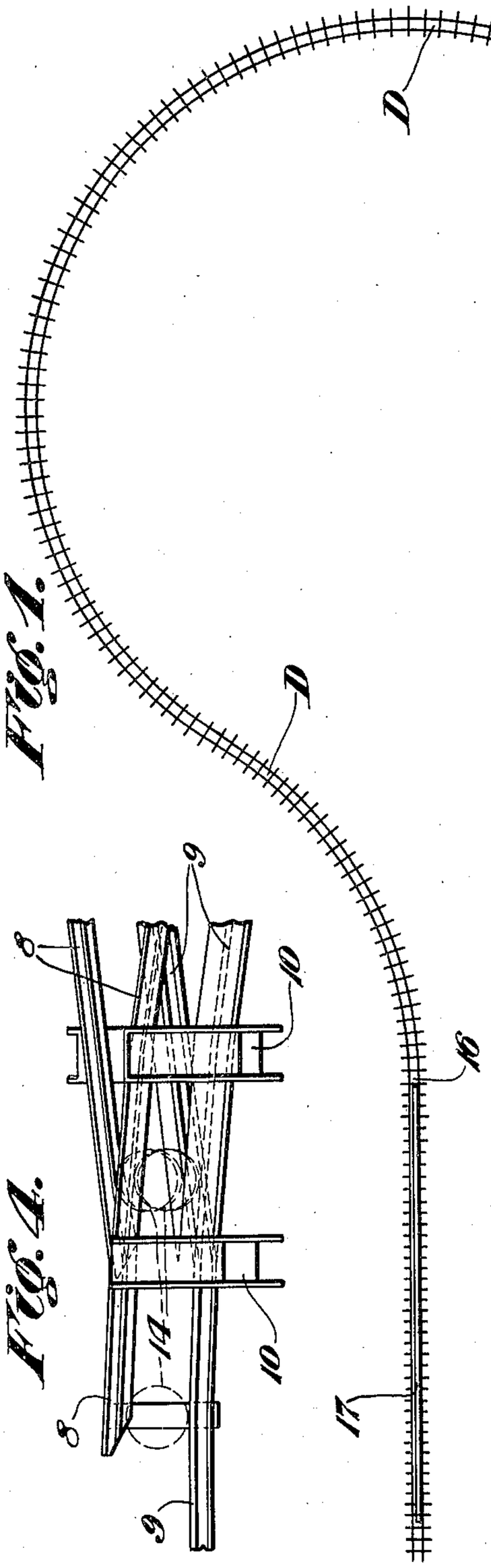

Fig. 4.

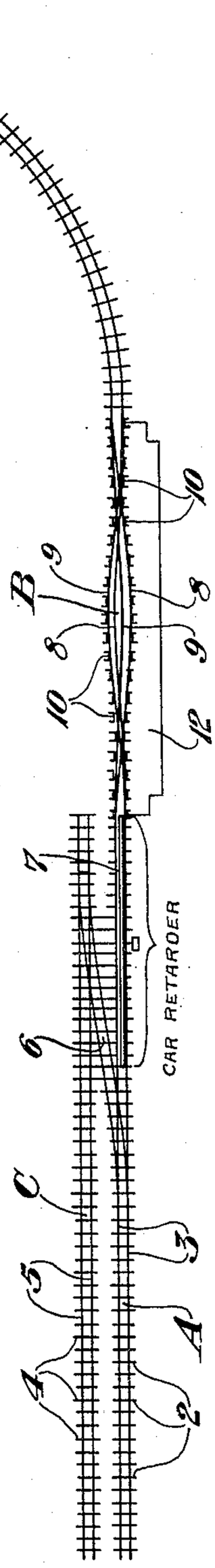

Fig. 1.

Fig. 2.

Witnesses:
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Inventor:
EDWARD O'TOOLE,
by: Anthony Usina
his Attorney.

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CAR DUMPING APPARATUS

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Fig. 3.

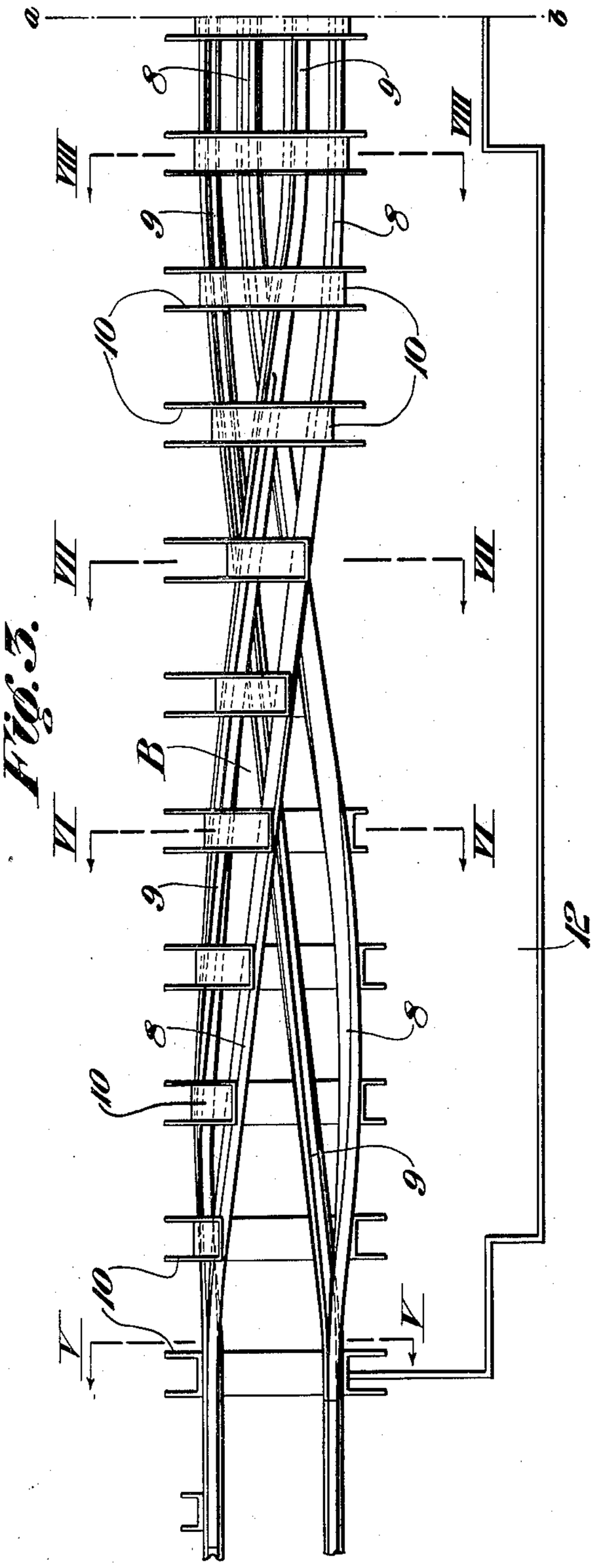
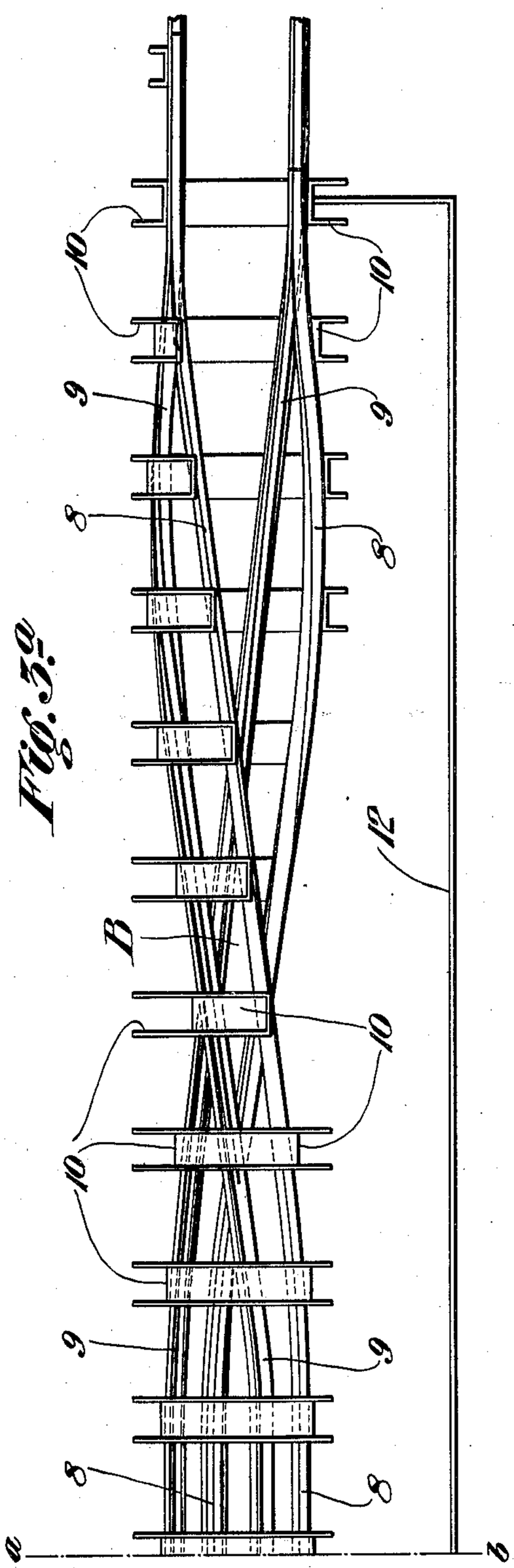


Fig. 3a.



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CAR DUMPING APPARATUS

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Fig. 5.

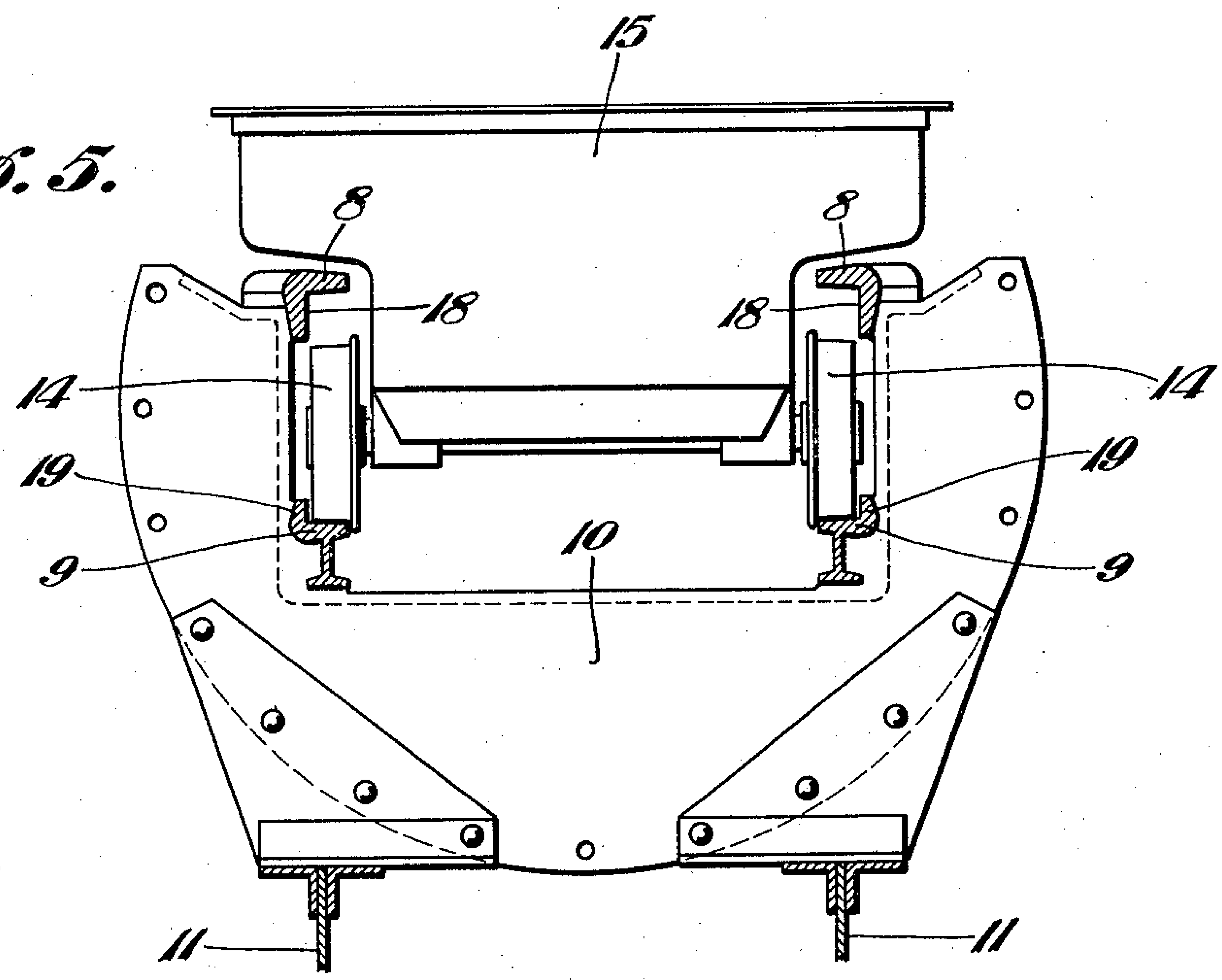
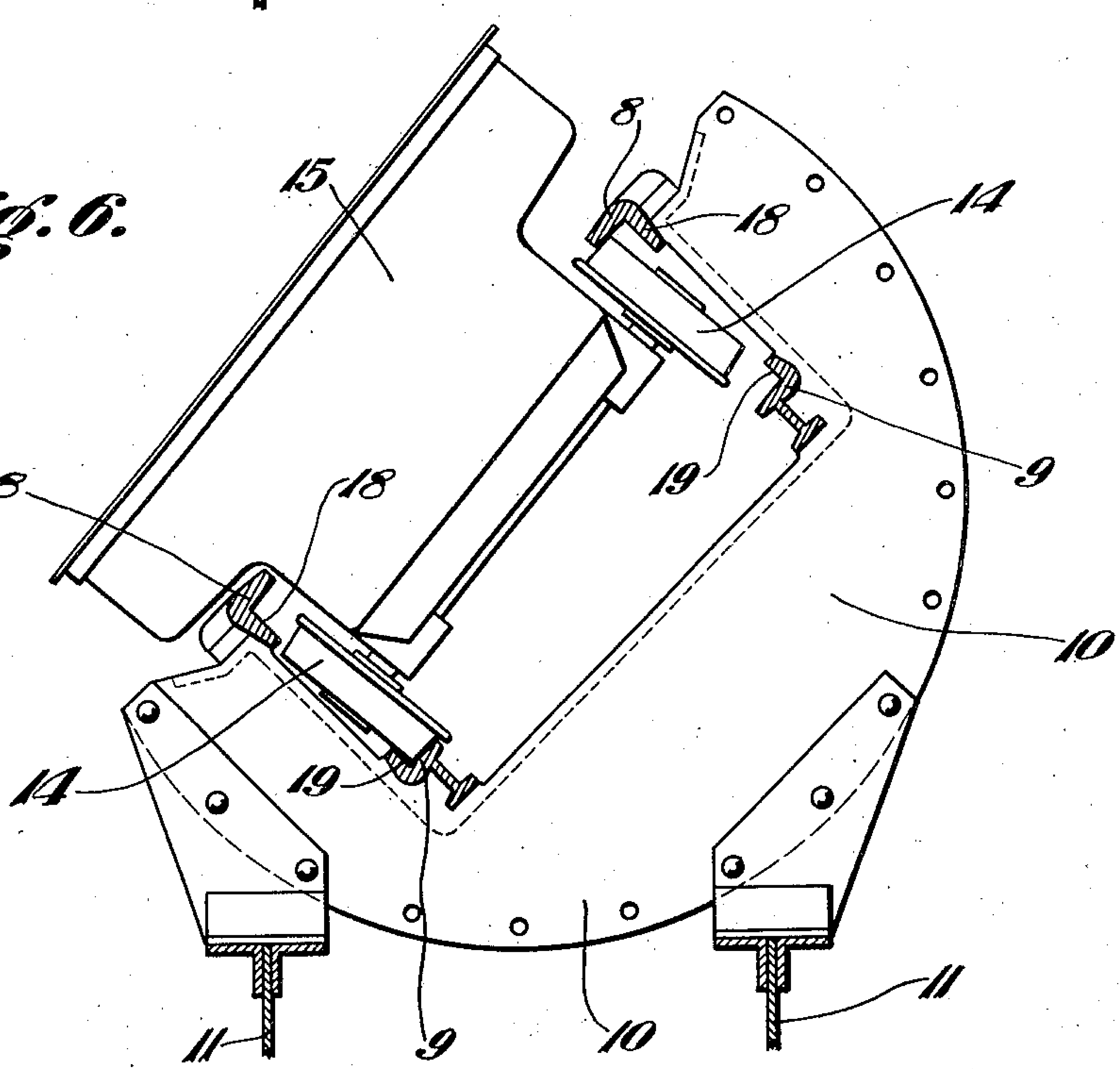


Fig. 6.



Witnesses:
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April 22 , 1924. **1,491,060**

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CAR DUMPING APPARATUS

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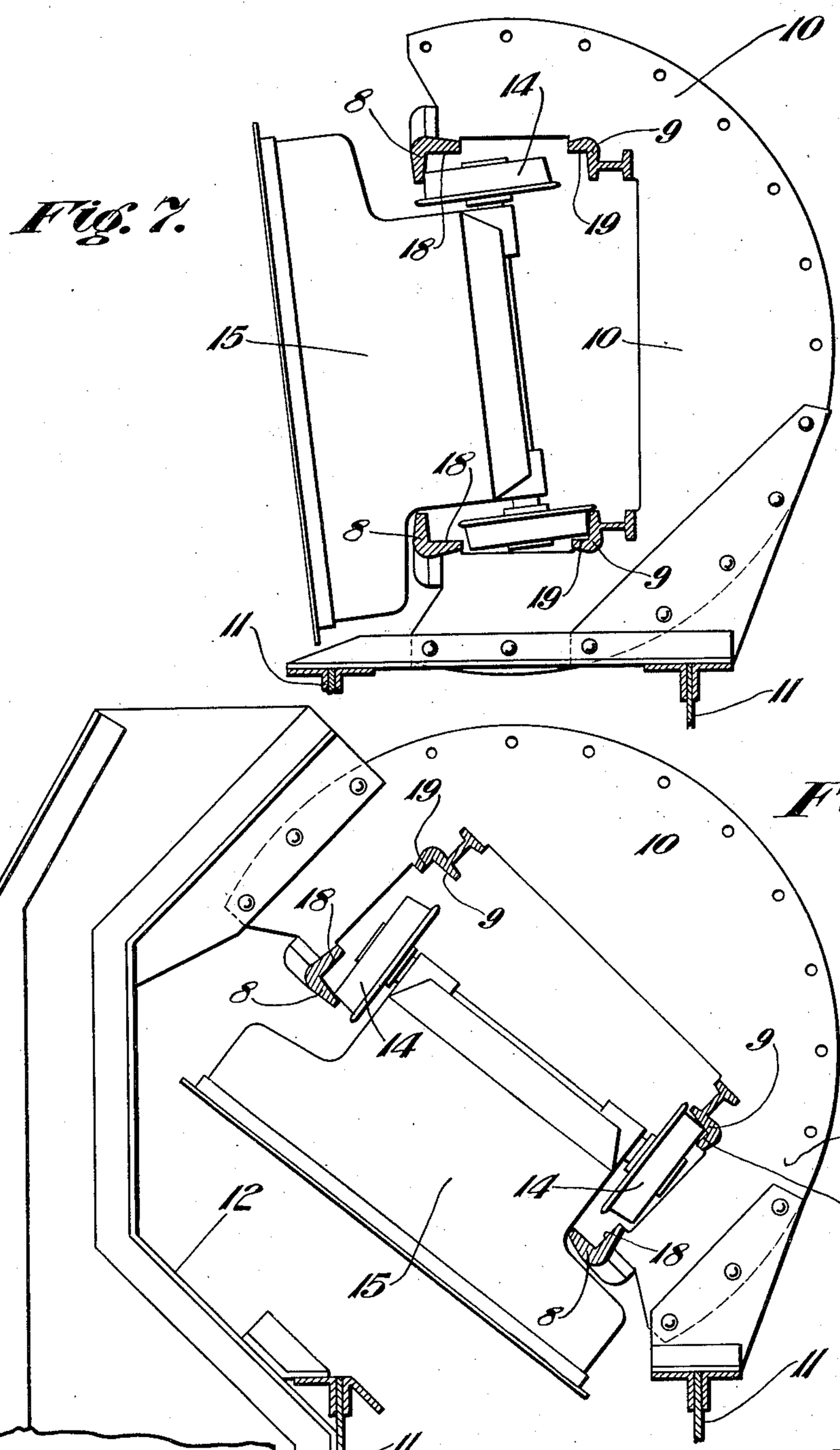

Fig. 7.

Fig. 8.

Witnesses:
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April 22 , 1924. **1,491,060**

E. O'TOOLE

CAR DUMPING APPARATUS

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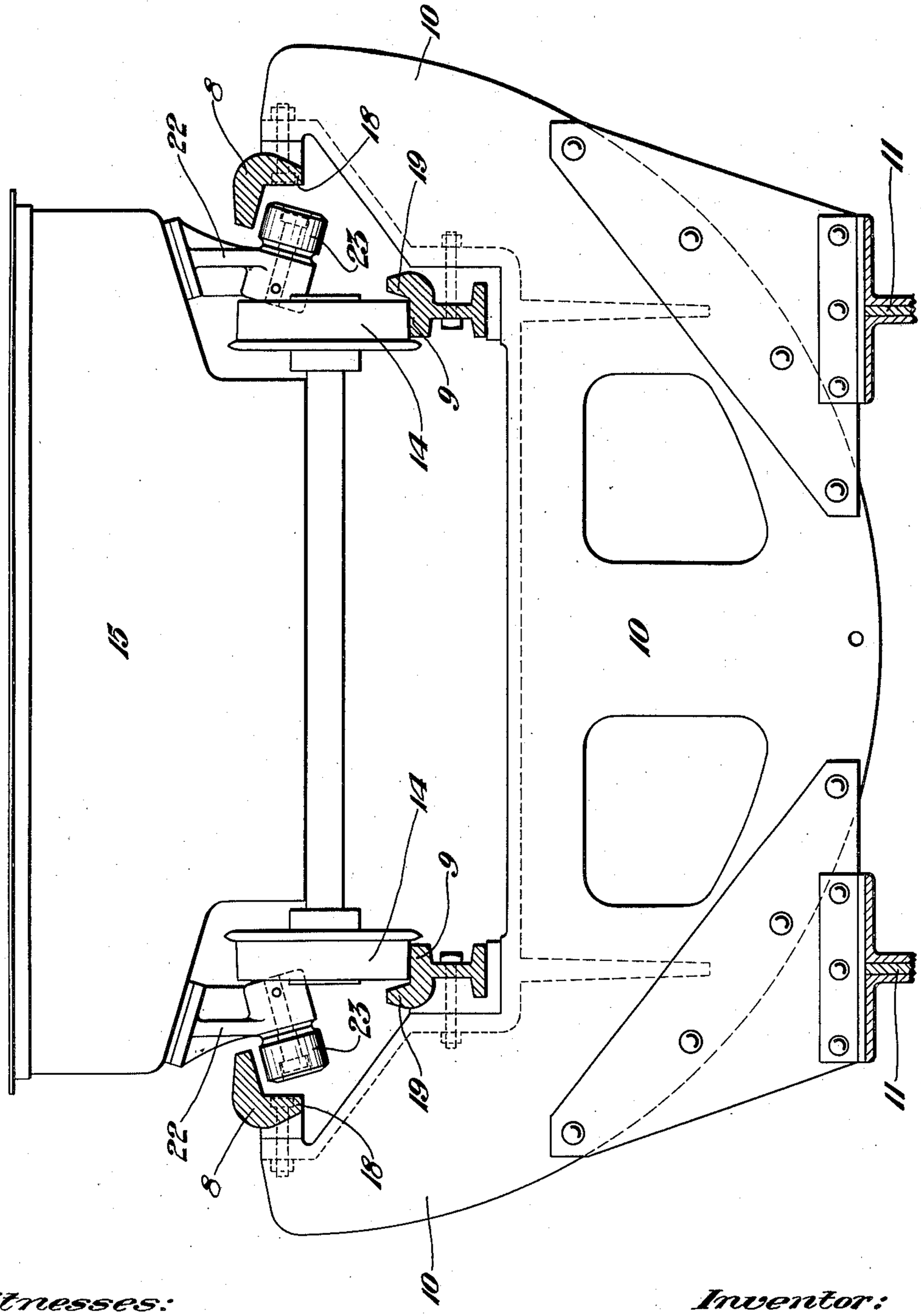

Fig. 3.

Witnesses:
Edwin Trudt

Inventor:
EDWARD O'TOOLE,
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D Anthony Usina
his Attorney.

Patented Apr. 22, 1924. 1,491,060

UNITED STATES PATENT OFFICE.

EDWARD O'TOOLE, OF GARY, WEST VIRGINIA.

CAR-DUMPING APPARATUS.

Application filed October 14, 1922. Serial No. 594,446.

To all whom it may concern:

Be it known that I, EDWARD O'TOOLE, a citizen of the United States, and resident of Gary, in the county of McDowell and State of West Virginia, have invented certain new and useful Improvements in Car-Dumping Apparatus, of which the following is a specification.

This invention relates to car dumping apparatus, and more particularly to car dumping apparatus for dumping mine cars, and has for its object the provision of such an apparatus that will be devoid of movable parts, and yet one that will invert the car and right it again while continuously moving along a track.

Another object is to provide a car dumping apparatus that will dump a greater number of cars than the dumping apparatus heretofore devised.

A further object is to provide a car dumping apparatus having the novel construction, design and combination of parts hereinafter described and illustrated in the accompanying drawings.

In the drawings, Figure 1 is a somewhat diagrammatic plan of my invention.

Figure 2 is a diagrammatic side elevation.

Figure 3 is a partial plan of the dumping track, and Figure 3ª is a continuation thereof.

Figure 4 is a partial side elevation of the entrance end of the dumping track.

Figures 5, 6, 7 and 8 are transverse sectional elevations on the lines V—V, VI—VI, VII—VII, and VIII—VIII of Figure 3, showing the different positions of the car when traveling along the dumping track.

Figure 9 is a transverse sectional elevation through the dumping track showing a slightly modified arrangement.

Referring more particularly to the drawings, the letter A designates the supply track leading to the dumping track B. C designates the locomotive return track and D the empty car return track.

The supply track A is of the usual track construction and consists of ties 2 and rails 3. The locomotive return track C parallels the supply track and also is of the usual track construction consisting of ties 4 supporting the rails 5. The locomotive return track C is connected to the supply track A adjacent the dumping track B by a switch 6. A car retarder 7 which may be of the well known yielding friction type is provided in the track A adjacent to the dumping track B. The car retarder 7 is adapted to engage a suitable shoe (not shown), on the cars and thus slow up or retard the movement of the cars prior to their entrance onto the dumping track.

The car dumping track B forms a continuation of the supply track A and is inclined downwardly from the supply track so as to cause the cars to travel along the same by gravity.

The track B comprises upper and lower rails 8 and 9 mounted on yokes 10 secured to beams 11, which bridge over a receiving bin 12 below the track. The rails 8 and 9 are disposed tread to tread, and spaced equidistant throughout their length to enable the wheels 14 of the cars 15 to pass between them without binding. The track B is twisted to form a helical curve of 135 degrees in one direction to a point adjacent its transverse center line, then continues straight for a short length, and then is reversely twisted in the opposite direction, forming a reverse helical curve of 135 degrees. It will thus be seen that cars passing along the track B will first be inverted and then righted while in continuous motion.

The track D or empty car return track forms a continuation of the dumping track B and is inclined downwardly to the point 16, at which point a cable hoist 17 is located to raise the empty cars up to normal level where they may be moved by the locomotive to any point desired for reloading.

The rails 8 and 9 are provided with side flanges 18 and 19, respectively, to limit the side movement of the cars during the dumping operation.

The operation of the apparatus above described will be readily understood. The cars are moved by any well known form of locomotive, cable or the like, along the supply track A. They then move by gravity along the dumping track B where they are inverted and righted as heretofore described, and continue by gravity along the empty return track D to the point 16 where they are engaged by the cable hoist 17 and elevated to the normal level portion of the return track.

If a locomotive is used to push the cars

along the track A it will be switched at the switch 6 to the locomotive return track C.

In Figure 9 an arrangement is shown for dumping cars having low bodies, that is bodies lying close to the wheels. In this construction the car body 15 projects over the wheels 14 and is so close to the wheels that it is not possible for the upper rails 8 to engage the upper portion of the wheel tread. Therefore a bracket 22 is secured to each side of the car body 15, which brackets are provided with outwardly extending arms on which are journaled rollers 23, and the rails 8 are spaced a greater distance apart than the rails 9, so as to overlie the rollers 23 on the brackets 22 instead of the wheels 14.

In operation the apparatus of Figure 9 will function the same as that heretofore described, with the exception that the rollers 23 will engage the rails 8 when the car is being dumped, instead of the wheels 14.

While I have shown and described only one specific embodiment of my invention it will be understood that various modifications may be made without departing from the scope of my invention as defined in the appended claims, for instance the dumping track may be horizontal instead of inclined and power means may be used to move the cars therethrough, or other equivalent construction may be used.

I claim:—

1. A car dumping mechanism comprising, a two-rail dumping track upon which all the wheels of the cars to be dumped are adapted to travel, a series of retaining rails spaced above and alined with the rails of said dumping track, said dumping track comprising a portion having both rails twisted uniformly in one direction from a horizontal position through a sufficient angle to dump cars passing along said track, and another portion twisted uniformly in a reverse direction at a point beyond said first mentioned twisted portion to form a car righting portion.

2. A car dumping mechanism comprising a single track portion, means for slowing up the cars as they pass over said single track, an inclined car dumping track adapted to have the cars move thereover by gravity, said dumping track comprising a pair of traction and supporting rails and a pair of guard rails spaced above and in alinement with said traction rails, said traction and said guard rails being arranged tread to tread, and said dumping track having a portion of its length twisted helically in one direction and a second portion twisted helically in the reverse direction so as to automatically dump and right the cars passing thereover.

3. A car dumping mechanism comprising a single supply track portion, means for slowing up the cars as they pass over said single track, an inclined car dumping track adapted to have the cars move thereover by gravity, said dumping track comprising a double track composed of a pair of traction and a pair of guard rails above said traction rails, said traction rails and said guard rails being disposed tread to tread and having a portion of their length twisted helically in one direction and a second portion twisted helically in the reverse direction so as to automatically dump and right the cars passing thereover, a return track leading from said dumping rack having an upwardly inclined portion in its length, and means for conveying the cars along said upwardly inclined portion of said return track.

4. The combination with a section of helically twisted track adapted to invert and right cars passing thereover, of a supply track communicating with the entrance end thereof, a locomotive return track paralleling said supply track and connected therewith by a switch, and an empty car return track communicating with the discharge end of said dumping track.

5. The combination with a section of helically twisted track adapted to invert and right cars passing thereover, of a supply-track communicating with the entrance end thereof, a locomotive return track paralleling said supply track and connected therewith by a switch, and an empty car return track communicating with the discharge end of said dumping track, said empty car track being inclined downwardly for a portion of its length and provided with a car elevating apparatus at the end of said inclined portion.

6. The combination with a section of inclined track twisted helically in opposite directions on the opposite sides of its transverse center line, of a supply track communicating with the entrance end thereof, a locomotive return track paralleling said supply track and connected therewith by a switch, and an empty car return track communicating with the discharge end of said dumping track, said empty car track being inclined downwardly for a portion of its length and provided with a car elevating apparatus at the end of said inclined portion.

In testimony whereof I have hereunto set my hand.

EDWARD O'TOOLE.