1,136,829.

G. H. MUELLER.

CAR DUMPING APPARATUS.

APPLICATION FILED JAN. 2, 1913.

Patented Apr. 20, 1915.

2 SHEETS—SHEET 1.

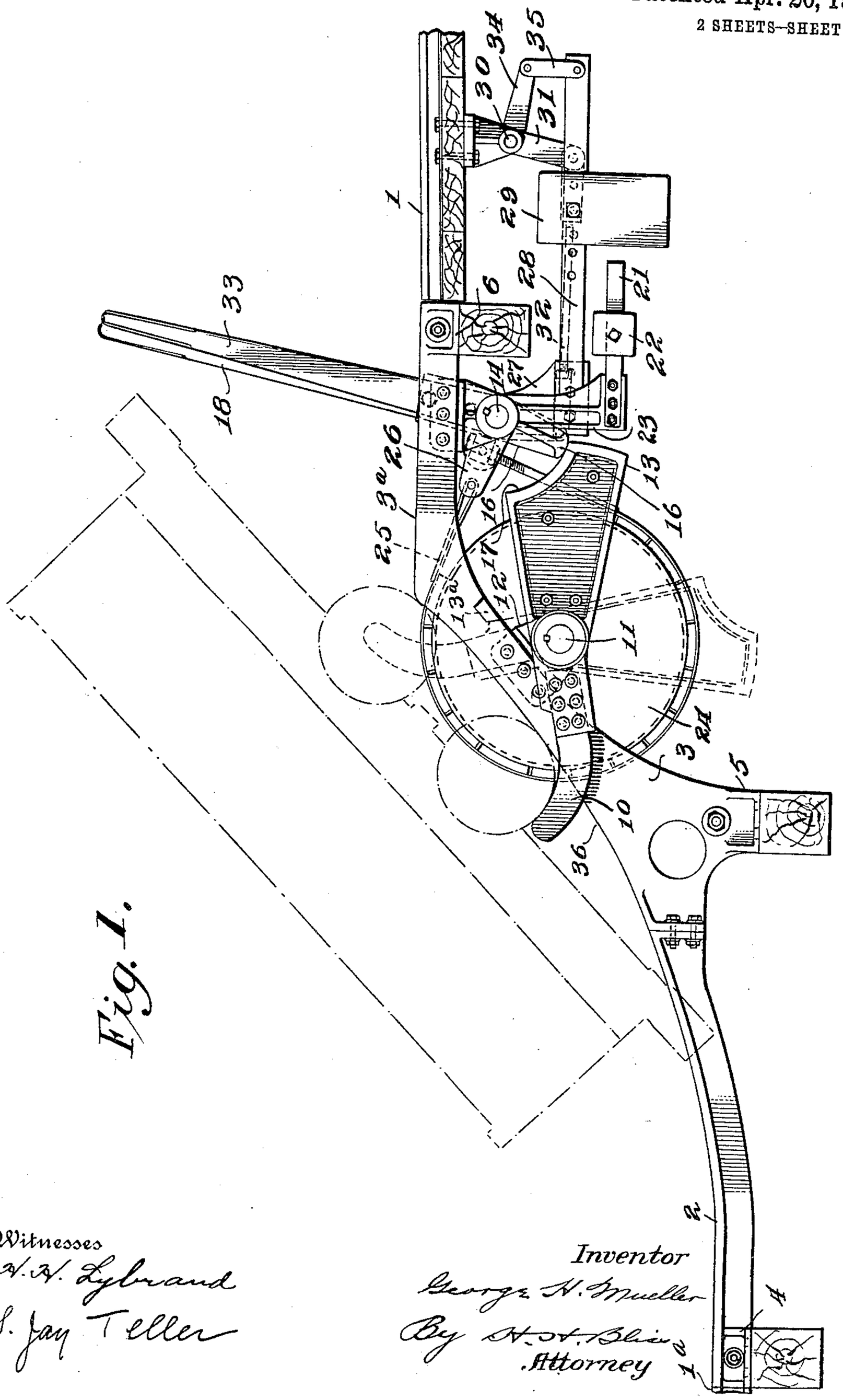


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

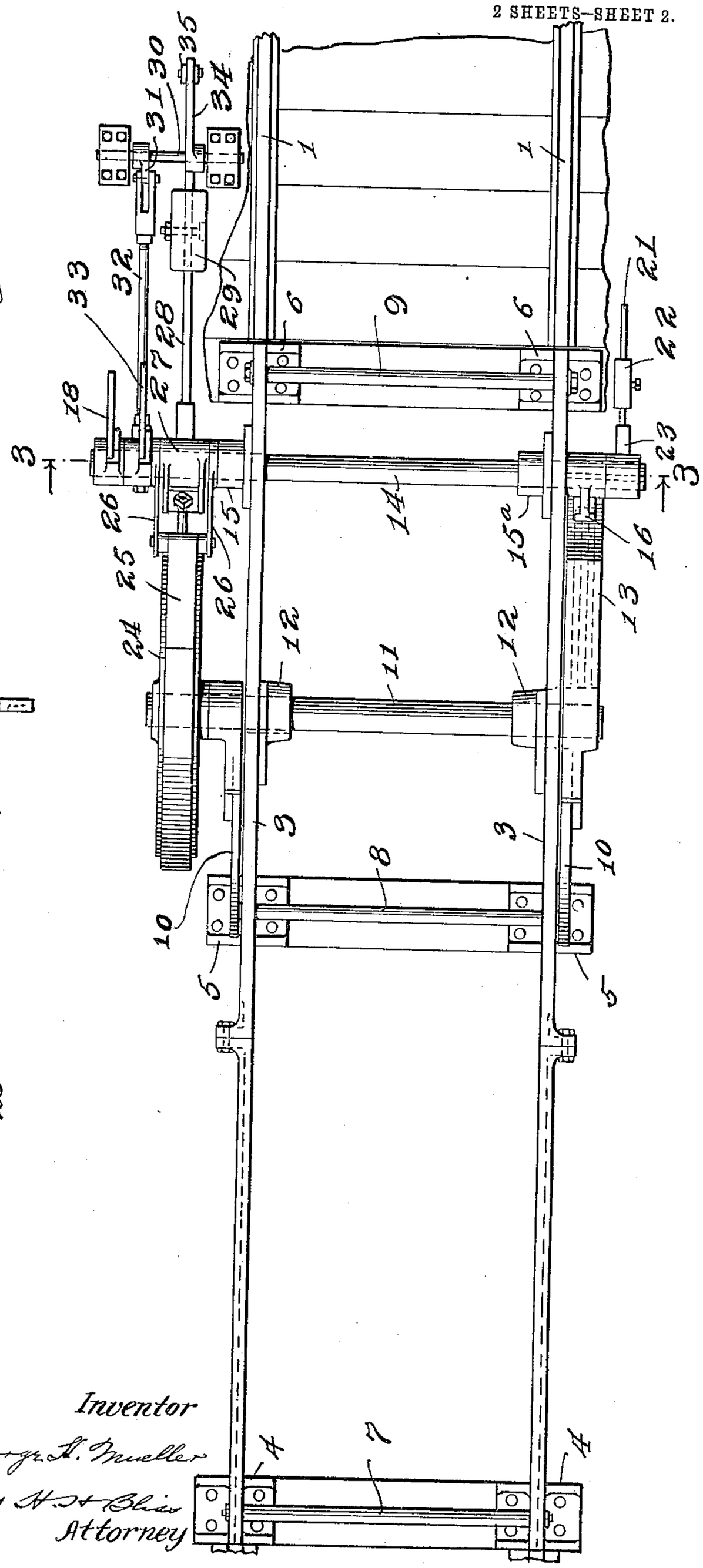


Fig. 3.

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UNITED STATES PATENT OFFICE.

GEORGE H. MUELLER, OF COLUMBUS, OHIO, ASSIGNOR TO THE JEFFREY MANUFACTURING COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF OHIO.

CAR-DUMPING APPARATUS.

1,136,829. Specification of Letters Patent. Patented Apr. 20, 1915.

Application filed January 2, 1913. Serial No. 739,838.

To all whom it may concern:

Be it known that I, GEORGE H. MUELLER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Car-Dumping Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to car-dumping apparatus of the type in which a fixed continuous track is provided, the cars being tilted into inclined dumping position by moving over a short sharply inclined section of that track.

The principal object of the invention is to provide an improved mechanism for temporarily holding the cars in dumping position on the inclined track section.

Another object is to provide a track having certain improved structural features.

Still further objects will be apparent from the following specification and claims.

Of the drawings which illustrate one embodiment of my invention Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a fragmentary cross sectional view taken along the line 3—3 of Fig. 2.

Referring to the drawings, 1 represents the main feed track along which cars move toward the dump, and 1ª represents the discharge track for receiving the cars after dumping.

2, 2, and 3, 3, are special rails which are preferably steel castings. The wheel-engaging surface of each rail 3 is formed in two sections at an angle to each other, the upper sections 3ª alining with the rails of the feed track 1 and the lower inclined sections 3ᵇ alining with the rails 2, which in turn aline with the rails of the discharge track 1ª. The upper parts of the rails 2 are preferably curved upward so as to form a continuous smooth rail-engaging surface with the lower sections of the rails 3, the rails 2 being connected with the rails 3 by means of bolts. The rails 2 and 3 are preferably provided at 4, 5, and 6 with brackets or pedestals by means of which they can be connected to the framework upon which the dump as a whole is supported. Cross connections between the rails are provided at 7, 8, and 9, each connection consisting of a spacer tube or pipe and a tie-bolt extending through the pipe and through suitable apertures in the rails.

It will be observed that the construction which I have described provides three track sections. The upper of these track sections consists of the parts 1 and 3ª and is horizontal or only slightly inclined. Another of these track sections consists of the parts 1ª and 2, and is also horizontal or only slightly inclined. Between these two sections there is the sharply inclined section 3ᵇ which connects the other two sections. The car to be dumped must first move along the upper horizontal section, then into dumping position on the sharply inclined section, and subsequently along the lower horizontal section away from dumping position.

In order that the car may be retained in its inclined dumping position long enough to permit the contents to be discharged, means are provided for engaging the car and holding it in position on the inclined section. The means shown in the drawings comprises the two horns 10, 10 which are mounted upon the transverse rotatable shaft 11. This shaft is mounted in bearings 12, 12 which are secured to the rails 3, 3. Each of the horns preferably comprises two parts, one of which is a casting keyed or otherwise rigidly connected with the shaft and the other of which is a curved bar of steel or wrought iron riveted to the casting. One of the horns 10 is provided with or has formed as an integral part thereof an arm or counterweight 13. This counterweight serves to normally hold the horns in the position indicated by dotted lines in Fig. 1.

14 is a rock shaft mounted in suitable bearings 15, 15ª secured to the rails 3, 3. At the end of the rock shaft 14 which is adjacent the counterweight I provide a stop or dog 16 which can engage a suitable curved surface 17 of the arm or counterweight 13. A hand lever 18 is secured to the rock shaft 14, preferably at the other end thereof, and by means of this hand lever

the rock shaft can be moved to throw the dog into or out of position to engage the arm 13. It will be clear that when the arm is engaged by the dog, the horns 10, 10, will be stopped in the positions indicated by full lines in Fig. 1, the car thus being held in dumping position. When the dog is moved to release the arm the horns can move downward and permit the car to pass onward along the track. A stop 13ª limits the movement of the arm 13 and of the horns 10, 10. As shown in Fig. 3, the bearing 15ª, which is adjacent the dog, has a stop 19 in the side toward the dog, and the dog is provided with a shoulder 20 adapted to engage the stop. In this way there is provided positive means for limiting the forward movement of the dog. For normally holding the dog in its forward operative position, with the shoulder engaging the stop, I provide a horizontal arm 21 upon which is an adjustable counterweight 22. The arm 21 is secured to the shaft 14 by means of a bracket 23. It will be clear that the counterweight 22 acts to move the dog forward and that it can be moved backward out of operative position only when the operator actuates the lever 18. At the end of the shaft opposite to that on which the counterweighted arm 13 is located I provide a brake wheel 24 around which passes a brake band 25. One end of the brake band 25 is connected to links 26, 26 which are loosely mounted on the rock shaft 14. The other end of the brake band is connected to a lever 27 which is rotatably mounted on the shaft 14. Secured to this lever 27 is a horizontal arm 28 upon which is adjustably mounted a counterweight 29. This counterweight serves to move the lever 27 in the direction to tension the brake band. For lifting the counterweight to release the brake band, there is provided the small rock shaft 30 which is connected by means of the arm 31 and the rod 32 with a hand lever 33 loosely mounted on the rock shaft 14. An arm 34 and a link 35 connect the rock shaft 30 with the end of the weight arm 28. By means of this construction, the operator by moving the hand lever 33 can lift the weight to release the brake.

When a car to be dumped approaches the dumping apparatus, its wheels will first engage the horns 10, 10, which are initially in the position indicated by dotted lines in Fig. 1. The brake will be automatically applied by means of the counterweight 29 and the dog 16 will be held in operative position by means of the counterweight 22. The car, therefore, moves downward into inclined dumping position on the sections 3ᵇ of the rails 3, its downward movement being first resisted and retarded by means of the brake and then stopped by the engagement of the dog 16 with the arm 13. The door of the car can be opened either manually or by any desired mechanism, and after dumping, the car is released by the operator's moving the lever 18 to disengage the dog 16 from the arm 13. The weight of the car then pushes the horns downward out of the path of the wheels and the car is free to move onward. If desired, in order to permit the car to move onward more easily, the operator at the same time that he releases the dog 16 can also loosen the brake. In any event, after the car has been allowed to pass onward, the operator releases the brake and permits the counterweighted arm 13 to return the horns to the initial operative position. The apparatus is then ready for another car.

In my co-pending application for dumping apparatus, Ser. No. 639,306, filed July 19, 1911, I have shown and described a car dumping apparatus in many respects similar to that herein disclosed. However, the apparatus here shown has a number of important features not present in the earlier mechanism. One of the advantages of this present mechanism is that two controlling levers are provided, one for the dog 16 and another for the brake. In the earlier mechanism the brake and the dog were controlled by the same lever, it being on this account impossible to control one of them independently of the other. With the two-lever construction it is possible for the operator to release the dog and by keeping his hand on the other lever tension the brake band just sufficiently to hold the horns against moving upward too soon. It will be observed that the horns must be held in their lower position until after the rear wheels of the car have passed. In the earlier construction it was found necessary to provide a supplemental brake for thus holding the horns. In the present construction this supplemental brake is done away with. Another feature of importance in the present construction is the counterweight 22 for holding the dog 16 in operative position. With the independent controlling lever it would be possible without this counterweight or its equivalent for the operator to carelessly leave the dog in inoperative position as a car entered the dump. Under these conditions the car would not be stopped but would be permitted to move over the dump without its contents being discharged.

The formation of the rails 2, 2, and 3, 3, of cast steel makes it possible for these parts of the track to be more securely supported. It will also be observed that the rails 3, 3, are rigidly secured together and that all of the operative parts of the mechanism except the rock shaft 30, are mounted on these rails. In this way there is provided a self-contained apparatus which can be easily and quickly set up without the necessity for at-

taching a large number of parts to the supporting framework.

What I claim is:

1. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a movable stop for positively limiting the movement of the shaft and the horns in one direction, a lever for regulating the said brake, and a second lever movable independently of the first for moving the said stop into and out of operative position.

2. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a movable stop for positively limiting the movement of the shaft and the horns in one direction, a counter-weight connected for normally applying the brake, a hand lever for regulating the said brake, and a second lever movable independently of the first for moving the said stop into and out of operative position.

3. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a movable stop for positively limiting the movement of the shaft and the horns in one direction, a lever for regulating the said brake, second lever movable independently of the first for moving the said stop out of operative position, and a counter-weight connected for normally holding the stop in its operative position.

4. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a movable stop for positively limiting the movement of the shaft and the horns in one direction, a counter-weight connected for normally applying the brake, a lever for regulating the said brake, a second lever movable independently of the first for moving the said stop out of operative position, and a counter-weight connected for normally holding the stop in its operative position.

5. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a second transverse rock shaft, an arm on the first shaft, a stop on the second shaft adapted to engage the arm to limit the movement of the first shaft and that of the horns, a lever secured to the second rock shaft for moving it to bring the stop into or out of operative position, and a second lever loosely mounted on the said second shaft and operatively connected with the brake.

6. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a movable stop for positively limiting the movement of the shaft and the horns in one direction, a lever for controlling the movement of the said stop into and out of operative position, and a counter-weight connected for normally holding the stop in operative position.

7. In a car dumping apparatus, the combination with approximately horizontal car feed and car discharge tracks at different levels, and a sharply inclined rigidly mounted stationary track connecting the feed and discharge tracks, of a transverse rock shaft, horns secured to the rock shaft and adapted to be swung into and out of the path of the wheels of a car on the sharply inclined track, a brake on the rock shaft for resisting its movement and that of the horns, a second transverse rock shaft, an arm on the first shaft, a stop on the second shaft adapt-

ed to engage the arm to limit the movement of the first shaft and that of the horns, means for limiting the movement of the second shaft to determine the operative position of the stop, a lever secured to the second rock shaft for controlling the movement of the said stop into and out of operative position, and a counter-weight connected for normally holding the stop in operative position.

In testimony whereof I affix my signature, in presence of two witnesses.

GEORGE H. MUELLER.

Witnesses:

RALPH CLOSE,

DUDLEY T. FISHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."