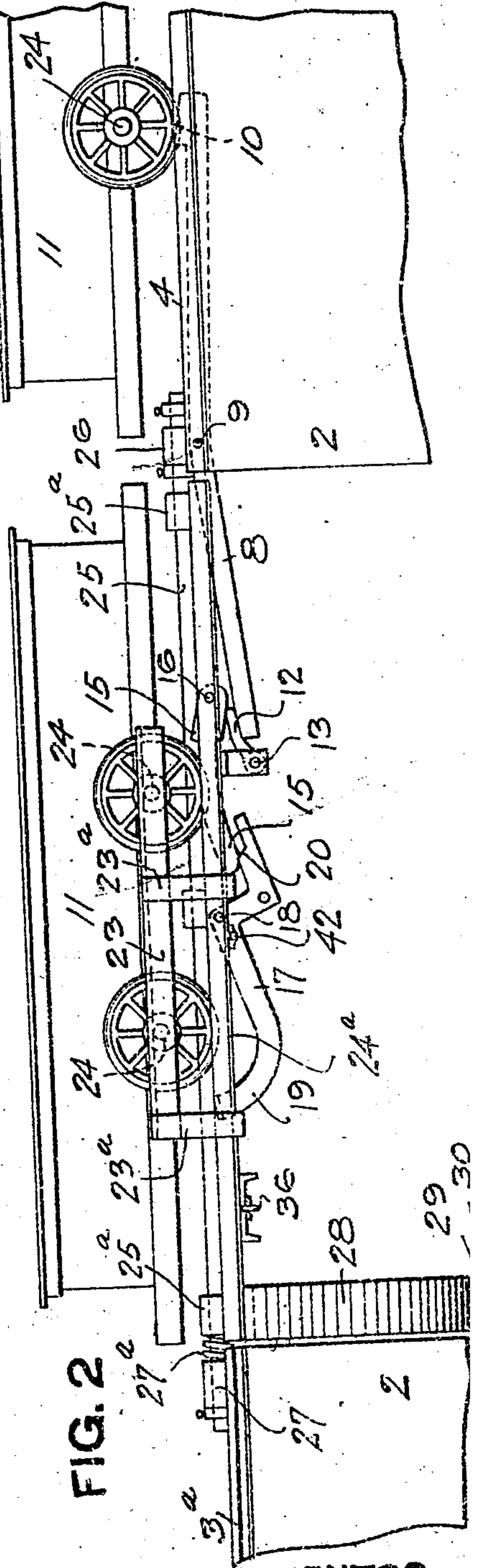
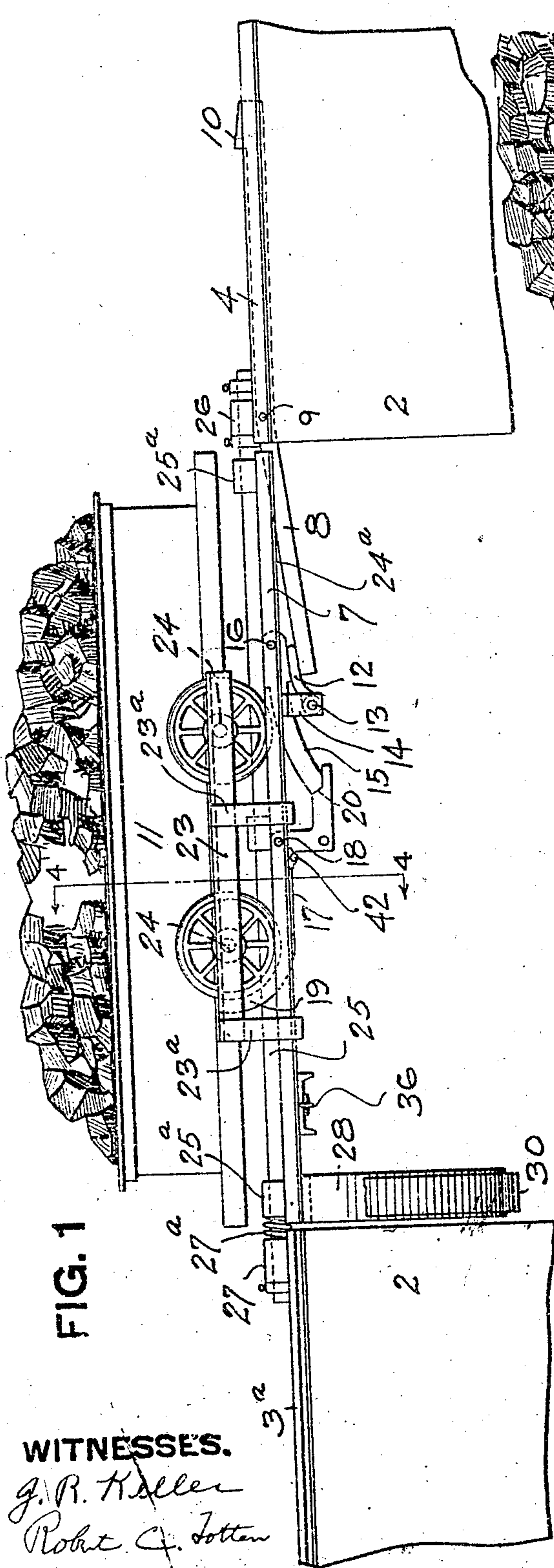


993,731.

S. B. STINE.
DUMPING APPARATUS.
APPLICATION FILED FEB. 28, 1910.

Patented May 30, 1911.

3 SHEETS—SHEET 1.



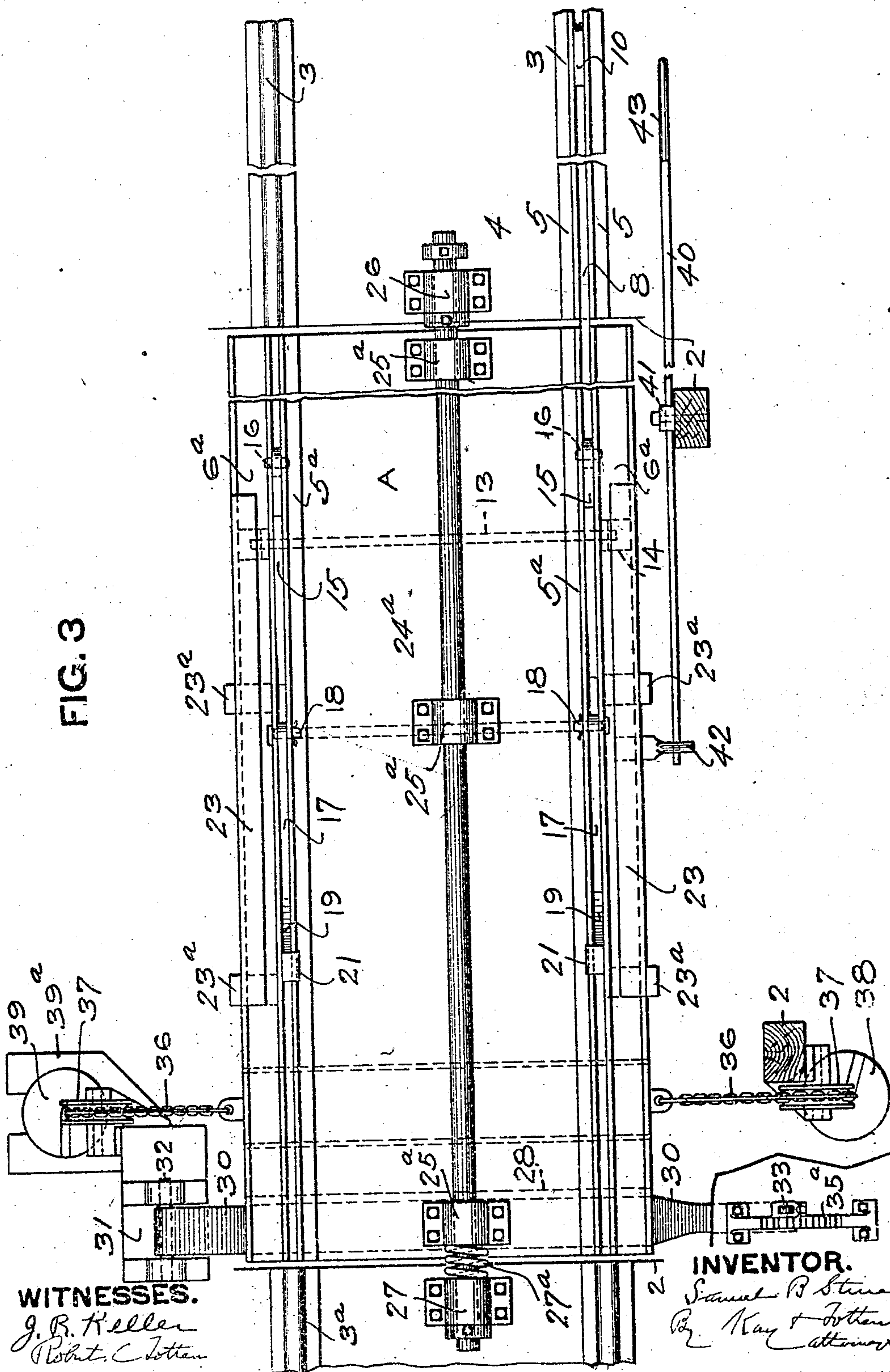
INVENTOR.
Samuel B. Stine
By Mary & Follen
Attorneys

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3 SHEETS—SHEET 2.

36



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3 SHEETS—SHEET 3.

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FIG. 4

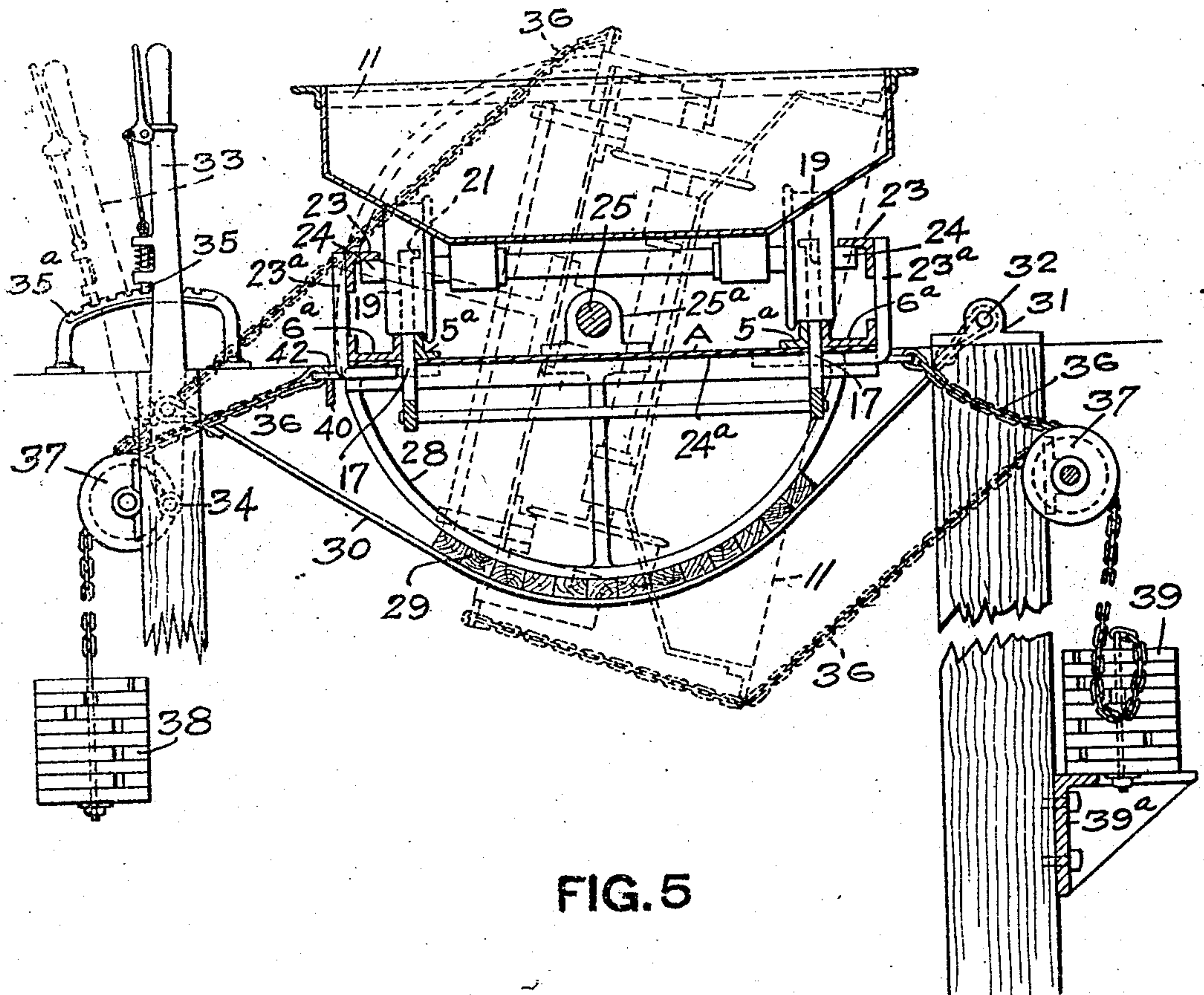
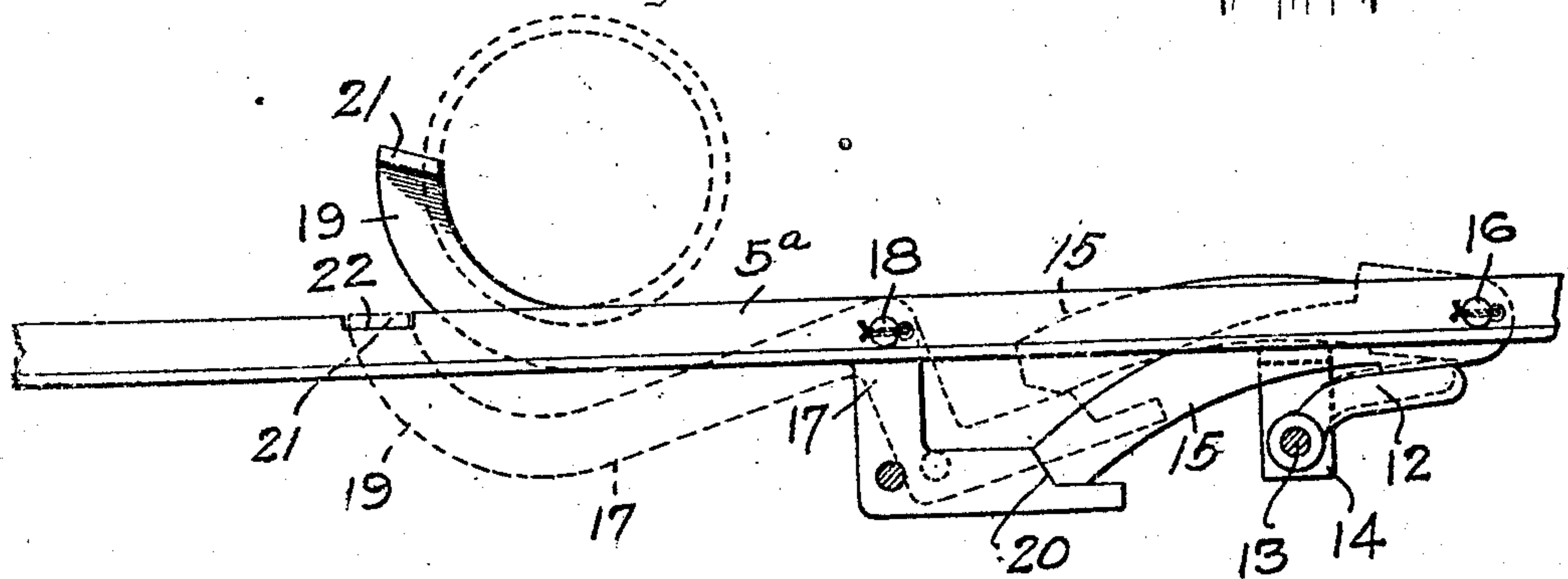


FIG. 5



WITNESSES.
J. R. Keller
Robert K. Totten

INVENTOR.
Samuel B. Stine
By Kay & Totten
attorneys

UNITED STATES PATENT OFFICE.

SAMUEL B. STINE, OF OSCEOLA MILLS, PENNSYLVANIA.

DUMPING APPARATUS.

993,731.

Specification of Letters Patent. Patented May 30, 1911.

Application filed February 28, 1910. Serial No. 546,357.

To all whom it may concern:

Be it known that I, SAMUEL B. STINE, a resident of Osceola Mills, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Improvement in Dumping Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to dumping apparatus, and more especially to what is generally termed a cross-over dump, such as is employed in connection with coal and like tipples.

The object of my invention is to provide a simple and efficient form of cross-over dump either for use as a plain cross-over dump, or a rotary cross-over dump, which will receive the loaded cars, one by one, in succession and support the same during the dumping operation, while at the same time all the parts work automatically so that it will only be required to feed the cars to the dump, the on-coming car acting to release the car just dumped, all as fully hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation partly broken away of my invention showing the car thereon; Fig. 2 is a like view showing the horns lowered to allow of the movement of the car therefrom; Fig. 3 is a plan view; Fig. 4 is a section on the line 4-4 Fig. 1; and Fig. 5 is an enlarged detail of one of the horns.

While my invention is equally applicable for a plain cross-over dump, I have illustrated it in the accompanying drawings as applied to a rotary cross-over dump.

In the drawings the numeral 2 designates the portion of the tipple structure in connection with which my invention is used, which may be of any suitable design.

The tracks 3 lead to the dump and on these tracks the loaded cars are brought from the mine into position to pass onto the dump, and, in order that the cars may pass by their own momentum onto the dump, said track is slightly inclined. The stationary track-section 4 of the dump is formed of the angle-bars 5 which are carried by the frame 2. The trip-rail or lever 8 is located in the space between the angles 5, and said lever is fulcrumed therein by means of the pin 9. At the rear end of the lever 8 is the inclined projection 10 which normally extends above the upper edges of the angles 5

as indicated in Fig. 1; and in position to be depressed by treads of the front wheels of the car 11 as it passes onto the dump. The forward end of the lever 8 beyond the fulcrum-pin 9 inclines downwardly to a slight extent and the extreme forward end of the lever 8 engages one of the lugs 12 on the shaft 13 which extends transversely of the dump and is supported in the journal boxes 14 which are riveted or otherwise secured to the bottom of the dump frame 7. The lugs 12 engage the locking-levers 15 which are pivoted at 16 to the tracks of the dump-section A formed of the angle 5^a and channel 6^a, and said locking-levers are located in the space between said angle and channel. The forward ends of the locking-levers 15 are adapted to engage the horn-levers 17 which are pivoted at 18 in the space between the angle 5^a and channel 6^a. The forward ends of the horn-levers 17 are provided with the horns 19 which project upward in position indicated in Fig. 1, where they are engaged by the front wheels of the car 11. In this position of the horns the locking-levers engage at their forward ends the shoulders 20 of the horn-levers, and lock or hold the horn-levers up in position as indicated in Fig. 1. When, however, the locking-levers are released as in the manner hereinafter set forth, the horn-levers drop of their own weight and bring the horns into the position indicated in dotted lines Fig. 5, where the lugs 21 on said horns engage the seats 22 formed in the angle 5 and channel 6^a to prevent the upper ends of the horns from dropping below the angle-bars.

The guards 23 are carried by the uprights 23^a on the dump-frame A, and said guards are composed of angles, the upper flanges of which are engaged by the outer ends of the axles 24 of the cars so as to prevent the car from falling from the dump during the dumping operation.

The numeral 25 designates the axle of the dump-frame A which is set slightly off center according to the style of car to be used. This axle 25 is journaled in boxes 25^a secured to the bottom plate 24^a of the dump, and the extreme ends of said axle 25 are journaled in suitable boxes 26 and 27 on the tipple-frame. Interposed between the bearings 25^a and 27 is the spring 27^a to take the shock off the dump when the car comes in contact with the horns.

The brake-frame 28 which may be formed of cast iron or other suitable material, is constructed to rotate from the center of the axle 25, and the brake-blocks 29 are secured to the brake-band 30. This brake-band 30 is secured to the casting 31 by means of the pin 32. The opposite end of the brake-band 30 is connected up to the brake-lever 33. This lever 33 is fulcrumed at 34, said lever being provided with a spring latch 35 to lock the lever to the notched quadrant 35^a in applying the brake.

As the car is supported on the rotary dump by means of the axle 25, all that is necessary is to loosen or tighten the brake-band. As the dump is mounted off center it will be readily seen that the load of coal has been discharged from the car. The chains 36 are secured to the dump and said chains pass over the sheaves 37 and carry the weights 38 and 39. The weight 39 is supported by the shelf 39^a so as to act as a driving weight after the car goes around about two-thirds of its path. The chain on this weight is then taken up, and the momentum lifts this weight over the sheave wheel into dumping position. On returning, the weight will return to its shelf, and the other weight will return the car to normal position. These weights act to return the dump to its original position after the coal has been discharged from the car. It is apparent, however, that other means may be employed to effect the dumping, and I do not limit myself to the construction described and illustrated.

Pivoted to one side of the frame is the foot-lever 40 fulcrumed at 41, and the outer end of said lever is adapted to engage the lug 42 on the dump. The inner end of the lever 40 has the handle 43, and it is apparent by pressing down on the handle 43, the forward end of the lever is raised, and through its engagement with the lug 42 the pressure exerted starts the dump to rotate. This insures the dumping of the car in case the car has been loaded to a greater extent on the opposite side than the dumping side, so that it will not start rotation of its own accord when the brake is released.

The operation of my improved dump is as follows: Let it be assumed that the car 11 in Fig. 2 has been dumped and relieved of its load, and that a loaded car is in position to pass onto the dump. This loaded car when released from the train standing on the track 3 will move onto the dump and will first pass onto the angle-bars 5 forming the track 4. The treads of the front wheels of the loaded car will come in contact with the projection 10 on the trip-rail 8, and will lower said projection together with the rear end of the trip-rail whereupon the forward end of the trip-rail will be raised and the locking-levers 15 operated so as to release the

horn-levers 17, and said horn-levers will drop to the position indicated in Fig. 2. This releases the empty car which passes from the dump onto the track 3^a. When the front wheels of the loaded car reach the locking-levers 15 said locking-levers will be depressed and by the pressure exerted on the horn-levers 17, said horn-levers will be raised and locked in their upright position so as to be engaged by the front wheels of the loaded car. The loaded car is now in position for dumping, and this is accomplished by the operator standing with his hand upon the lever 33 which he operates to release the brake, and the dump will rotate due to the fact of its being mounted off center, and the weight of the coal in the car tending to throw it over to the dumping side. If, however, there should be any hitch in the movement of the dump due to the car being overloaded on the side opposite to the dumping side, the operator simply applies pressure to the handle 43 and operates the lever 40, which by its engagement with the lug 42 on the dump, starts the dump, and it then rotates without further assistance. After the load has been discharged from the car, the weights 38 and 39 will bring the car back to its normal position. The brake is thrown on after the empty car has passed from the dump to prevent the oncoming car from dumping before it has reached the horns.

By my invention the cars can be dropped over continuously when the dump is set on a slightly falling grade, and as the dump is purely automatic, the only labor that is necessary is to uncouple each car and allow it to run onto the dump. If braking is necessary the same can be readily controlled by the use of the brake-lever 33. By the use of my improved dump breakage of coal is reduced to a minimum, and with the chutes properly arranged, the coal, instead of being thrown out of the car, slides out into the chute without breaking to any extent the most fragile coal. This relieves the strain on the cars, as there are no jars or jolts to loosen the bolts or axles, as well as other parts of the apparatus.

What I claim is:

1. In dumping apparatus, the combination with a suitable frame, of a dumping section, stops carried thereby movable in a vertical plane, a pivotally mounted locking trip-lever adapted to engage said stops, means operated by the oncoming car for releasing said lever, a portion of said lever projecting above the track when released in position to be depressed by the oncoming car.

2. In dumping apparatus, the combination with a suitable frame, of a dumping section, pivotally mounted stops thereon swinging in a vertical plane having tail portions, locking trip-levers adapted to engage

said tail portions, and means operated by the oncoming car for releasing said locking levers, said locking-levers when released being in the path of the oncoming car.

5 3. In dumping apparatus, the combination with a suitable frame, of a dumping section, pivotally mounted stops thereon having tail pieces, said tail pieces having shoulders, locking trip levers engaging said shoulders, and means operated by the oncoming
10 car for releasing said locking levers, portions of said locking levers projecting up in the path of the oncoming car when released.

15 4. In dumping apparatus, the combination with a suitable frame, of a dumping section, a trip-rail pivoted on said frame having a portion projecting up in the path of the oncoming car, a shaft extending
20 transversely of said dumping section, projections on said shaft, said trip-rail engaging one of said projections, locking-levers in the path of said projections, and vertically movable stops engaged by the forward ends
25 of said locking levers.

5. In dumping apparatus, the combination with a suitable frame, of a dumping section, stops carried thereby movable in a vertical plane, supports on said dumping
30 section to receive the outer ends of said stops, and means operated by the oncoming car for raising and lowering said stops.

35 6. In dumping apparatus, the combination with a suitable frame, of a rotary dumping section rotatable on a longitudinal axis, stops carried thereby, and means operated

by the oncoming car for throwing said stops out of the way.

7. In dumping apparatus, the combination with a suitable frame, of a counter- 40 balanced rotary dumping section mounted off center, movable stops carried thereby, and means operated by the oncoming car for operating said stops.

8. In dumping apparatus, the combination 45 with a suitable frame, of a counter-balanced, rotary dump section mounted off center, movable stops on said rotary dump section, means operated by the oncoming car for operating said stops, and a tipping 50 lever adapted to engage said dump.

9. In dumping apparatus, the combination with a suitable frame, of a counter- 55 balanced rotary dump section mounted off center, movable stops on said rotary dump section, means operated by the oncoming car for operating said stops, a tipping lever mounted alongside of said dump, and a projection on said dump adapted to be engaged
60 thereby.

10. In dumping apparatus, the combination with a suitable frame, of a rotary dump- 65 section, weights connected to opposite sides thereof, and a support for one of said weights.

In testimony whereof, I, the said SAMUEL B. STINE, have hereunto set my hand.

SAMUEL B. STINE.

Witnesses:

EDWARD HANEY,
RHODA RHODY.