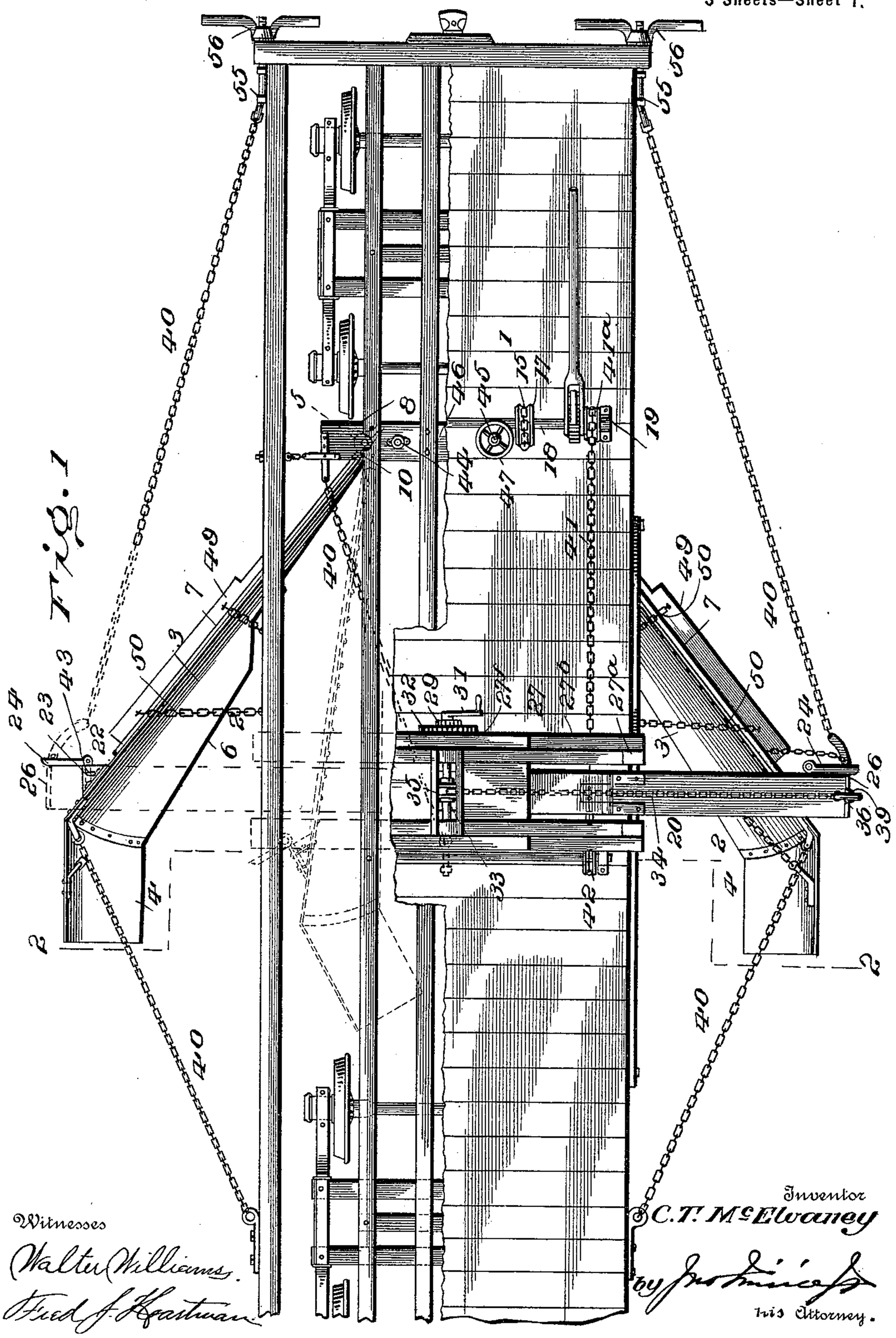
No. 631,654. Patented Aug. 22, 1899.

C. T. McELVANEY.

BALLAST SCRAPER.

(Application filed Nov. 10, 1898.)

(No Model.) 3 Sheets—Sheet 1.



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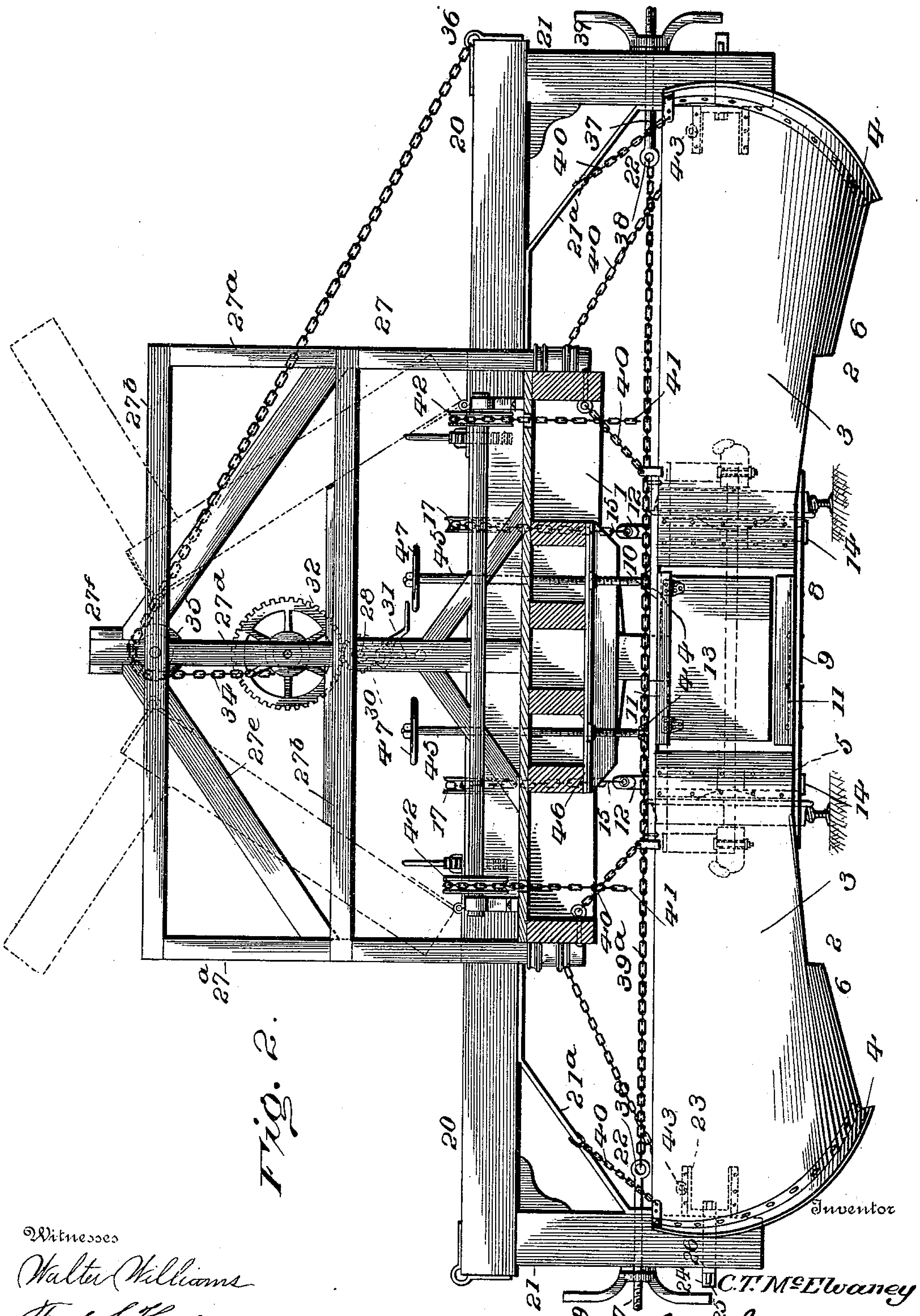

Fig. 2.

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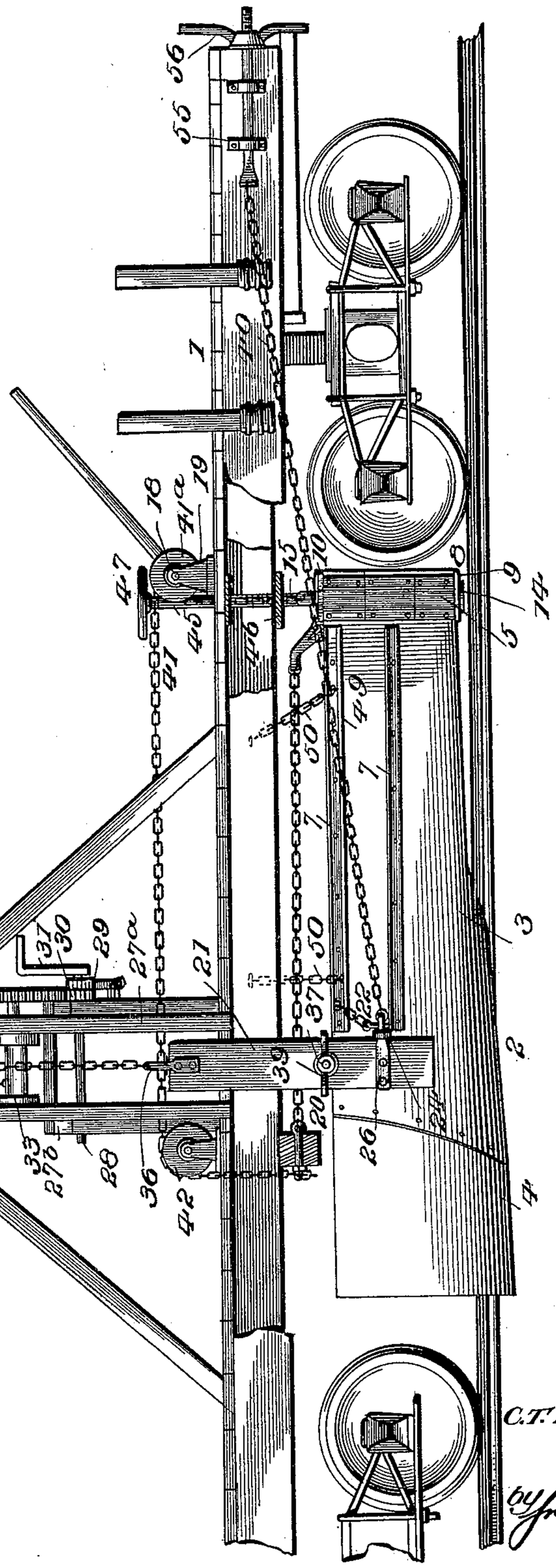
Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES T. McELVANEY, OF DENISON, TEXAS.

BALLAST-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 631,654, dated August 22, 1899.

Application filed November 10, 1898. Serial No. 696,083. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. McELVANEY, a citizen of the United States, residing at Denison, in the county of Grayson and State of Texas, have invented new and useful Improvements in Ballast-Scrapers, of which the following is a specification.

The object of my invention is to provide a railway car or truck with a pair of scrapers arranged on each side of the car, whereby the dirt or gravel, which has been previously dumped along each side of the rails, will be readily and evenly distributed between said rails.

A further object of my invention is to provide an apparatus for leveling ballast between the tracks, whereby the dirt, gravel, or the like is spread from either or both sides of the rails, means for adjusting the parts for leveling different grades, and means for placing the parts under the car when the apparatus is not in use.

Many other features of my invention will appear further on in the description and be particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of my invention, showing a part of the car broken away. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is a side elevation with the parts broken away.

The same numerals refer to like parts in all the figures.

1 represents a flat car of usual construction to which my improvements are applied. To the under side of the car I arrange two scrapers 2, which are of peculiar construction and will now be described in detail. Each scraper is made up of a body portion 3, which is concavo-convex in cross-section and has at its outer end a scoop-like section 4, arranged so as to be in a parallel plane with the line of the car. At the inner or reduced ends of the scrapers I secure straps 5, through which is passed the bolt which forms the pivot, whereby a swinging motion is provided. The upper sides of the scrapers are straight, but the lower sides are cut at an angle, as shown at 6, and at about the center of the lower angular portion a step is formed, so as to accommodate itself to the tracks. In order to strengthen the scrapers, I secure to the outer face of the same two pieces of angle-iron, as shown at 7. The scrapers are mounted in a frame 8, composed of a lower bar 9 and an upper bar 10, each being braced by angle-pieces 11. Hinged to the upper angle-piece 11 is a swinging apron 13, the object of which will be hereinafter explained. Pivot-pins 12 pass through the ends of the bars and the straps and pivotally secure the scrapers to the frame. Each pin has a head 14 and the upper ends thereof a perforation in which a section of a lifting-chain 15 is secured. The chain 15 passes up through the car-floor and thence over a windlass 17, which is on a cross-shaft 18, mounted in bearings 19 on the car-bed.

Hinged one on each side of the car and in rear of the scoop-sections are two L-shaped arms 20, the short arm 21 of which is locked to the respective scraper, as at 22. A piece of channel-iron 23 is attached to the outer side of the scraper and has riveted to it an outwardly-projecting arm 24, having a slot 25 in the outer end. A short arm 26 is riveted to the arm 21 and is designed to pass through the slot in the arm 24, after which a pin is passed through a hole or perforation in the arm 26, thus locking the scrapers to the L-shaped sections. Each section is braced, as at 21^a.

A frame 27 is built on the car-bed, the same comprising four uprights 27^a and cross-sills 27^b. Central uprights 27^d and inclined braces 27^e, together with the connection-bars 27^f, serve to hold the frame rigid.

Mounted in suitable bearings in the frame is a shaft 28, carrying a ratchet 29, pinion 30, and a handle 31 on the outer end. The pinion 30 meshes with a gear 32, secured to a shaft which is mounted in the frame and has securely locked to it and between the frame-sections a windlass 33. A chain 34 is attached to the windlass and then passes up and around a pulley 35 to the L-shaped sections, where it is secured, as at 36. For convenience I use only one chain and pulley, using it first on one side and then on the other.

When the parts are in operation, as shown in the drawings, it is essential that the scrapers should be held together, at the same time permitting a little adjustment should it be required. I accomplish this in the following manner: In the ends of the sections 21 I

pass a threaded rod 37, in the inner end having an eye 38 and a nut 39 working on the threads against the sections 21. A chain 39ª is secured to the inner end of the adjusting-screws. It will be seen that I have provided a positive connection between the two scrapers, and yet they have a certain movement up or down should any obstruction come in the way while the parts are in operation. That the mechanism may be further braced and to prevent too much pull in either direction, I arrange a series of chains, as at 40. Near the ends of the shaft 18 I arrange a windlass 41ª, over which pass chains 41, said chains passing over guide-pulleys 42 and thence through the car-bed, where they are ready to be attached to a point 43, so as to raise the scrapers up and out of the way when not in operation.

On the upper side of the upper bar 10 are two sockets 44, in which fit adjusting-screws 45. The screws 45 are mounted in the car-bed and a plate 46 secured to the under side of the sills of the car. The upper end of each screw has mounted thereon a hand-wheel 47.

In order to prevent any dirt or gravel, as the case may be, from passing over the scrapers, I arrange on the outside and near the upper part thereof aprons 49, each of which is supported by chains 50.

The operation is as follows: The sections are first lowered to the position as shown in full lines in Fig. 2, after which the scrapers are adjusted and the two locked together by passing the locking-pin in the perforation in the bar secured to the L-shaped sections. This being accomplished the screw-rods 37 and chain connecting the same are passed through the perforation in the section 21. Then the binding-nut 39 is applied, drawing the parts together. The screw-rods 45 are now brought down into the sockets 44 on the upper part of the frame, and the desired adjustment of the front of the scrapers is obtained. This being done the chains 40 are hooked to their proper places and the car is started in the direction of the arrow. The dirt or gravel is scooped from the sides of the rails and spread between the same, the surplus passing out and under the swinging gate 13.

If it is desired to transport the car from one place to another, the binding-nuts 39 are released, the locking-pin 26ª withdrawn, and the L-shaped sections raised (to the position shown in dotted lines in Fig. 2) by means of the chain and windlass. The scrapers are now pushed under the car, the screw-rods 45 raised, and the end of the chain 41 is connected at 43, and the shaft carrying the windlass is revolved by means of the ratchet-levers, thus raising the scrapers up under the car and out of the way.

One of the brace-chains 40, which is connected to the outer side of the scrapers, is provided at the outer end thereof with a screw, the same working in guides 55 and having a nut 56 working on the outer end. The purpose of this connection is to tighten up the various braces after the parts are in position for operation.

It will be seen from the foregoing description that I have provided a simple and efficient means for spreading dirt or gravel between the rails.

I am aware that many minor changes may be made without departing from the spirit of my invention. For instance, I may use two chains for raising the L-shaped sections, whereas, for convenience, I now only employ one. Instead of raising the parts as described I may employ a series of levers or pneumatic devices. In fact any well-known mechanism may be employed for this purpose.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a railway ballast-scraper, the body of a car, provided with scrapers on both sides of the same, said scrapers being connected together at their front ends, by a frame, chains for supporting said frame, and a pair of adjusting-screws fitting in sockets on the upper side thereof, said screws limiting the upward movement of the scrapers, substantially as and for the purpose set forth.

2. A railway-car body having scrapers secured to each side thereof, the rear of said scrapers being adjustably supported by means of chains which have their lower ends connected to the scrapers, and secured to and are wound around a windlass on the top of the car, screws limiting the upward movement of the scrapers, a swinging frame hinged to each side of the car-body, capable of being locked to the scrapers, and a connecting mechanism, connecting the frames, substantially as shown and described.

3. A railway-car body having scrapers on each side thereof, said scrapers consisting of a concavo-convex body portion, the upper side thereof being on a parallel plane with the upper surface of the car, and the lower edge being cut at an angle thereto, said lower edge having a step cut therein, and a front scoop-section secured to the front end of the body portion, said scoop-section being arranged at an angle to the body portion, and in a parallel plane to the car-body, substantially as and for the purpose set forth.

4. The combination with a railroad-car, of scrapers pivotally secured to a frame beneath the car, and supported by any suitable supporting mechanism, swinging brace-sections hinged to the car, a screw and a chain connection connecting said swinging frame and scrapers to each other, a hoisting apparatus for raising said swinging frames, and a hoisting apparatus for raising the scrapers up and under the car-bed, substantially as and for the purpose set forth.

5. The combination with a railroad-car, of a pair of scrapers pivotally connected together, a pair of screws operating on the up-

per side of the frame connecting the scrapers, and means for supporting the same, substantially as and for the purposes set forth.

6. In a ballast-scraper, the body of the car having scrapers located one on each side and under the same, said scrapers diverging from each other toward the outer sides of the car, the rear ends of said scrapers being adjusted by a chain and windlass, and limited in their upward movement by a pair of adjusting-screws, the front ends of the screws being held to side swinging frames hinged to each side of the car, and a frame mounted on the top of the car, to accommodate the swinging frames when the car is being transported, substantially as shown and described.

7. In a ballast-scraper the combination of the car-body, having a pair of concavo-convex scrapers mounted under said body, means for adjusting the same, a pair of frames hinged to the sides of the car-body, and a locking device consisting of a section of channel-iron secured to the outer sides of the scrapers, having an outwardly-projecting bar, provided with a perforation, each of the swinging frames having a rearwardly-projecting bar, engaging the aforesaid perforation, and a pin passed through a vertical hole in the bar projecting from the swinging frame, substantially as and for the purpose set forth.

8. A ballast-scraper, concavo-convex in cross-section, pivoted at the inner end, a scoop-section at the outer end, and an apron extending along the outer side of the body portion, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES T. McELVANEY.

Witnesses:
THOMAS FRANCIS FOLEY,
EDMOND FRANCIS O'HERIN.