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LE GRAND KNIFFEN.

LOADING APPARATUS FOR WAGONS AND THE LIKE.

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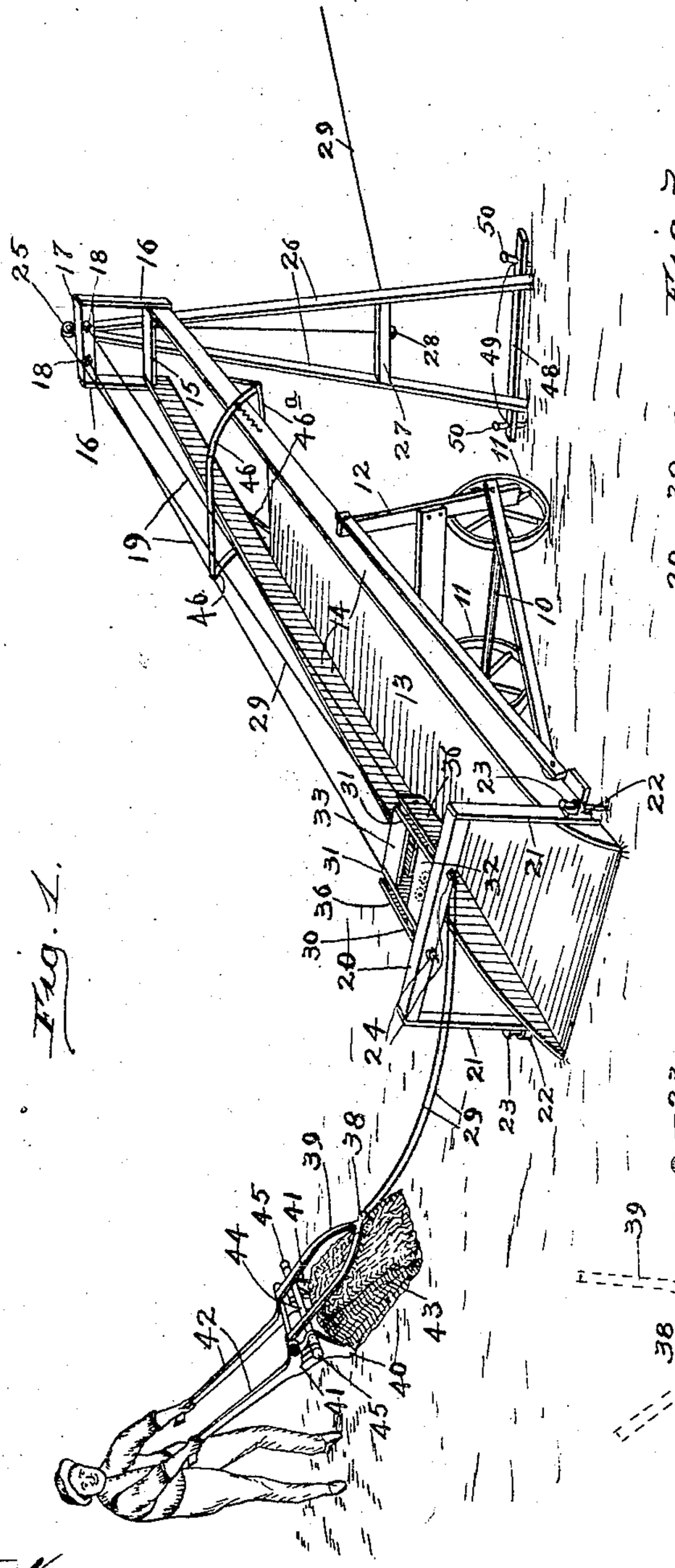

Fig. 1.

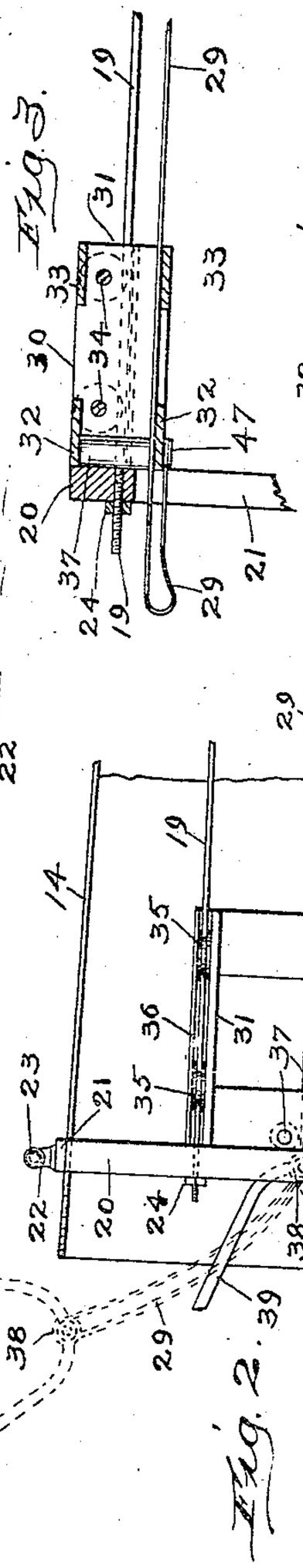

Fig. 3.

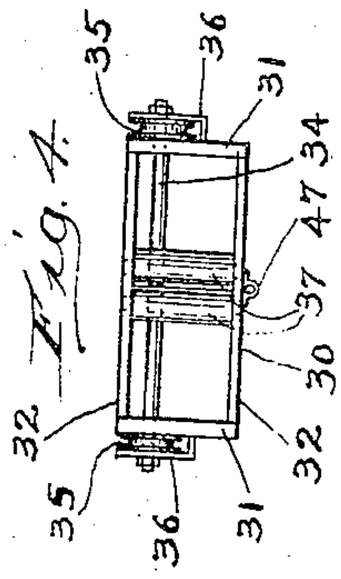

Fig. 4.

Fig. 2.

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LOADING APPARATUS FOR WAGONS AND THE LIKE.

No. 894,331. Specification of Letters Patent. Patented July 28, 1908.

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To all whom it may concern:

Be it known that I, LE GRAND KNIFFEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Loading Apparatus for Wagons and the Like, of which the following is a specification.

This invention relates to that class of apparatuses employed for loading wagon-boxes or bodies and other elevated receptacles from the ground, or usually a point lower than the receptacle to be loaded with manure, gravel, sand, grain, ore, earth, and the like, which consists, when in operation, of a wheeled and inclined chute or platform, one end of which rests on the ground and the other end is extended above the wagon-body or receptacle to be loaded, and in which the material to be loaded is moved by a scraper or carrier of the proper construction through the instrumentality of a cable or rope along the floor of the inclined chute from the ground, and dumped into the receptacle over the upper end of the chute or platform.

Heretofore, in using loaders of the above-named general type, it has been necessary to place the lower end of the platform or chute near the pile of manure or other material to be loaded into the wagon, and in the operation of loading the fork, carrier or scoop would have to be manipulated substantially directly to the rear of the lower end of the chute, or approximately in alinement therewith, in order that the carrier or scoop, when loaded, could be drawn onto the chute and up the same. In other words, the scoop, fork or carrier could not be loaded at any considerable distance from either side of the chute and then be properly delivered thereto so as to ascend the same, thus necessitating frequent changes in the position of the lower end of the chute.

The principal object of my present invention is to so construct the apparatus that the carrier for the material may be manipulated to receive its load at either side or directly in rear of the chute, and after being so loaded will be drawn by means of a draft-rope or cable to the lower end of the chute when it will be caused to ascend the same to near the upper portion where it will automatically dump its load into a wagon-body or other suitable receptacle.

The invention consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

In the accompanying drawing, which serves to illustrate the invention—Figure 1 is a perspective view of a loading apparatus embodying the invention, showing the carrier in the act of gathering its load at one side of the apparatus and the parts in position ready for conveying the carrier up the chute; Fig. 2 is a plan view of the lower portion of the chute or platform, showing by dotted lines a portion of the carrier in the act of approaching the chute from both sides thereof, and illustrating by continuous lines the position the bail of the carrier will occupy in beginning its progress upwardly on the chute; Fig. 3 is a cross-sectional view of the carrier controller or truck and a part of the means for supporting the same at the lower end of the chute; and Fig. 4 is a rear end view of the carrier controller or truck.

Like numerals of reference, refer to corresponding parts throughout the different views of the drawings.

The truck or carriage of the apparatus consists of an axle 10, on or near each end of which is mounted a wheel 11, of any desired construction, and two triangular upright frames, one of which is located near each end of the axle so as to be in parallelism with one another. Mounted between the upper portions of the upright members 12 of said triangular frames in any suitable manner is a chute or platform, which consists of a floor 13 and side pieces 14 which are secured to the side edges of the floor and extend some distance above the upper surface thereof, as shown in Fig. 1 of the drawing. The upper ends of the side pieces 14 of the chute are projected some distance beyond the upper end of the floor 13 and are secured together by means of a cross-piece 15 at their upper portions.

Secured to the upper portion of the chute is an upwardly extending frame, which consists of upright side pieces 16 and a cross-piece 17 uniting them at their upper portions. This cross-piece is provided with two spaced apart openings 18 for the reception and retention of the upper ends of two parallel wires, cables or ropes 19, which have their lower ends extended through suitable openings in a cross-piece 20 which connects the upper portion of two upright members 21, which are secured at their lower ends to the lower portion of the sides 14 of the chute,

and which upright members and the cross-piece 20 constitute the lower supporting-frame for the cables, ropes or tracks 19, which are to be used for the purpose to be presently explained. Each of the uprights 21 is provided near its lower end with an apertured bracket 22 to receive a spike 23 which may be driven into the ground in order to firmly secure the lower end of the chute in position.

The upper and lower ends of the rods or track pieces 19 may be secured to the cross-pieces 17 and 20, respectively, by means of nuts 24 screwed thereon, or otherwise. The cross-piece 17 of the upper frame is provided at about its middle with a pulley 25 and may have means to engage the upper ends of uprights 26 used for supporting the upper end of the chute so that a wagon may be driven under the same. The uprights 26 are preferably downwardly divergent and have on their lower portions a cross-piece 27 on which is journaled a pulley 28 over which the draft-cable or rope 29 for the fork, scoop or carrier may pass.

Mounted on the track pieces 19, which may be made of any suitable material, is a carrier controller which is designated as a whole by the numeral 30, and consists of two side pieces 31 which are connected together near their ends by means of cross-pieces 32 and 33. Journaled in the side pieces 31 near their ends are axles 34 which have on each of their ends a grooved pulley or wheel 35 to travel on the track pieces 19. Secured on the axles 34 outwardly from the wheels 35 and at each of the ends of the axles is a keeper 36 each of which is inturned at its lower edge to project under the wheels so as to hold the controller in position on the track pieces 19, as will be apparent. Vertically journaled at about the middle of the cross-pieces 32 are two spaced apart rollers or pulleys 37 between which the draft-cable or rope 29 is extended. This cable passes around a pulley 38 on the bail of the carrier 39 which carrier is indicated as a whole by the reference numeral 40 and may be of the ordinary or any preferred construction, but in the present instance I have shown it as having two upright side pieces 41 provided with handles 42 and having a scoop 43 to collect the load. The bail 39 of the carrier is pivoted at its rear end to the side pieces 41, and said side pieces are connected together by means of a rod 44 which has projecting ends 45 on each side of the side pieces 41 to co-act with tripping levers 46 which are pivotally secured to pendent brackets 46^a on the sides of the chute near the upper end of the floor thereof and are used for restricting the upward movement of the carrier and for causing it to dump its load when it shall have passed over the upper end of the chute floor.

From the foregoing and by reference to the drawing it will be understood and readily seen that the chute may be wheeled on its truck or carriage to the desired position near the material to be loaded when it may be supported by means of the uprights 26 at the proper inclination and its lower end firmly secured to the ground by means of the spikes 23 passing through the openings in the brackets 22 on the uprights of the lower supporting-frame for the track-pieces, and that the carrier controller 30 will be movably held in position on the track pieces 19, yet in such a manner, by reason of the keepers 36, that its wheels will be kept on said tracks in the movement of the controller. The lower end of the draft-cable 29 is secured to the lower portion of the controller 30, and usually to an eye 47 fixed to the lower portion of one of the cross-pieces 32 of the controller, and said cable passes around the pulley 38 on the bail 39 of the carrier and then between the rollers 37 of the controller and then over the pulley 25 on the upper supporting-frame for the track pieces, then over a pulley 28 on the cross-piece 27 of the uprights 26 and may have its other end secured to a draft appliance, such as a swingletree, to which a horse is hitched. By this arrangement, it is apparent that the carrier may be manipulated at either side of the apparatus by means of the operator until it is loaded, when by applying draft thereto through the draft-rope or cable 29 it will be drawn to the lower end of the chute until the front portion of the bail 39 strikes the pulleys 37 between which the cable 29 passes, or until the bail strikes the lower portion of the controller, when the carrier and controller will be drawn upwardly on the chute until the projections 45 on the carrier strike the levers 46, which will restrict its further upward movement and cause it to tilt and dump its load, when by slackening the draft-cable the carrier and chute will be returned, by reason of their gravity, to the lower end of the apparatus, when the same operation may be repeated from either side of the apparatus, or at the rear thereof, as is manifest.

In order to provide means for securely holding the chute in position on the ground, I may sometimes provide the lower ends of the uprights 26 with a cross-piece 48 which is extended on both sides of the members 26 and has at each of said extensions an opening 49 for the reception of spikes 50 which may be driven into the ground. By this arrangement it will be understood that the chute or apparatus can be anchored at four different points, that is, by means of the spikes 23 at the lower end of the chute and by means of the spikes 50 at the lower ends of the uprights 26 which support the upper end of the chute.

It will be evident from the above description that the apparatus is susceptible of considerable modification without material de-

parture from the principles and spirit of the invention, and for this reason I do not desire to be understood as limiting myself to the precise form and arrangement of the several parts of the device as herein set forth in carrying out my invention in practice.

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

1. The combination with an inclined chute, of a track supported thereon, a carrier adapted to travel on the chute and having a forwardly extending pivoted bail, a controller for the carrier adapted to travel on the track, a pulley carried by the controller, means at the lower end of the track to stop the rearward movement of the controller, and a draft-rope longitudinally extended over the chute and engaging the bail of the carrier and the said pulley, whereby when draft is applied to the rope the carrier may be caused to move from one side of the chute to the lower end thereof and its bail to strike the controller.

2. The combination with an inclined chute, of a track supported thereon, a carrier adapted to travel on the chute and having a forwardly extending pivoted bail, a controller for the carrier adapted to travel on the track, a pair of pulleys carried by the controller, means at the lower end of the track to stop the rearward movement of the controller, and a draft-rope longitudinally extended over the chute and engaging the bail of the carrier and one of the said pulleys, whereby when draft is applied to the rope the carrier may be caused to move from either side of the chute to the lower end thereof and its bail to strike the controller.

3. The combination with a chute adapted to be placed in an inclined position, of a track supported above the chute and near the ends thereof, a carrier-controller to travel on the track and carrying a pulley, means to stop and normally hold the controller at the lower end of the track, a carrier adapted to travel on the chute and comprising a material-supporting-body portion and a bail pivotally secured at its rear ends, a draft-rope secured at one of its ends to the controller and loosely engaging the front portion of the carrier-bail and the pulley on the controller, whereby when draft is applied to said rope the carrier will be caused to move from one side of the chute to the lower or rear end thereof and its bail to strike the controller.

4. The combination with an inclinable chute, of a track supported thereon, a carrier adapted to travel on the chute, a bail pivotally secured at its rear end to the carrier and having on its front portion a pulley, a controller for the carrier adapted to travel on the track and having a guide for a draft-rope, means at the lower end of the track to stop the rearward movement of the controller, and a draft-rope longitudinally extended over the chute and loosely engaging the guide of the controller and the pulley on the carrier-bail and having one of its ends secured to the controller.

5. The combination with an inclinable chute, of a track comprising two parallel pieces supported above the chute and near the ends thereof, a carrier adapted to travel on the chute, a bail pivotally secured at its rear ends to the carrier-body and having a pulley on its front portion, a truck-controller for the carrier mounted to travel on the track-pieces and provided with a guide for a draft-rope, means at the lower end of the track to stop the rearward movement of the controller, and a draft-rope longitudinally extended over the chute and loosely engaging the guide of the controller and the pulley on the bail and having one of its ends secured to the controller.

6. The combination with an inclinable chute, of an upright frame at each of its ends, track-pieces secured at each of their ends to said supporting-frames, a carrier adapted to travel on the chute, a bail pivotally secured at its rear ends to the body of the carrier and having a pulley journaled on its front portion, a controller for the carrier adapted to travel on the track-pieces and provided with a guide for a draft-rope, the said rope longitudinally extended over the chute and loosely engaging the guide of the controller and the pulley on the carrier bail and having one of its ends secured to the controller.

7. The combination with an inclinable chute, of an upright frame at each of its ends, a frame at the lower end of the chute having at each of its sides an apertured bracket for the reception of a spike, parallel track-pieces secured at each of their ends to said supporting-frame, a carrier adapted to travel on the chute, a bail pivotally secured at its rear ends to the body of the carrier and having a pulley on its front portion, a controller for the carrier adapted to travel on the track-pieces and provided with a guide for a draft-rope, the said controller consisting of a frame, wheels journaled on each side of the frame, a keeper mounted on each side of the frame externally of the wheels and each having an inwardly turned portion below the wheels, and a draft-rope longitudinally extended over the chute and loosely engaging the guide of the controller and the pulley on the carrier-bail and having one of its ends secured to the controller.

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