

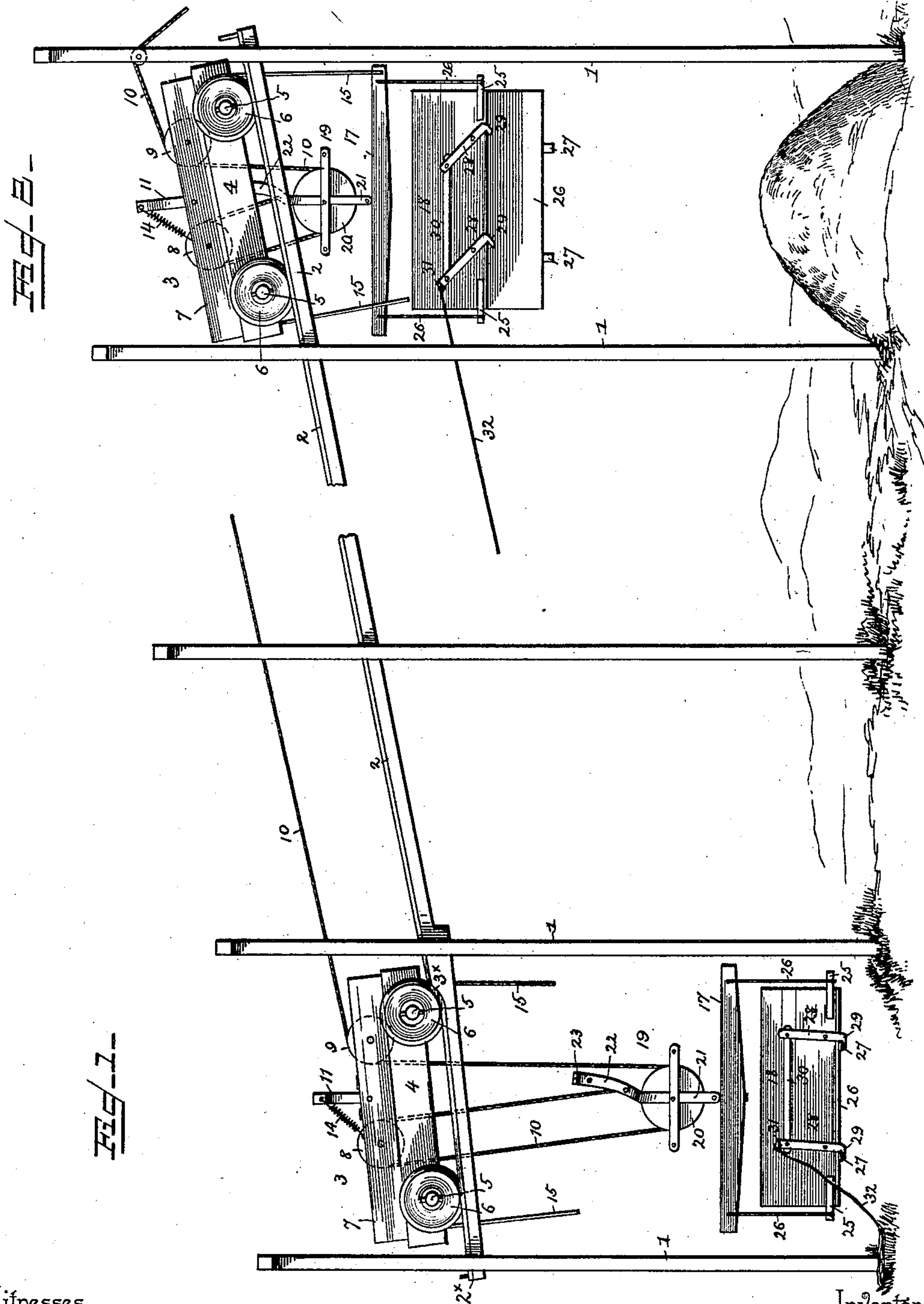
(No Model.)

2 Sheets—Sheet 1.

T. J. CLEPPER.
LOADING AND UNLOADING APPARATUS.

No. 464,555.

Patented Dec. 8, 1891.



Witnesses

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Inventor

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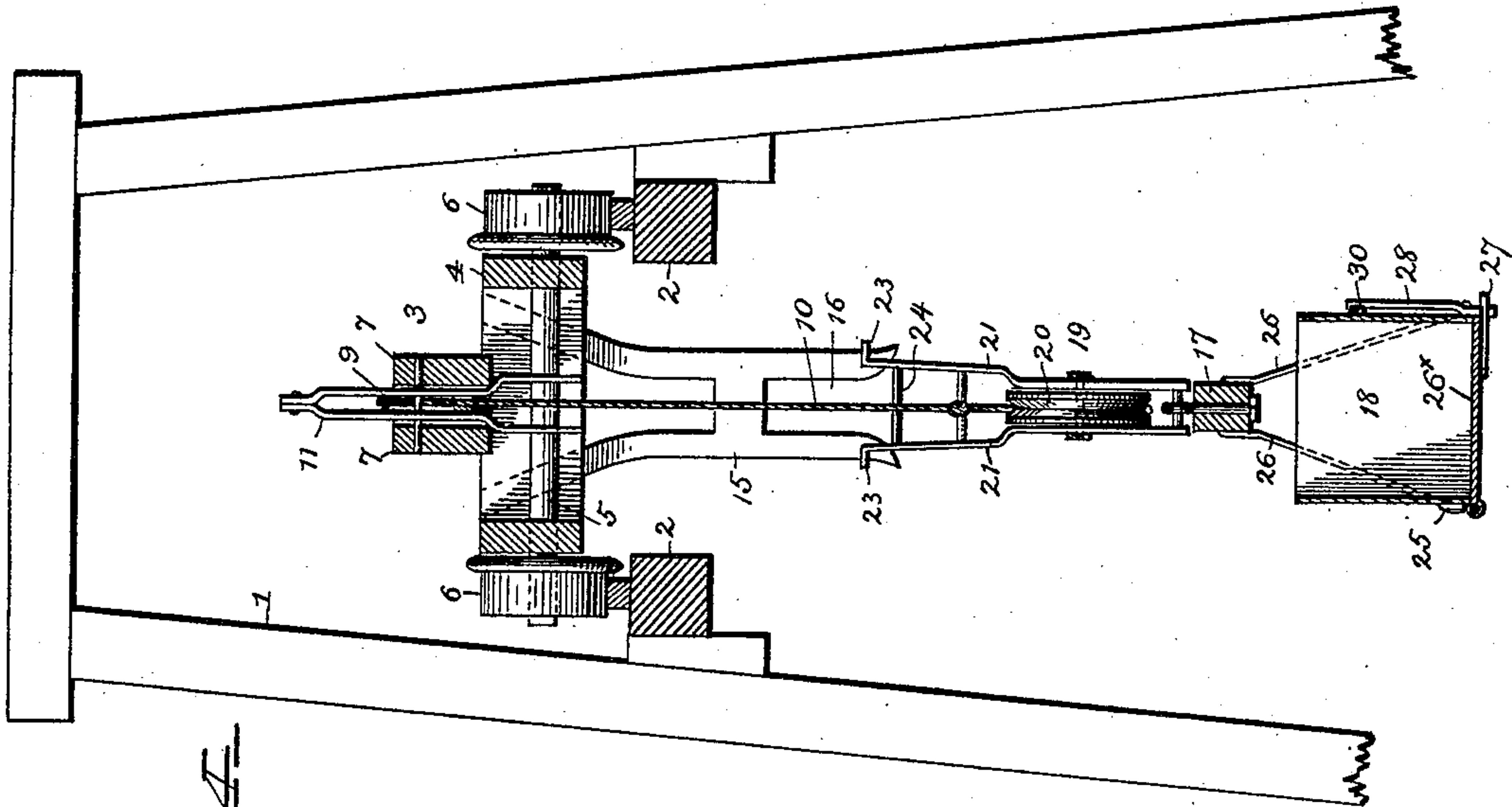


Fig. 4.

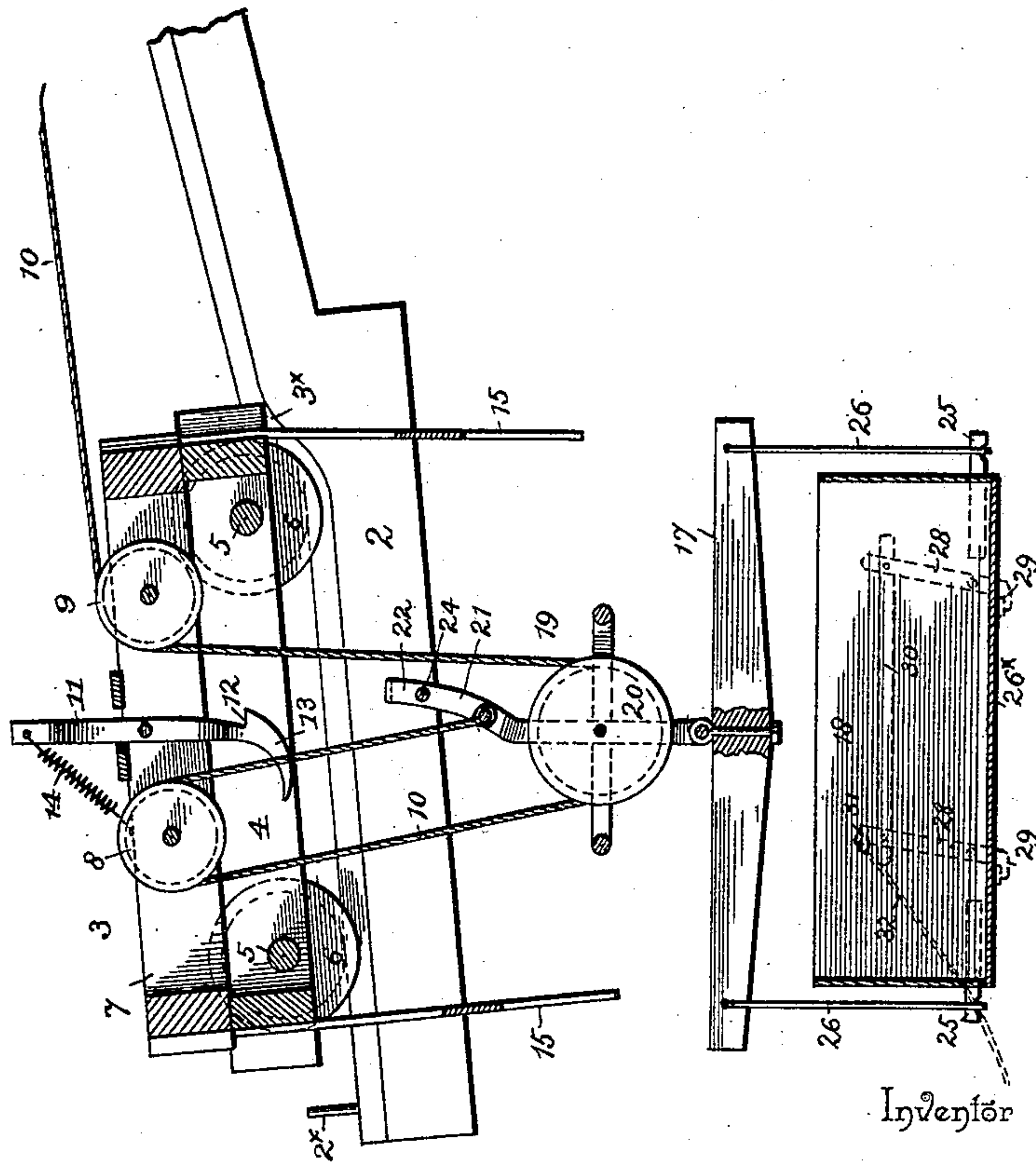


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS J. CLEPPER, OF COLUMBIA, PENNSYLVANIA.

LOADING AND UNLOADING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 464,555, dated December 8, 1891.

Application filed July 9, 1891. Serial No. 398,946. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. CLEPPER, a citizen of the United States, residing at Columbia, in the county of Lancaster and State of Pennsylvania, have invented a new and useful Loading and Unloading Apparatus, of which the following is a specification.

My invention relates to loading and unloading apparatus; and it has for its object to provide an apparatus that will easily raise and support all kinds of material which may be unloaded from cars or vessels, and that will carry the same to any desired place and automatically dump the material and again return for a new load, which will be controlled by an apparatus simply constructed and operated, being designed in this use especially for the unloading of cars and sand from barges and conveying the same away from and back of the water's edge to the desired dump, but, as said, may be used for conveying and dumping coal or any other desired material.

With these objects in view the invention consists in a specially-constructed car traveling upon an inclined trestle supporting rails and a dumping-box supported by said car and provided with automatic dumping mechanism, the whole being provided with special details of construction hereinafter more fully described, illustrated in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a dumping apparatus constructed in accordance with my invention, the dumping-bucket suspended beneath the conveying-car in the act of hoisting. Fig. 2 is a similar view illustrating the car at the end of its travel and the dumping-box suspended, thereby discharging its contents. Fig. 3 is a longitudinal sectional view of the conveying-car and dumping-box. Fig. 4 is a transverse sectional view of the same.

Referring to the accompanying drawings, 1 represents a trestle-way supporting inclined tracks 2 2, which are inclined from the point from which it is desired to convey the unloaded material to the dump desired, being used in connection with barges or vessels to the water's edge and to and from freight-cars or other freight-carrying means. These tracks

are provided at their extremities or starting-points with the stops 2^x, which prevent the car thereon from overrunning the same, while a short distance back of the starting-point the same are further provided with the rounded shoulders 3^x, above which point the rails begin a steeper incline, said shoulders holding the car 3 in position and prevent the same from traveling up the incline when the load is being hoisted thereto. Upon this track a carrying and conveying car 3 is designed to travel and carry the material to be dumped. The car 3 consists of the ordinary rectangular frame 4, mounted upon the axles 5, carrying the ordinary car-wheels 6, engaging the track within the trestle-way.

Longitudinally secured upon the top of the car are parallel strips 7, forming a frame within which are journaled the pulleys 8 and 9, which are secured within and between said strips to either side of the center thereof, and over which the operating-rope 10 is designed to work. Between the strips 7 and the pulleys journaled between the same are pivotally mounted the hooks 11, the shoulders 12 of which are located beneath the portion extending below the car-frame, and are provided beneath the locking-shoulders with the curved portions 13, which form a guide to conduct the locking-pin to the shoulders of said hooks. The said hooks 11 are normally held in a positive position beneath the car-frame and between the rope-pulleys by means of the spiral springs 14, secured to the car-frame and bearing against the said hooks and against the tension of the springs. The hooks are pressed out while engaging the locking-pin, and are drawn back in their normal position by said springs after the dumping apparatus has been engaged therewith.

Depending from both ends of the car-frame 4 are the strips 15, which form between their free ends, extending under the car-frame, a retaining bifurcation or opening 16, between which the frame of the dumping apparatus passes and is held within during the operation of conveying and dumping.

The figure 17 designates a strip or bar that is adapted to sustain the dumping-box 18, as well as the means which secures the same to the conveying-car. Centrally secured by a loose or swinging connection to the top of

said bar is the pulley-frame 19, within which is journaled the pulley 20, over which the operating-rope 10 is designed to pass and hoist the dumping-box carried thereby up to engagement with the conveying-car. The two side strips 21, forming a part of the pulley frame or sheath, extend up above the top of the pulley 20, secured therein, as at 22, the same being slightly curved to guide the same to enter the hook located in the car-frame, and terminates at its upper ends in the right-angularly-disposed stops 23, which limit the upward movement of the dumping-box by means of said stops abutting under the parallel strips carrying the rope-pulleys and locking-hook, and said upwardly-extending strips 22 are connected together near their upper ends and beneath said stops by the pin or rod 24, which is designed to strike against the curved ends of said hooks and be guided into engagement with the locking-shoulders thereof, and thereby support the apparatus beneath the car-frame, the cross-bar upon which said pulley and frame is mounted being adapted to enter between the bifurcated ends of the guide-strips, previously referred to as secured to the opposite ends of the car-frame, and thus prevent lateral swing of the dumping-box carried thereby. The dumping-box 18 is rectangular in shape, and is provided at each corner with the projecting arms 25, which are engaged by the rods or wires 26, secured thereto and opposite ends of the bar 17, and is thus supported and is held to said hoisting-bar, the rods engaging said arms being loosely connected thereto, so that they can easily be detached when it is desired to replace a loaded box for one that has discharged its contents. The open bottom of said box 18 is inclosed by a hinged cover 26^x, from the free edge of which are the projecting strips or arms 27. On the side of said box are pivoted parallel levers 28, provided with the shoulders 29, that are adapted to engage beneath the projecting strips or arms 27, secured to the hinged bottom and lock the same securely over the bottom of the box. Said strips are connected together by the connecting-rod 30, which causes simultaneous action and operation, and the upper end of one of said levers terminates in the right-angularly bent portion 31, to which the rope or cord 32 is secured which operates the locking-levers and throws them out of engagement with the hinged cover at the proper time.

The construction and operation of my dumping apparatus are now thought to be apparent. The dumping-boxes containing the sand or other material are conveyed in barges or other freight-carriers to the terminal of the inclined trestle-way, at which point the carrying-car and the hoisting pulley and frame are ready to receive the said boxes. One end of the hoisting-rope is connected to the pulley-frame 19, passing therefrom over one of the rope-pulleys secured within the frame upon

the top of the carrying-car, and return again and passes under the pulley 20, within said pulley-frame, and then up and over the other pulley within the frame upon the car, and from thence to the hoisting-engine or other operating mechanism. The pulley-frame being out of engagement with the hooks pivoted within the car-frame, the hoisting-rope being slackened, the said pulley-frame and the cross-bar thereunder, and to which it is loosely connected, is lowered upon the filled dumping-box. The said box is now secured to the hoisting apparatus by means of the fastening device previously referred to, and the hoisting-rope is operated upon by the hoisting-engine or other operating means. The action of the rope over the pulleys within the car-frame and over the single pulley supporting the filled box draws the pulley-frame up beneath the conveying-car and into engagement with the hooks located between the frame and beneath the same, the car being held from moving by the track-shoulders 3^x. The rope still being operated upon at this point moves the car over the retaining-shoulders of the lower portion of the track and up the inclined track, and, when the same has reached the point where it is desired to dump the box, the box is automatically relieved of its contents by means of the cord or rope secured to the locking-levers thereon, and also being secured at a point from the dump regulated by the distance which it is desired the car to travel before the box is relieved of its contents. After dumping, the rope is slackened and the car and its empty box return to the starting-point, where, by gently pushing the box and the frame carrying the same forward, the pulley-frame is thrown out of engagement with the hook and the box-carrying apparatus is lowered and is ready for its next load.

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

1. In an apparatus of the class described, the combination, with an inclined track having rounded shoulders or stops at its lower end, of a car provided with hoisting-pulleys adapted at the start to rest against said shoulders, double spring-actuated locking-hooks pivotally secured and located between the hoisting-pulleys, a pulley and frame suspended from said hoisting-pulleys, said frame extending above the inclosed pulley and terminating in a locking portion having a pin or rod adapted to engage the said locking-hooks, and an automatic dumping car or box detachably connected with said pulley-frame, substantially as set forth.

2. In an apparatus of the class described, the combination, with an inclined track having rounded shoulders or stops at its lower ends, of a car traveling on said track and provided with a rectangular frame secured longitudinally thereon, hoisting-pulleys secured within said frame, spring-actuated hooks piv-

totally mounted within the frame and between said pulleys and provided with locking-shoulders located beneath said frame and curved guiding ends extending below and away from said locking-shoulders, a pulley and frame suspended from said hoisting-pulleys, provided with a locking pin or rod and adapted to travel over said guiding ends and to engage said locking-shoulders of the hooks, and an automatic dumping car or box detachably connected with said pulley-frame, substantially as set forth.

3. In an apparatus of the class described, the combination, with an inclined track having rounded shoulders or stops, of a car provided with hoisting-pulleys and a locking device, retaining strips or plates depending beneath said car from either end, a pulley and frame suspended from said hoisting-pulleys and adapted to engage the locking device, an automatic dumping car or box, and a frame or bar loosely connected to said pulley-frame and supporting said dumping car or box, the same being adapted to engage said retaining strips or plates, substantially as set forth.

4. In an apparatus of the class described, the combination, with an inclined track having rounded shoulders or stops, a traveling car, and suspending and hoisting means, of an automatic dumping car or box provided with arms projecting from each end and detachably connecting the same with the hoisting-car, a hinged bottom provided with projecting arms extending from the free edge of said bottom, parallel levers pivotally secured to the side of said car and provided with locking-shoulders engaging said arms, and a bar connecting said levers and adapted to simultaneously operate the same, substantially as set forth.

5. In an apparatus of the class described, the combination, with an inclined track having rounded shoulders or stops, of a car provided with hoisting-pulleys and a locking device, retaining strips or plates depending beneath said car from both ends, a pulley and frame suspended from said hoisting-pulleys and adapted to engage the locking device, and an automatic dumping car or box suspended from said pulley and frame, having a hinged bottom and automatically and simultaneously operated locking-levers controlling said hinged bottom, substantially as set forth.

6. In an apparatus of the class described, the combination, with an inclined track having rounded shoulders or stops, of a traveling car provided with a rectangular frame secured longitudinally thereon, hoisting-pulleys secured within said frame, spring-actuated hooks pivotally mounted within the frame and between said pulleys and provided with locking-shoulders and curved guiding ends, retaining strips or plates secured at both ends of said car, a pulley and frame suspended from said hoisting-pulleys, said pulley-frame terminating above the inclined pulley in a locking portion adapted to engage the said hooks, a frame or bar suspended from said pulley and frame, and a dumping car or box detachably secured to said suspended frame or bar, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

THOMAS J. CLEPPER.

Witnesses:

STEPHEN B. CLEPPER,
THORNTON B. METZ.