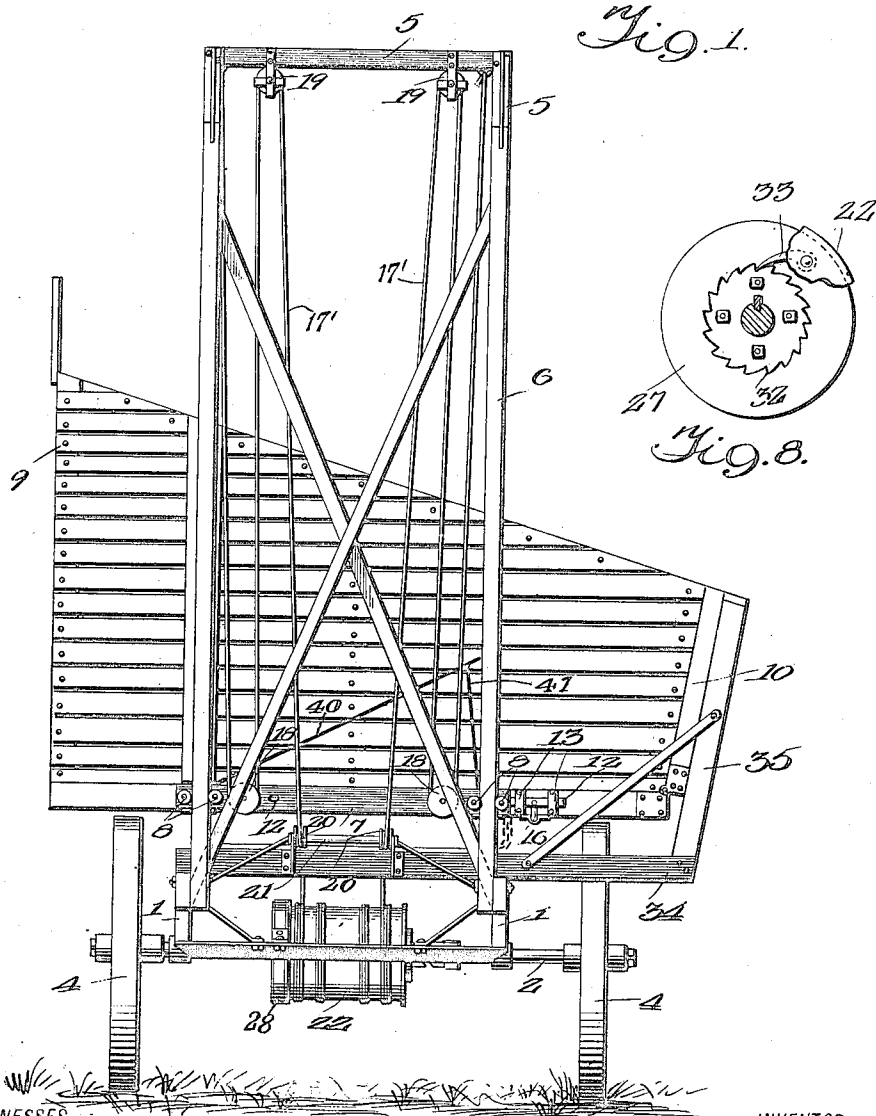


F. SIBRAVA.
ELEVATING AND UNLOADING DEVICE.
APPLICATION FILED MAR. 3, 1920.

1,372,912.

Patented Mar. 29, 1921.

4 SHEETS—SHEET 1.



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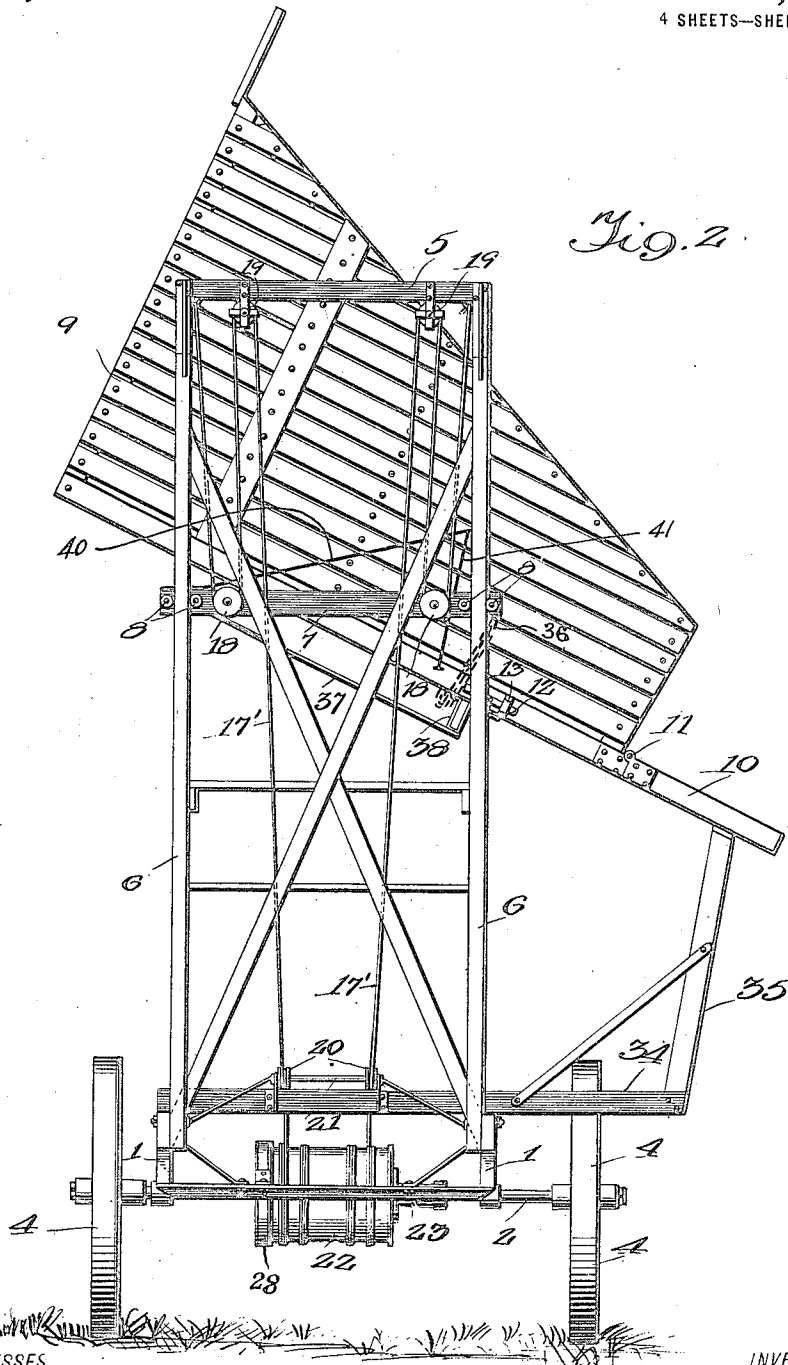


Fig. 2.

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4 SHEETS—SHEET 3

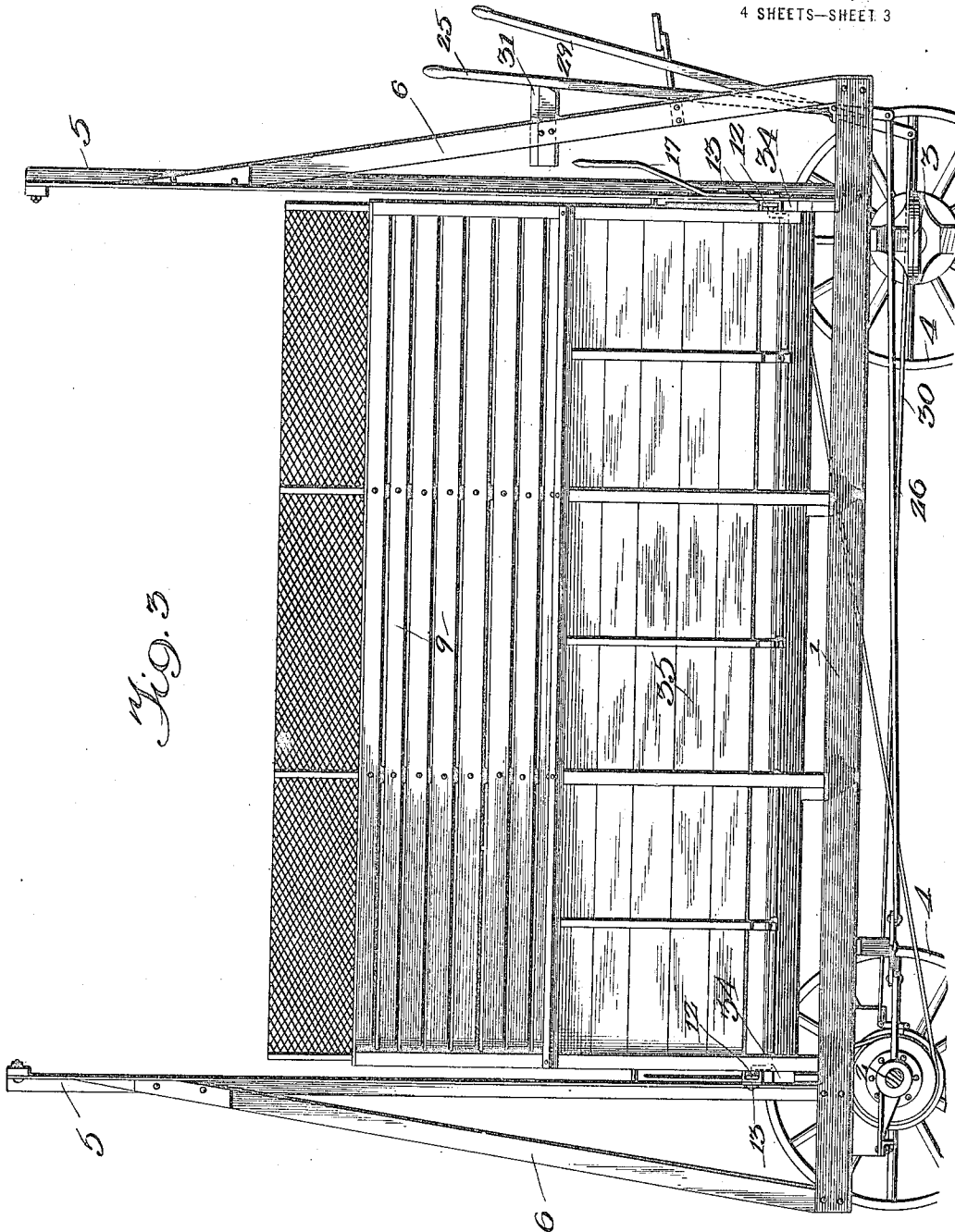


Fig. 3

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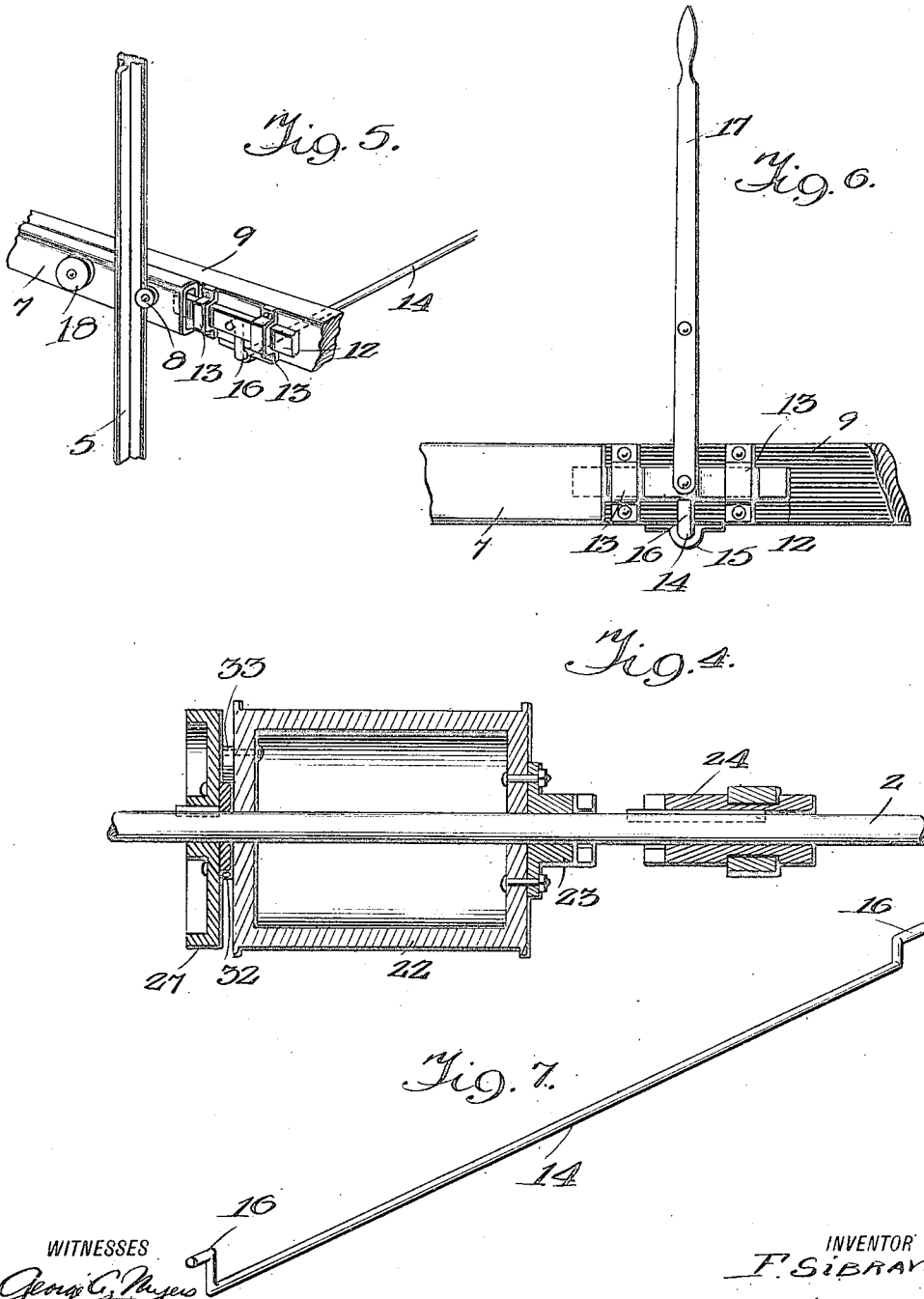
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

FRANK SIBRAVA, OF WILSON, KANSAS.

ELEVATING AND UNLOADING DEVICE.

1,372,912.

Specification of Letters Patent. Patented Mar. 29, 1921.

Application filed March 3, 1920. Serial No. 363,051.

To all whom it may concern:

Be it known that I, FRANK SIBRAVA, a citizen of the United States, and a resident of Wilson, in the county of Ellsworth, in the State of Kansas, have invented certain new and useful Improvements in Elevating and Unloading Devices, of which the following is a specification.

My invention is an improvement in elevating and unloading devices, and has for its object to provide mechanism of the character specified consisting of a barge or body for containing the load and a wheeled support having a superstructure within which the barge has vertically guided movement, together with means controlled by the movement of the wheeled support for raising said barge in the superstructure, and wherein the barge or body is normally held horizontally in the superstructure, but may be tripped to permit it to take an inclined position to unload the contents thereof.

A further object of the invention is to provide a discharge door arranged to normally swing open, but held in position by mechanism on the body until the barge has been elevated, the door being then permitted to open in position to form a continuation of the bottom of the barge to assist in delivering the material.

In the drawings:

Figure 1 is a rear view of the device in loading position;

Fig. 2 is a similar view, with the parts in unloading position;

Fig. 3 is a front view;

Fig. 4 is a longitudinal section through the reel;

Fig. 5 is a perspective view showing the tripping mechanism at one side of the barge;

Fig. 6 is a partial side view, showing said mechanism at the other side;

Fig. 7 is a perspective view of the shaft for controlling the tripping mechanism;

Fig. 8 is an end view of the reel.

In the embodiment of the invention shown a wheeled support is provided, consisting of a frame 1 on which is journaled a rear axle 2, and a front axle 3 is pivoted to the front of the frame 1 to swing laterally with respect to the frame, to guide the support. Wheels 4 are mounted on the axles, the front wheels being journaled in the axles, while the rear wheels are secured thereto.

A suitable superstructure is supported by the frame, the said superstructure consist-

ing of upright frames 5 which are arranged at the front and rear of the frame, and suitably braced, as indicated at 6. Each frame 5 is composed of vertical T-bars connected at their upper ends, and these bars form guide rails for guiding the barge or body in its upward and downward movement.

A cross bar 7 is arranged at each frame 5, and each cross bar 7 carries at each end a pair of grooved wheels 8 which engage opposite sides of the adjacent T-bar. The barge or body 9, as clearly shown in Figs. 1 and 2, is of greater depth at one end than at the other, and the side walls slope gradually from the high to the low end. The low end is open and a door 10 is connected to the bottom of the barge at the said end by hinges 11.

As will be noticed, the barge is of slatted construction, and it is pivoted to the cross bars 7 as indicated at 12. This pivotal connection is nearer the high end of the barge than the low end, and it is near that end of each cross bar remote from the door 10.

The barge may be locked in horizontal position with its bottom in the plane of the cross bars 7 by latches 12. These latches, as shown more particularly in Fig. 5, are mounted on the bottom of the barge 9 at the opposite sides thereof, being slidable through keepers 13. Each of the cross bars 7, as shown in Fig. 5, is a hollow casing, and the latches engage in the ends of the cross bar.

A shaft 14 is journaled in bearings 15 on the bottom of the body, and this shaft is provided at each end with a crank arm 16. Each crank arm is journaled in the adjacent latch 12, and a lever 17 is secured to one of the crank arms, for manipulating the shaft to simultaneously operate the latches.

The cross bars 7 and the barge are moved vertically by means of flexible members 17', a pair of the said members being arranged at each end of the superstructure, that is, at each frame 5. One end of each flexible member is secured to the top of the adjacent frame at the adjacent corner thereof, and from thence the members pass downwardly beneath pulleys 18 on the cross bars 7 and upwardly over the pulleys 19 at the top of the superstructure.

The flexible members at each end pass downwardly beneath pulleys 20 on a shaft 21 supported by the frame 1, and wind upon a reel 22 which is mounted loosely on the

rear axle 2. This reel carries the fixed portion 23 of a clutch, with which is adapted to cooperate a movable section 24 feathered on the axle, and controlled by a lever 25 arranged at the front of the frame and connected to the clutch operating mechanism by a link 26.

At the opposite end of the reel from the clutch there is mounted a brake drum 27, encircled by a band 28, and a lever 29 is provided for controlling the band, the lever being connected to the operating mechanism for the band by a link 30. Both these levers 25 and 29 are arranged at the front of the wheeled support adjacent to the seat 21, and the lever 17 is also arranged at this point. Thus all of the controlling mechanism is in position to be operated by the driver. The brake drum 27 is loose on the axle 2 and the band is supported by the frame 1. A ratchet wheel 32 is secured to the inner face of the drum, and with this wheel engages a spring pressed pawl 33 mounted on the reel. The pawl and ratchet wheel are so arranged that the reel may move freely forwardly with respect to the drum without interference from the pawl and ratchet connection. When the brake is loose the reel may also rotate freely rearwardly, carrying the brake drum or disk with it. When the brake is set, however, the reel cannot move rearwardly, that is, in a direction to lower the barge or body.

Cross bars 34 are arranged transversely of the frame 1 at suitable intervals and these cross bars, as clearly shown in Figs. 1 and 2, project well beyond the walls of one side of the frame and at the low side of the barge or body. Uprights 35 are secured to the cross bars, and are braced against the cross bars, and these uprights are connected by planking, as shown in Fig. 3, to form a wall in connection with the uprights. This wall inclines slightly outwardly from the vertical and when the barge is in lowered position the door 10 rests against the same. It will be noticed, referring to Fig. 1, that that side of the barge or body adjacent to the door 10 is inclined, inclining inwardly toward its bottom, and the wall inclines at the same angle.

The operation of the device is as follows:

When the barge is loaded the wheeled support is drawn to the place of discharge by any suitable means, as, for instance, by draft animals or a tractor. Arriving at the place of discharge, the clutch is operated to connect the reel to the rear axle. Now as the wheeled support moves forwardly the reel will be rotated in a direction to wind up the flexible member and by setting the brake the reel may be restrained from retrograde movement. As the barge moves upwardly, the door 10 swings out-

wardly slightly at its top, resting against the wall 35. When the barge reaches a suitable height the latches 12 are released, by swinging the lever 17 in the proper direction, and the barge immediately drops into the position of Fig. 2. The door 10 rests upon the top of the wall 35 and the contents of the barge is discharged outwardly over the inclined door. The door may be held shut in any suitable manner, if desired, until it is in unloading position. As soon as the barge is unloaded the pressure of the brake band is relaxed and the reel rotates in the reverse direction to lower the barge. The speed of rotation may be controlled nicely by means of the brake. Chains 36 are arranged between the ends of the cross bars 7 adjacent the low side of the barge and the bottom of the barge, to limit the tilting movement thereof, and stop plates 37 are secured to the bottom of the barge in spaced relation by brackets 38, the said plates engaging the cross bars 34 to limit the downward movement of the barge to a position such that it will clear the wheels 4 at the front and rear.

Referring to Figs. 1 and 2, it will be observed that a spring 40 is connected at one end to each cross bar 7 at the end remote from the latches 12, and the other end of each spring is connected to the bottom of the barge, by a link 41. This is a balancing spring, for assisting in returning the barge to normal position when the load has been dumped. Referring to Fig. 2, it will be seen that the springs are pressed down toward the cross bar when the barge is dumped, and they tend to throw the low end of the barge upwardly.

I claim:

1. A device of the character described comprising a wheeled supporting frame, spaced vertical posts at the ends of the frame, a body between the posts, cross bars mounted for sliding movement upon said posts, the body including end bars pivotally connected with said cross bar, means for raising and lowering the body, slidable bolts carried by the ends of the body and normally engaging the cross bars for holding the body against tilting movement upon the pivots, a rock shaft carried by the body and having its ends formed with crank portions engaging said bolts whereby to retract the same from engagement with the cross bars to permit the body to tilt, and a hand lever associated with said rock shaft.

2. A device of the character described comprising a wheeled supporting frame including a plurality of spaced uprights, cross bars mounted for sliding movement along said uprights, a body disposed between said uprights and including end bars pivotally connected with the cross bars whereby the body has a tendency to tilt in one direction,

means for raising and lowering the body, guide brackets secured upon the end bars of the body, bolts slidable through said brackets, the adjacent ends of the cross bars 5 being formed with sockets receiving said bolts whereby to hold the body against tilting movement, a rock shaft journaled longitudinally beneath the body and having upwardly extending crank ends pivotally connected with said bolts, and a lever connected with one of said crank ends whereby 10 to lock said shaft to release the bolts from the sockets.

FRANK SIBRAVA.