

No. 792,406.

PATENTED JUNE 13, 1905.

J. S. EASH.  
BEET WEIGHING AND DELIVERING APPARATUS.

APPLICATION FILED APR. 16, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

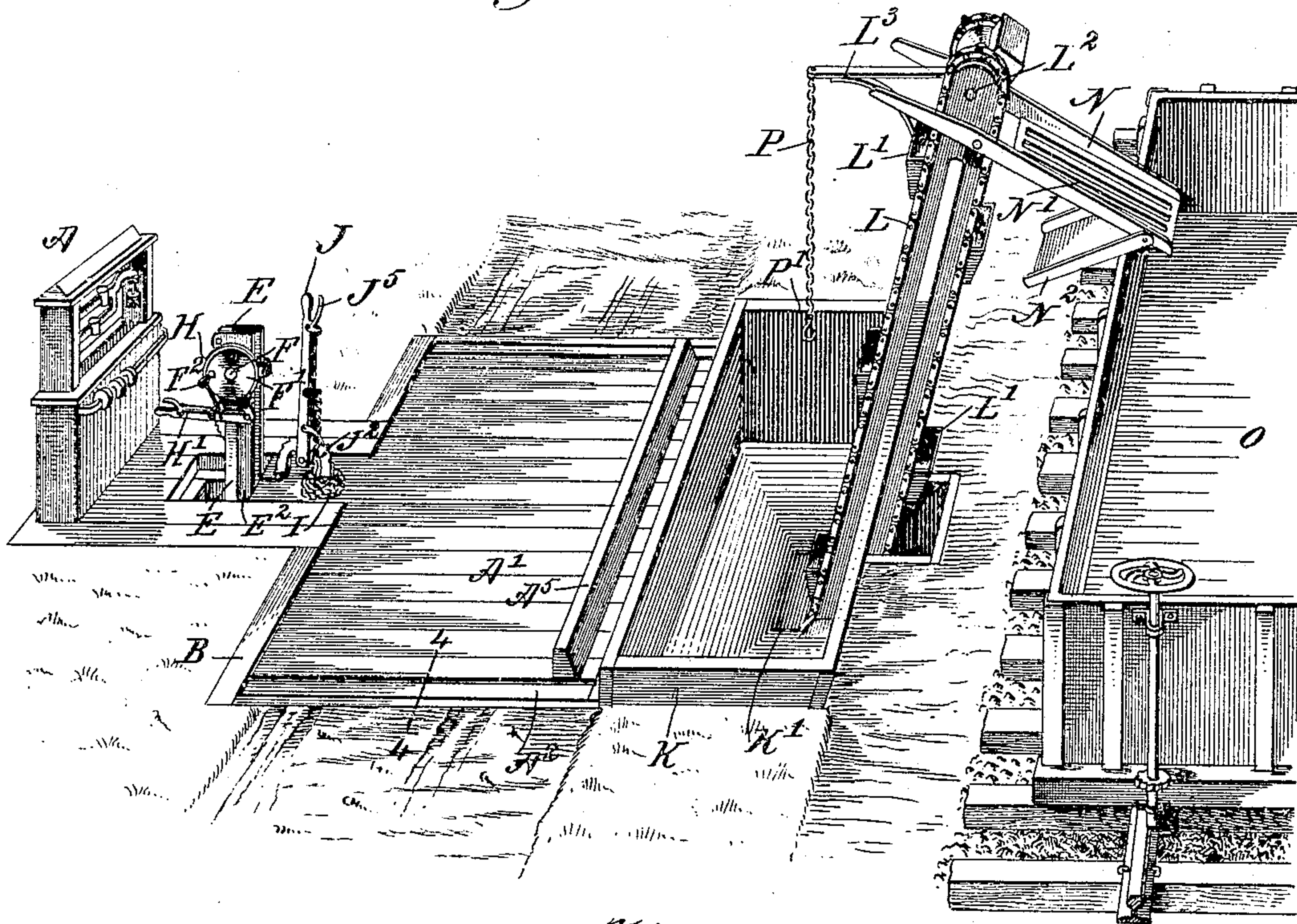


Fig. 3.

Fig. 5.

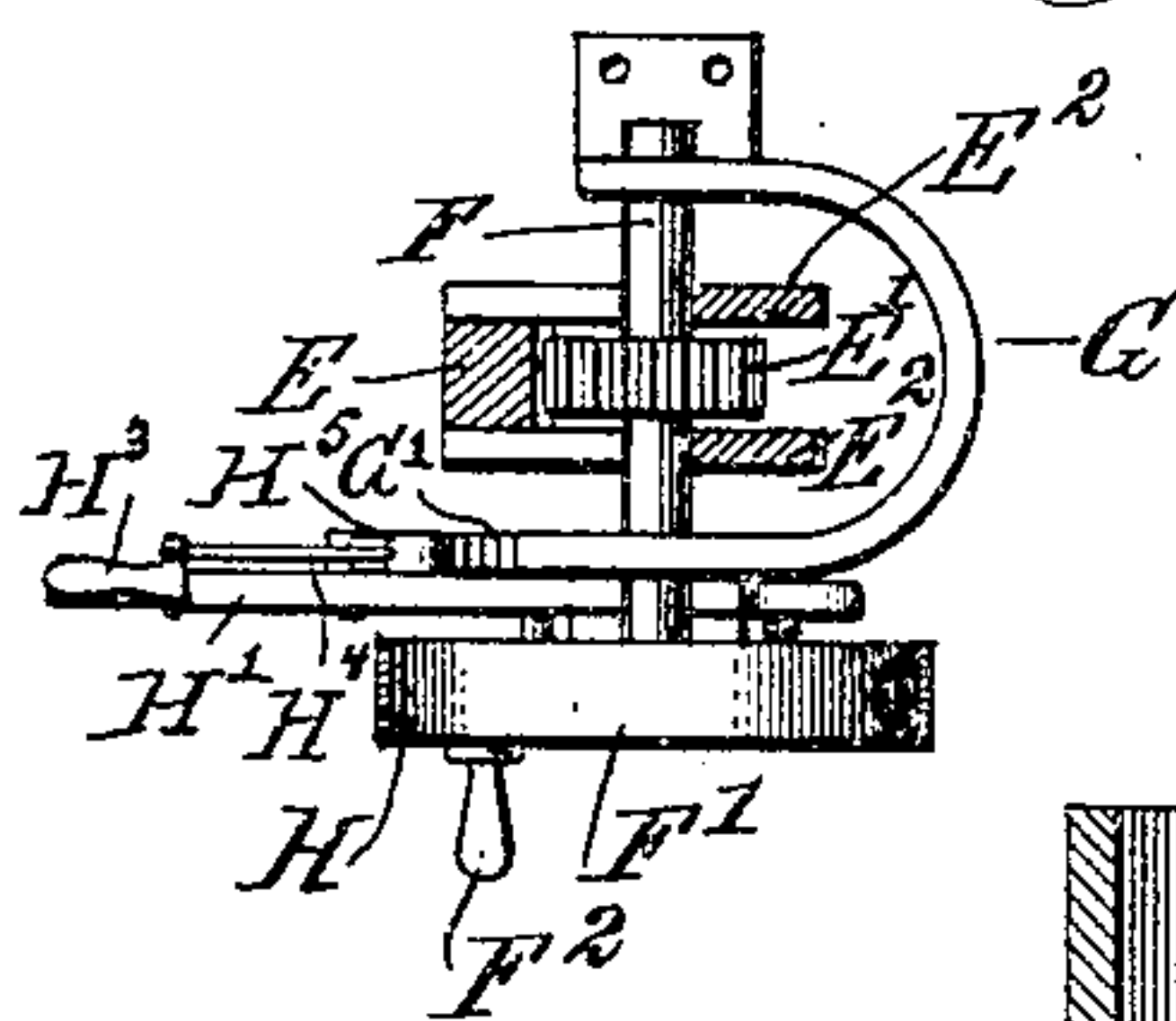
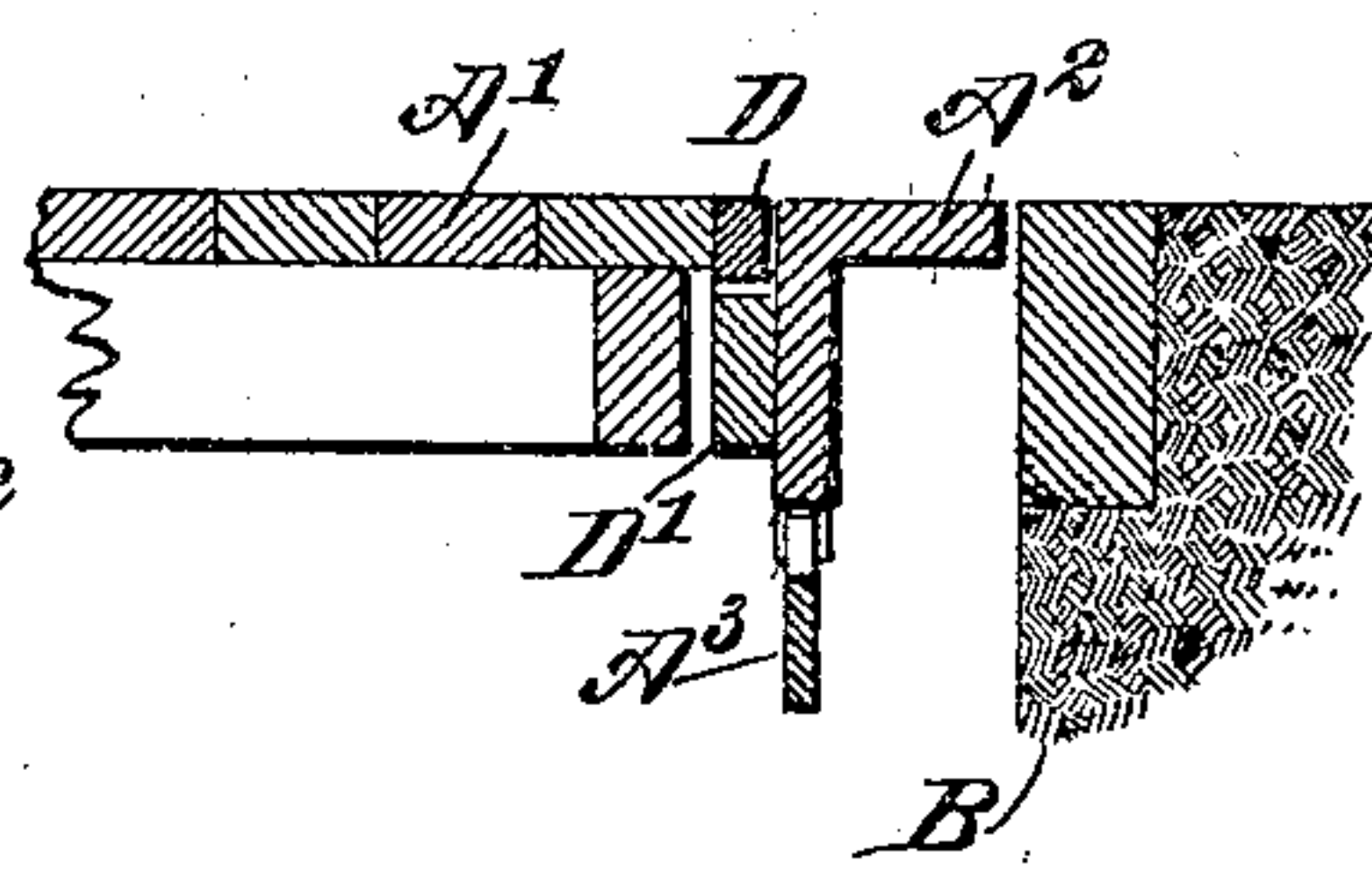


Fig. 4.



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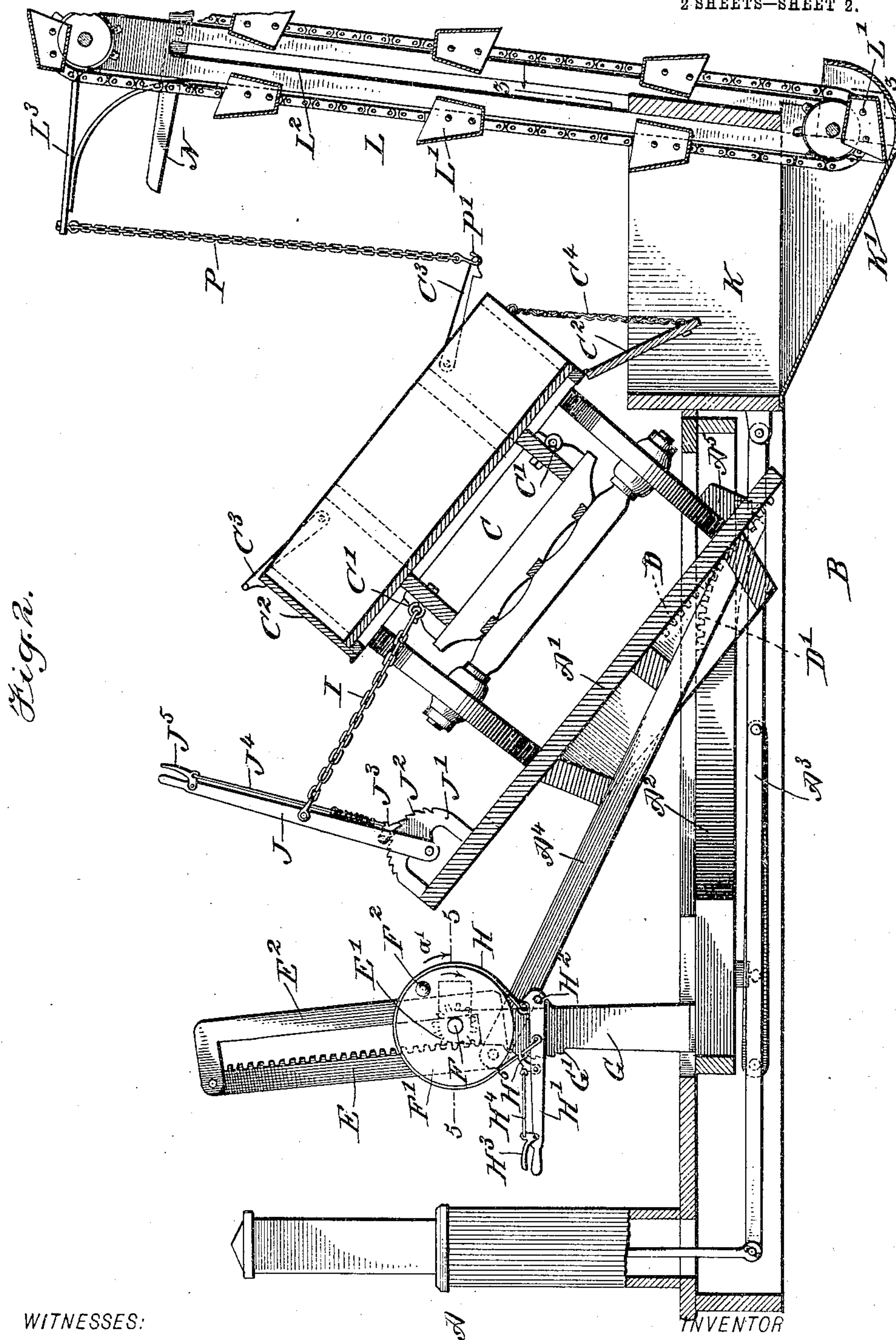
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## BEET WEIGHING AND DELIVERING APPARATUS.

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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

JACOB S. EASH, OF NIWOT, COLORADO.

## BEET WEIGHING AND DELIVERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 792,406, dated June 13, 1905.

Application filed April 16, 1903. Serial No. 152,892.

*To all whom it may concern:*

Be it known that I, JACOB S. EASH, a citizen of the United States, and a resident of Niwot, in the county of Boulder and State of Colorado, have invented a new and Improved Sugar-Beet Weighing and Delivering Apparatus, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved sugar-beet weighing and delivering apparatus, more especially designed for use along railroad-tracks in the country or in towns and cities and arranged to permit convenient driving of a loaded vehicle onto a weighing-platform, to then dump the contents of the vehicle, and finally elevate the contents into a car on the railroad-track.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement. Fig. 2 is a sectional side elevation of the improvement, showing a vehicle on the platform in a dumping position. Fig. 3 is a cross-section of the receiving-hopper and part of the elevator for elevating the beets from the hopper to the car. Fig. 4 is an enlarged transverse section of part of the platform, the section being on the line 4 4 of Fig. 1; and Fig. 5 is an enlarged sectional plan view, on the line 5 5 of Fig. 2, of part of the mechanism for imparting a rocking or swinging motion to the platform.

The platform A' of a platform weighing-scale A is mounted to swing on a frame A<sup>2</sup>, hung on the levers A<sup>3</sup> of the said scale, and the said frame A<sup>2</sup> and its platform A' extend in the upper portion of a pit B and are normally flush with the surrounding ground to permit of conveniently driving a wagon, car, or other vehicle C, loaded with sugar-beets or the like, onto the platform A' for weighing and dumping, as hereinafter more fully described.

The platform A' is provided at its ends (see Figs. 2 and 4) with racks D, in mesh with segmental gear-wheels D', secured to the frame A<sup>2</sup>, to support the platform A' on the frame and to allow the platform to rock from the normal horizontal position (shown in Fig. 1) to the inclined dumping position. (Illustrated in Fig. 2.) Now in order to rock the platform A' the following device is provided: On the under side of the platform A' is secured a longitudinally-extending beam A<sup>4</sup>, pivotally connected at its outer end with a rack E, in mesh with a pinion E', secured on a shaft F, journaled in suitable bearings on a standard G, attached to the frame A<sup>2</sup> of the platform weighing-scale A. On one outer end of the shaft F is secured a pulley or crank-wheel F', carrying a handle F<sup>2</sup>, adapted to be taken hold of by the operator to turn the shaft F and pinion E' for the latter to swing the rack E upward or downward, according to the direction in which the shaft F is turned. When the shaft F is turned in the direction of the arrow a', then the rack E is caused to move upward and in doing so moves the outer end of the beam A<sup>4</sup> along to swing the platform A' into an inclined position as the racks D roll over on the segmental gear-wheels D'. When the shaft F is turned in the inverse direction of the arrow a', then a downward movement is given to the rack E to swing the platform A' back to its normal horizontal position. (Shown in Fig. 1.) In order to hold the rack E in mesh with its pinion E', guide-arms E<sup>2</sup> are provided, secured to the ends of the rack E and engaging the shaft F on the side opposite the one on which the rack E is located.

If desired, a brake and locking mechanism may be connected with the shaft F to brake the latter during the return movement of the platform A' and the vehicle thereon and to lock the platform in an inclined position when dumping the contents of the vehicle C. For this purpose a brake-band H is passed around the wheel F' and is connected with a brake-lever H', fulcrumed on the standard G and under the control of the operator, said brake-lever being provided with a hand-lever H<sup>3</sup>,



connected by a link  $H^4$  with a pawl  $H^5$ , fulcrumed on the brake-lever  $H'$  and adapted to engage one of a series of teeth or notches  $G'$ , formed on the standard  $G$ . Now when the platform  $A'$  is in an inclined position then the operator bears down on the brake-lever  $H'$  to cause the brake-band  $H$  to firmly engage the wheel  $F'$  to hold the latter against return movement, the brake-lever  $H'$  being locked in place by the pawl  $H^5$ . After the contents of the vehicle  $C$  have been dumped the operator presses the hand-lever  $H^3$  to disengage the pawl  $H^5$  from the teeth  $G'$ , and then by manipulating the brake-lever  $H'$  an easy movement of the platform  $A'$  is insured, it being understood that the weight of the platform and vehicle causes an automatic return movement of the platform.

In order to prevent the vehicle  $C$  from slipping off the platform  $A'$  while the latter is swung into an inclined position, one side of the platform is provided with a guard-rail  $A^5$  for the wheels on that side of the vehicle to rest against, as will be readily understood by reference to Fig. 2, and on the body of the vehicle  $C$  and on each side thereof is arranged an eyebolt  $C'$ , and the eyebolt on the upper side of the vehicle is engaged by a chain  $I$ , connected with a lever  $J$ , fulcrumed on a bracket  $J'$ , attached to the platform  $A'$ , and on the said bracket is a notched segment  $J^2$ , engaged by a pawl  $J^3$ , connected by a link  $J^4$  with a lever  $J^5$ , fulcrumed on the handle end of the lever  $J$ . After the vehicle is driven onto the platform  $A'$  the chain  $I$  is connected with the corresponding eyebolt  $C'$ , and then the lever  $J$  is swung outward until the chain  $I$  is taut, and then the lever is locked in place by the pawl  $J^3$  engaging the notched segment  $J^2$ . The box or wagon-bed of the vehicle  $C$  is provided with hinged sides  $C^2$ , normally locked in a closed position by latches  $C^3$ , pivoted on the ends of the wagon-box and engaging the top or free edges of the sides  $C^2$  to hold the latter in a closed position; but when the latch  $C^3$  is swung upward out of engagement with the side  $C^2$  at the lower side of the vehicle at the time the latter is on the inclined platform  $A'$  then the side  $C^2$  swings into an open position, as shown at the right in Fig. 2, to allow the contents of the box to slide out of the same into a receiving-hopper  $K$ , arranged alongside the platform  $A'$  and pit  $B$ , as plainly shown in the drawings. The downward-swinging motion of the side  $C^2$  is limited by a chain  $C^4$ , so as to properly guide the beets from the wagon-box into the receiving-hopper  $K$ . The latter is provided with a hopper-bottom  $K'$ , into which pass the buckets  $L'$  of an elevator  $L$  of any approved construction and mounted on a frame  $L^2$ , secured to the hopper  $K$ , adjacent to the railroad-track, and the buckets  $L'$  during their passage through the bottom  $K'$  scoop up the beets contained therein and carry

the same upward to finally deliver the beets onto a chute  $N$ , fulcrumed on the upper portion of the frame  $L^2$  of the elevator  $L$ . The chute  $N$  discharges the beets into a railroad-car  $O$ , traveling on the track adjacent to the apparatus. The free end of the chute  $N$  usually rests on one side of the car  $O$ , and the bottom  $N'$  of the said chute is preferably slotted to permit dirt and other impurities to drop through the slots onto a second chute  $N^2$ , extending downwardly and inwardly to deliver the dirt to the ground alongside the railroad-track.

From the upper end of the frame  $L^2$  extends a bracket  $L^3$ , supporting a chain  $P$ , carrying at its lower end a hook  $P'$ , adapted to engage the free end of the latch  $C^3$  on that side of the vehicle adjacent to the hopper  $K$  at the time the vehicle is driven onto the platform  $A'$  and the latter is still in a horizontal position. Now when the platform  $A'$  is swung into an inclined position, as described, then the chain  $P$  holds the free end of the latch  $C^3$  stationary, and thus moves the latch out of engagement with the side  $C^2$  as the vehicle swings with the platform into the dumping position. (Shown in Fig. 2.)

The operation is as follows: When the platform  $A'$  is in a horizontal position, as shown in Fig. 1, then the vehicle  $C$ , loaded with sugar-beets and the like, is driven onto the said platform, and then the vehicle and its load are weighed on the platform-scale in the usual manner and the chain  $P$  is connected with the latch  $C^3$  and the chain  $I$  with the eyebolt  $C'$ . The operator then turns the shaft  $F$  in the direction of the arrow  $a'$  to impart a swinging or rocking motion to the platform  $A'$  to move the latter into an inclined position and at the same time causing an opening of the side  $C^2$ , as previously explained, so that the contents of the vehicle slide out of the box thereof into the hopper  $K$ . The elevator, driven by any suitable power, now lifts the beets and discharges the same onto the chute  $N$ , which in turn delivers the beets to the railroad-car  $O$ . After the beets are dumped from the vehicle  $C$  the platform  $A'$  is caused to move back to its normal horizontal position, as previously explained, and then the chain  $P$  is disengaged from the latch  $C^3$  and the chain  $I$  is disconnected from the eyebolt  $C'$ . The vehicle is then driven off the platform, and the latter is ready to receive another vehicle, and the above-described operation is then repeated.

By the arrangement described a large number of vehicles can be readily driven one after the other on the platform and weighed and their contents discharged, so as to keep the elevator going for quickly filling a railroad-car.

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

1. A weighing and delivering apparatus



provided with a weighing-scale having a frame hung on the scale-levers, a platform fulcrumed at one end in said frame, and means connected with the platform for tilting the same, as set forth.

2. A weighing and delivering apparatus provided with a weighing-scale having a frame hung on the scale-levers, a platform fulcrumed at one end in said frame, a beam secured to the platform and carrying a rack at its end, a pinion meshing with the rack, and means for operating the pinion, as set forth.

3. A weighing and delivering apparatus provided with a platform-scale having a frame hung on the scale-levers, a platform mounted to rock on the frame, and a mechanism carried on the said frame and connected with the platform, to rock the latter from a horizontal to an inclined position and vice versa, as set forth.

4. A weighing and delivering apparatus provided with a platform-scale having a frame hung on the scale-levers, a platform mounted to rock on the frame, and a mechanism carried on the said frame and connected with the platform, to rock the latter from a horizontal to an inclined position, and vice versa, the said mechanism comprising a revoluble shaft, a pinion thereon and a rack in mesh with the said pinion and pivotally connected with a beam fixed on the platform, as set forth.

5. A weighing and delivering apparatus provided with a platform-scale having a frame hung on the scale-levers, a platform mounted to rock on the frame, a mechanism carried on the said frame and connected with the platform, to rock the latter from a horizontal to an inclined position and vice versa, and means for locking the said mechanism, to hold the platform in an inclined position, as set forth.

6. A weighing and delivering apparatus provided with a platform-scale having a frame hung on the scale-levers, a platform mounted to rock on the frame, a mechanism carried on the said frame and connected with the platform, to rock the latter from a horizontal to an inclined position and vice versa, and means for braking the said mechanism, to insure an

easy return movement of the platform, as set forth.

7. A weighing and delivering apparatus, provided with a platform weighing-scale having a frame hung on the scale-levers and provided with fixed gear-segments, a platform fitting the frame and provided with racks meshing with the said segments, and means for rocking the platform as set forth.

8. A weighing and delivering apparatus provided with a platform weighing-scale having a frame hung on the scale-levers, and provided at its ends with fixed gear-segments, a platform fitting the said frame and provided at its ends with racks meshing with the said segments, a beam extending from the platform, and a device on the said frame, engaging the beam, to impart a swinging motion to the platform, as set forth.

9. A weighing and delivering apparatus provided with a platform weighing-scale having a frame hung on the scale-levers and provided with fixed gear-segments, a platform fitting the said frame and provided with racks meshing with the said segments, a beam extending from the platform, a rack to which the beam is pivoted, a crank-wheel, a pinion on the shaft of the crank-wheel and meshing with the rack, and a brake for the crank-wheel, as set forth.

10. In a weighing and delivering apparatus, a weighing-scale having a frame hung on the scale-levers, a platform fulcrumed at one end in the frame, a beam extending from the platform, a rack pivoted to the end of the beam, a shaft, a pinion on the shaft and engaging the rack, guide-arms secured to the rack and engaging the shaft to hold the rack in engagement with the pinion, and means for operating said shaft, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB S. EASH.

Witnesses:

WALTER COULEHAN,  
W. L. McCASLIN.