(No Model.) 2 Sheets—Sheet 1.

S. F. EVANS.

DUMPING PLATFORM.

No. 602,255. Patented Apr. 12, 1898.

Fig. 3.

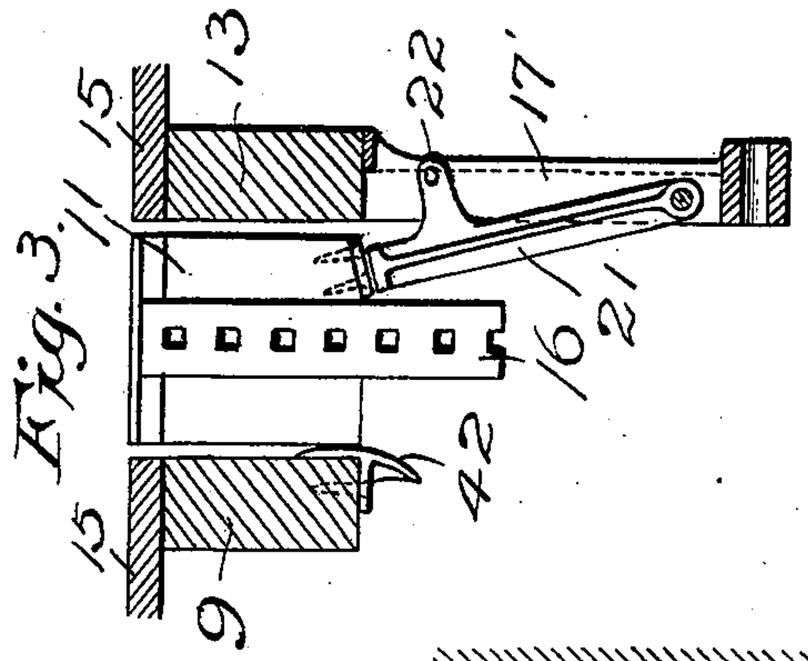

Fig. 1.

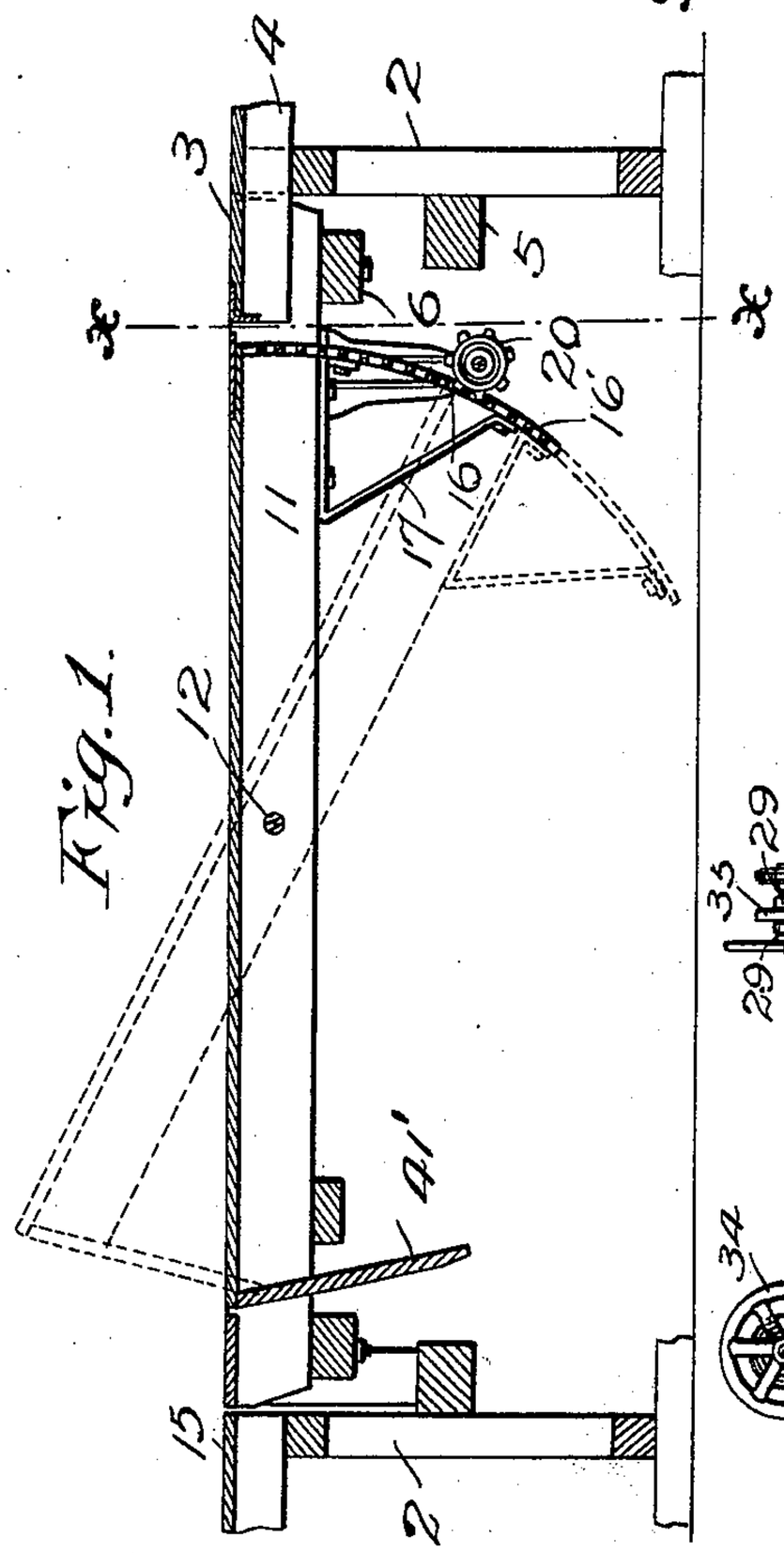

Fig. 2.

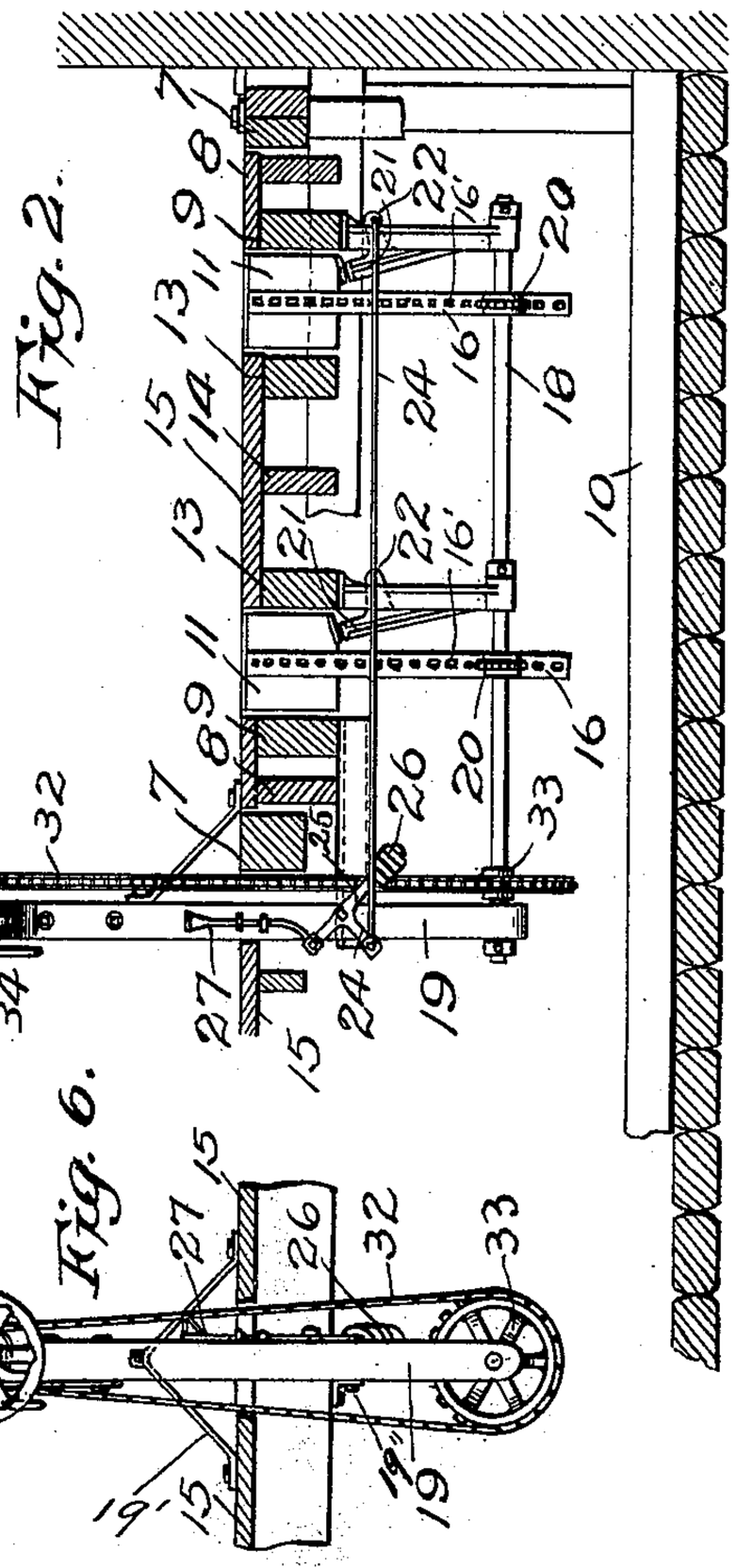

Fig. 6.

Witnesses.
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his attorneys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 7.

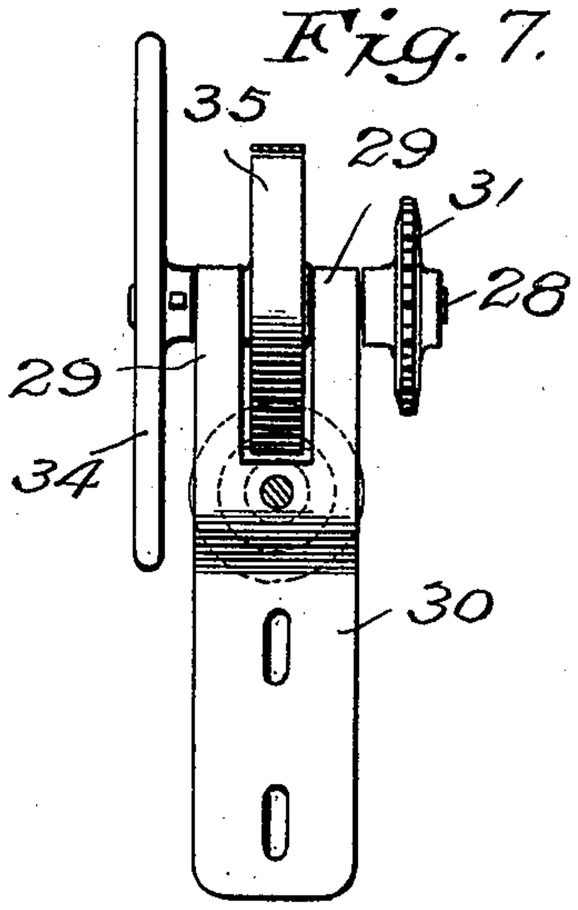


Fig. 8.

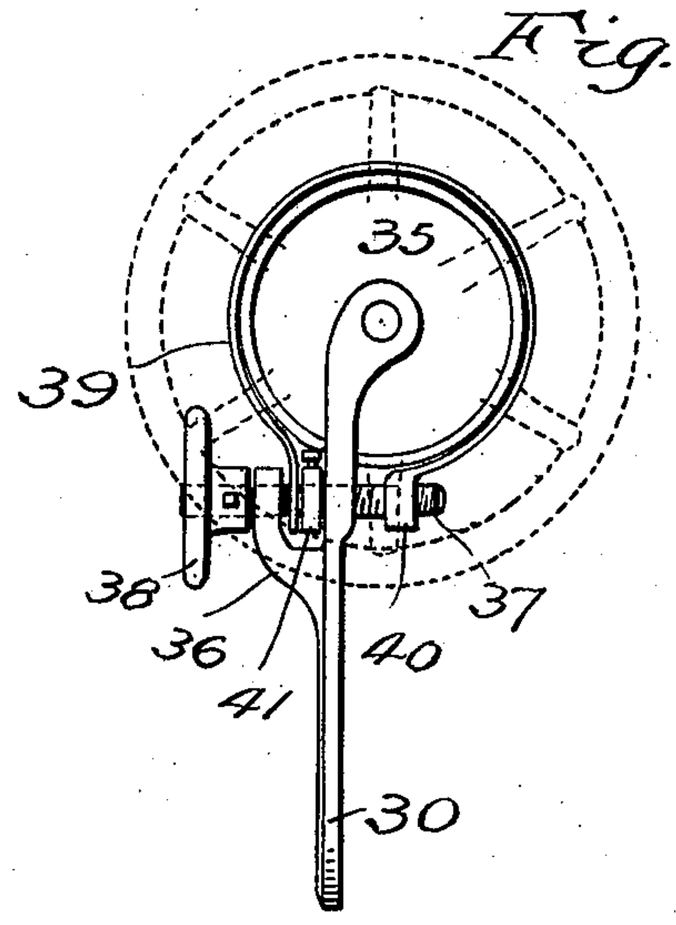


Fig. 9.

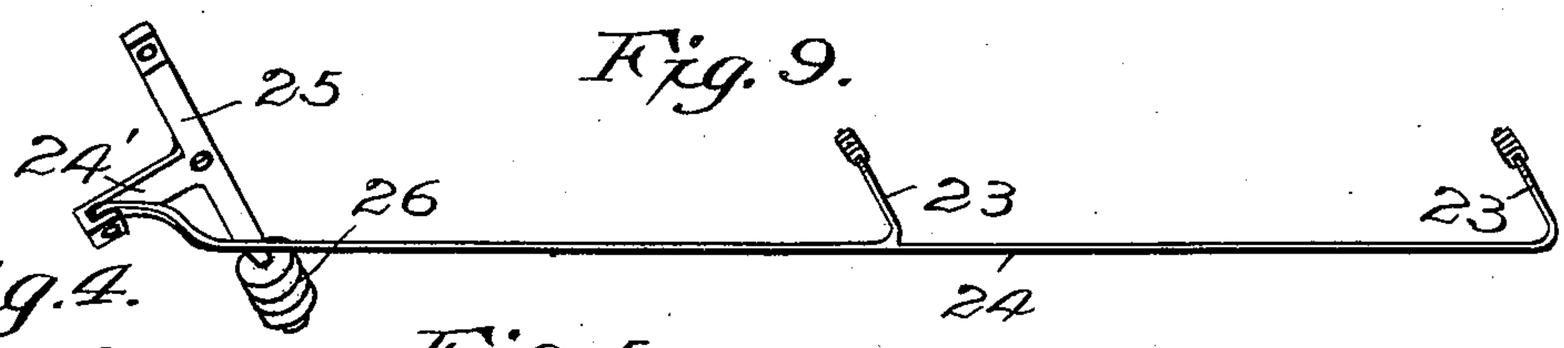


Fig. 4.

Fig. 5.

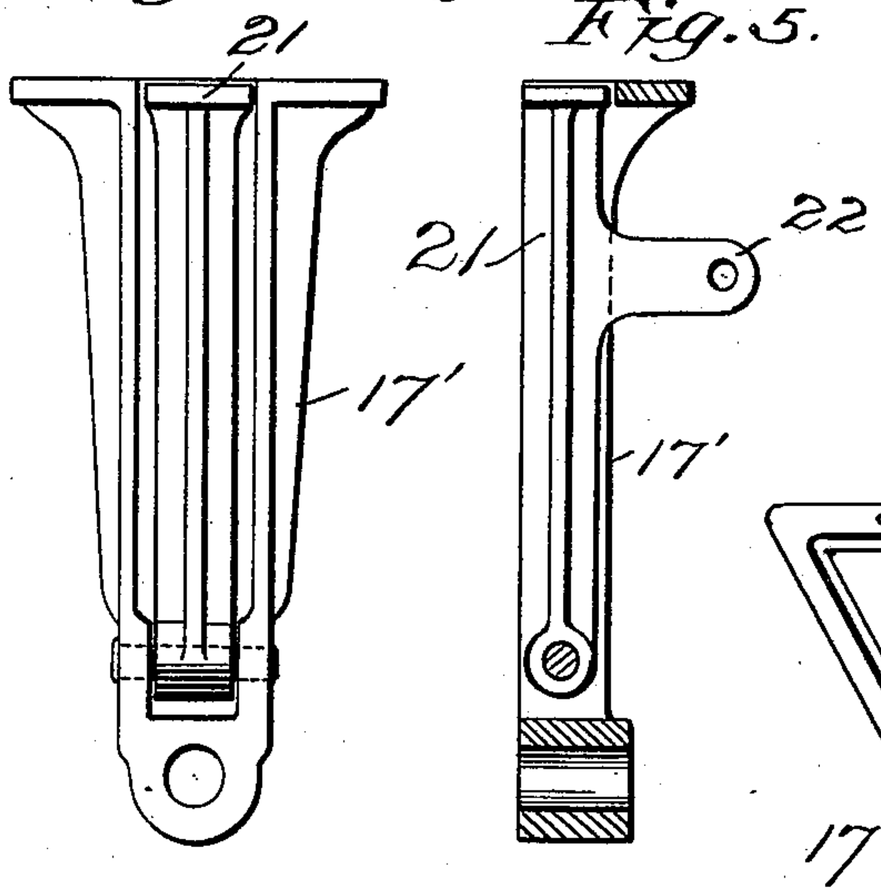


Fig. 10.

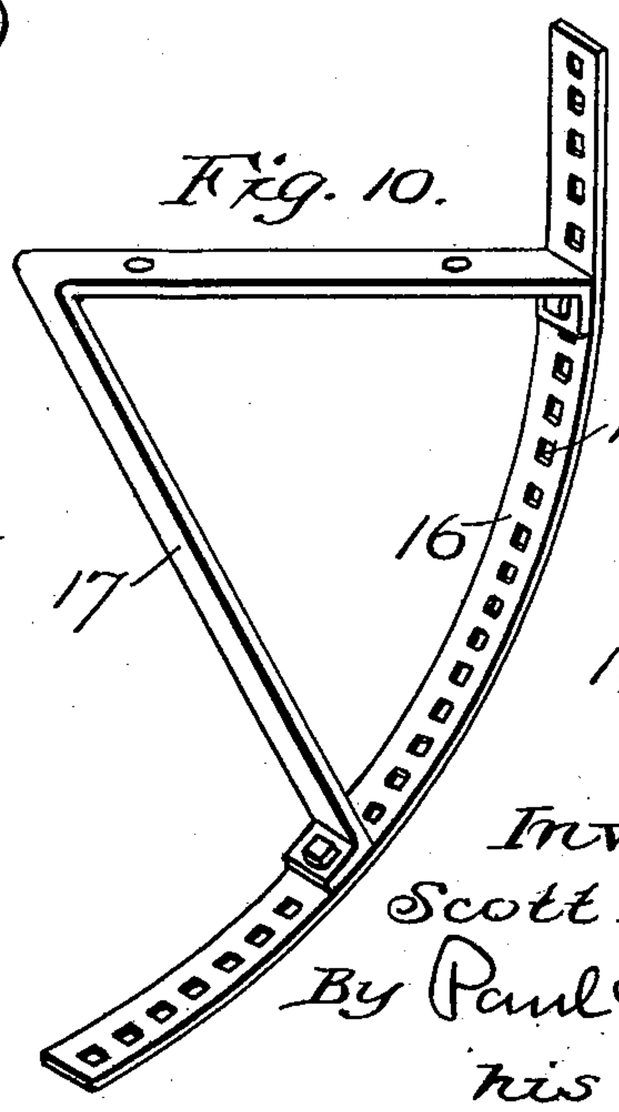
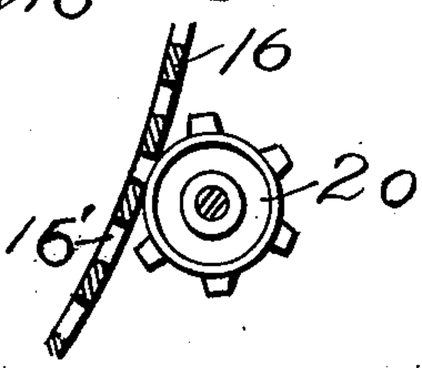


Fig. 11.



Witnesses
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Inventor;
Scott F. Evans.
By Paul & Hanley
his attorneys.

UNITED STATES PATENT OFFICE.

SCOTT F. EVANS, OF MINNEAPOLIS, MINNESOTA.

DUMPING-PLATFORM.

SPECIFICATION forming part of Letters Patent No. 602,255, dated April 12, 1898.

Application filed August 31, 1897. Serial No. 650,091. (No model.)

To all whom it may concern:

Be it known that I, SCOTT F. EVANS, of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Dumping-Platforms, of which the following is a specification.

My invention relates in general to dumping-platforms such as are generally used in connection with grain-elevators to aid in discharging grain from the wagons as it is brought to the elevator; and the primary object of the invention is to provide means for automatically locking the movable portion of the platform to prevent the same from being suddenly tilted and the operating mechanism broken or otherwise damaged by the sudden strain when a loaded wagon is driven onto the dumping-platform.

A further object is to provide a brake by means of which the operator can regulate or check entirely the movement of the tilting portion of the platform; and a still further object is to provide an improved mechanism for moving the tilting portion of the platform or returning the same to its normal position.

Dumping-platforms as heretofore constructed have not proved entirely satisfactory for the reason that usually no provision is made for locking the tilting track-timbers in a horizontal position to prevent the weight of the loaded wagon when driven onto the platform from suddenly tilting the timbers and stripping the teeth from the gearing or otherwise seriously damaging the operating mechanism; and the essential feature of my invention relates to mechanism for obviating this inconvenience and annoyance arising from the use of the ordinary dumping-platform.

To this end the invention consists in a stationary platform, the tilting timbers or platform supported thereby, means for tilting the same, and a locking device engaging said timbers to lock the same in a horizontal position.

Further, the invention consists in means for automatically returning said locking device to its normal position after the operation of dumping is completed.

Further, the invention consists in a friction device for controlling the mechanism that operates the tilting timbers.

Further, the invention consists in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal sectional view of a dumping-platform embodying my invention. Fig. 2 is a sectional view on the line $x\,x$ of Fig. 1. Fig. 3 is a detail showing one of the locking-arms or stops. Fig. 4 is a side elevation of the stops and the brackets supporting the same. Fig. 5 is a vertical section of the bracket or hanger shown in Fig. 4. Fig. 6 is a side elevation of the mechanism for operating the tilting platform. Fig. 7 is a side elevation of the friction device for controlling the operating mechanism. Fig. 8 is an edge view of Fig. 7. Fig. 9 is a detail view of the rod for operating the stops. Figs. 10 and 11 are details of the gear mechanism by means of which the tilting portion of the platform is operated.

In the drawings, 2 represents the side walls surrounding the pit or space beneath the dumping-platform; 3, the flooring around the edge of the platform over the timbers 4, and 5 and 6 transverse timbers arranged at each end of the dumping-platform and by means of which the walls 2 and flooring 3 are held firmly in position. The platform is also provided with the longitudinal timbers 7 upon each side and with the smaller timbers 8 and 9, arranged between the timbers 7 and the tilting portion of the platform. Suitable timbers 10 are provided beneath the dumping-platform, forming the floor of the pit, and a receptacle is also provided to receive the grain as it is discharged from the wagon when the platform is tilted. This receptacle, however, is well known and being in use generally I have not considered it necessary to show the same in connection with my device. In the middle of the platform I arrange the longitudinal timbers 13 and 14 parallel with the timbers 9 and supporting the flooring 15.

The tilting portion of the platform comprises the track-timbers 11, arranged longitudinally in openings provided in the dumping-platform between the timbers 9 and 13 and pivotally supported by the pins or rods 12, which pass through the middle portion of the track-timbers and have their ends supported

by the timbers 9 and 13. At one end of the track-timbers 11 I provide curved steel plates 16, which depend in a curve concentric with the pivotal center of the track-timbers, are provided with a series of holes or openings 16′, and are rigidly secured to said track-timbers by the brackets 17, bolted to the under side of the timbers. To support the operating mechanism beneath the dumping-platform, I provide the hangers or brackets 17′, bolted to the under side of the timbers 9 and 13 and provided at their lower ends with bearings for the horizontal transverse shaft 18. The shaft is also supported at one end by an upright standard 19, which extends up through the platform and supports the mechanism for operating the shaft 18.

Upon the shaft 18 I provide the sprocket-wheels 20, having teeth to enter the openings 16′, and for locking the track-timbers in a horizontal position I provide the arms or stops 21, pivotally secured to the brackets 17′ and arranged to swing to one side and engage the beveled under surface and provided with projecting arms or lugs 22, to which the laterally-projecting arms 23 on the operating-rod 24 are firmly attached.

The operating-rod 24 extends along beneath the platform parallel with the shaft 18 and is pivotally connected at one end to an arm 24′ on a lever 25, that is in turn pivotally secured to the upright standard 19. The lever 25 is provided with weights 26 at one end, by means of which the stops 21 are normally held in engagement with the track-timbers 11, or a spring mechanism may be used, if desired.

To secure the standard 19 firmly in an upright position, I provide the brace-rods 19′, having one end secured to the dumping-platform and the other to the side of the standard. Beneath the platform I provide the angle-iron 19″, bolted to the timbers of the platform and the side of the standard, which when secured in this way is very rigid and prevents the operating mechanism from getting out of alinement and permits the operator to easily tilt the track-timbers, even though a heavily-loaded wagon be standing thereon.

On one side of the standard 19 I provide a vertically-moving rod 27, by means of which the lever 25 may be tilted by the foot of the operator and the stops thrown out of engagement with the track-timbers 11 whenever it is desired to unload a wagon.

At the upper end of the standard 19 I provide a shaft 28, mounted in bearings 29, arranged at the upper end of the head or block 30, that is rigidly secured to the upper end of the standard 19. The shaft 28 is provided at its upper end with a sprocket-wheel 31, over which a chain 32 passes, connecting the same with a sprocket-wheel 33, provided on the shaft 18 at the lower end of the standard.

At the outer end of the shaft 28 I provide a hand-wheel 34, by means of which the operator may revolve the shaft 18 and tilt the track-timbers.

Between the sprocket-wheel 31 and the hand-wheel 34 on the shaft 28 I provide a brake-wheel 35, over which passes a metal brake band or strap 39, provided at one end with a block 40, having a threaded opening to receive the end of a screw 37, which passes through the head 30, an integral bracket provided thereon, and also through an opening in the other end of the brake-band, said end being arranged on the screw between the integral bracket and head and held in position thereon by the collar 41. A hand-wheel 38 on the end of the screw 37 permits the operator to turn the screw back and forth and set or loosen the brake mechanism whenever desired.

At the opposite end of the platform from the point where the operating mechanism is arranged I provide guards 41′, which close the opening between the platform and the track-timbers when the same are tilted and which prevent anything from interfering with the track-timbers when it is desired to return the same to their normal position. I also provide the timbers 9 and 13 with guides 42, which aid the operator in returning the track-timbers 11 to their normal position when the operation of dumping the wagon has been completed.

The operation of my improved platform is as follows: When the wagon is driven onto the platform, the tilting timbers will be locked in a horizontal position by stops 21, so that the weight of the loaded wagon will not strip the teeth from the gears 20 or otherwise damage the operating mechanism. As soon as the wagon has reached the proper position for dumping the operator will place his foot upon the upper end of the rod 27, depressing the lever 25 and throwing the stops 21 out of engagement with the track-timbers 11. Then by means of the hand-wheel 34 and the friction device the timbers with the wagon thereon may be tilted to the position indicated by dotted lines in Fig. 1 and the grain unloaded into the pit beneath the platform. As soon as the operation of unloading is completed the operator allows the platform to return to its former horizontal position, and the weight 26 on the end of the lever 25 will automatically throw the stops 21 into engagement with the track-timbers 11, and thereby prevent the platform from tilting until such time as it is desired to unload another wagon.

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

1. A dumping-platform, comprising a stationary part, a movable part pivotally supported thereby, mechanism for tilting said movable part, arms or stops to engage said movable part and lock the same in a horizontal position, said arms or stops being transversely movable with respect to said movable part, and means for disengaging said arms or stops from said movable part, substantially as described.

2. In a dumping-platform, the combination, with the tilting portion of the platform, of means for tilting the same and returning it to its normal position, arms or stops arranged to engage said tilting portion and transversely movable with respect to the same, means connected with said arms for disengaging the same from said tilting portion, and means for automatically returning said arms or stops to their normal position, substantially as described.

3. In a dumping-platform, the combination with the stationary platform, of the tilting track-timbers supported thereby, means for operating the same, the pivoted arms or stops arranged to engage said track-timbers, and lock the same in a horizontal position, said arms or stops being movable transversely with respect to said timbers, means for disengaging said arms or stops from said timbers, and means for automatically returning said arms or stops to their normal position after the operation of dumping is completed, substantially as described.

4. The combination, in a dumping-platform, with the stationary portion, of the pivoted track-timbers supported thereby, means for tilting the same, the brackets secured beneath said stationary portion, the pivoted stops carried thereby and normally in engagement with said track-timbers, means for disengaging said stops from said track-timbers, and means for automatically returning the same to their normal position, substantially as described.

5. The combination, with the stationary platform, of the pivoted track-timbers and means for tilting the same, the brackets arranged beneath said platform, the pivoted stops carried thereby and normally in engagement with said track-timbers, a rod connecting said stops, a standard, a weighted lever pivotally connected to said rod and said standard, and means carried by said standard for operating said lever, for the purpose set forth.

6. The combination, with a tilting platform and means supporting the same, of means for tilting said platform and returning it to its normal position, and means operating laterally with respect to said platform for locking it in a horizontal position and permitting it to tilt when unlocked, substantially as described.

7. The combination, with a tilting platform and means supporting the same, of means for tilting said platform and returning it to its normal position, and pivoted stops transversely movable with respect to said platform for locking it in a horizontal position and permitting it to tilt when unlocked, substantially as described.

8. The combination, with the platform, of the tilting track-timbers, the mechanism for tilting the same, the brake-wheel provided in connection with said mechanism, the strap or band passing over the same, the head or block supporting said brake-wheel and the screw carried by said head and passing through openings provided in the ends of said strap or band, substantially as described.

9. In a device of the class described, the combination with the upright standard, of the head or block carried thereby, the shaft mounted in bearings in said head, the brake-wheel arranged upon said shaft, the bracket 36, the screw 37, the strap or band passing over said brake-wheel, said strap having one end attached to said screw and its opposite end provided with a block having a threaded opening to receive the same, and the collar 41 provided upon said screw, substantially as described.

10. The combination, with a tilting platform and means supporting the same, of means for tilting said platform and returning it to its normal position, brackets or hangers supported beneath said platform, pivoted stops carried thereby normally in engagement with said platform to lock the same in a horizontal position, means for simultaneously disengaging said stops from said platform and means for automatically returning said stops to their normal position, substantially as described.

11. The combination, with a tilting platform and means supporting the same, of means for tilting said platform and returning it to its normal position, pivoted stops operating laterally with respect to said platform for locking the same in a horizontal position, means for disengaging said stops to permit the tilting of said platform, and means for automatically returning said stops to their normal position, substantially as described.

12. The combination, with a stationary platform, of the pivoted track-timbers, and means for tilting the same, the hangers or brackets arranged beneath said platform, the pivoted stops carried thereby and normally in engagement with said track-timbers, means connecting said stops to simultaneously disengage the same from said timbers, and means for returning said stops to their normal position, substantially as described.

13. The combination, with a stationary platform, of pivoted track-timbers and means for tilting the same, hangers or brackets, stops carried thereby and normally in engagement with said track-timbers, means for simultaneously disengaging said stops from said timbers and means for automatically returning said stops to their normal position, substantially as described.

In testimony whereof I have hereunto set my hand this 27th day of August, A. D. 1897.

SCOTT F. EVANS.

In presence of—
D. C. STEBBINS,
J. L. RECORD.