Aug. 10, 1937.

J. L. STRATTON ET AL

2,089,717

TIPPLE TRUCK PLATFORM

Filed July 25, 1936

3 Sheets-Sheet 1

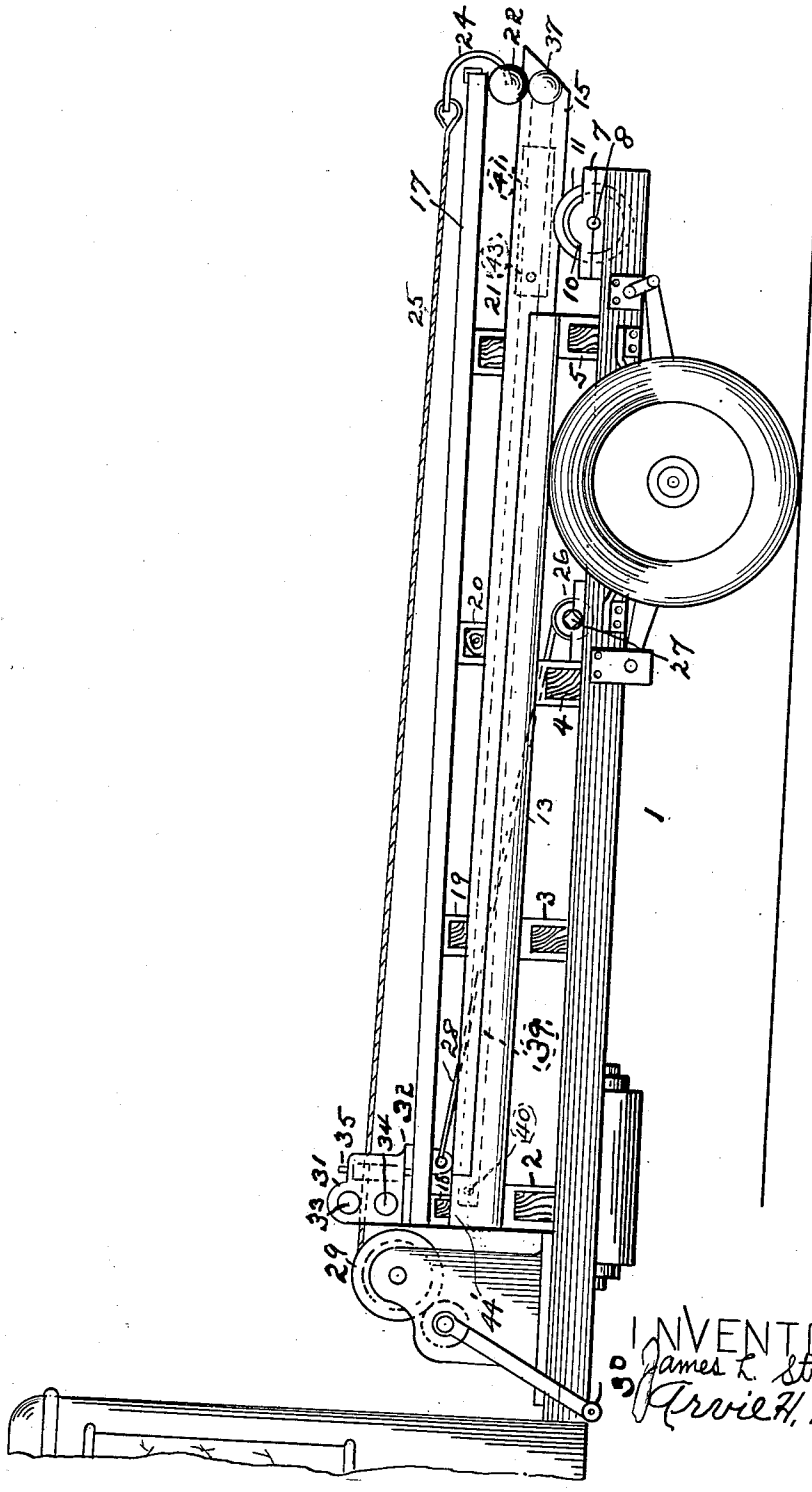


FIG. 1

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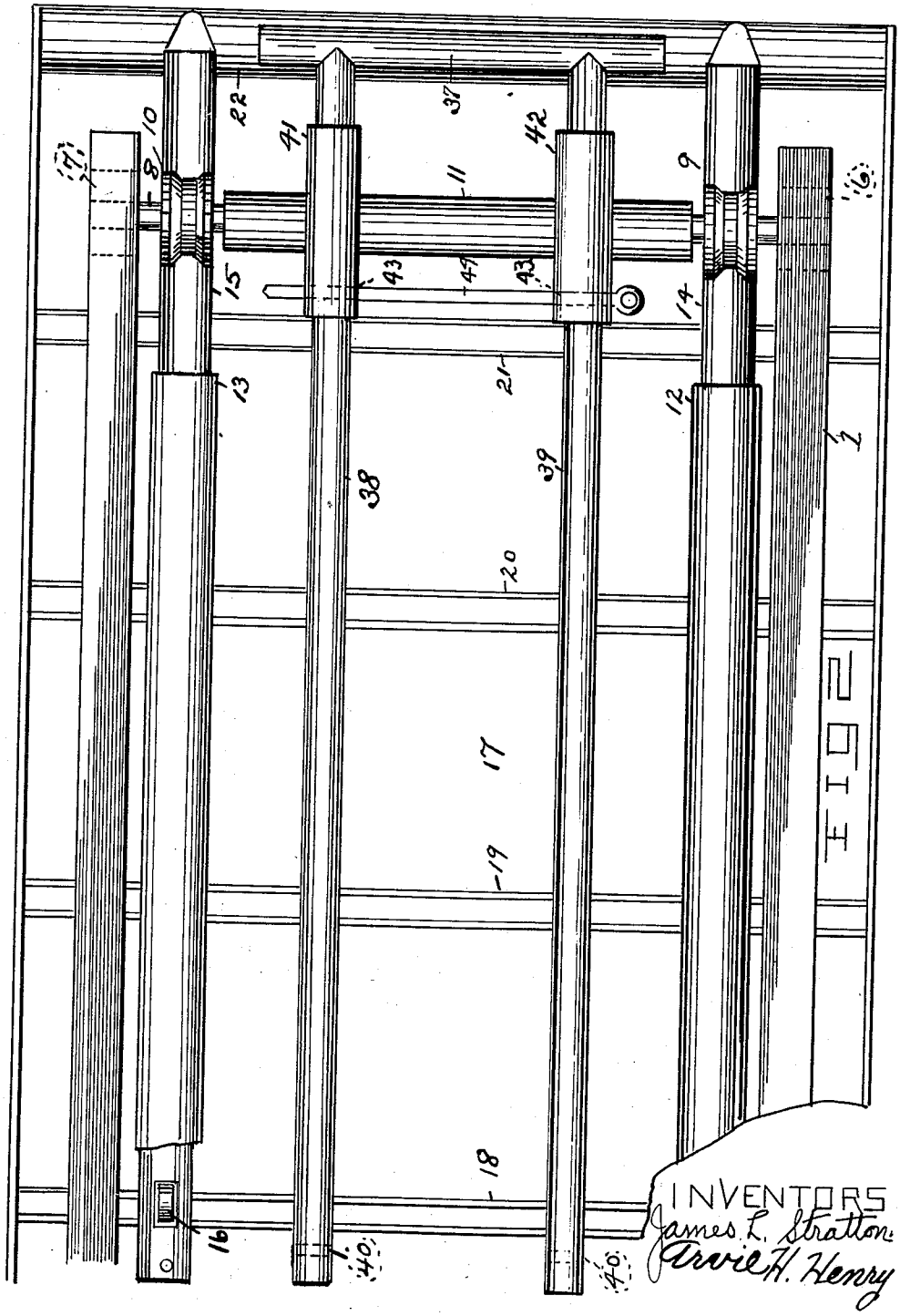


FIG 2

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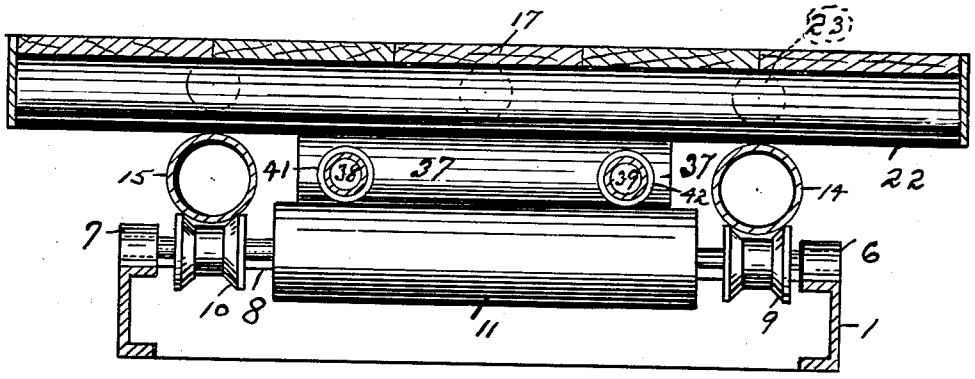


FIG 3

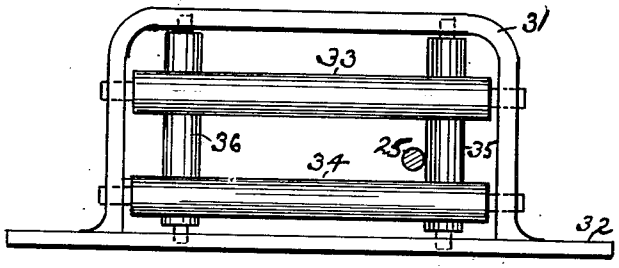


FIG. 4

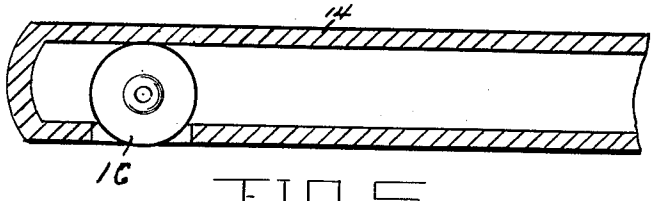


FIG. 5

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2,089,717

TIPPLE TRUCK PLATFORM

James L. Stratton and Arvie H. Henry,
Oklahoma City, Okla.

Application July 25, 1936, Serial No. 92,488

5 Claims. (Cl. 214—85)

This invention comprehends the automatic mechanical handling of heavy loads, both in loading and unloading.

The invention offers a teaching in the art of drayage. This teaching suggests the movability and tiltability of a loading platform in conjunction with a truck-chassis. It is an object to skid the platform along a plane at an angle to the horizontal plane of the chassis-beams, while allowing the plane of the platform to remain parallel with the plane of the chassis beams, until a given position, when the platform will gravitate automatically to a tilted rearwardly disposed position. At another position, it will again tilt back to normal position or in its horizontal plane.

It is an object of the invention to provide the needed means for this aforesaid accomplishment, and also to insure a fixed position and retainment of the platform in the drayage, loading, and unloading positions of the same.

It is also an object of the invention to move the loading-platform to a loading and an unloading position automatically, in part, by the use of the inclination means by which the loading-platform is sustained, after the platform has been given an initial movement upon said inclination means, by means which are substantially mechanically controllable.

Other objects of the invention will appear from a reading of both the specification, the drawings and the claims.

On the sheets of drawings,

Figure 1 is a side elevation of a structure arranged to include the essentials of the invention;

Figure 2 is an inverted view, with parts omitted to display more conveniently, some of the essential parts;

Figure 3 is a rear end sectional view taken on the line 3—3 of Figure 1 forward of the rear end, and just behind the wheels of the truck;

Figure 4 is an elevation view of a suitable winch-cable guide associated with the upper side of the loading-platform, and

Figure 5 is a detail fragment of the platform-runner, showing its anti-friction roller.

In said views, like characters of reference will indicate like parts.

The chassis, as such, forms no essential part of the invention, of course, but upon the upper side of the beams 1 of its frame may be disposed a series of graduated sloping transverse members 2, 3, 4 and 5, more or less, as the case may require, and decreasing in height in the order named. Rear of these are bearings 6 and 7 in which is borne a shaft 8 about which rotate two anti-friction rollers 9 and 10, intermediate whereof is provided on said shaft a pivoted mandrel 11.

Upon the graduated members 2, 3, 4 and 5 are mounted two tracks 12 and 13 which, of course, may be of any suitable type so long as they are inclined relative to the plane of the chassis-beams 1, and, preferably may be arcuate to receive tubular runners 14 and 15, and the only object of the runners being tubular is to simplify construction, and therefore any type of runner may be adapted at will. Forward of these runners are inserted rollers 16 (see Figure 5) to relieve the friction of the runners between them and the tracks while the runners are moving over the rollers 9 and 10 during the excursions of the platform 17 in either direction.

Upon these runners 14 and 15 and running transverse thereto, but parallel with the members 2, 3, 4 and 5 are like members 18, 19, 20 and 21, more or less, as the case may be, and which increase in height in the order named or reverse to the order of height of those members 2, 3, 4 and 5. Upon these the platform 17 is supported, and thus there is provided a horizontally movable loading-platform upon a horizontally disposed chassis-frame and an intermediate trackage train which occupies an angular position with relation to both and this far, essentially the invention corresponds to that disclosed and taught in our application for Letters Patent of the United States, filed in the United States Patent Office on the fifth day of April, A. D. 1935, Serial Number 14,853, which has since matured into Patent No. 2,065,833, dated December 29th, 1936, for Slidable tipple platform for vehicles, and allowed to us on the sixth day of June, A. D. 1936.

Rearward of the member 21 on the upper side of the tracks 12 and 13 is a bolster 22 forming an end support between the loading-platform 17 and the runners, and this bolster is conveniently provided with rear openings 23 (see Figure 3) into which, at will, the hook 24 of the winch-cable 25 may be inserted for any given purpose.

On the chassis frame beams 1 are bearings 26, omitted in Figure 2, for the sake of clarity in which is located a bar or reel having a squared head 27 and upon which bar may be stored a cable 28 suitably attached to the under side of the platform so that when a wrench is applied to the head 27, and movement therefore is provided, the platform, by the pull of the cable 28 will slide down the tracks 12 and 13, assisted by the travel of the rollers 16 in the tracks and over the rollers 9 and 10 mounted on the shaft 8

in the bearings 7 at the outer end of the chassis-beams 1, thus lowering gradually but still maintaining the loading-platform in horizontal position, until its tilting point when it will automatically go over.

The winch-cable unreels from and reels upon a winch-drum 29 operated ultimately by a crank 30, and this cable is designed to pass through an anti-friction device, located upon the upper side of the platform 17, and which may be seen in detail in Figure 4. Here is a frame 31 supported upon a base 32 and into the upright standards whereof are journalled two horizontally disposed parallel but separated rollers 33 and 34, while in the base and the upper part of the frame are journalled two transversely or vertically mounted separated rollers 35 and 36. This provides a universal guide and friction roller media for the cable 25 as it weaves from side to side during its threading and unthreading upon the drum 29 of the winch.

To the underside of the bolster 22 is preferably welded a short header 37 which is substantially in axial alignment with the bolster 22 and from this header 37 and extending forward thereof, are two reaches 38 and 39, running parallel with the runners and the tracks and essentially coincident with the length of the platform 17. Near their free ends, these reaches are each provided with transverse openings 40.

Running parallel with the runners 14 and 15, and transversely located upon and affixed to the mandrel 11 are reach-guides 41 and 42 which have a tipple-movement because of the pivotal relation of the mandrel 11 to the shaft 8, and through which the reaches 38 and 39 travel, when the loading-platform 17 travels in either direction, because the header 36 is fixed to the bolster 22 which is affixed to the runners 14 and 15. These tipple reach-guides are provided with transversely located openings 43 and correspondingly, at this point, if desired, these reaches may be provided with like openings, and when the loading-platform is in horizontal drayage position, a pin or bar 44 may pass through these openings and hold the loading-platform in drayage position after it has been pulled to that position by the cable 25. When it is desired to shift the platform rearwardly by the cable 28 winding on the bar having the squared head 27, the pin 44 is removed and the platform will, at a given point after being started by the pull on the cable 28 automatically topple and gravitate groundward, and slide out to the limit of the runners and the reaches, ready for loading or discharge or drayage.

During this period the guides 41 and 42 will correspondingly tip as will the reaches 38 and 39, and which, when drawn out to their limit in the guides 41 and 42, may be held in that position, at will by again inserting the pin or bar into the reaches and the reach-guides when the reaches have come to their full outward or rearward position. This insures in both cases, a locked position of the loading-platform 17. To prevent the runners 14 and 15 from lifting from their tracks, the latter are provided with caps 44'.

It will now be observed that there is provided a tiltable loading platform with tiltable guides therefor, governing the movement of reaches, which in either fully tilted position or fully normal drayage position afford means for holding the platform in given positions, and insuring positive action.

Having thus set forth the invention, we claim:

1. In a construction as set forth, the combination with a chassis, of a partially horizontally and tiltable loading platform movably mounted thereon, means upon which the loading platform may tilt; tandem means intermediately located of the chassis and the loading platform and angular to both for lowering the platform through horizontal planes to the tilting point, a system of reaches associated with the lowering means and the loading platform for holding said loading platform in given fixed positions; means pivotally mounted for co-operating with said means, and an element adapted to affixedly associate the holding means and the pivoted means.

2. In a construction as set forth, a chassis, angularly located tandem tracks mounted thereupon, runners mounted in connection with said tracks, a platform angularly related to the runners and parallel with the tandem tracks, reaches intermediate of said runners, a bolster for said platform, a header affixed to said bolster and to said reaches, rollers in association with said runners, and mounted on said chassis, a mandrel in association with said runners, guides tiltably carried by the mandrel, and governing the movement of said reaches, said guides and reaches having co-operating openings, and means for taking into said openings, for controlling the reaches.

3. The organization of claim 2, and means for mechanically forcing the platform to a tilting point.

4. The organization of claim 1, and means for mechanically forcing the platform to a tilting point.

5. In a combination as set forth, a chassis having horizontally disposed beams, of graduated members sloping thereon from front to rear, tracks disposed on said members; runners operable in conjunction with said tracks, graduated members set in reverse order to the first named members, a platform mounted thereon and adapted upon the movement of the runners to lower through horizontal planes to a tipple point; a header carried with the platform; reaches associated with the header and running forward to the nether front of the platform, tiltable guides for the reaches, both guides and reaches having openings of the transverse order, pivoted means upon which the guides may tip, antifriction rollers upon which the runners may move before the point of tipple, means for co-operating with the openings to hold the platform in given positions, and means carried by the platform for governing the movement of a winch cable when employed in loading the platform.

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