No. 707,951. Patented Aug. 26, 1902.

T. ALEXANDER.

LOG OR FREIGHT DUMPING APPARATUS.

(Application filed Oct. 7, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

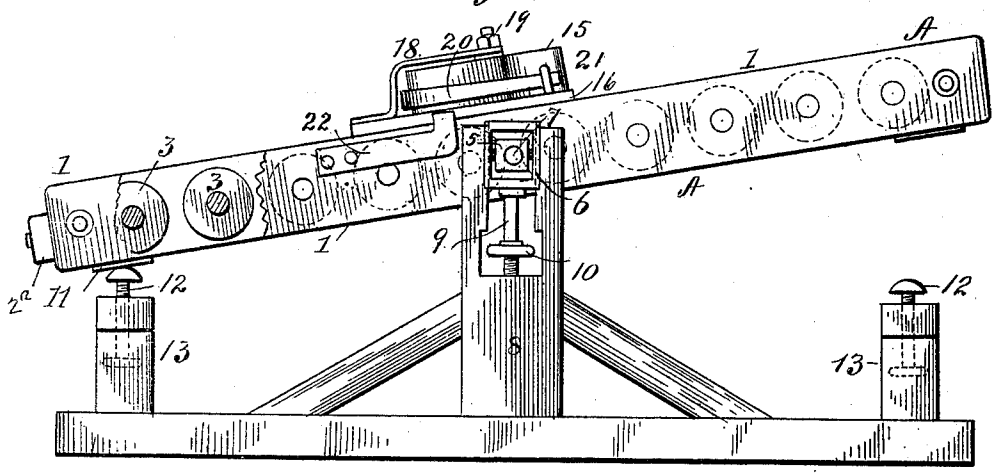
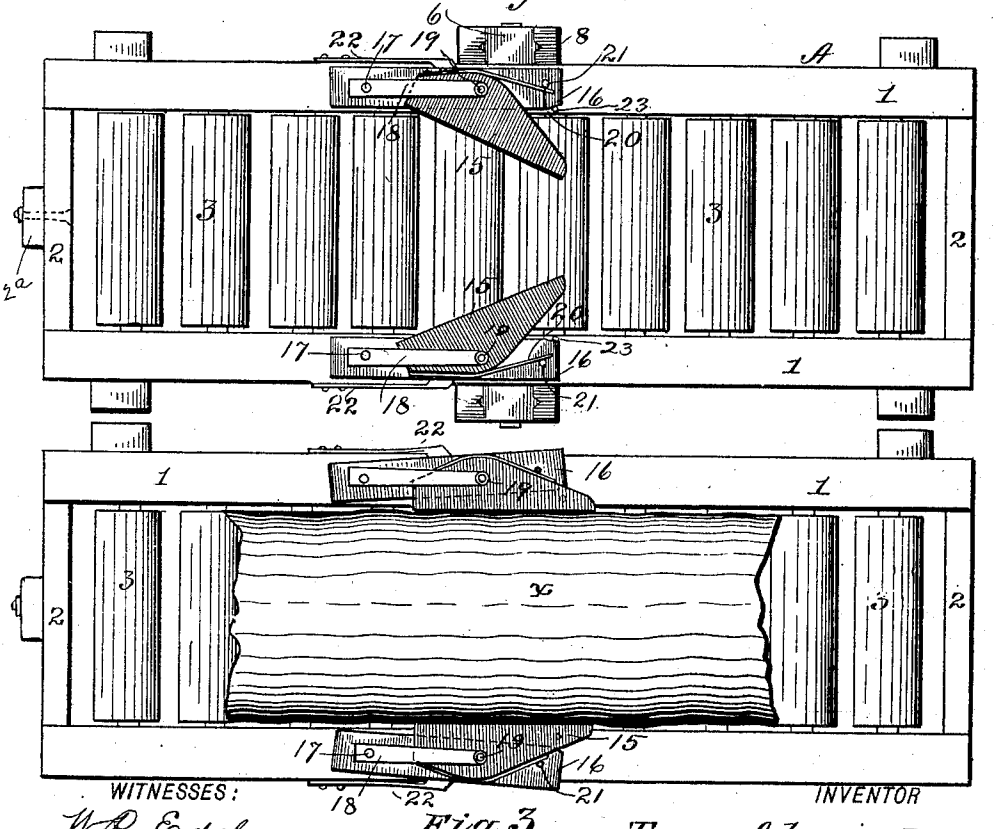


Fig. 2.



WITNESSES:

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Fig. 3.

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Fig. 4.

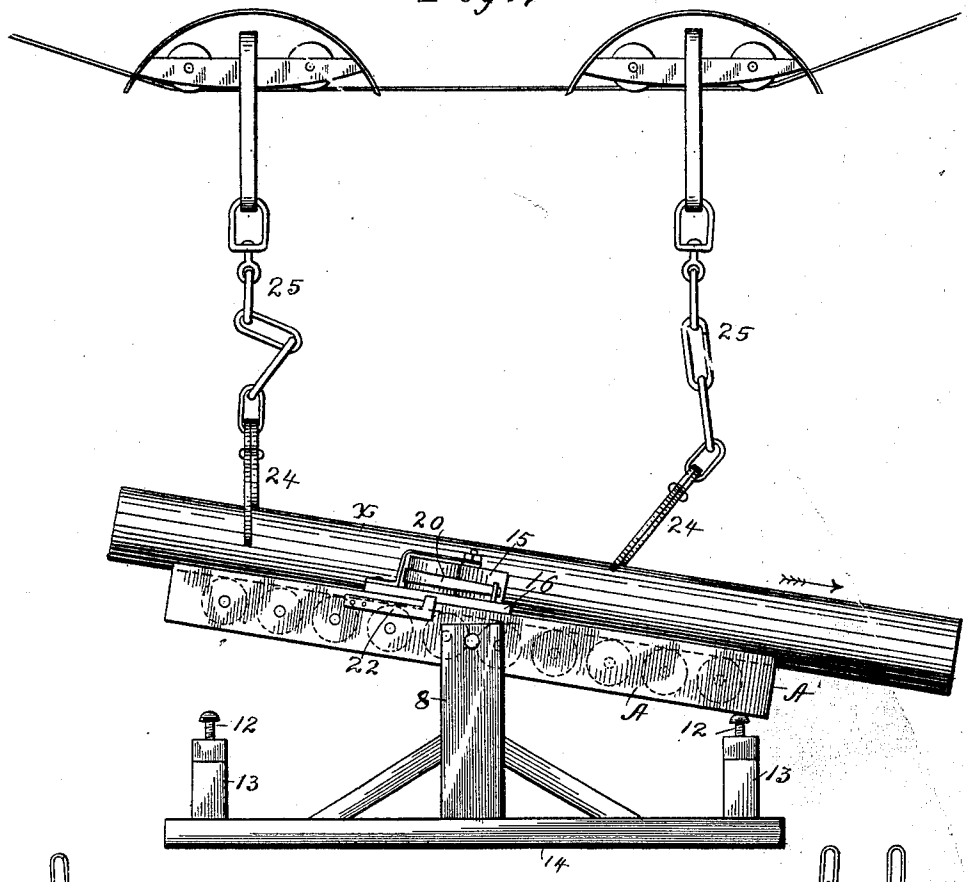


Fig. 6.

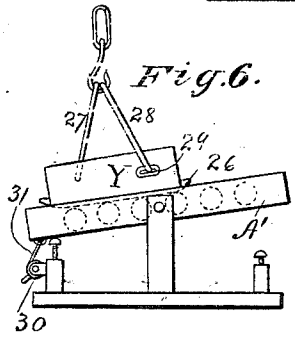


Fig. 5.

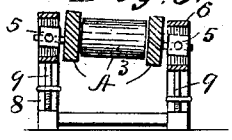


Fig. 7.

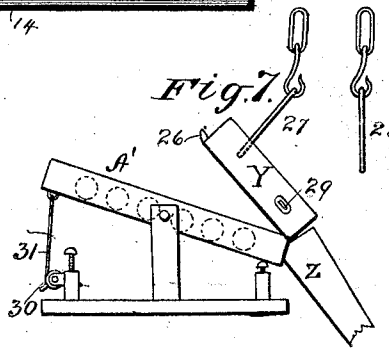
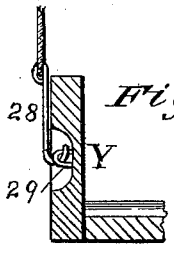


Fig. 8.



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UNITED STATES PATENT OFFICE.

TONY ALEXANDER, OF BISMARCK, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO GIDEON ALEXANDER, OF NEW ORLEANS, LOUISIANA.

LOG OR FREIGHT DUMPING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 707,951, dated August 26, 1902.

Application filed October 7, 1901. Serial No. 77,781. (No model.)

To all whom it may concern:

Be it known that I, TONY ALEXANDER, a citizen of the United States, residing at Bismarck, in the county of Lawrence and State of Mississippi, have made certain new and useful Improvements in Log or Freight Dumping Apparatus, of which the following is a specification.

My invention is an apparatus for use with an overhead cable or rail carrier for receiving, arresting, and then dumping a log or other form of freight at the end of its travel while suspended from a cable or rail.

The chief feature of the apparatus is a pivoted and automatically tiltable frame whereon the log or other freight strikes and by which it is arrested and then discharged upon the ground or into a chute or into a suitable receptacle, the said frame automatically resuming its normal inclined position immediately following such discharge or dump. The tiltable frame is adapted for vertical adjustment and for different lateral inclinations and provided with a series of antifriction-rollers and with pivoted and spring-actuated dogs which not only receive and guide and tend to arrest the log when it strikes upon the frame, but serve also to release the hooks or other devices by which the log is suspended from the carriage that travels on the overhead cable or rail.

The details of construction, arrangement, and operation of parts are as hereinafter described, reference being had to accompanying drawings, in which—

Figure 1 is a side view of my improved apparatus, part of the frame being broken away to show the antifriction-rollers. Fig. 2 is a plan view of the apparatus. Fig. 3 is another plan view of the apparatus with a log supported thereon. Fig. 4 is a side view illustrating the operation of the apparatus. Fig. 5 is a cross-section of the apparatus, illustrating the lateral inclination of the frame for facilitating dumping or discharge of logs, &c. Figs. 6 and 7 are views illustrating the dumping of freight-boxes. Fig. 8 is a detail view illustrating the attachment of a suspending hook or grapple to a freight-box.

As shown in Figs. 1, 2, and 3, the frame A of my improved apparatus is oblong and rectangular and consists of two thick parallel side beams 1 1 and end cross-bars 2. A series of antifriction-rollers 3 are journaled in the side bars 1, thus forming a roller-bed upon which the log or other freight is received and supported until dumped or discharged, as will be hereinafter described. The frame A is pivoted centrally or thereabout, so as to oscillate in a vertical plane, and in practice it is weighted at its front end, as shown at 2^a in the figures, so that it is held normally in slightly-inclined position, as shown in Fig. 1. Its pivotal attachment is provided by means of trunnions or lateral journals 7, (see Fig. 1,) that enter bearing-blocks 5, which are themselves provided with trunnions journaled in a vertically-slidable frame 6. (See Fig. 1.) The said frame 6 is supported slidably in a guide-slot provided in vertical posts 8, arranged on opposite sides of the frame A. The frames 6 rest upon and are adjusted by a screw-shaft 9, which is provided with a hand-wheel 10 for rotating it, and whose threaded portion works in a nut bedded in the aforesaid posts 8. The heads or upper ends of the screw-shafts 9 are set rotatably in caps forming attachments of the frame 6. The latter is provided with lateral projections or ribs that work in grooves formed in the inner sides of the slotted portion of the posts 8, as shown best in Fig. 2. The frame A is provided at each end, on the under side, with a block 11, which is adapted to strike upon the conical head of a screw 12, that is arranged vertically in a guide 13 and adapted to be adjusted vertically by rotating it. The guides 13 are supported upon the bed-frame 14 of the apparatus. It is apparent that by means of the screws 9 and 12 the height of the frame A or its forward inclination or its extent of movement in the dumping operation hereinafter described may be regulated at will. It is further apparent that by means of the screws 9 the frame A may be set at a lateral inclination—that is to say, with one side higher than the other, as shown in Fig. 5—whereby the discharge of logs from the apparatus is facilitated, as will be further explained. In practical use the apparatus is arranged directly under and in line with the cable or rail upon which the log or other freight is trans-

ported by means of a carrier. Further, it is arranged at the point where the log or other freight is to be discharged or dumped. While being transported on the cable or rail the log is supposed to be held practically horizontal. Therefore when it reaches the frame A its front end will strike upon the front portion of the latter and will pass farther up on the same and between dogs 15, as shown in Fig. 3, where the log is indicated by X. The said dogs are in the form of blocks whose front ends are square or angular, and they are pivoted near the center of their length and in horizontal position upon bars 16, which are in turn pivoted near their front ends, or at 17, to the side bars 1 of the discharger A. A strap 18 is applied for supporting the pivot-bolt 19 of each dog 15. A plate-spring 20 is attached to the front end of each dog, on the rear side thereof, and its free end engages a pin 21, which is set in the rear free end of the bar 16. Said pin also serves as a stop for the dogs, so that they cannot be thrown back too far. The arrangement of the springs 20 relative to the dogs 15 is such that the latter are held in an inclined position horizontally or are projected toward each other, as shown in Fig. 2. In this position they receive a log and guide the same in the direction of the length of the discharger-frame A. It is apparent that the pointed or rear ends of the dogs 15 will yield proportionately to the diameter of the log X, and if the diameter of the log be greater than the normal distance between the pivots 19 of the dogs the latter will be forced back bodily along with the bars 16, as illustrated in Fig. 3. Springs 22 are attached to the outer sides of the bars 1 of frame A, and their free ends press against the bars 16 at a point in advance of their pivots 17, thus tending to force the free or rear ends of the bars 16 inward. This movement is arrested by stops 23, which are set in the frame-bars 1 adjacent to their inner sides. It will be seen, therefore, that the dogs 15 have an oscillating movement of their own, due to their pivotal attachment, and that they also have a bodily movement laterally in consequence of their attachment to the bars 16. By this arrangement the dogs are adapted to receive or engage and duly guide logs of greatly-varying diameter. When a log X is received upon the discharger A, it passes between the dogs 15, as indicated, and overbalances the pivot-frame A, so that the latter is tilted into the position shown in Fig. 4, and continuing its motion by moving on the rollers 3 it passes clear of the dogs and is discharged upon the ground or a chute, as the case may be. As before intimated, the frame A is preferably inclined laterally, as shown in Fig. 5, in order to cause the log to be discharged laterally as well as endwise from the frame. The above-described operation will ensue whether the log be moved slowly or with great rapidity. In practice the logs received upon the frame A travel with great rapidity, and the discharge is effected almost instantaneously.

It is apparent that means must be provided for releasing the hooks or grapples by which the logs X are held suspended during transit. For this purpose any suitable means may be employed; but by the construction and arrangement of the dogs 15 they are adapted for this purpose—that is to say, when a log arrives or strikes upon the discharger A the dogs are thrown into such position that their rear angular ends (see Figs. 2 and 3) strike against the hooks 24, by which the log is suspended from the cables or chains 25, (see Fig. 4,) and thereby knocks or forces the hooks out of engagement with the log. In Fig. 4 the front hooks are shown disengaged and the log is supposed to be traveling forward, so that the dogs 15 will next engage and free the rear hooks. In brief, the dogs 15 subserve two purposes, in that they receive and guide the logs and automatically disengage the hooks or grapples as the logs pass over the discharger and are unloaded by the tilting of the latter. The apparatus as a whole thus operates automatically for receiving, releasing, and discharging the logs.

In Figs. 6, 7, and 8 I illustrate the use of the apparatus for discharging other freight than logs—that is to say, for discharging such freight as is necessarily carried in boxes or equivalent receptacles. In Figs. 6 and 7 I indicate a box Y, which is provided with skids or runners 26 to adapt it to strike upon and ride easily over the rollers of the frame A′. The box Y is suspended by two sets of hooks 27 and 28. The hooks 27 may have a permanent engagement with the box Y; but the hooks 28 engage staples 29, as shown in Fig. 8, the staples being arranged in recesses in the outer sides of the box Y and the point of the hooks being directed forward, so that when the hooks are engaged by the dogs 15, as in the case of the log-hooks before described, the said hooks 28 will be instantly disengaged, so that the box Y may be tilted and discharged into a chute Z, as shown in Fig. 7. In place of weighting the front end of the frame or discharger A′ it may be restricted to the normal position shown in Fig. 6 by means of a windlass 30 and strap or rope 31.

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

1. An apparatus for receiving and discharging logs or other freight, which comprises the fixed frame, having supports, or stops, at each end as described, a tiltable frame, pivoted and supported in the fixed frame at about the middle of its length, and weighted at its front end, and having a bed over which logs may slide as described; means for guiding said logs lengthwise of said tiltable frame, the latter being held normally depressed or inclined downward in the direction of travel of the logs, as shown and described.

2. An apparatus for the purpose specified, comprising a tiltable frame which is pivoted at or near its middle, and means for adjusting its pivoted bearings vertically, whereby the said frame may be adjusted bodily higher or lower and set at any required inclination transversely, substantially as shown and described.

3. An apparatus for the purpose specified, comprising the pivoted discharger or frame lateral trunnions projecting from said frame at or near its middle, trunnion guides or supports adapted for sliding vertically and screws connected with such supports for adjusting the latter higher or lower, substantially as shown and described.

4. An apparatus for the purpose specified, comprising the pivoted discharger-frame central trunnions for such pivoted frame, bearings for said trunnions which are in turn provided with lateral gudgeons, a frame in which said bearings are pivoted, guide-posts having slots or ways in which said frames are adapted to slide vertically, and screws connected with the said frame and working in nuts fixed in the posts, substantially as shown and described.

5. An apparatus for the purpose specified, comprising a discharger-frame pivoted at or near its center and tiltable as specified, and a screw top or buffer which is adjustable vertically and arranged beneath the end of said frame for arresting and supporting the same when in use, as shown and described.

6. An apparatus for the purpose specified, comprising a fixed supporting-frame, a tiltable frame pivoted therein, and devices arranged on such tiltable frame and adapted to move laterally, and springs bearing upon said devices and serving to hold them pressed normally inward over a portion of the bed, for receiving a log or other freight between them and yielding and guiding the log in the manner described.

7. An apparatus for the purpose specified, comprising a pivoted tiltable frame and dogs or guide-blocks pivoted upon the sides of said frame, and means for holding them projected inward over the bed of said frame, their rear ends being approximated for the purpose of receiving or engaging a log or other freight, substantially as shown and described.

8. An apparatus for the purpose specified, comprising a pivoted and tiltable discharger-frame, and dogs pivoted upon the side bars of the same and springs engaging said dogs for holding them projected normally into the path of the log or other freight received upon the frame, substantially as shown and described.

9. An apparatus for the purpose specified, comprising a frame having pivoted dogs whose rear ends are adapted to engage hooks or grapples by which the logs or other freight are suspended and carried, substantially as shown and described.

10. An apparatus for the purpose specified, comprising a pivoted tiltable frame having dogs pivoted upon the upper side of the same and their front ends being of angular form and springs for holding the dogs normally in position to receive and engage the log or other freight, substantially as shown and described.

11. An apparatus for the purpose specified, comprising a frame, bars pivoted at their front ends upon the upper sides of said frame, and dogs pivoted to said bars, and springs for holding both bars and dogs in the position required for yielding engagement with a log or other freight, substantially as shown and described.

12. In an apparatus substantially as described, the combination with a tiltable frame pivoted at or near its middle and weighted at its front end, of dogs which are pivoted to bars and the said bars in turn pivoted upon the said frame, stops for arresting both bars and dogs, and springs for pressing them inward, in the manner described.

TONY ALEXANDER.

Witnesses:
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J. MIDDLETON.