F. E. THRALL, S. SHEA & B. H. THRALL.

DROP STAKE FOR LOGGING CARS.

APPLICATION FILED AUG. 23, 1909.

949,966. Patented Feb. 22, 1910.

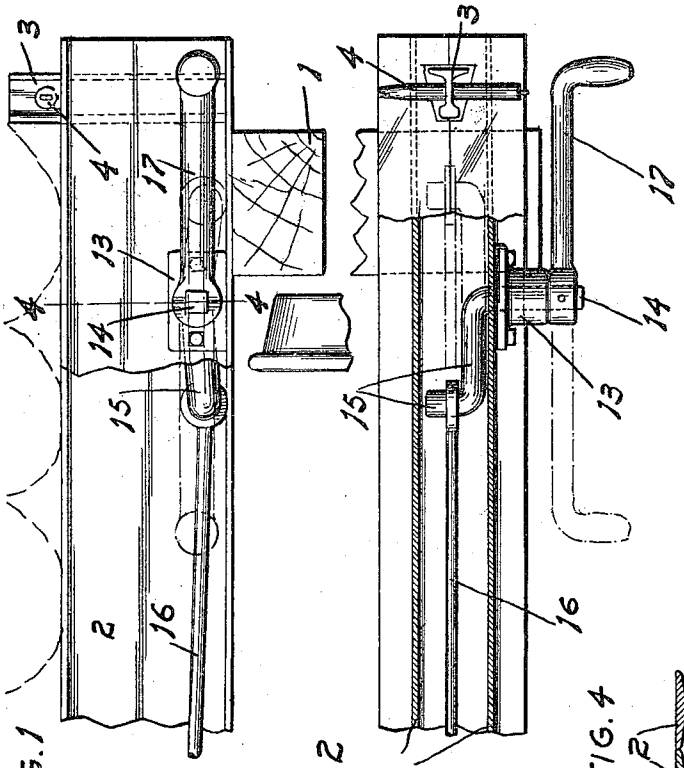
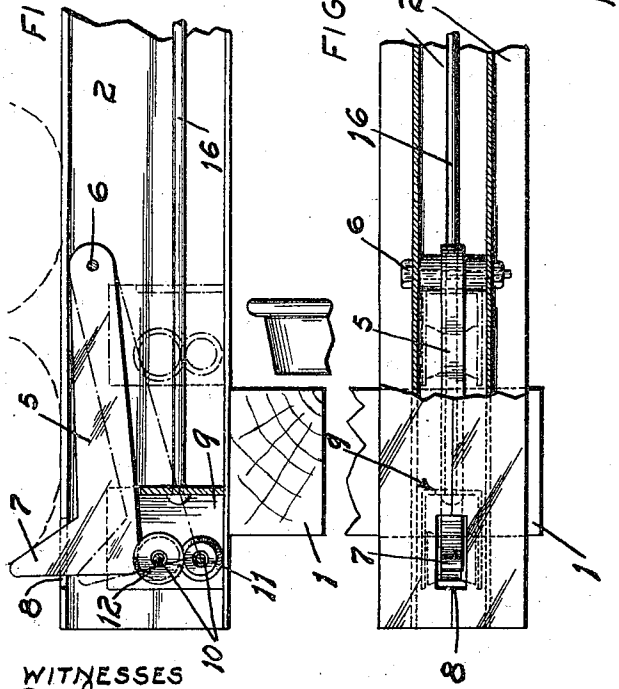


FIG. 1

FIG. 2



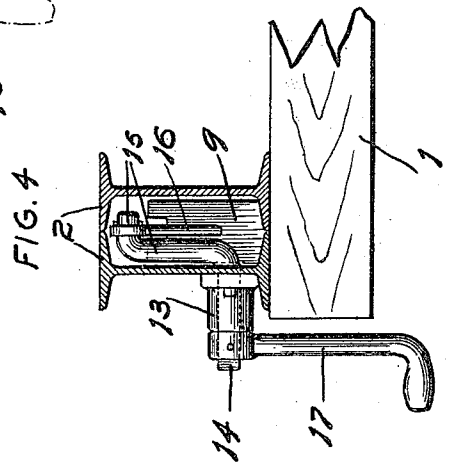


FIG. 4

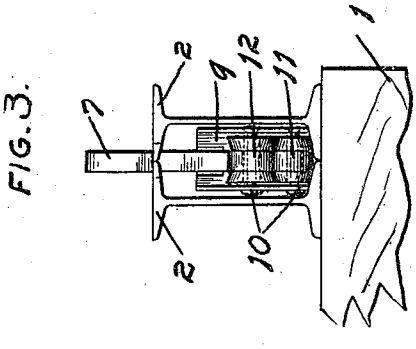


FIG. 3.

WITNESSES

Wm. Janus.

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DROP-STAKE FOR LOGGING-CARS.

949,966. Specification of Letters Patent. Patented Feb. 22, 1910.

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To all whom it may concern:

Be it known that we, FORREST E. THRALL, STEPHEN SHEA, and BURTON H. THRALL, citizens of the United States, residing at Lake Charles, Louisiana, have invented a certain new and useful Improvement in Drop-Stakes for Logging-Cars, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a portion of a logging car, or the like, and showing one of our improved drop stakes thereon. Fig. 2 is a plan view of one end of a logging car and showing the drop stake thereon. Fig. 3 is an end view of a frame in which the drop stake is positioned. Fig. 4 is a vertical section taken on the line 4—4 of Fig. 1, and showing the crank and handle utilized for operating the drop stake in vertical positions.

Our invention relates generally to logging cars, or flat cars utilized for hauling logs, and more particularly to the drop stake utilized on said cars and the means for elevating said stake, and to the means whereby said stake is locked while in an elevated position.

On logging cars and flat cars utilized for hauling logs, it is essential that short stakes or stops be arranged at one side of the car, which stakes must be easily and quickly shifted into an out of the way position when it is desired to unload the logs. To this end we have devised a pivoted hook or drop stake, which is elevated by means of a roller bearing and which lowers by gravity when the roller bearing is shifted in one direction beneath the drop stake, and there being simple means provided for locking the stake-shifting mechanism after movement in both directions.

To the above purposes, our invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings, 1 designates the side sills of the logging car, and transversely arranged thereon, at suitable distances apart, are the frames in which the drop stakes and their operating means are mounted. In the present instance, we have shown these transverse frames as being constructed of a pair of I-beams 2 placed side by side and held together in any suitable manner.

Vertically disposed in each frame at one end thereof is a stake 3 held by means of a pin 4. Arranged in the opposite end of the frame is the drop stake, which, as shown, comprises a horizontally disposed arm 5, the inner end of which is pivotally mounted on a pin or bolt 6 which passes transversely through the vertical webs of the I-beams 2. Formed on or fixed to the outer end of this arm 5 is a short vertically disposed stake 7, which when elevated occupies an opening 8 formed in the top of the frame by cutting away the adjacent flanges of the I-beams 2.

Arranged for sliding movement in the frame beneath the arm 5 is a small frame 9 comprising a pair of side walls united by one end wall, and journaled upon pins 10 passing transversely through the side walls of said frame is a pair of rollers 11 and 12. The periphery of the lower roller travels on the adjacent pair of flanges at the bottom of the I-beams 2, and the arm 5 rests upon the upper one of said rollers. The openings in the rollers 11 and 12 are made substantially larger than the pins 10, and thus the weight of the load against the stake 7 is transmitted through the rollers direct to the adjacent flanges at the bottom of the I-beams 2, instead of being carried by said pins.

Formed on or fixed to the vertical web of one of the I-beams 2 at the end of the frame adjacent the stake 3 is a bearing 13, and journaled therein is a shaft 14, on the end of which, within the space between the webs of the I-beams 2, is formed a crank 15. Journaled on the end of this crank 15 is one end of a rod 16, the opposite end of which is connected to the sliding frame 9. Detachably arranged on the outer end of the shaft 14 is a crank handle 17. The crank 15 is so arranged as that it will drop a slight distance below the center when moved from one position to the other, and thus said crank and parts operated thereby are effectually locked against movement in either direction until said crank is manipulated by means of the handle 17.

When logs or the like are being loaded onto a car equipped with our improved drop stakes, said stakes occupy elevated positions as seen in Figs. 1 and 2. With the stakes so elevated the logs or timbers loaded on to the car are prevented from rolling off. When the logs are to be unloaded, the stakes are dropped into positions as shown by dotted lines in Fig. 1, by engaging the crank handles 17 and giving the same half a turn, which movement, by means of the crank 15 and connecting rod 16, draws the sliding frame 9 into position beneath the pivoted end of the arm 5, thus permitting the stake to drop, and during this movement the under side of the arm 5 rides upon the periphery of the roller 12. As the crank 15 moves a slight distance below the plane occupied by the axis of the shaft 14, the parts are effectually held in locked positions until said shaft and the crank are manipulated by means of the crank handle.

A drop stake of our improved construction is comparatively simple, is easily and quickly elevated when desired, and when the sliding frame 9 is shifted to the right beneath the arm 5, said arm and stake will drop by gravity, thus permitting the logs or timber to be discharged from the side of the car over the drop stakes.

While we have described our invention as being particularly applicable for logging cars, it will be readily understood that the principles involved in our invention may be applied to lumber cars, and for the purpose of locking the side bars or panels of gravel cars.

We claim:

1. The combination with a logging car of a drop stake arranged for vertical movement at the side of the car and a sliding roller arranged for operation beneath said stake for elevating the same.

2. The combination with a logging car of a drop stake arranged for vertical movement at the side of the car, a sliding roller arranged for operation beneath said stake for elevating the same and means for actuating said sliding roller.

3. The combination with a logging car provided with a transversely disposed member, of a drop stake pivotally mounted on said member, and a roller bearing arranged to slide beneath said drop stake.

4. The combination with a logging car provided with a transversely disposed member, of a drop stake pivotally mounted on said member, a sliding member arranged beneath said drop stake, and a roller bearing carried by said sliding member which engages the under side of the drop stake.

5. The combination with a logging car provided with a transversely disposed member, of a drop stake pivotally mounted on said member, a sliding member arranged beneath said drop stake, a roller bearing carried by said sliding member, and means for actuating the sliding member.

6. A drop stake for logging cars, comprising a pivoted arm, a stake carried by one end of said arm, and a roller arranged to slide beneath the arm, for the purpose of elevating the same.

7. A drop stake for logging cars, comprising a pivoted arm, a stake carried by one end of said arm, a roller arranged to slide beneath the arm for elevating the same, and means whereby said roller is shifted.

8. A drop stake for logging cars, comprising a pivoted arm, a stake carried by one end of said arm, a roller arranged to slide beneath the arm for elevating the same, means whereby said roller is shifted, and which shifting means is automatically locked after movement.

9. A drop stake for logging cars, comprising a pivotally mounted arm, a stake carried thereby, and a laterally moving roller bearing operating in a horizontal plane beneath the arm.

10. A drop stake for logging cars, comprising a pivotally mounted arm, a stake carried thereby, a laterally moving roller bearing operating in a horizontal plane beneath the arm, and means whereby said roller bearing is shifted.

11. A drop stake for logging cars, comprising a pivotally mounted arm, a stake carried thereby, a laterally moving roller bearing operating in a horizontal plane beneath the arm, means whereby said roller bearing is shifted, and which roller-shifting means is locked at the end of each stroke.

12. The combination with a vertically moving drop stake for logging cars, of a roller bearing operating in a horizontal plane beneath the stake and adapted to elevate the same when moved in one direction.

13. The combination with the vertically moving drop stake of a logging car, of a member arranged to slide in a horizontal plane beneath the stake and adapted to elevate the same when said member is moved in one direction.

14. The combination with the vertically moving drop stake of a logging car, of a member arranged to slide in a horizontal plane beneath the stake and adapted to elevate the same when said member is moved in one direction, and means whereby said member is locked after movement.

15. The combination with a vertically moving drop stake which is mounted to drop by gravity, and a sliding roller bearing arranged beneath said drop stake and adapted to elevate the same.

16. The combination with a vertically moving drop stake which is mounted to drop by gravity, a sliding roller bearing arranged beneath said drop stake and adapted to ele-

vate the same, and means whereby said roller bearing is actuated.

17. The combination with a vertically moving drop stake which is mounted to drop by gravity, a sliding roller bearing arranged beneath said drop stake and adapted to elevate the same, means whereby said roller bearing is actuated, and which last-mentioned means is locked after movement.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses, this 12th day of August, 1909.

FORREST E. THRALL.
STEPHEN SHEA.
BURTON H. THRALL.

Witnesses:
J. A. KINDER,
P. A. DEES.