H. KNOX.

LIFTING FRAME.

APPLICATION FILED JAN. 12, 1909.

920,754.

Patented May 4, 1909.

2 SHEETS—SHEET 1.

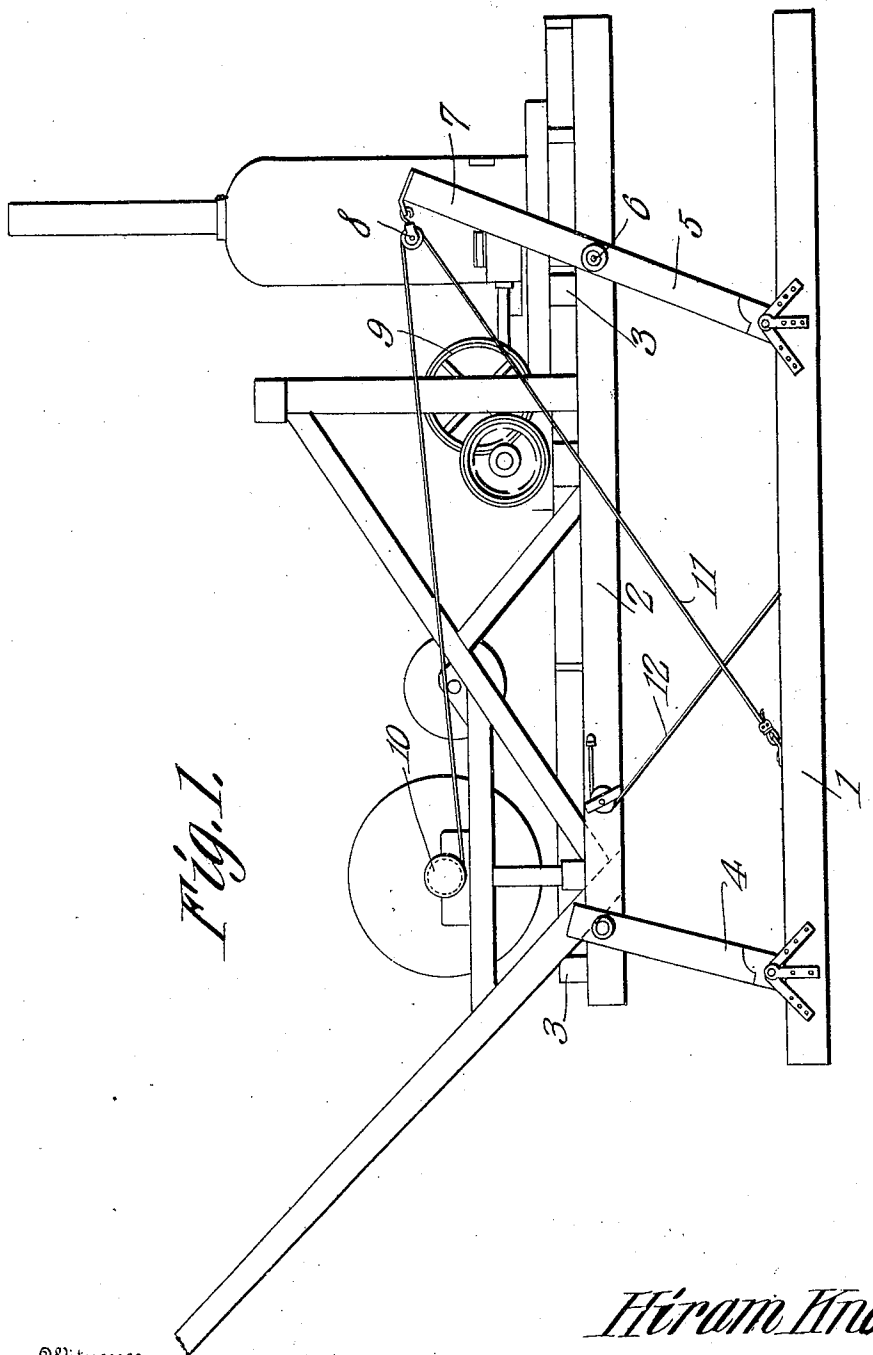


Fig. 1.

Witnesses

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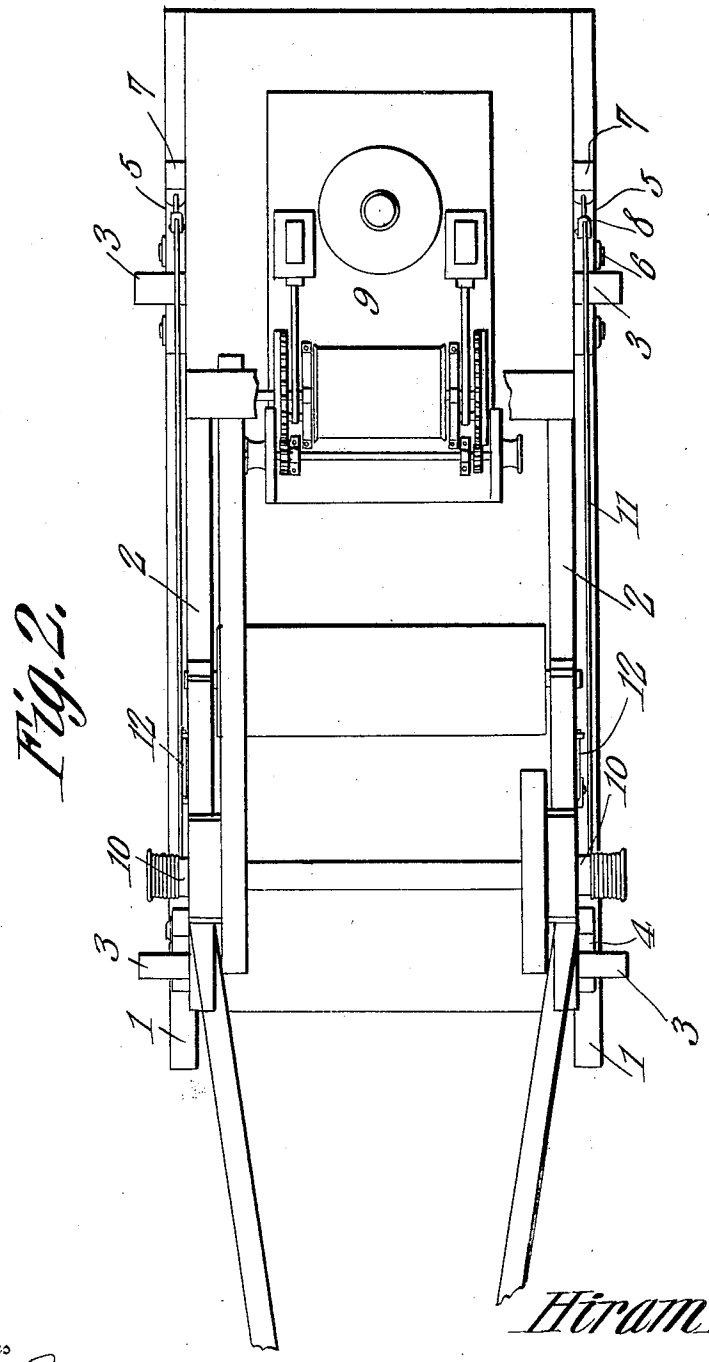


Fig. 2.

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UNITED STATES PATENT OFFICE.

HIRAM KNOX, OF LIVINGSTON, TEXAS.

LIFTING-FRAME.

No. 920,754. Specification of Letters Patent. Patented May 4, 1909.

Application filed January 12, 1909. Serial No. 471,925.

To all whom it may concern:

Be it known that I, HIRAM KNOX, a citizen of the United States, residing at Livingston, in the county of Polk and State of Texas, have invented a new and useful Lifting-Frame, of which the following is a specification.

This invention has relation to lifting frames, and it consists in the novel construction and arrangement of its parts, as hereinafter shown and described.

The object of the invention is to provide a frame upon which may be mounted a hoisting engine, the parts of the frame being so arranged that they may be operated upon by cables connected with the engine, whereby that portion of the frame upon which the engine is mounted may be lifted above the surface of the ground, so that a car or other carrying device may be run under that part of the frame upon which the engine is mounted, thus providing means for quickly loading the engine and frame upon the body of the car.

Primarily the frame includes parallel sills and parallel beams, the engine and an attached winding drum may be positioned upon the beams, and legs are pivotally connected at their lower ends with the sills, and the legs at one end of the beams are pivoted at their upper end portions thereto, while the legs at the opposite ends of the beams are pivoted at intermediate points thereto and have end portions which project beyond the said pivotal connections. Pulleys are mounted upon the projecting ends of the last said legs, and cables are attached at one end to the sills at points intermediate the ends thereof and pass around the said pulleys, and at their opposite ends wind about the drum which is connected with the engine. Other cables are attached at their lower ends to the sills at points intermediate the ends thereof, and are connected at their upper ends to the said beams at points intermediate of the ends thereof, and are adapted to limit the upward movement of the beams with relation to the sills, as will hereinafter appear.

In the accompanying drawings:—Figure 1 is a side elevation of the lifting frame. Fig. 2 is a top plan view of the same.

The lifting frame consists of the parallel sills 1 and the parallel beams 2. The beams 2 are connected together by the cross pieces 3, the ends of which project beyond the outer sides of the said beams, and lie over the upper sides of the sills 1. Legs 4 are pivotally connected at their lower ends to the forward ends of the sills 1 and are pivotally connected at their upper ends to the forward ends of the beams 2. Legs 5 are pivotally connected at their lower ends with the rear end portions of the sills 1, and are pivotally connected at intermediate points as at 6 to the rear end portions of the beams 2. The distance between the pivotal connections of the legs 4 and 5 with the beams 2 and the sills 1 is the same in both instances, but the legs 5 have portions 7 which project beyond their pivotal connections with the beams 2. In fact, the legs 5 are in the form of levers, and will hereinafter be distinguished from the legs 4, by the application of the term "lever legs". Pulleys 8 are attached to the projecting end portions of the lever legs 5. An engine 9 is mounted upon the beams 2 and is operatively connected in the usual manner with a winding drum 10. Cables 11 are attached at one end to the sills 1 at points between the legs 4 and lever legs 5, and then pass around the pulleys 8 and around the winding drum 10. Cables 12 are attached at their lower ends to the sills 1 at points between the legs 4 and the lever legs 5, and at their upper ends are attached to the beams 2 at points between the said legs 4 and 5. The cables 12 are relatively short, and are adapted to limit the upward movement of the beams 2 with relation to the sills 1.

The operation of the frame is as follows:—Presuming that both the sills 1 and the beams 2 are resting upon the ground, and it is desired to elevate the beams 2 and the mechanism located thereon with relation to the sills 1 and the surface of the ground, the drum 10 is started in rotation so that the cables 11 are wound thereon, and when this occurs the said cables 11 are shortened and the projecting ends of the lever legs 5 are elevated or swung up upon the pivotal connections between the lower ends of the said legs and the sills 1. At the same time those ends of the legs 4 which are pivotally connected with the beams 2 swing in an upward direction, and thus the beams 2 are elevated, but in parallel relation with respect to the sills 1. When the beams 2 reach the limit of their upward movement the cables 12 become taut and further upward movement on the part of the said

beams 2 with respect to the sills 1 is checked. Thus the beams 2 are elevated above the surface of the ground, and a car or other vehicle may be run under the same, when the operation above described may be reversed, and the said beams 2 lowered upon the platform of the car. When this is done, the sills 1 may be swung up manually or otherwise, and the entire frame and the apparatus located thereon is thus loaded upon the car platform. It will also appear that by reversing the operation above described the beams 2 and the apparatus located thereon may be removed from the platform of a car and again positioned upon the ground, and, when in such position, the cross pieces 3 mounted upon the beams 2 will lie, at their end portions, transversely across the upper edges of the sills 1. Thus, when the beams 2 are lowered, they, together with the sills 1, form a substantial foundation for the apparatus mounted upon the said beams.

The frame as shown and described is especially adapted to be used for supporting engines and drums adapted for lifting and hauling or skidding logs, but it is obvious that the said frame may be employed for elevating and lowering engines adapted to be used for other purposes.

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

1. A lifting frame comprising sills, legs and lever legs pivotally connected at their lower ends with the sills, beams pivotally connected with the legs at their upper end portions and pivotally connected with the lever legs at points intermediate of their ends, a winding device mounted upon the beams, and cables attached at one end with the sills, and at their opposite end portions winding upon the said winding device and engaging the projecting ends of the lever legs at intermediate portions.

2. A lifting frame comprising a sill, legs and lever legs pivotally connected at their lower ends with the sill, a beam pivotally connected at one end with the upper end portion of the legs, and pivotally connected at its opposite end portion to an intermediate portion of the lever legs, a winding device mounted upon the beam, and a cable attached at one end to the sill, and at its other end winding upon the said device and communicating, at an intermediate portion, with the projecting end of the lever leg.

3. A lifting frame comprising sills, legs and lever legs pivotally attached at their lower ends to the opposite ends of the sills, beams pivotally connected at their ends to the upper end portions of the legs, and pivotally connected at their opposite end portions to the lever legs at points intermediate of the ends thereof, a winding device mounted upon the beams, cables attached at one end to the sills and winding at their other ends upon the said winding devices, and communicating at intermediate portions with the projecting ends of the lever legs, and cables connected at one end with the sills and at their opposite ends with the beams, and adapted to limit the movement of the beams with relation to the sills.

4. A lifting frame comprising sills, legs and lever legs pivotally connected at their lower ends to the sills, beams pivotally connected at one end with the upper end portions of the legs, and pivotally connected at their opposite end portions with the said lever legs at points intermediate of the ends thereof, cross pieces mounted upon the said beams and having end portions projecting beyond their sides and over the upper edges of the sills, a winding device mounted upon the beams, cables attached at one end to the sills, and at their opposite end portions winding upon the said winding device, and at intermediate portions communicating with the projecting ends of the lever legs.

5. A lifting frame comprising sills, legs and lever legs pivotally connected at their lower ends with the sills, beams pivotally connected at one end with the upper end portions of the legs and pivotally connected at their opposite end portions to the lever legs at points intermediate of the ends thereof, cross pieces located upon the beams and having end portions projecting beyond the sides thereof and over the upper edges of the sills, cables attached at one end to the sills, and at their opposite end portions winding upon the winding devices and having communication at intermediate portions with the projecting ends of the lever legs, and cables attached at one end to the sills, and at their opposite ends to the beams and adapted to limit the movement of the beams with relation to the sills.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HIRAM KNOX.

Witnesses:
W. H. KNOX, Jr.,
E. C. WILSON.