

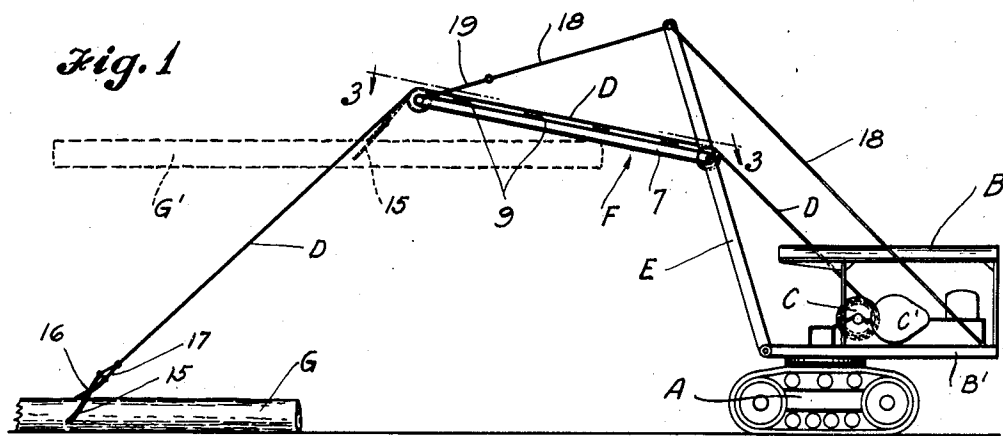
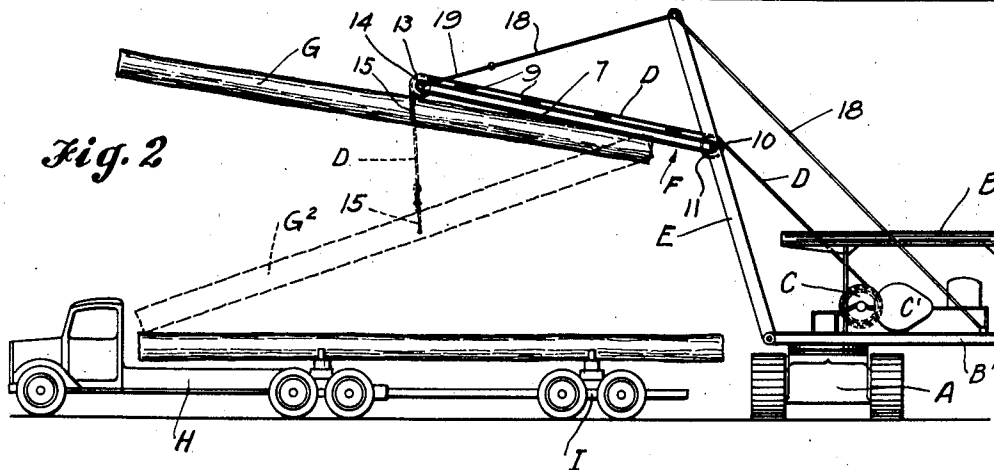
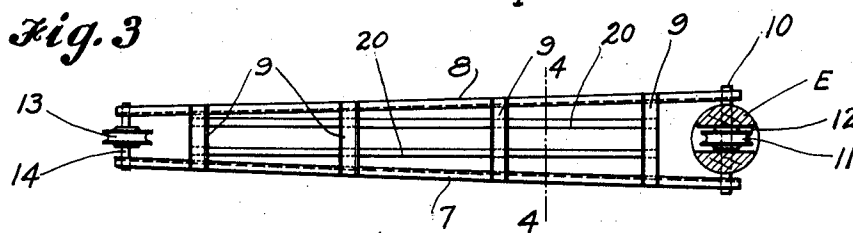
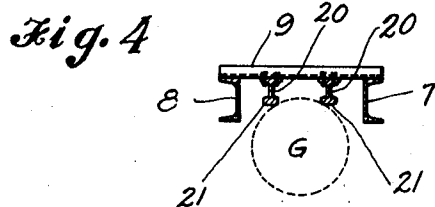
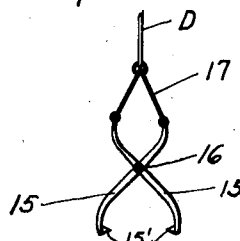
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APPARATUS FOR LOADING LOGS

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APPARATUS FOR LOADING LOGS

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1 Claim. (Cl. 212-43)

This invention relates to hoisting derricks, and particularly to derricks and apparatus for loading logs on trucks.

In the operation of loading large logs on trucks and cars for transportation it is usual to provide such trucks with trailers with free turning wheels, to support the rear ends of long logs, and it is important that a major portion of the weight of such logs shall be supported by the driving wheels of the trucks, in order to assure traction for the driving wheels, as in event the greater weight was supported over the trailer wheels, the driving wheels will sometimes slip or spin when the trucks attempt to climb heavy grades.

In logging operations in the forests of the Northwestern States logs are frequently cut for loading with lengths exceeding forty feet and frequently exceeding four feet in diameter. These great logs are usually moved and hoisted by heavy steel cables, operated over sheave wheels, on spars or gin poles with ordinary round booms. With these methods much difficulty has been found in guiding the logs into suitable positions on the trucks, and preferably with the larger or butt ends of the logs forward on the trucks. Further difficulties are found in adjusting the logs in parallel positions with lifting booms for alignment on the trucks in parallel positions, for the reason that when the logs are raised from the ground they frequently swing in various directions, and their great weight makes the lateral control both difficult, and dangerous for the workmen.

It is therefore among the objects of this invention, to provide simple means for overcoming such difficulties, and for hoisting such logs, and steadying the same in line with the booms, and for sustaining the same in such positions when raised, until moved to proper positions to be lowered upon the trucks.

Particular objects are to provide a relatively wide boom for lifting and guiding the logs, supported by a gin pole or post and projected on an upwardly inclined angle therefrom, all to be carried upon a tractor with a rotatable cab thereon, with a drum thereon for operating a power cable for hoisting; and further to provide such boom with a pair of parallel and spaced rails for straddling the curved sides of the logs for steadying the logs when being raised and lowered, and for sustaining the same in such steadied upraised positions while they are being moved to positions over a truck for loading.

With these and other objects to be hereinafter

stated, I have illustratively exemplified my invention by the accompanying sheet of drawings, showing:

Figure 1 represents a side elevation of the apparatus with the outer end of the cable connected to a log to be lifted, and dotted lines to indicate the log when partially raised.

Figure 2 represents a similar position of the apparatus, showing the log fully raised, and dotted lines to indicate the log being loaded upon a truck, and the tractor behind the truck.

Figure 3 represents an enlarged top plan of the boom taken on lines 2-3 on Fig. 1, showing the frame and rails and sheave wheels, and connection with the post, in cross section.

Figure 4 represents a cross section of the boom taken on lines 4-4 on Figure 3, and dotted lines to indicate a log beneath the rails.

Figure 5 is an elevation of a suitable pair of tongs for connecting the logs to the hoisting cable.

Like numerals and characters on the different figures represent like parts. The letter A represents any ordinary "caterpillar" or tractor for moving the apparatus to various positions in the forests for picking up the logs, indicated by G. The cab B is rotatably mounted upon the tractor in the usual manner for connecting cabs and platforms of steam shovels with means to provide circular movement of the cab and apparatus for picking up and loading logs in various places. An ordinary hoisting drum C, for operating the cable D, is also attached to the platform B' of the cab, operated by any ordinary power means which may be located in the casing C'.

E, indicates a gin pole, spar, or post, which is also mounted on the cab platform in substantially perpendicular position, for supporting the operating boom, indicated in general by letter F on the drawing, for hoisting, sustaining, moving, and lowering the logs as desired.

The boom F is preferably constructed from a pair of side bars 7 and 8 for a frame and attached together by cross ties or braces 9 affixed thereto by rivets or welding for rigidity and strength. The rear or back ends of the bars are pivotally connected to the post E by a cross rod 10, commonly known as a "shipper shaft" in the art. This shaft also provides an axle for the rear sheave wheel 11 rotatably mounted thereon with free movement for supporting the cable D between the drum and another free turning sheave wheel 13, on axle or shaft 14 positioned through the outer ends of the bars. A mortise 12 is pref-

erable cut through the post at the suitable position for the wheel 11, when a wooden post is used, as usual in the woods. The inner end of the boom is connected to the post at a point approximately near the center between the two ends of the post, and a considerable distance above the lower end of the post, to provide clearing and space beneath the boom when used for logs, to permit trucks to operate thereunder.

On the outer extended end of the cable D, a pair of tongs as 15 may be connected by a bridle 17, the legs of the tongs being crossed and connected by a pivot pin 16, so that when the tops are drawn together by the bridle the lower ends and prongs, or teeth 15' will also be drawn together, and the teeth may be thus driven into the sides of the logs to be moved when the cable is drawn upward. When the cable and log are lowered till the latter rests on a truck, the tongs may be easily removed from the log.

The outer end of the boom is supported at any suitable position, and preferably at about 20 degrees incline above horizontal from the post, by any suitable guy cable 18, and bridle 19 for connection with the outer ends of the frame bars. The other end of the guy cable is attached to the cab floor by any suitable means, and the bight or central portion of the guy cable connected to the top of the post for sustaining the boom at a desired elevation for hoisting. The inclined position of the rails, facilitates the sliding adjustment of the adjacent end of the logs when raised, fully by the cable.

The rails 20—20 are affixed to and below the braces 9, and spaced apart in parallel positions for straddling the sides of the logs for sustaining the upraised ends, and bodies of the logs when hoisted. The rails are so positioned at relatively considerable distance from each other to permit the same to pass down or straddle over the opposite sides of the logs, and the rails also extend below the braces at considerable and relative distances so that the outer edges will project sufficiently beneath the braces to provide clearance from the braces, for upper rounded faces of the logs and assure that the braces will not contact the logs to obstruct the same, in movement, or to prevent the rails from retaining the logs in alignment therewith. The lower edges of the rails are provided with enlarged and rounded heads 21, 21, which facilitate the adjustments and sliding of the logs beneath the same, to a predetermined point along the boom.

In operation, the cab and boom are swung into

suitable position toward any log lying on the ground, and the tongs connected to the log at a point distant from the smaller end of the log, so that when raised the end of the log will come to rest at the predetermined point beneath the boom, and with the greater weight of the log outside or beyond the location of the sheave wheel 13, whereby such outer end of the log will tend to sag down, and bind the inner end of the log against the rails, when the log is sufficiently raised. The log when so raised against the rails will be steadied thereby, and prevented from swinging from side to side, when completely raised from the ground. When the outer end of the log is elevated higher than the outer end of the boom, the log will usually slide inward toward the post till the tongs are directly beneath the wheel, and the inner end at the point desired, so that the outer end when lowered upon the truck shown as H, will conform with the front ends of other logs thereon, and assure sufficient weight on the truck wheels to prevent the same from spinning. The rear ends of the logs being supported by the wheels of the trailer I.

As the apparatus is easily moved into various positions by the tractor, logs of any length may be loaded with the front ends in alignment on the forward part of the truck. The tractor may be used to carry the apparatus into places inaccessible for a truck, and there pick up any scattered logs, and when the same are hoisted up against the boom, the tractor then moves them to the location of the truck, until the full load has provided.

Having described my invention, I claim as new for patent thereon:

A derrick boom for loading logs, comprising side bars and cross tie braces for a frame, a pair of rails affixed to the lower faces of the braces at right angles therewith, and spaced apart relatively widely and parallel with each other for extending over and straddling opposite sides of logs, and said rails extended at considerable relative distance in area below said braces to prevent the logs from contacting the braces when raised and from being obstructed by the braces, and to prevent the logs from moving laterally with the rails and boom when raised, the outer edges and faces of the rails provided with rounded sides, to facilitate longitudinal sliding movement of the logs along the rails when elevated.

HARRY CARLSON.