Oct. 27, 1936. R. G. LE TOURNEAU 2,058,473

LOGGING ARCH

Filed Feb. 8, 1935 2 Sheets-Sheet 1

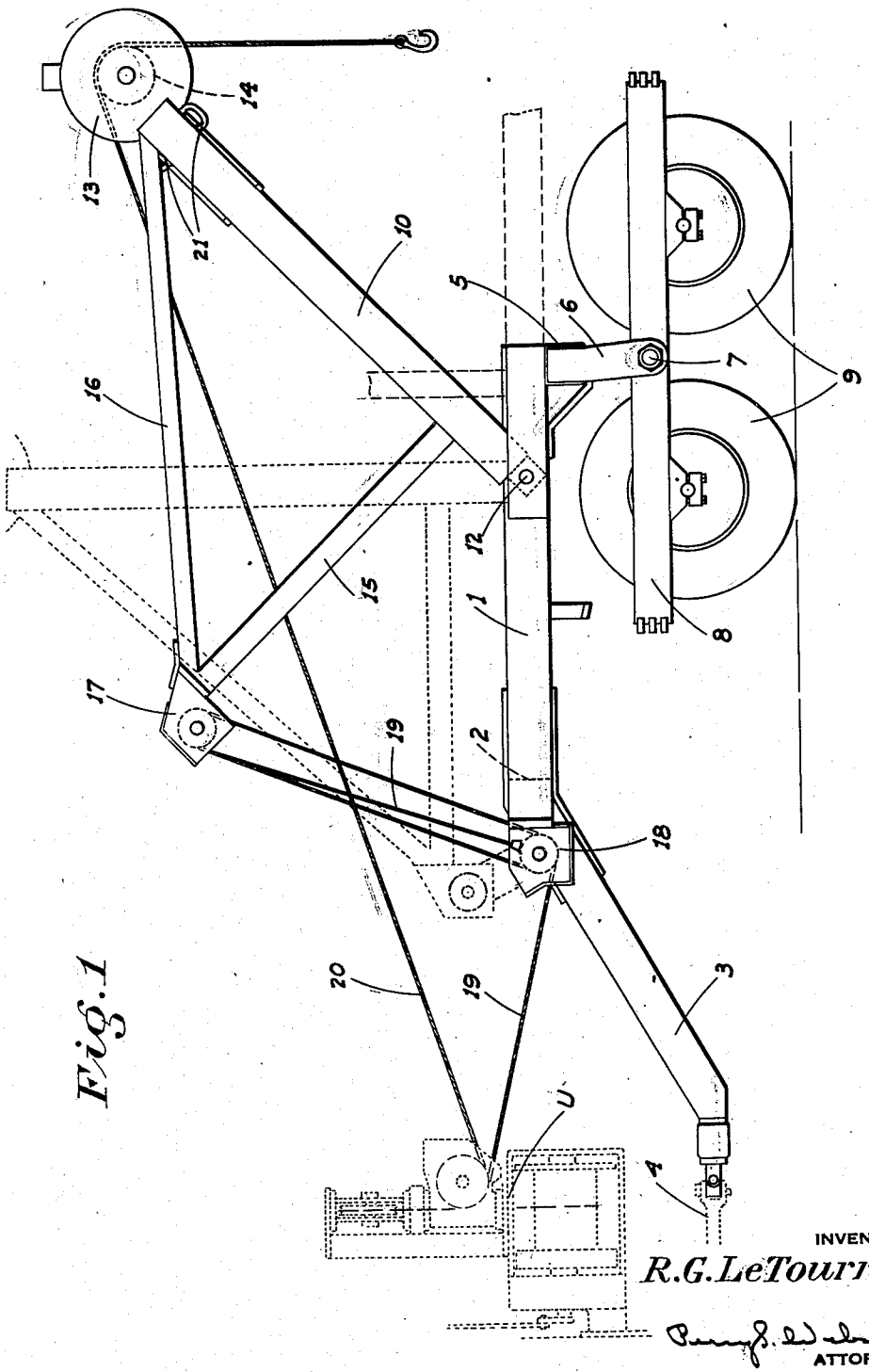


Fig. 1

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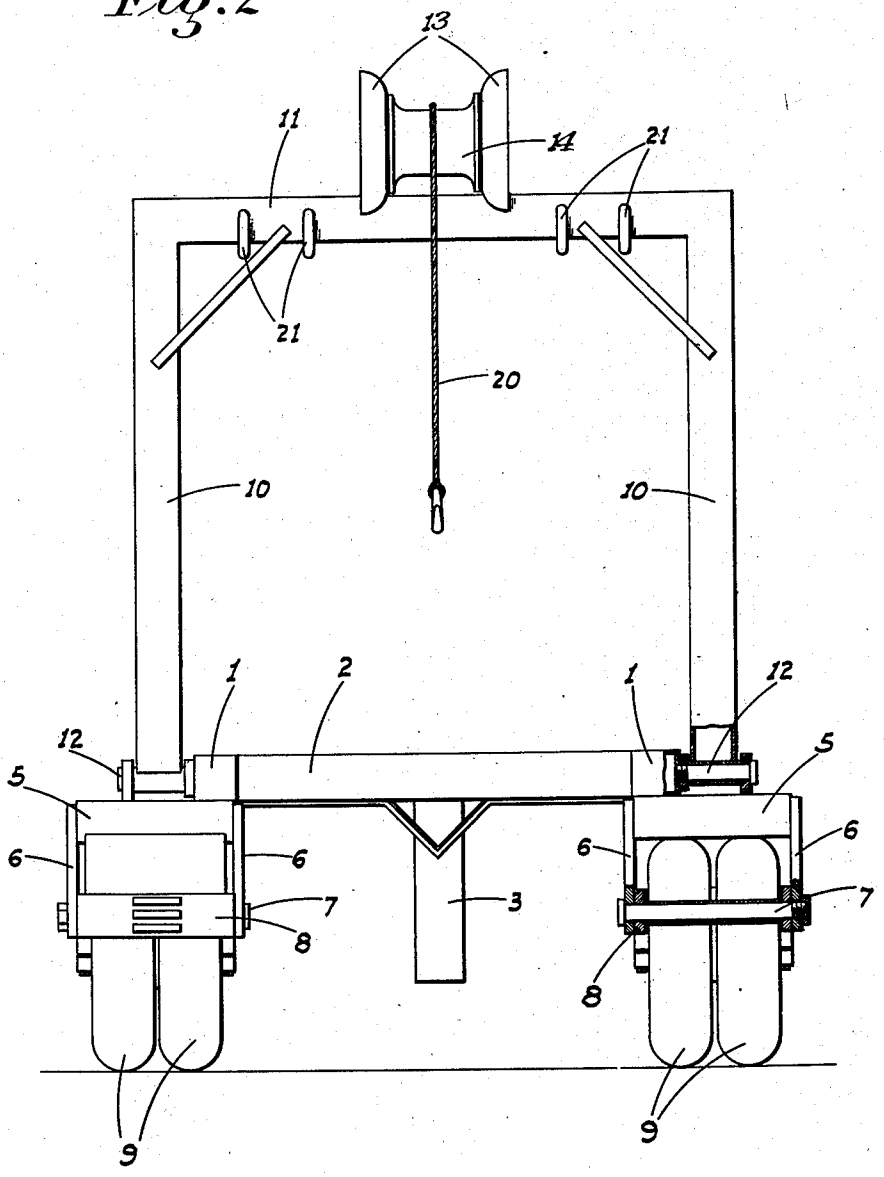
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Fig. 2



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2,058,473

UNITED STATES PATENT OFFICE

2,058,473

LOGGING ARCH

Robert G. Le Tourneau, Stockton, Calif., assignor to R. G. Le Tourneau Inc., Stockton, Calif., a corporation

Application February 8, 1935, Serial No. 5,622

2 Claims. (Cl. 212—8)

This invention relates to logging derricks or arches as they are commonly known. One of the objects of my invention is to provide a structure of this character having a boom so constructed that the logs can be picked up off the ground in the clear of the tracks, or in other words, without bumping the tracks before being lifted. This allows a larger number of logs to be brought into the arch at one lift than is the case with the ordinary form of arch.

Another important object is to construct the device so that the weight of the logs being carried may be optionally and easily shifted relative to the supporting wheels of the arch so as to relieve the draw bar of the tractor to which the arch is connected from any vertical drag either up or down and which of course interferes with its efficient operation and manipulation.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of my improved arch.

Figure 2 is a front end view of the same showing the boom fully raised.

Referring now more particularly to the characters of reference on the drawings, the frame of the arch comprises spaced side beams 1, a front cross beam 2, and a tongue 3 depressed at its front end, as shown, and adapted for supporting engagement with the draw bar 4 of a tractor. Mounted on and projecting outwardly from the rear ends of the beams 1 are short lateral frame beams 5, from both ends of each of which rigid arms 6 depend. Each pair of arms supports a transverse spindle 7, which swivelly supports a wheel truck frame 8. This frame supports the wheels 9 of the truck, of which there are preferably four disposed in somewhat closely spaced alinement both transversely and longitudinally; the spindle projecting between the longitudinally spaced wheeels.

The boom of the arch is a special construction and comprises a pair of rigid transversely spaced parallel arms 10 rigidly connected together by a top cross beam 11 so that the boom is of rectangular form. The lower ends of the boom arms depend outside the side beams 1 near their rear ends and are pivotally mounted in connection therewith by transverse pins 12. The top beam 11 of the boom is provided centrally of its extent with a pair of upwardly projecting and transversely spaced pulley supporting discs 13, whose inner faces have an outward flare and between which a wide grooved pulley 14 is turnably mounted. The length of the boom is such that when lowered to a substantially horizontal position, its normally upper end will be some distance rearwardly of the beams 1 and the wheel trucks.

Projecting forwardly from one arm 10 near its lower end (when the latter is vertical) is an auxiliary arm 15 rigidly braced from said arm 10 at the top by a diagonal bar or arm 16. At its forward end the arm 15 carries a sheave block 17, in a transverse position to cooperate with a similar anchor block 18 mounted on the adjacent beam 1 at its forward end. The longitudinal position of the sheave 18 relative to the sheave 17 is such that when the arms 10 are vertical, and the arm 15 is horizontal the sheave blocks lie in closely superimposed relation to each other, as shown in Figure 1.

The boom is raised or lowered by a cable 19 extending between the sheaves 18 and 17 and anchored on one of the same, and leading from the sheave 18 to a power drum unit U on the tractor, which is preferably of the type shown in my Patent No. 1,912,645, dated June 6, 1933. The logs are individually hoisted by means of a single cable 20 extending from said power unit on the tractor to and over the pulley 14.

If it is not desired to use the main pulling line 20, and when the logs are bunched, the boom may be lowered over the stacked logs and the latter may be then supported from the boom by chains or the like engaging hooks or eyes 21 mounted at intervals along the top beam 11. The boom is then raised to a traveling position, such position being adjusted fore or aft by manipulation of the cable 19 so as to distribute the load relative to the truck spindles and draw bar connection so that there will be no great upward or downward drag on said draw bar. I thus eliminate one of the difficulties had with the present form of arch.

The arch may be used in the manner above stated or by carrying the weight on the main line, or by a combination of both systems as may prove most advantageous at any time. For instance, the operator may pick up with the arch direct a bunch of logs which happen to be spotted in some position, and then throw out his high line and bring in another bunch from a distance; the

position of the logs fore and aft being then adjusted so that this combination load would balance at the draw bar.

It is to be noted that all such handling of the logs is facilitated by the open ended nature of both the boom and the frame, so that the boom does not have to be excessively long nor do the logs have to be raised a great distance in order to clear the frame. A further advantage of the above described form of boom is that it enables the unwieldy logs when being raised to swing between the arms of the boom without danger of striking and damaging the same. It also enables the logs to be further advanced on the structure without having to mount the boom a relatively great distance in front of the wheel-truck pivot.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A logging arch comprising a frame which includes spaced side beams disconnected at their rear end, a front cross beam and means projecting from said cross beam for supporting attachment to a tractor; transversely separated and disconnected wheels supporting the rear end of the beams and arranged to leave the space between the beams and the ground entirely unobstructed, and a log supporting boom including side arms spaced apart at their lower ends a distance not less than the spacing of the frame beams, means pivoting the arms at said end on the beams adjacent the rear end of the beams in position to enable the boom to swing from a substantially rear horizontal to a substantially forward vertical position, and means applied to the boom to control the swinging movement of the boom.

2. A logging arch comprising a frame which includes spaced side beams disconnected at their rear end, a front cross beam and means projecting from said cross beam for supporting attachment to a tractor, spaced lateral beams projecting outwardly from and under the side beams at their rear end to leave the space between said beams at said end entirely unobstructed, transversely separated wheel trucks supported from said lateral beams outwardly of the adjacent inner faces of the side beams, a log supporting boom including parallel side arms pivoted at their lower end on the outside of the side beams adjacent but ahead of the lateral beams, and means to swing said boom from a horizontal rearwardly projecting position to a vertical upstanding position.

ROBERT G. LE TOURNEAU.