April 30, 1946. N. F. WATKINS 2,399,304

LUMBER OR PIPE CARRYING RIG

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Fig. 1

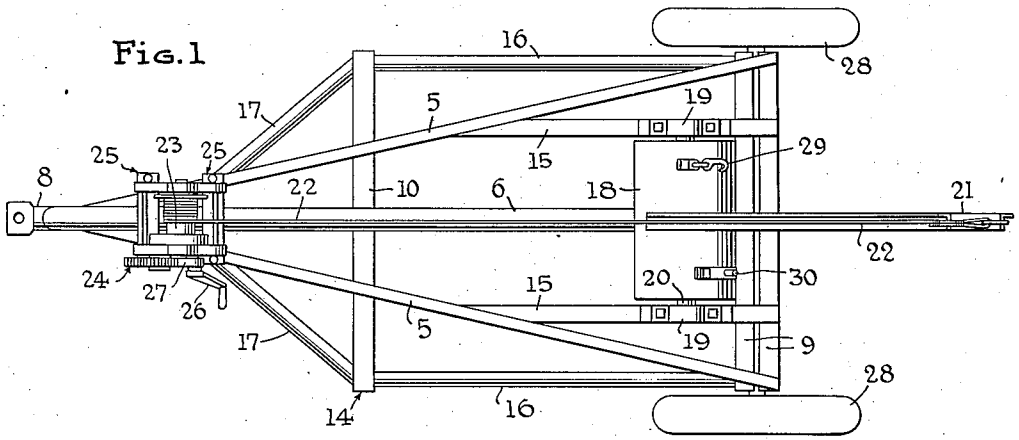
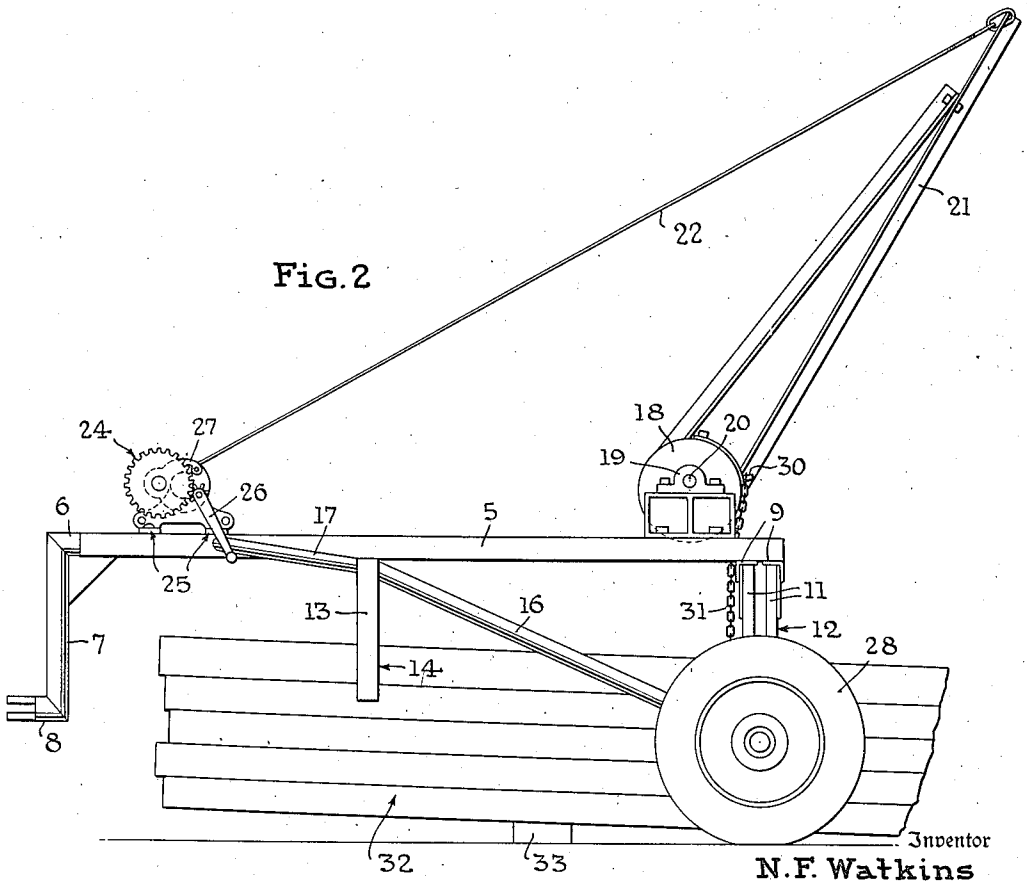


Fig. 2



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Fig. 3

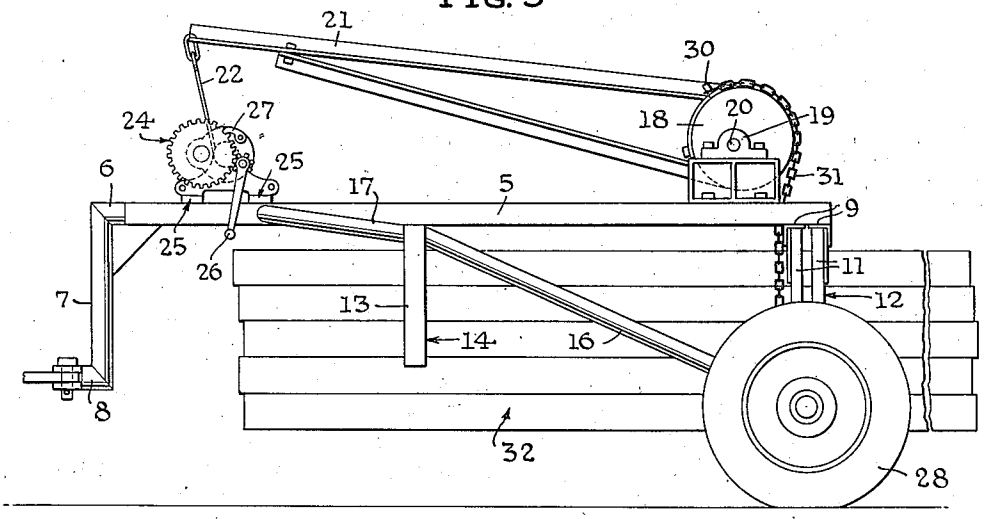
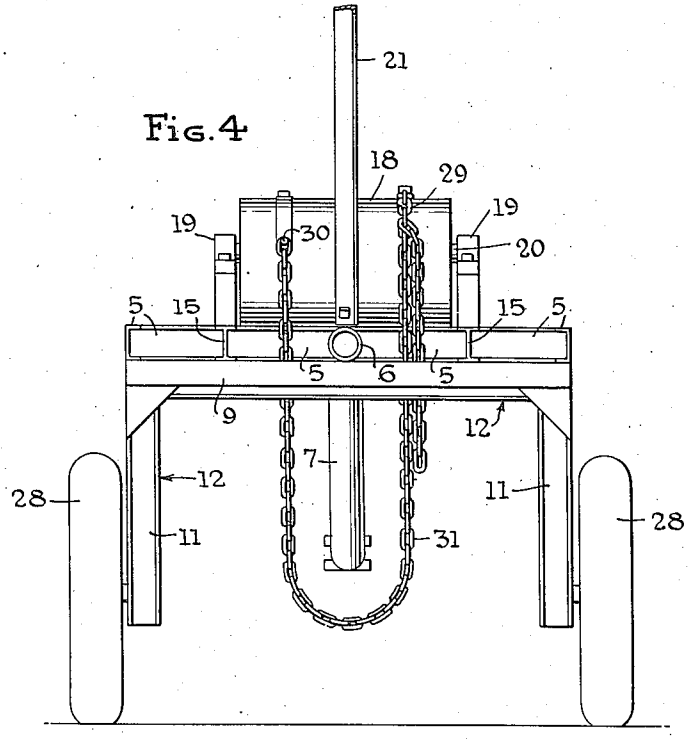


Fig. 4



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LUMBER OR PIPE CARRYING RIG

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2 Claims. (Cl. 214—65.3)

The invention relates generally to carrying rig structures and primarily seeks to provide a simple and inexpensively manufactured rig adapted for easily lifting, securely holding, and transporting elongated objects such as pipe or lumber.

Considerable difficulty is experienced in the handling and transporting of elongated objects such as logs, pipe or undressed lumber because of the great weight of said objects and the tendency of the individual objects to move relatively to one another. At times it is necessary to move such objects short distances only, and it is obviously impractical and wasteful of labor to load the objects onto, and again unload them from high platform trucks or comparable transporting media. It is therefore an object of the invention to provide a rig of the character stated having provision for carrying the logs, pipe or other elongated objects in underslung fashion permitting transportation of said objects with a minimum of necessary lifting, said rig including longitudinally spaced inverted U-shaped means against which a collected pile or grouping of the objects can be securely clamped in a manner assuring against objectionable relative movement of the object units.

Another object of the invention is to provide a rig of the character stated including a rotatably mounted large diameter drum, means on the drum for securing the ends of a chain looped downwardly about a collected pile or grouping of elongated objects, an elongated drum rocking lever secured at one end to the drum, and a cable attached to the free end of the lever and wound about a winch and effective to control the positioning of the lever and the resulting lifting or lowering of the chain looped objects.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims, and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a plan view illustrating the improved lifting and transporting rig.

Figure 2 is a side elevation illustrating the relation of the parts prior to lifting of the group of elongated objects.

Figure 3 is a view similar to Figure 2 illustrating the relation of the parts after the group of elongated objects has been lifted and secured against the cradles.

Figure 4 is a rear elevation.

In the example of embodiment of the invention herein disclosed, there is included a supporting and draft frame structure including two forwardly converging beams 5 and a central longitudinal draft tube 6, the latter having a downwardly turned leg 7 at its forward end which terminates in a forwardly directed tractor draft connection 8.

The beams 5 and the tube 6 are reinforced by horizontally, transversely disposed beams 9 at the rear of the rig, and also intermediately by a transverse beam 10. Side members 11 suitably braced and depending vertically from the laterally disposed ends of the cross beams 9 cooperate with said beams in forming an inverted U-shaped cradle generally designated 12. Side members 13 depending vertically from the laterally disposed ends of the beam 10 cooperate with said beam in forming an inverted U-shaped cradle generally designated 14. It will be observed by reference to Figures 2 and 4 of the drawings that the cradles 12 and 14 are disposed in longitudinally spaced relation.

Supplemental longitudinally disposed and parallel spaced reinforcing members 15 are provided and fixed at their rear ends to the transverse members 9 and at their front ends to the frame beams 5, and it will be apparent by reference to Figures 1, 2 and 3 of the drawings that additional angularly disposed longitudinal members 16 and 17 are connected between the cradles 12 and 14 and between the cradle 14 and the beams 5 respectively for reinforcing the frame structure, and particularly the cradles.

A large diameter drum 18 is rockably mounted in bearings 19 supported on the frame members 15, and it will be apparent by reference to Figures 2 and 3 of the drawings that the pivot centers 20 about which the drum rocks are disposed in off-center relation to the periphery of the drum.

A rocking lever 21 is secured to the drum in a manner for projecting radially therefrom, and the free end of the lever has attached thereto a cable 22 which is wound about and secured to the winding drum 23 of a conventional winch structure generally designated 24. The winch structure is supported as at 25 on the framing and includes the usual turning crank 26 and locking pawl 27.

The frame structure formed as hereinbefore described is supported on wheels 28 which are mounted at the lower ends of the upright members 11 of the cradle 12.

A hook member 29 is secured to the drum at one side thereof, and an anchor pin 30 is secured

to the drum at the other side thereof, and these hook and pin equipments provide means for removably and adjustably attaching a chain 31 to the drum.

In the practical use of the improved lifting and transporting rig, a group or pile 32 of elongated objects such as logs, pipe, lumber or the like is arranged in the manner illustrated in Figure 2, preferably on one or more transverse supporting members 33 so as to leave a space beneath the pile which will facilitate looping of the chain 31 thereunder and adjustable attachment of the chain to the hook and pin equipments 29, 30 on the drum. After the chain has been suitably looped under the pile of elongated objects and attached to the drum, the crank 26 of the winch is turned so as to wind the cable 22 and move the lever 21 from the position illustrated in Figure 2 to the position illustrated in Figure 3. This movement of the lever serves to turn the drum 18 about its off-center pivotal mounting 20, and the resulting winding of the looped chain 31 will lift the group of elongated objects from the position illustrated in Figure 2 to the position illustrated in Figure 3 wherein they will be securely held within and against the longitudinal spaced cradles 12 and 14. The pawl 27 is adjusted to secure the condition of parts illustrated in Figure 3.

With the objects lifted off the ground and secured against the cradles 12 and 14 in the manner illustrated in Figure 3 the rig can be attached to a tractor or other hauling device and the secured group of objects can be transported as desired. After the rig has been drawn to the place at which the group of objects is to be deposited the pawl 27 can be released and by suitably turning the crank 26 the load may be lowered from the position illustrated in Figure 3 onto the ground or other suitable supporting means.

It will be apparent that by reason of the provision of the large diameter drum, lever and winch equipments, the lifting of heavy loads of the character described can be effected with ease, and by reason of the off-center mounting of the drum, the actual lifting of the rod is effected much more rapidly than would be the case if a smaller or centered drum were used.

While one form of the invention has been shown for purposes of illustration, it is to be clearly understood that various changes in the details of construction and arrangement of parts may be made without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A rig for lifting and transporting elongated objects comprising, a wheeled supporting frame including two longitudinally spaced inverted U-shaped cradles, a chain disposed intermediately of said cradles for looping under a group of elongated objects straddled by the cradles, a drum rockable about an off center axis, means for attaching the looped chain to the drum, a lever secured to and projecting from the drum, and cable winding winch means and a cable wound about the winch and connected with the free end of the lever for swinging the lever to turn the drum in a manner for elevating the looped chain and drawing the object group off the ground and against the cradles, and means for securing the lever to the chain elevating position.

2. A rig for lifting and transporting elongated objects comprising, a wheeled supporting frame including two longitudinally spaced inverted U-shaped cradles, a chain disposed intermediately of said cradles for looping under a group of elongated objects straddled by the cradles, a drum rockable about an off center axis, means for attaching the looped chain to the drum, a lever secured to and projecting from the drum, and cable winding winch means and a cable wound about the winch and connected with the free end of the lever for swinging the lever to turn the drum in a manner for elevating the looped chain and drawing the object group off the ground and against the cradles, and means for securing the lever to the chain elevating position, said chain attaching means comprising hook and pin means carried by the drum whereon links of the chain can be removably and adjustably attached.

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