J. E. NORBY.

TRACK LAYING AND RAISING APPARATUS.

APPLICATION FILED MAR. 8, 1919.

1,317,813.

Patented Oct. 7, 1919.

2 SHEETS—SHEET 1.

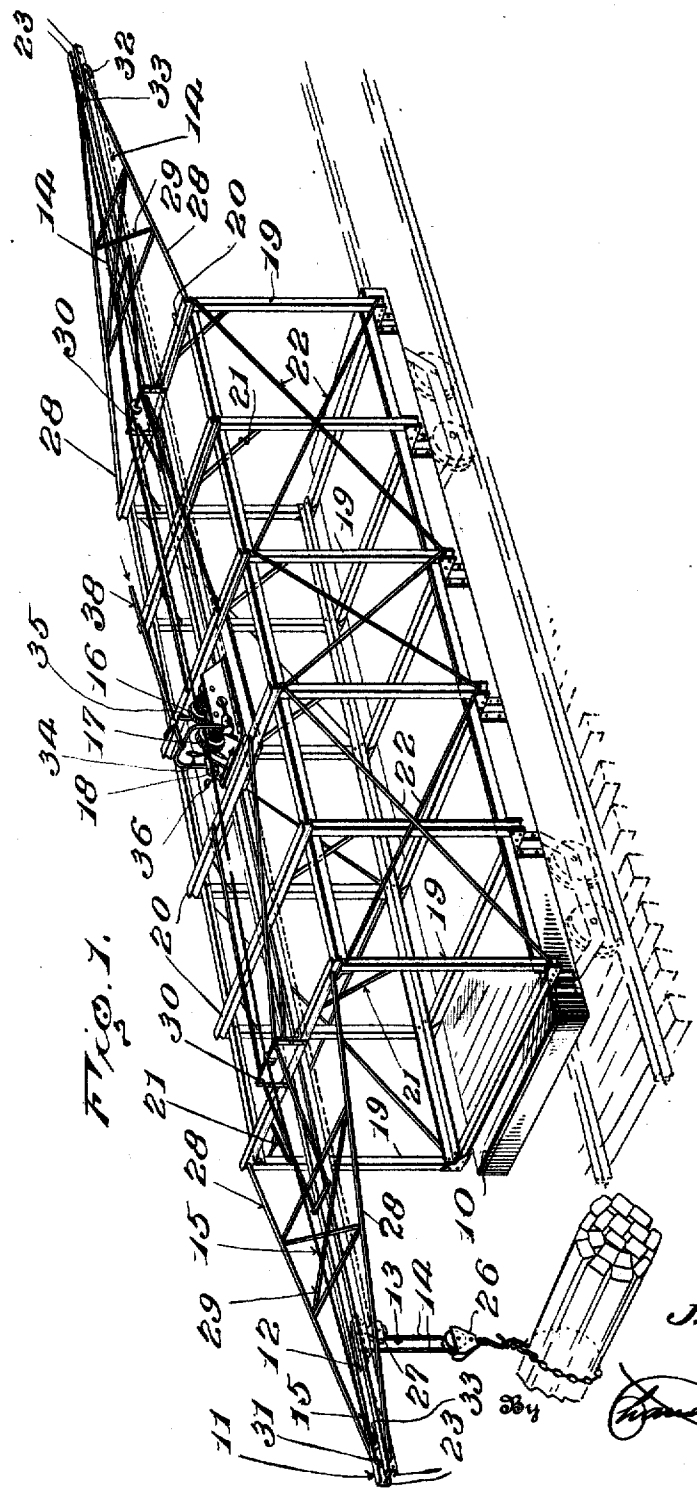


Fig. 1.

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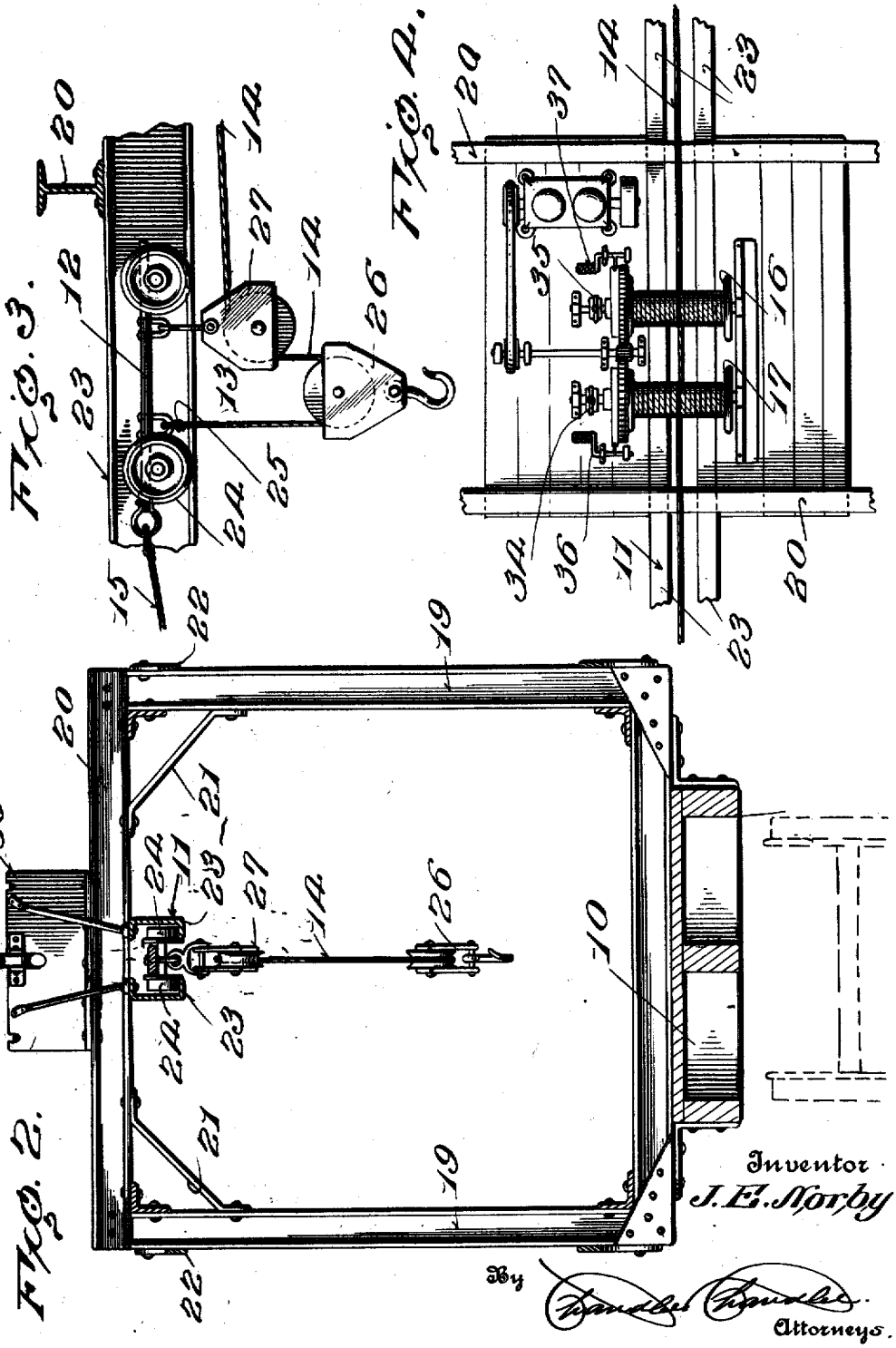
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2 SHEETS—SHEET 2.



THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN E. NORBY, OF STARK, MONTANA, ASSIGNOR OF ONE-HALF TO GEORGE F. FOX, OF MISSOULA, MONTANA.

TRACK LAYING AND RAISING APPARATUS.

1,317,813. Specification of Letters Patent. Patented Oct. 7, 1919.

Application filed March 8, 1919. Serial No. 281,419.

To all whom it may concern:

Be it known that I, JOHN E. NORBY, a citizen of the United States, residing at Stark, in the county of Missoula, State of Montana, have invented certain new and useful Improvements in Track Laying and Raising Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the invention is to provide a relatively simple apparatus of comparatively powerful construction and capacity for use in the laying and raising or removing of tracks and other railway road bed equipment, and which while capable of relieving the workmen of all of the heavier or more arduous portions of the necessary labor in connection with the indicated operations may be readily and quickly manipulated and efficiently controlled by a small crew having only a limited training and moderate mechanical skill.

Further objects and advantages will appear in the course of the following description of a preferred embodiment of the invention, it being understood that changes in form, proportion and details of construction may be resorted to, within the scope of the appended claims, without departing from the principles involved.

In the drawings:

Figure 1 is a perspective view of the complete apparatus.

Fig. 2 is a transverse vertical sectional view.

Fig. 3 is a detail view of the carriage and related hoisting means.

Fig. 4 is a detail plan view showing a convenient arrangement of drums and operating devices in connection with a motor which may be of any well known or preferred type.

The apparatus consists essentially of a truck, preferably of the wheeled type so as to be capable of traversing the track rails of a road which is being laid or raised and having, for example a platform 10 such as that ordinarily employed in connection with what are ordinarily termed flat cars; an overhead longitudinally disposed guide-way 11 spaced above the plane of the platform 10 a sufficient distance to permit of readily carrying a load of rails or ties longitudinally of the car or truck and between said guide-way and the platform, said guide-way being extended beyond the extremities of the platform for a distance which may vary under certain conditions and circumstances and may be determined by experience; a carriage 12 arranged to traverse said guide-way from end to end and thus pass over the truck longitudinally in the transportation of loads either to or from the same; and hoisting and carriage operating mechanism connected with the carriage and consisting, as shown in the selected embodiment of the invention, of hoisting means 13, a main or hoisting cable 14, a haul-back cable 15, drums 16 and 17 upon which said cables are reeled, respectively, and an engine 18 or equivalent motor or means for actuating the drums to manipulate the cables.

In order that the longitudinal guide-way provided for the traverse of the carriage may be supported so as to allow for space above the platform through which to convey track equipment, such as rails, ties and the like, and at the same time provide for the necessary rigidity and strength to maintain the loads which may be imposed upon the carriage, there is shown a super-structure or frame work on the platform consisting of a series of transverse parallel upright frames each having side uprights 19 and connecting cross bar 20, and these frames are transversely braced as at 21 and longitudinally braced as by means of bars 22 or the equivalents thereof. The uprights and cross bars may consist of I-beams or other selected types of structural iron elements.

The channel irons 23 facing each other and constituting the guide-way serve as a housing for the carriage so that the wheels or rollers 24 thereof traverse the inturned lower flanges of said channel irons while the hoisting device consisting of the adja-

cent end of the main or hoisting cable 14 which is terminally connected with the carriage as shown at 25, the fall block 26, and guide pulley 27, may operate between the planes of said channel irons.

In order that the extended terminal portions of the guide-way may have the requisite strength to resist downward strain when a load is imposed upon the carriage, the frame-work which is mounted upon the truck platform is provided with extensions consisting, for example, of the convergent side beams 28 braced as at 29, and supported by the overhead longitudinal truss braces 30; and the terminal guide pulleys 31 and 32 which are located at the extremities of the guide-way and over which extend the haul-back and main cables, are protected from contact through an excessive movement of the carriage by means of stops or buffer blocks 33.

Any suitable means may be provided for controlling the drums which respectively carry the main and haul-back cables, such as hand operated friction levers 34 and 35 and the foot operated brakes 36 and 37, a friction and brake appliance being provided for each drum so that when one drum is being advanced to reel the cable which is carried thereby the other drum may be subjected to the action of the brake to control the movement of the carriage and maintain at the desired elevation the load which is supported by the fall block.

Obviously a single operator is able through these devices to manipulate the hoisting and carriage operating mechanism and thus elevate or lower a load while the carriage remains stationary as in lifting rails or bundles of ties from the road bed and in lowering the same upon the platform of the truck or upon a following car, and in maintaining the load at the desired elevation during movement of the carriage longitudinally of the truck either in laying or raising tracks or in other words either in transferring materials from the truck or a following car to a point in advance of the truck to supply the workmen who are laying the track, or in transferring the materials from the road bed to the truck or a following car after the workmen have withdrawn the spikes by which the rails are secured to the cross ties. In operation therefore it is necessary, in addition to the men occupied in either spiking the rails or in detaching the rails from the ties, to employ, for the operation of the apparatus, only the motorman by whom the movements of the drums are controlled and a man on the truck to receive the loads as they are deposited thereon or upon the following car, or to arrange the loads to be received by the hoisting devices when the transfer of material is in the opposite direction. It will be noted that the operators and workmen are thus relieved of all of that part of the work of laying or raising tracks which involves the lifting and carrying of the rails and ties to or from the point of use and they can confine their attention entirely to the arrangement of the materials in preparation for reception by the hoisting devices or after the deposit of the same upon the car or upon the ground representing the site of the proposed track.

It will be understood moreover that the hoisting and carriage operating mechanism herein disclosed is merely typical, it is particularly adapted for the purposes indicated by reason of the range of operation which is thereby provided, in that, for example, the load of rails or ties, which may be connected with the fall block in any of the well known ways proposed by railway men may be elevated at any convenient point beyond one end of the truck and conveyed to any desired point upon the platform of the truck, to be received by the latter or may be carried beyond the rear end of the truck platform for deposit upon a car connected with the truck and forming part of the train employed in connection with the track laying or raising operation.

Also it will be understood that there is opportunity for a wide range of selection in the matter of the type of motor which may be employed for the operation of the drums, as either gasolene, electric, steam or other engines may be employed, and when a steam engine is selected its power may be derived, for example, by means of a steam supply pipe 38 extending from the locomotive of the train.

What I claim is:

1. A track laying and raising apparatus having a track supported truck provided with a longitudinal overhead guideway projecting terminally beyond the truck, a carriage traversing and housed by said guideway, hoisting and haul-back cables connected with the carriage and traversing guide rollers at the extremities of said guideway, drums located at an intermediate point of the guide-way for carrying said cables, and hoisting means supported by the carriage in coöperation with said hoisting cable.

2. A track laying and raising apparatus having a track supported truck provided with a longitudinal overhead guide-way projecting terminally beyond the truck and consisting of facing channel bars, a carriage traversing and housed by said guideway, and hoisting and carriage operating mechanism consisting of hoisting and haul-back cables connected with the carriage and traversing guide rollers at the extremities of said guide-way, drums located at an intermediate point of the guide-way for carry-

ing and operating said cables, and means for actuating said drums, a hoisting means being supported by the carriage in coöperation with said hoisting cable, and buffer blocks being interposed near the extremities of the guide-way to limit the traverse in opposite directions of the carriage.

In testimony whereof I affix my signature, in the presence of two witnesses.

JOHN E. NORBY.

Witnesses:
P. J. FEARON,
GEORGE F. FOX.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."