J. L. ANDERSON.

ELEVATING TRUCK.

APPLICATION FILED JUNE 17, 1918.

1,321,780.

Patented Nov. 11, 1919.

2 SHEETS—SHEET 1.

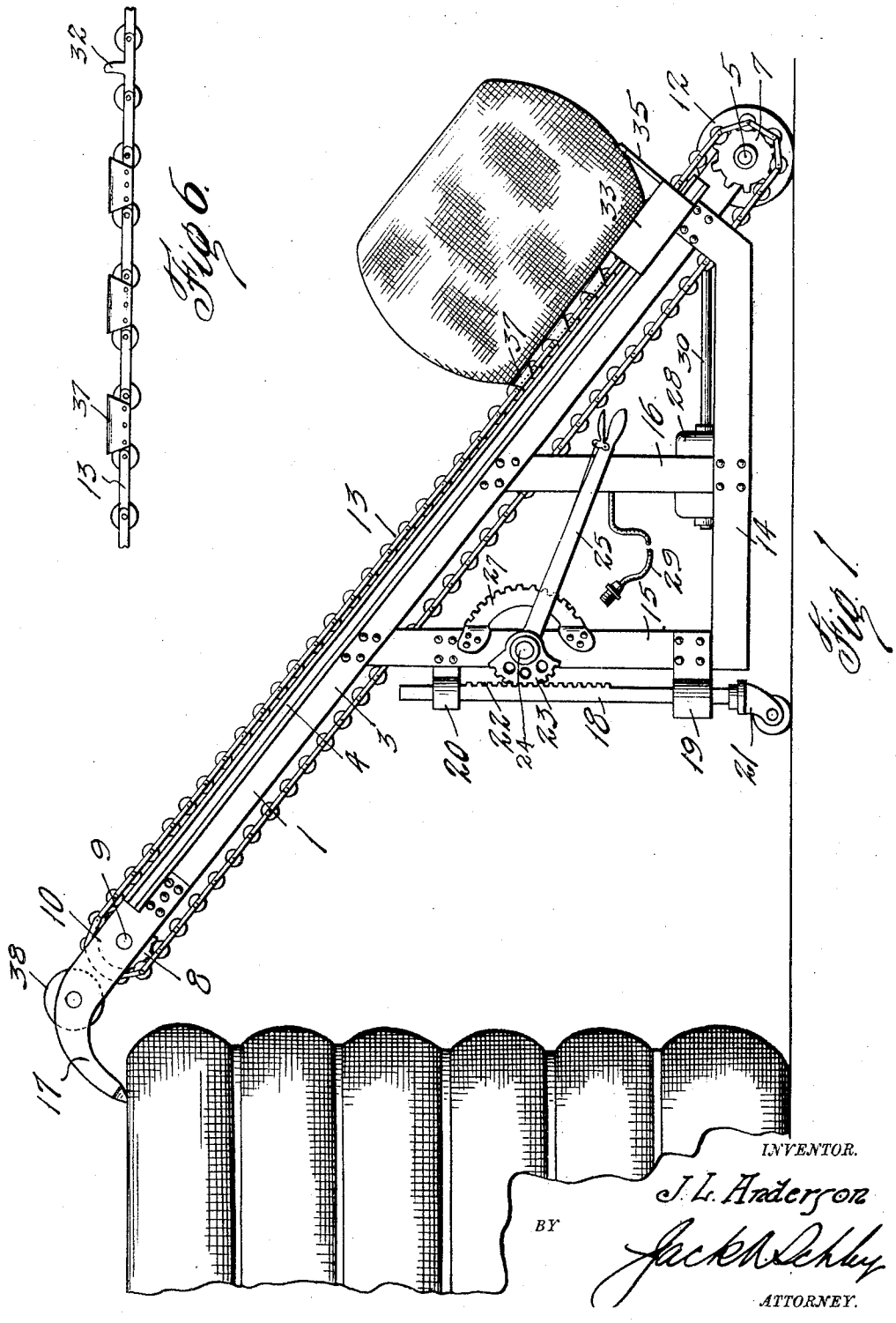


Fig. 1.

Fig. 6.

INVENTOR.

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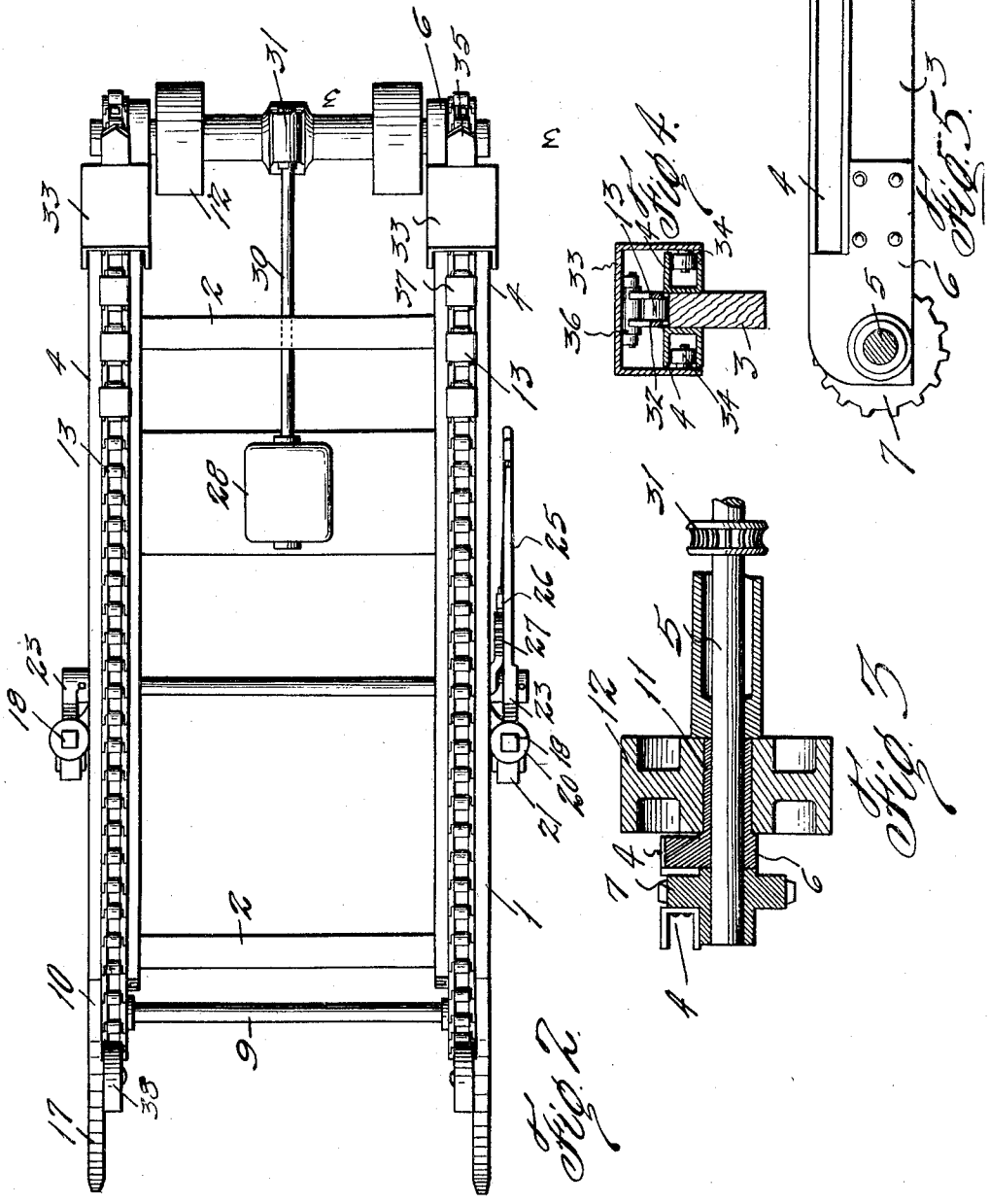
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UNITED STATES PATENT OFFICE.

JOHN L. ANDERSON, OF ITALY, TEXAS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-THIRD TO B. W. J. WOFFORD, OF CORSICANA, TEXAS, ONE-THIRD TO R. P. WOFFORD, OF DALLAS COUNTY, TEXAS, ONE-SIXTH TO THOMAS C. HALL, OF BELL COUNTY, TEXAS, AND ONE-SIXTH TO R. W. CAIN, OF ELLIS COUNTY, TEXAS.

ELEVATING-TRUCK.

1,321,780. Specification of Letters Patent. Patented Nov. 11, 1919.

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To all whom it may concern:

Be it known that I, JOHN L. ANDERSON, a citizen of the United States, residing at Italy, in the county of Ellis and State of Texas, have invented certain new and useful Improvements in Elevating-Trucks, of which the following is a specification.

This invention relates to new and useful improvements in elevating trucks.

In the handling and storing of certain commodities which are transported in boxes, bales or the like it is necessary to stack or pile them one upon another, and this is often referred to as "decking." Where the object to be elevated is quite heavy the elevating means must be substantial and easily positioned and effectual in its operation. This invention has to do more particularly with the elevating of heavy objects such as bales of cotton, and experience has shown that an elevating truck of the inclined type is required. Such a truck must be easily and quickly moved and adjusted.

In carrying out the invention I provide an elevating member carrying an endless chain which is continuously operated when the device is in use. A carrier is associated with this chain, and the elevating member is arranged at an incline. Thus the carrier is moved longitudinally of the elevating member when engaged by means on the chain for this purpose. The elevating member is mounted on a portable frame which it overhangs, so that the elevating member may discharge its load properly.

It is preferable to provide adjusting means in connection with the supporting frame whereby the discharge end of the elevating member may be raised and lowered at will. By such an arrangement the truck could be moved up to a bale of cotton and the discharge end of the elevating member adjusted vertically so that it would project over the bale and when lowered would rest on the bale which would form a support. It is obvious that the adjusting means might assume various forms and that it might be possible in some instances to do away with the adjusting means owing to the inclined overhanging end of the elevating member.

The invention will be more readily understood from a reading of the following specification and by reference to the accompanying drawings, in which an example of the invention is illustrated, and wherein,

Figure 1 is a side elevation of a truck constructed in accordance with this invention and in position for taking a bale of cotton on top of a standing bale,

Fig. 2 is a plan view of the truck shown in Fig. 1,

Fig. 3 is a sectional detail on the line 3—3 of Fig. 2,

Fig. 4 is a transverse sectional detail of one of the conveyer legs,

Fig. 5 is a detail of one of the truck wheel mountings, and

Fig. 6 is a detail of a portion of one of the conveyer chains.

In the drawings the numeral 1 designates an elongated elevating member which is disposed on an incline. The member 1 comprises elevating legs at each side spaced apart and connected by cross bars 2. Each leg comprises a central track member 3 with channel irons 4 secured to each side of the same as is shown in detail in Fig. 4. At the lower end of the member 1 a transverse drive shaft 5 is supported in brackets 6 secured to the legs of said member. At the lower end of each track member a sprocket wheel 7 is fixed on the shaft 5, while at the upper end of each member 3 sprocket wheels 8 are mounted on a transverse shaft 9 carried in brackets 10 secured to said members 3. The brackets 6 carry integral sleeves 11 projecting inwardly as shown in detail in Fig. 3. On each sleeve 11 a truck wheel 12 is journaled. These truck wheels have a diameter sufficient to support the lower end of the member 1 above the floor. Endless chains 13 of the roller type pass over the sprockets and travel on top of the members 3.

As before mentioned elevating member 1 is disposed on an incline, and this is essential in this type of elevating truck. A supporting frame 14 is secured to the lower ends of the members 3 and is provided with

uprights 15 and 16 respectively rigidly attached at their upper ends to the members 3. The member 15 is at one end of the frame 14 and a considerable portion of the member 1 projects beyond or overhangs said frame. The brackets 10 at the upper end of the member 1 also carry downwardly curved supporters 17 which are hook-like but do not necessarily have the function of hooks. The purpose of these supporters is to rest on the bale or other support and hold the upper end of the member 1 above the top of the bale so that the bale or load being decked may be carried to the proper elevation for easy handling. It is obvious that the part 17 might be dispensed with, but in such case the support would have to be heavy enough to carry the load and the arrangements would have to be such as to prevent the overhanging end of the member 1 from tilting down when sustaining the load. Where the parts 17 are used they must be brought into contact with the top of the bale, and I propose to accomplish this by vertically adjusting the upper end of the member 1.

In carrying out this feature I mount parallel with each upright 15 a vertical shank 18 slidably confined against rotation in brackets 19 and 20 respectively secured to said members. These shanks 18 carry at their lower ends swiveled casters 21 which with the wheels 12 support the frame 14 and make it easily movable. The casters 21 being swiveled permit the truck to be easily moved in any direction. Each shank 18 carries a gear rack 22. Gear segments 23 mesh with these racks and said segments are fastened on a transverse shaft 24 suitably supported by the members 15. At one end a hand lever 25 is attached to one of the segments and carries a locking plunger 26 positioned to engage a segmental rack 27 mounted on one of the members 15. The lever 25 projects downward at an angle toward the lower end of the elevating member 1. By swinging the lever upward the segments 23 are rocked so as to climb upward on the racks 22 whereby the frame 14 is swung, the shaft 5 acting as a fulcrum point and the part 17 elevated and the brackets 19 and 20 sliding upward on the shanks 18. With the supporter 17 thus elevated the truck may be moved in position so that the free ends of the parts 17 may be positioned over the standing bale. When this has been done the lever 25 is released and the member 1 lowered until the supporters rest on top of the bale thus supporting the upper end of said member 1.

Within the frame 14 an electric motor 28 is suitably mounted and may be connected with a source of electrical supply by a flexible conductor 29 so that the truck may be readily moved from place to place. The motor has a directly connected driving shaft 30 extending into and connected with a worm gear drive 31 on the shaft 5 whereby the sprockets 7 are driven. It is, of course, understood that the truck wheels 12 are not driven by the shaft 5. The chains 13 are driven by the sprockets 7 so that the upper run of the same is upward along the members 13. Each chain carries an outstanding lug 32 and the chains are arranged so that these lugs aline transversely of the member 1. Each pair of channel irons 4 support a carrier 33. This carrier has a flat upper surface with portions depending on each side of the channel irons as is shown in detail in Fig. 4, and these depending portions have mounted on their inner faces rollers 34 engaging in the channels 4 and supporting the carriers above the chains as is shown. Each carrier at its lower end has an upright bracket 35. Within each carrier a roller 36 is supported in the path of the lug 32 of the associated chain. It is obvious that when the lugs 32 engage the rollers 36 the carriers will be moved up the inclined track members 3 when the rollers 36 are carried beyond the shaft 9 the lugs 32 will ride out from under said rollers thus releasing the carriers which will return by gravity to the lower end of the member 1.

Several of the chain links in advance of the lugs 32 carry guards 37 which project above the rollers of the chain and when the lugs engage the carrier these guards will be in advance of said carriers so as to support a bale of cotton above the chain rollers as is shown in Fig. 1, the lower end of the bale resting against the brackets 35. The bale to be loaded is brought up to the truck in the usual way and dumped over on to the carriers 33 which are elevated by the lugs 32. Rollers 38 are carried by the brackets 10 adjacent the brackets 8 so that the elevated bale will ride on to said rollers and overbalance thus falling on to the standing bale. After the lugs 32 release the carriers 33 and these carriers return to their normal position the motor 28 may be stopped if desired and the truck moved to another position or another bale may be loaded and elevated after the first bale has been moved out of the way. It is obvious that it is not necessary to stop the motor even while moving and adjusting the truck, but it would be economical to cut off the current. Owing to the bulky nature of a bale of cotton and its rounded sides the elevating member must be inclined particularly to overhang the standing bale. The supporters 17 are considered important, but as before stated not absolutely necessary It is pointed out that the supporting frame is a time saver, because if only an elongated elevating member without a supporting frame is used and said member positioned and handled like a ladder not only is considerable time lost

but extra labor is required. It is apparent that a single operator may quickly grasp the lever 25, adjust the member 1 and roll the truck to another position very quickly and not be called upon to do any heavy lifting or manipulating.

What I claim: is,

1. In a portable elevating truck, a supporting frame, swiveled casters on which the frame is adjustably supported, an inclined elevating member mounted on the frame and having its upper portion overhanging the frame, supporters at the upper extremity of the inclined member, an endless chain traveling longitudinally of the inclined member, a carrier movable longitudinally of the member and free from the chain, means carried by the chain for engaging the carrier for moving the latter upwardly on the inclined member, said carrier returning by gravity, and driving means for the chain mounted on the supporting frame.

2. In a portable elevating truck, an adjustable inclined elevating member, a vertically movable carrier free to slide on said member, an endless chain traveling on said member having a projection adapted to engage the carrier and move it upward on the member and to disengage itself from the carrier at the upper end of the elevating member, and guards mounted on the chain coöperating with the carrier in supporting a load.

In testimony whereof I affix my signature.

JOHN L. ANDERSON.