March 12, 1929. P. E. COUNTRYMAN 1,704,882

HOISTING DEVICE

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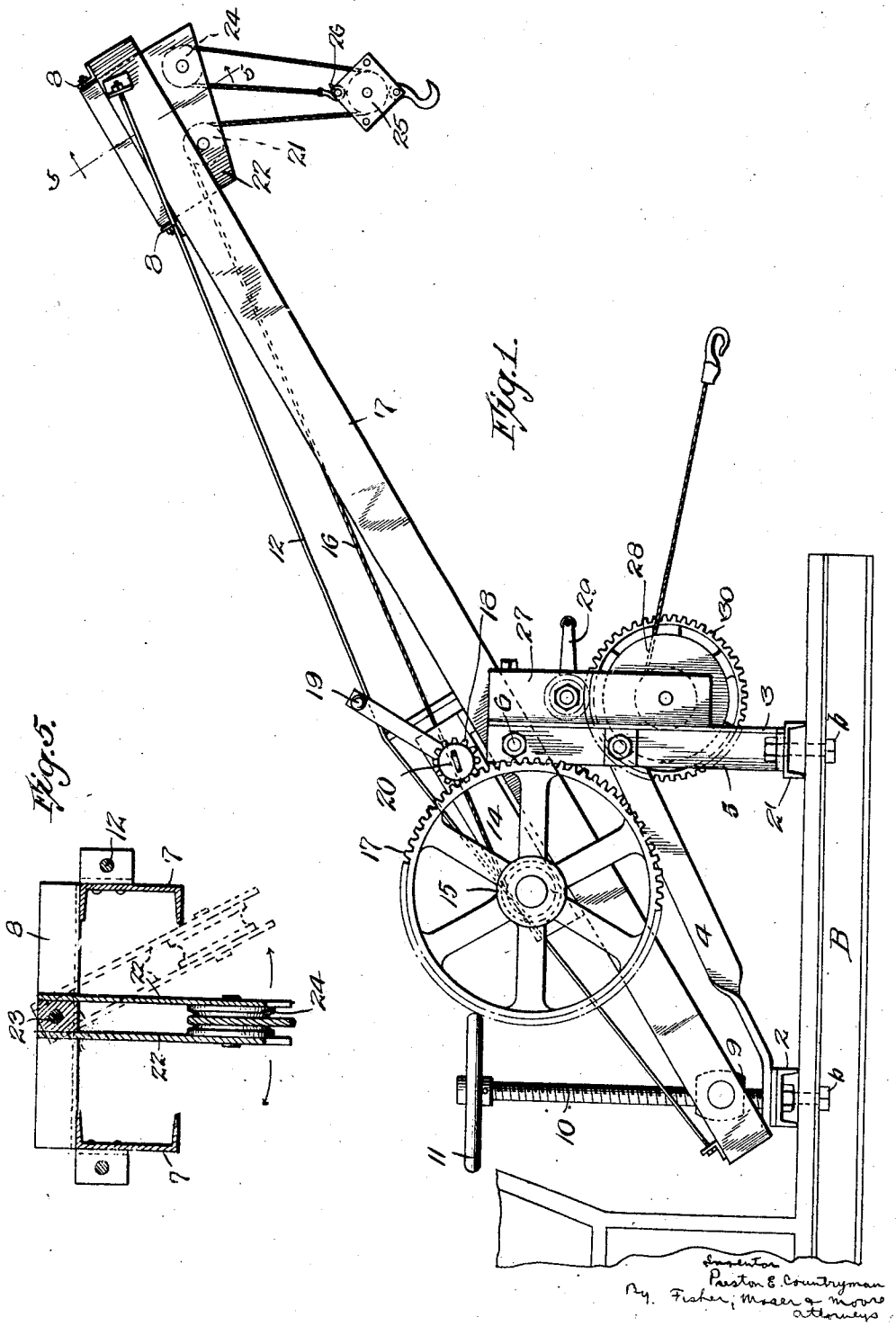


Fig. 1.

Fig. 5.

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Fig. 2.

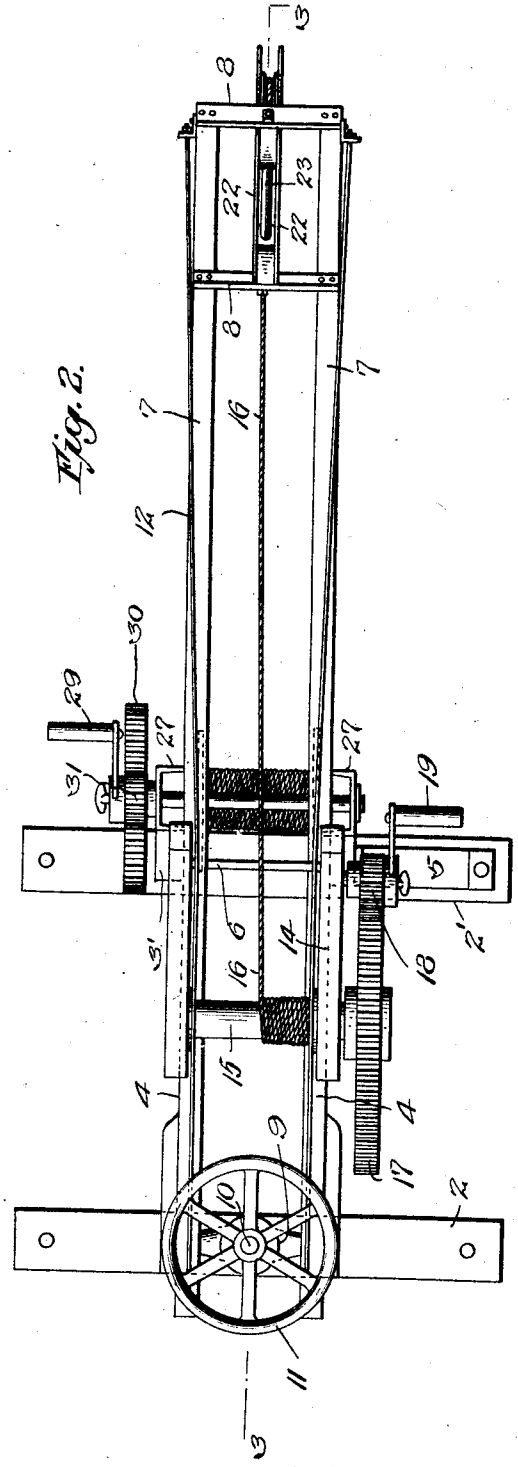
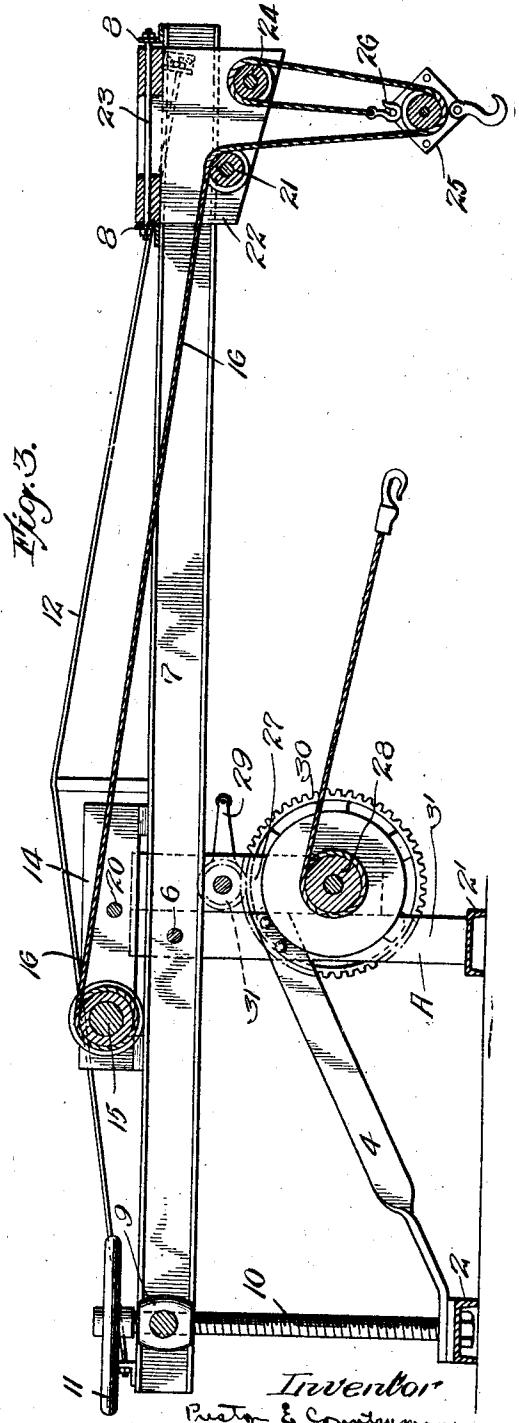


Fig. 3.



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Fig. 4.

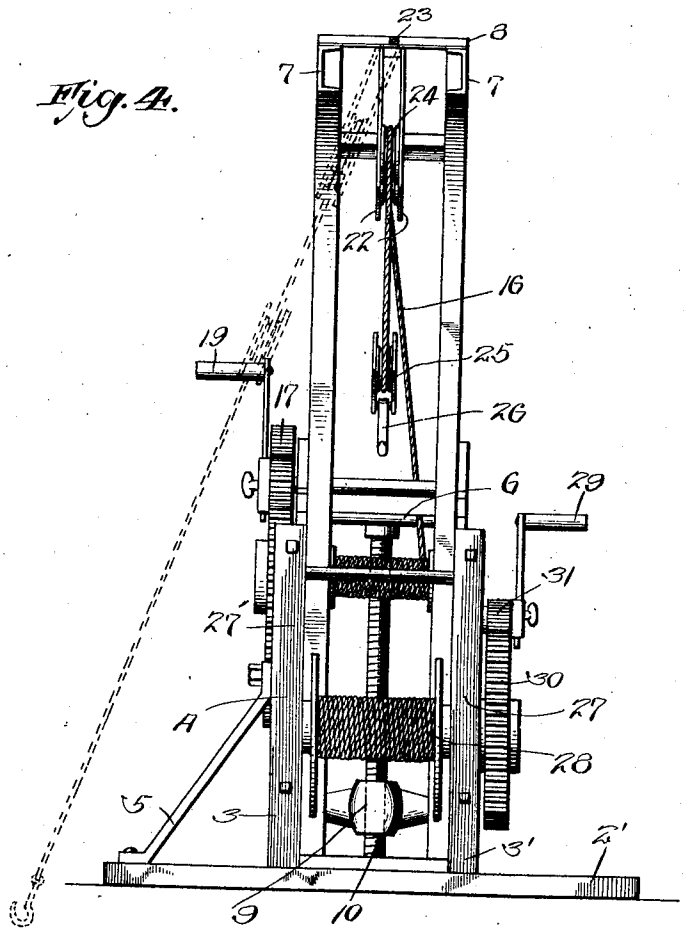
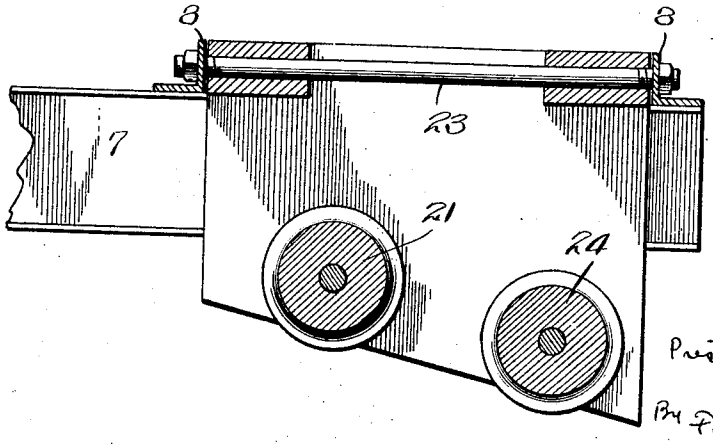


Fig. 6.



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UNITED STATES PATENT OFFICE.

PRESTON E. COUNTRYMAN, OF ASHLAND, OHIO, ASSIGNOR TO ELITE MANUFACTURING COMPANY, A PARTNERSHIP COMPOSED OF JOHN H. BURKHOLDER, P. E. COUNTRYMAN, AND E. L. KILHEFNER, OF ASHLAND, OHIO.

HOISTING DEVICE.

Application filed July 28, 1924. Serial No. 728,737.

The present invention relates to an improvement in vehicle cranes, and more particularly in a tilting crane or hoist, adapted to be mounted upon the chassis or body of an automobile or service truck. In general, my object is to provide a sturdy crane structure which may be readily mounted upon and attached to the body or frame of a vehicle, and in which a tilting boom or beam may be quickly and conveniently adjusted and fixed in different inclined positions by means of a hand wheel and screw. Thus as constructed and arranged the crane or hoist may be readily mounted in a stable position upon the rear end of a truck with the operating screw and hand wheel located in convenient reach of the operator on the seat of the truck. When mounted in this way the free end of the beam may also be lowered beyond the end of the body of the truck, and to promote freedom of action of the cables or chains in pulling at an angle from either side of the vehicle a special tackle device is hinged in a particular way to the free end of the beam, substantially as hereinafter shown and described. The structure also includes an auxiliary winch which is adapted to be supported in an independent operating position upon the frame of the crane beneath and apart from the tilting beam.

In the accompanying drawings Fig. 1 is a side elevation of my improved crane or hoist mounted upon a vehicle body, and Fig. 2 is a top view thereof. Fig. 3 is a vertical section, slightly enlarged, of the crane on line 3—3 of Fig. 2, showing the beam or boom lowered to a horizontal position. Fig. 4 is a front elevation of the structure, and Figs. 5 and 6 are enlarged sectional views of the outer end of the beam and the swinging plates and sheaves thereon.

The crane or hoist comprises a rigid frame A in which two parallel channel bars 2—2′ form transverse base parts which permit ready attachment of the frame by bolts *b* to the chassis or body B of a vehicle, see Fig. 1. Two upright bars 3—3′ are affixed to base part 2′ at the rear end of the vehicle, and connected to transverse bar 2 by a pair of inclined braces 4—4. Upright bar 3 is also braced laterally by a bar 5 bolted to base part 2′, and the upper ends of the two upright bars are tied together by a bolt 6. The same bolt serves as a pivot or fulcrum member for a tilting beam or boom comprising two parallel side bars of channel iron 7—7 which are united rigidly together in spaced relation at their outer ends by a trunnioned swivel member 9 having a screw-threaded opening at its middle adapted to receive a vertical screw 10. The lower end of screw 10 is rotatably and loosely connected to channel bar 2 and the upper end thereof is provided with a hand wheel 11 wherewith to rotate the screw and raise and lower the boom. Truss rods 12 extend longitudinally of the side bars of the boom, and a short and low superstructure 14 is built upon the boom rearwardly of pivot bolt 6 to carry a winding drum or reel 15 for a hoisting and pulling cable or chain 16. A gear wheel 17 is mounted at one side of the boom upon the drum shaft, and this gear wheel is adapted to be rotated by a pinion 18 and hand crank 19 on a cross shaft 20 journaled in the sides of superstructure 14. Cable 16 extends forwardly between the side bars of the boom and passes around a sheave or pulley 21 confined between two flat plates 22—22 which are suspended from a short pivot shaft 23 extending between and secured to the angle irons 8—8 at the top of the boom. Shaft 23 is situated centrally between the side bars of the boom and the sheave plates 22 are spaced sufficiently apart from said side bars to permit the suspended parts to swing freely to either side of the longitudinal medial line of the boom. A second sheave or pulley 24 is supported between the spaced plates in advance of the first sheave and at a greater distance from pivot shaft 23 than said first sheave, and cable 16 passes downwardly from the first sheave and around a pulley in a separate tackle block 25 and thence around the second pulley 24. A hook 26 at the end of cable 16 permits the cable to be detachably connected with tackle block 24, and accordingly the tackle connections may be changed and re-arranged in various ways to promote either a single, double-fold or threefold tackle.

The upright posts 3—3′ have supplementary pieces 27 bolted thereto which carry a winch comprising a cable winding drum 28, a crank 29, and a gear 30 and pinion 31. This winch may be used separately or co-operatively with the block and tackle on the tilting beam in pulling or hoisting operations, and the respective cranks for controlling the

two winding drums are placed on opposite sides of the boom to permit them to be operated at the same time whenever co-operative movements are necessary.

What I claim is:

In a hoisting device having a frame of parallel bars, means including bracing angles at the front end of said bars to rigidly unite said bars in spaced relationship to each other, a short shaft parallel to and between said bars and supported by said bracing angles, two flat plates pivotally suspended from said shaft, and a plurality of pulley sheaves rotatably supported by said flat plates.

In testimony whereof I affix my signature.

PRESTON E. COUNTRYMAN.