

Nov. 15, 1949

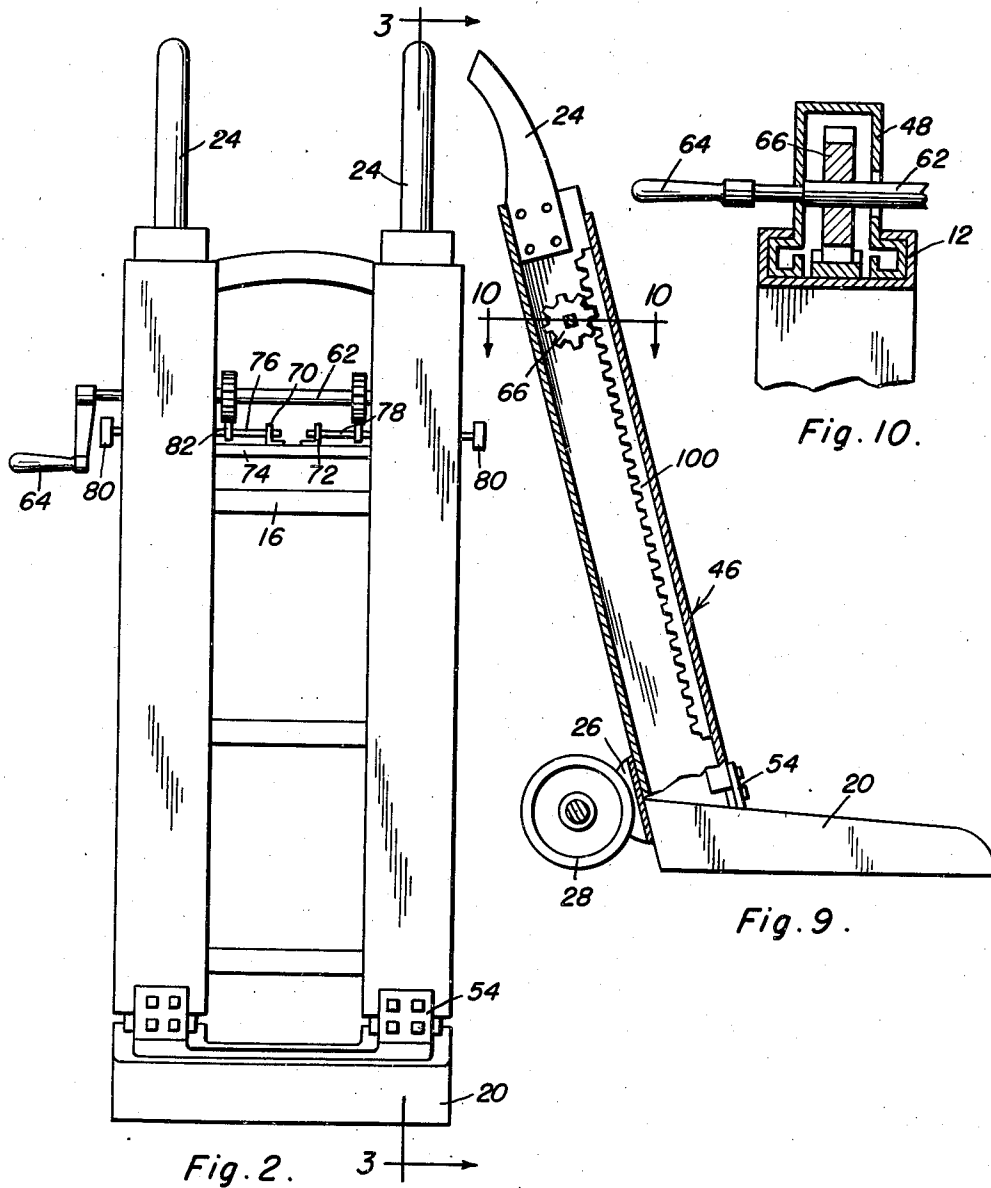
S. W. WYSOCKI

2,488,461

LIFT TRUCK

Filed Dec. 4, 1947

3 Sheets-Sheet 2



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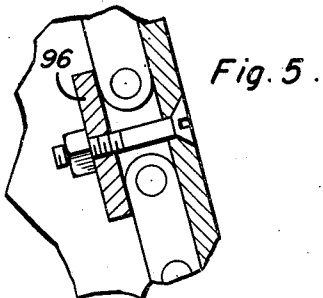
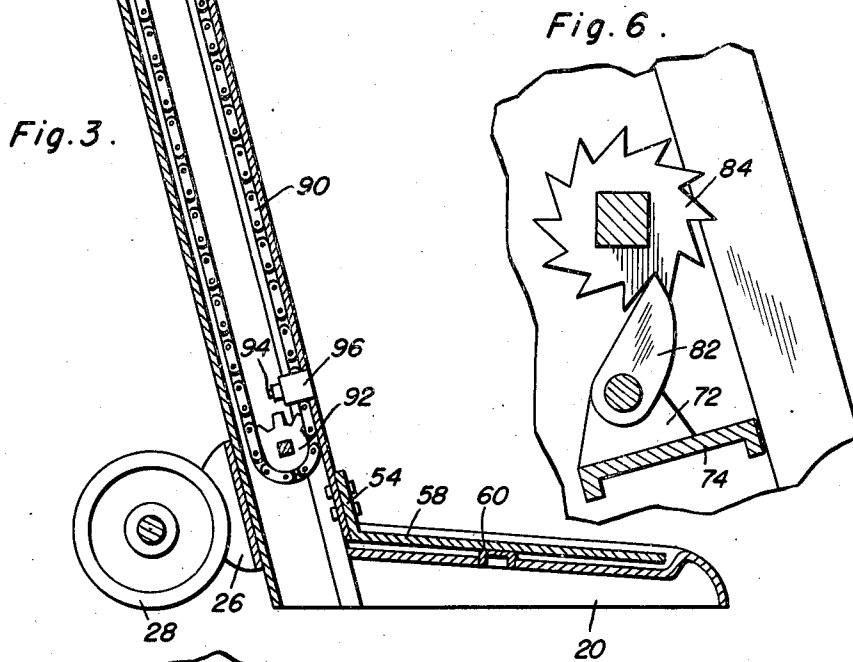
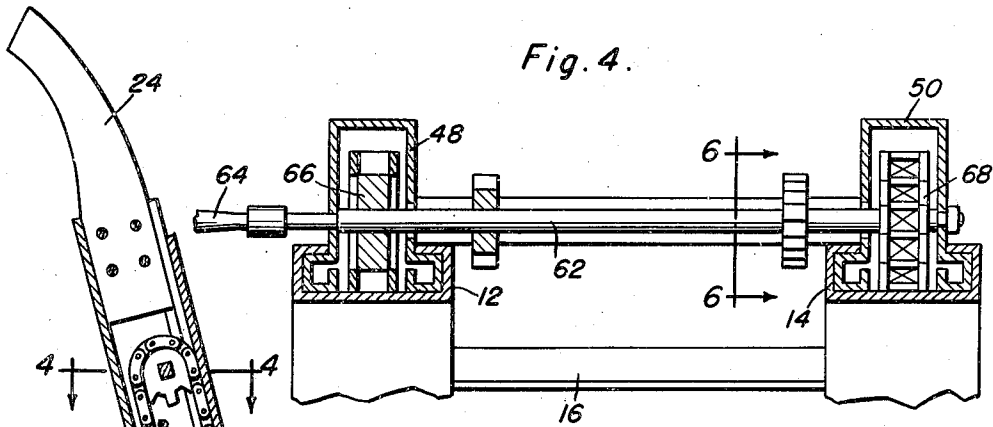
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LIFT TRUCK

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,488,461

LIFT TRUCK

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Application December 4, 1947, Serial No. 789,743

3 Claims. (Cl. 214—100)

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This invention appertains to novel and useful improvements in manually operated lifts and trucks.

An object of this invention is to provide a combination lift and truck including improved actuation means for the lift.

Another object of this invention is to provide means for maintaining the truck in selected positions.

Another purpose of this invention is to provide friction conducive, resiliently biased means associated with the said stand.

Another purpose of this invention is to raise and lower a frame member in a suitable support and maintain the frame in selected elevated positions.

Another purpose of this invention is to provide an extremely simple device of the character described capable of lifting packages and other impedimenta and transporting the same manually.

Ancillary objects and features of novelty will become apparent to those skilled in the art, such as simplicity of construction and ease of manufacture, in following the description of the preferred forms of the present invention, illustrated in the accompanying drawings, wherein—

Figure 1 is an elevational side view of the present invention;

Figure 2 is a front view of the invention shown in Figure 1;

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 2 and in the direction of the arrows;

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 3 and in the direction of the arrows;

Figure 5 is an enlarged fragmentary view illustrating a guide utilized in association with the invention and forming a portion thereof;

Figure 6 is an enlarged sectional view taken substantially on the line 6—6 of Figure 4 and in the direction of the arrows;

Figure 7 is a transverse sectional view taken substantially on the line 7—7 of Figure 3 and in the direction of the arrows;

Figure 8 is a sectional view illustrating the friction conducive means utilized in association with the present invention;

Figure 9 is a sectional view of a modified form of the invention, substituting gear means for the chain illustrated in Figure 3, and;

Figure 10 is a sectional view taken substantially on the line 10—10 of Figure 9 and in the direction of the arrows.

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This invention has been developed to provide a device for the purpose of lifting and transporting as well as loading various types of impedimenta. The preferred forms of the invention have been developed with an attempt of simplicity for facility in manufacture. As is well known conventional trucks simply transport impedimenta from one position to another. This invention is adapted to lift and lower the impedimenta before and/or after transportation thereof. Attempt has been made to provide a combination device such as that disclosed by the applicant however, the complexity of structure was usually prohibitive. In this invention simplicity is achieved.

Referring now to the first form of the present invention there is disclosed a support generally indicated at 10 which includes a back member composed of a pair of rails 12 and 14 respectively having cross braces 16 associated therewith. A base including a metallic platform 20 is provided at the lower portion of the rails 12 and 14 and has a suitable cross member 22 therein for additional rigidity. Conventional handles 24 may extend from the rails for the obvious purpose of manipulation of the invention. Brackets 26 extend from the lower portion of the said rails in order to journal wheels 28, thereby rendering a device mobile.

A pair of legs 30 form a stand for use in association with the present invention and these legs may be connected by various cross members including a truss element 32. This truss element engages one of the cross braces 16 and is journaled therearound. Of course, suitable resilient feet 34 may be supplied at the terminal portions of the legs for additional friction.

In utility of the invention the stand including the legs 30 may be utilized as illustrated in Figure 1. Friction conducive means is supplied in order to lock the said stand in a selected position. The said friction conducive means consists of a case 36 rigidly secured to the truss member 32 and a plunger 38 extending through the case and also the element 32. This plunger has a spring 40 normally biasing it outwardly of the said case and an adjustable screw 42 threadedly received in the said case and for the purpose of seating the spring. A leg support element 44 may be supplied in association with the said stand and retained therein by any suitable latch means.

A frame generally indicated at 46 is supplied in association with the said support and is slidable relative thereto. This frame includes a pair

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of rails 48 and 50 respectively having enlarged lower portions slidably seated in said rails 12 and 14 respectively. A pair of fish plates 52 and 54 respectively are secured to the lowermost portions of the said rails 48 and 50 and a base portion of the said frame extends therefrom. This base portion is simply a platform 58 having a stiffening member 60 extending thereacross. This stiffening member is adapted to seat in the suitable aperture or slot in the said base 20 and the entire extension 58 is seated in a suitable recess in the said base 20.

Means for raising and lowering the said frame 46 is provided. It is in the raising and lowering means that the embodiment of the invention shown in Figure 3 differs from that embodiment illustrated in Figure 9. Taking first that embodiment shown in Figure 3, it will be seen that a shaft 62 is journaled in the support and has a suitable handle 64 thereon. This shaft 62 has a pair of gears 66 and 68 respectively rigidly secured thereto.

A pair of brackets 70 and 72 respectively are seated on a suitable cross member 74 of the said support and a pair of shafts or axles 76 and 78 are journaled therein. Knobs 80 may be supplied at the terminal portions of the said axles for rotation thereof and a dog 82 is rigidly secured to each of the said axles. This dog is engageable with the teeth of a ratchet gear 84, two of which are supplied on the said shaft 62. It is readily apparent that by utility of this construction the shaft 62 may be maintained in a selected position, when so desired. This portion of the actuation means is common to both embodiments of the invention and the differentiating features may now readily be ascertainable as chain means for raising and lowering the frame and a rack gear means for performing the same function.

In the chain means it will be noted that a conventional link chain 90 extends around each of the said gears 66 and 68 and also around an idler gear 92 also supported in the said support. Of course, two idler gears are supplied, one for each chain in the connection. A small bracket having a U-bolt 94 extending therethrough is supplied for securing the said frame to the said chain 90. This small bracket 96 may be seen as a plate extending around the chain with the U-bolt extending through the said plate and the said frame.

The embodiment of the invention illustrated in Figure 9 shows a relatively large rack gear 100 engaging the said gear means 66 (and a second rack gear unshown engaging the other gear 68). Of course, the rack gears are rigidly secured to the said frame 46 for lifting purposes.

While there has been described and illustrated but preferred forms of the invention, it is apparent that variations may be made without departing from the spirit thereof.

Accordingly, limitation is sought only in accordance with the scope of the following claims.

Having described the invention, what is claimed as new is:

1. A combination lift and hand truck comprising a support including wheels and a base, a pair of rails in said support having a frame slidably received therein, mechanical means journaled in said support for raising and lowering said frame,

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said means including a shaft having a gear thereon, means secured to said frame engaging said gear for raising and lowering said frame, means for retaining said frame in selected positions relative to said support, said last mentioned means including brackets secured to said support having an axle journaled therein, a dog secured to said axle, a ratchet gear secured to said shaft operatively engaging said dog, a pivotally mounted stand associated with said support, and resiliently biased friction conducive means for locking said stand in selected positions.

2. A combination lift and hand truck comprising a support including wheels and a base, a pair of rails forming a part of said support, a frame slidably disposed in said rails, mechanical means journaled in said support for raising and lowering said frame, said mechanical means including a rack disposed in one of said rails and fixed to said frame, a shaft rotatably carried by said support and having a gear adjacent one end engaging the teeth of said rack, means for retaining said frame in selected position with respect to said support including brackets secured to said support having an axle journaled therein, a dog secured to said axle, a ratchet gear fixed to said last-mentioned shaft and operatively engaging said dog, a pivotally mounted stand operatively connected with said support, and resiliently biased friction conducive means for locking said stand in selected positions.

3. A combination lift and hand truck comprising a support which includes wheels and a base, a pair of rails secured to said support, a frame slidably disposed in said rails, mechanical means journaled in said support for raising and lowering said frame, said mechanical means including a shaft mounted for rotation in said support and having a gear at one end, a second shaft mounted for rotation in said support and having a second gear disposed thereon, a chain entrained around said gears, means fixing said frame to said chain, and means secured to said support for retaining said frame in selected positions with respect to said support including a bracket secured to said support having an axle journaled therein, a dog secured to said axle, a ratchet gear secured to one of said shafts and operatively engaging said dog, a pivotally mounted stand operatively connected with said support, and resiliently biased friction conducive means for locking said standard in selected position.

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