Oct. 30, 1951 G. E. KEROSON 2,573,575

PORTABLE EXTENSIBLE LIFT

Filed Oct. 31, 1947 2 SHEETS—SHEET 1

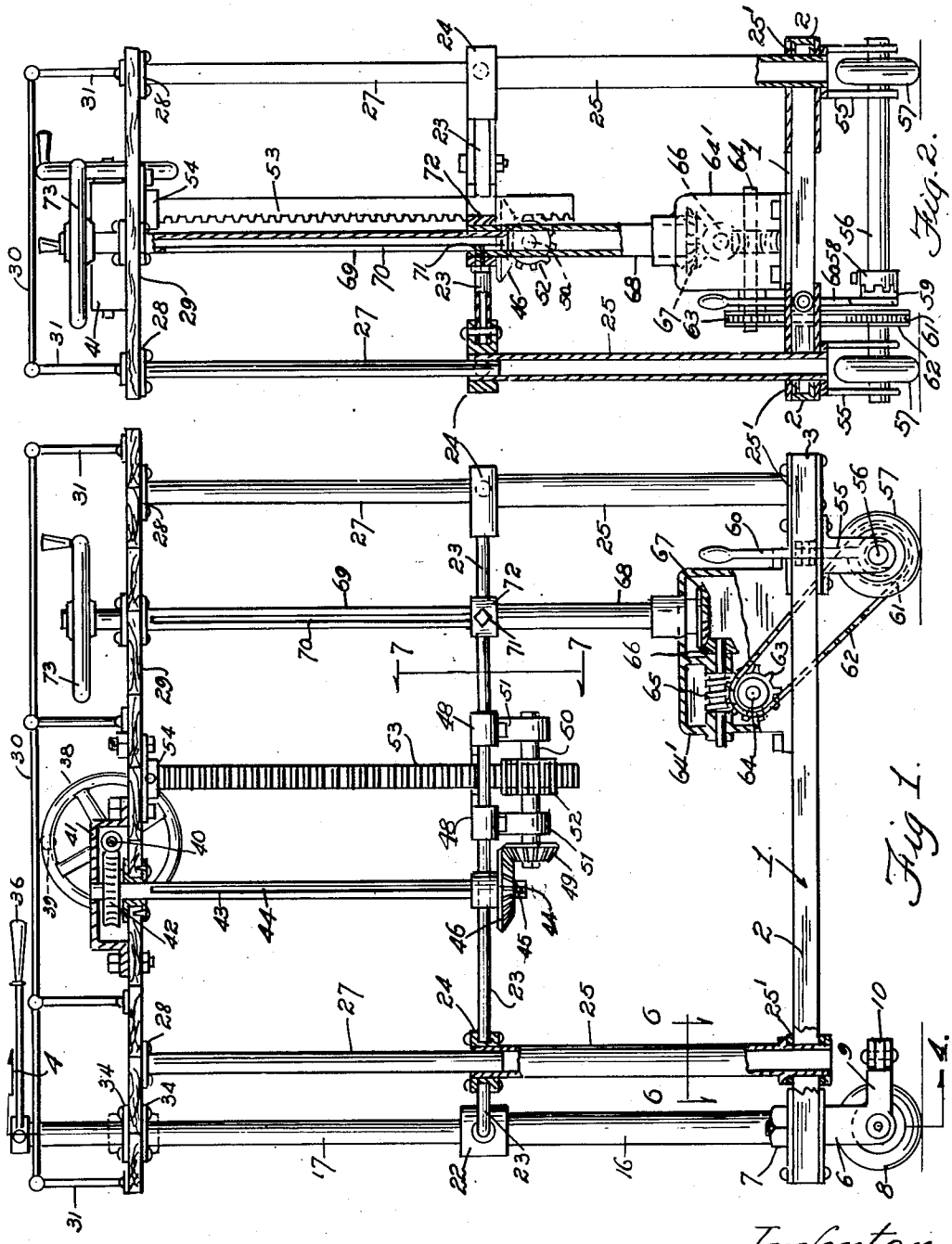


Fig. 1.

Fig. 2.

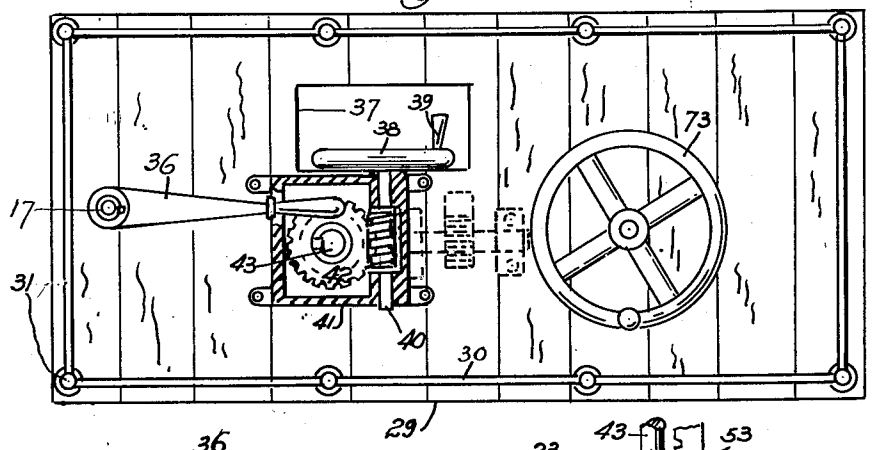
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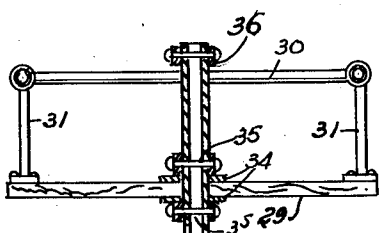
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Fig 3.





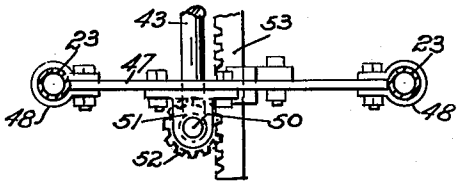
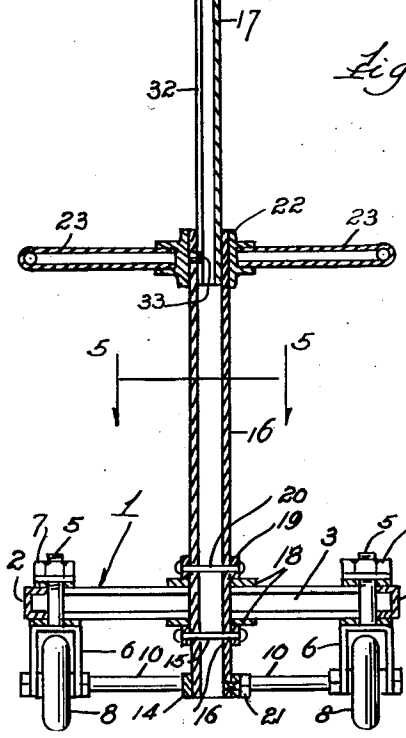


Fig 7

Fig 4.



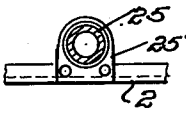


Fig.6.

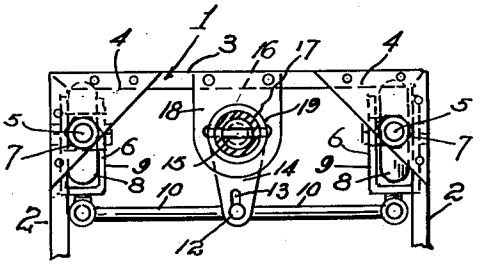


Fig.5.

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Patented Oct. 30, 1951

2,573,575

UNITED STATES PATENT OFFICE

2,573,575

PORTABLE EXTENSIBLE LIFT

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Application October 31, 1947, Serial No. 783,256

1 Claim. (Cl. 304—9)

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This invention relates generally to elevators and more particularly to portable extensible stages or lifts and the like for use in painting, redecorating, cleaning, etc. One object is to provide a portable lift or stage of sturdy construction adapted for operation by an individual more easily and readily than he could handle ladders, scaffolding and like paraphernalia and with remote danger of accident, bodily injury or property damage which is a considerable hazard incident to work of the type mentioned ordinarily.

A further object is to provide a portable lift that may be operated by the workman from his working position upon the machine without loss of time and with very little effort. A still further object is to provide a portable lift that in addition to carrying the workman about the room or structure in which he is at work may also carry his tools and supplies to enable him to proceed with speed and facility.

Other objects, novel features and advantages of arrangement, construction and design comprehended by the invention are hereinafter more fully pointed out or made apparent from the following description of a preferred embodiment as illustrated in the accompanying drawings wherein like reference characters denote corresponding parts throughout.

In the drawings:

Fig. 1 is a view of the instant portable lift as seen from the side, but partly in section.

Fig. 2 is a view of Fig. 1 as seen from one end and partly in section.

Fig. 3 is a top plan view of the portable lift.

Fig. 4 is a vertical sectional view through Fig. 1 on the line 4—4, looking in the direction of the arrows.

Fig. 5 is a horizontal cross sectional view through Fig. 4, looking down.

Fig. 6 is a detail horizontal cross sectional view, slightly enlarged, taken on the line 6—6 of Fig. 1, and

Fig. 7 is a view partly in cross section and partly in elevation taken on the line 7—7 of Fig. 1.

The reference numeral 1 denotes a base frame formed of side rails 2 and end rails 3, the end and side rails being connected at the corners of the frame by the braces 4 through which and through the frame, at the front end, the shanks 5 of yokes 6 extend, said yokes anchored in position by the nuts 7 and operatively associated with the front wheels 8, said yokes formed with an extension 9 connected by links 10 to the transverse steering rod apparatus by pin 12 to the elongated slotted portion 13 of the tongue 14 secured fast by pin

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15 to the lower section 16 of the tubular steering column 16, 17, said section 16 being secured by the spaced braces 18 to the front rail 3 of the frame, said section 16 immediately above the top brace 18, as shown in Fig. 4, being secured in position by the collar 19 about section 16 and secured thereto by the pin 20, said tongue 14 secured by screw 21 to the said section 16.

Secured to the column section 16 by coupling 22 is the rail formed of a plurality of sections 23 secured elsewhere by couplings 24 to tubular support post sections 25 supported by and secured to the rails of the frame 1, the sections 25 at the rear being at the rear corners of the frame and at the front being spaced inwardly from the front corners thereof and secured to the frame by braces 25'. Telescopically received in the post sections 25 are the cooperating sections 27 that at their upper ends are secured by plates 28 to the underface of the adjustable platform 29 substantially co-extensive with the frame 1 and provided with the guard rail 30 supported upon posts 31. The steering rod section 17 is formed with the keyway 32 receiving the key 33 of rod section 16 permitting vertical adjustment only of the steering rod sections, section 17 extending through the platform 29 and being secured thereto by the flanged collars 34 and bolts 35.

Secured to the upper end of the steering column is the steering lever 36. The platform is preferably formed with a large perforation 37 to provide clearance for the hand wheel 38 having handle 39 and fast to worm shaft 40 journaled in the housing 41 secured to said platform in mesh with the worm gear 42 within said housing and fast to the vertical transmission shaft 43 extending through and operatively supported by said platform, said shaft having a keyway 44 receiving key 45 of bevel gear 46, said shaft 43 extending through a support guide 47 extending transversely of the machine and secured by clamps 48, 48 to the rail sections 23, the said bevel gear 46 being in mesh with bevel gear 49 fast to rotary stub shaft 50 supported in bearings 51 secured to guide 47, said stub shaft 50 having fast thereon the pinion 52 in mesh with the vertical rack 53 secured by plate 54 to the platform 29.

Secured to the under side of the frame 1 are the yokes 55 that operatively support the drive shaft 56 having fast thereon the wheels 57 and the clutch member 58 releasably engaged by the clutch member 59 loose on shaft 56 and provided with operating lever 60 fulcrumed to the frame, said clutch member having fast thereupon the

sprocket wheel **61** connected by sprocket chain **62** to the sprocket wheel **63** fast upon shaft **64**, journaled in housing **64'**, having thereon the worm **65** connected by bevel gears **66**, **67** to the tubular shaft **68** supported in said housing and telescopically receiving the cooperating shaft **69** formed with keyway **70** receiving the key **71** connecting shaft sections **68**, **69** and carried by a collar **72** about shaft **68** at its upper end, said shaft section **69** at its upper end extending through the platform **29** and thereabove provided with the operating hand wheel **73**. In operation the vehicle is guided by means of the lever **36** which operates the sectional steering column **16**, **17**, the latter section moving the tongue **14**, rod **11** and the wheels **8**.

The platform **29** is raised and lowered by rotation of the wheel **38** that rotates worm shaft **40** in mesh with the worm gear **42** that rotates transmission shaft **43** and by means of the bevel gears **46**, **49** rotates stub shaft **50** that drives pinion **52** in mesh with the rack **53**. Movement of the platform is guided by the telescoping sectional members **25**, **27**, **16**, **17** and **68**, **69**. The vehicle is propelled by rotation of hand wheel **73** through shaft **68**, **69**, bevel gears **66**, **67**, worm **65** of shaft **64** provided with sprocket wheel **63** connected by sprocket chain **62** to sprocket wheel **61** fast upon shaft **56**. This drive is operative when the clutch members **58**, **59** are engaged. The worm shafts serve as brake media when the vehicle is stationary to prevent movement on an incline through gravity and serve as a safety feature preventing accidental movement of the machine while the workman is busy, etc. When the clutch members are separated the vehicle may be moved by hand from place to place with facility.

What is claimed is:

In a portable extensible lift, a base frame having wheels thereon, a platform above said base, guide posts on the base and guide posts on the platform telescoping in the posts on said base frame, a rail connected to the upper ends of the guide posts on the base, a rotary transmission shaft carried by said platform and having a hand wheel connected to said shaft for turning the same, a rack carried by said platform parallel to said transmission shaft, transversely extending straps carried by said rail on opposite sides of said rack and carrying bearings thereon, a pinion shaft journaled in said bearing and carrying a pinion meshing with said rack and a gear on said transmission shaft meshing with a gear on the pinion shaft whereby operation of the transmission shaft moves the platform relative to said base.

GEORGE E. KEROSON.

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