

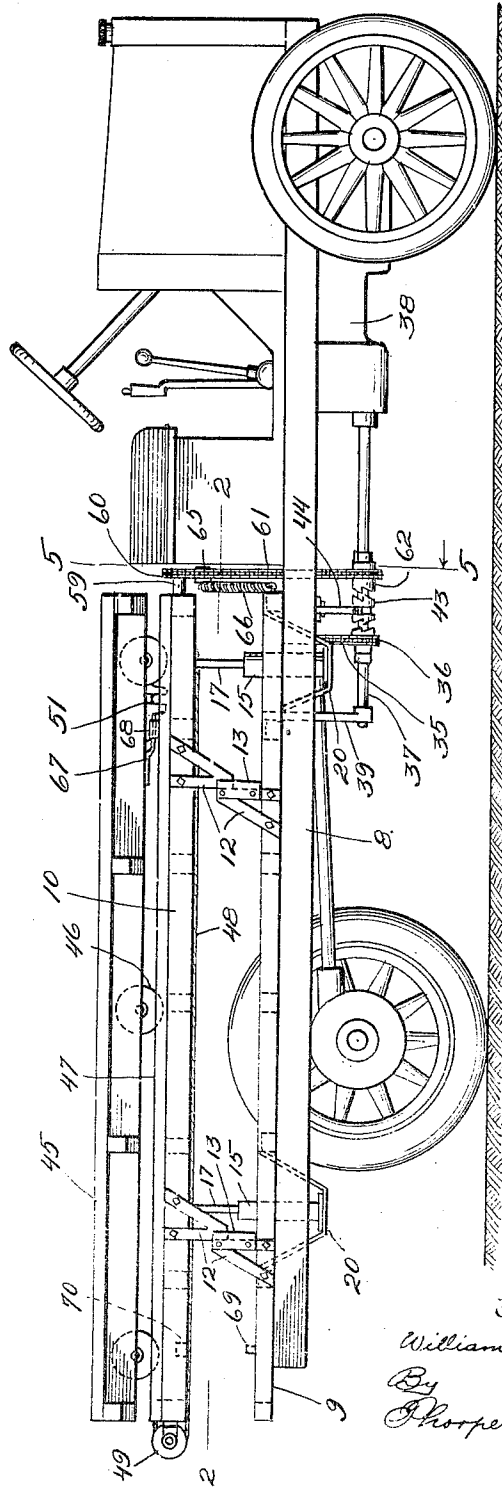
W. L. STONE.
ADJUSTABLE AND REMOVABLE TRUCK PLATFORM.
APPLICATION FILED AUG 11, 1920.

1,382,328.

Patented June 21, 1921.

3 SHEETS—SHEET 1.

Fig. 1



Witness:

W. Hamilton

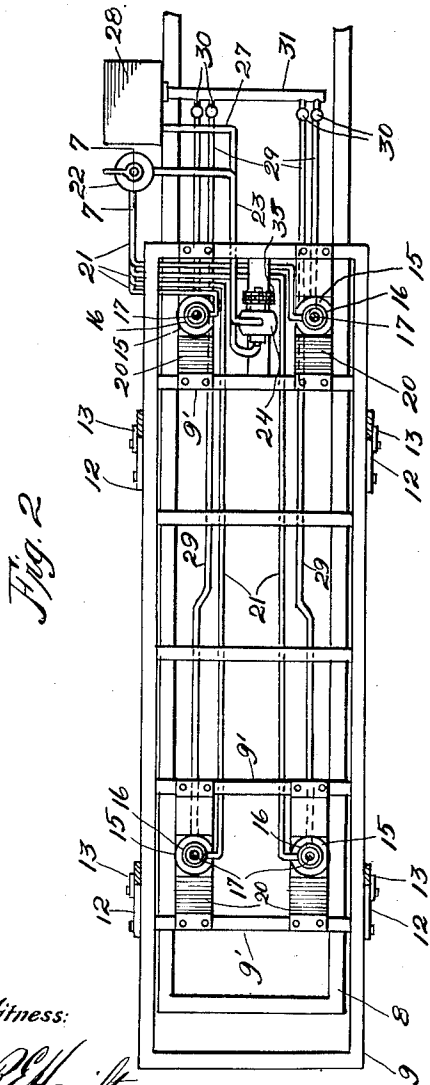
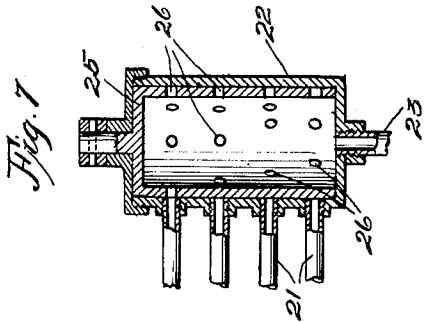
Inventor:
William L. Stone
By
Phelps & Gerard
Attorneys.

W. L. STONE.
ADJUSTABLE AND REMOVABLE TRUCK PLATFORM.
APPLICATION FILED AUG. 11, 1920.

1,382,328.

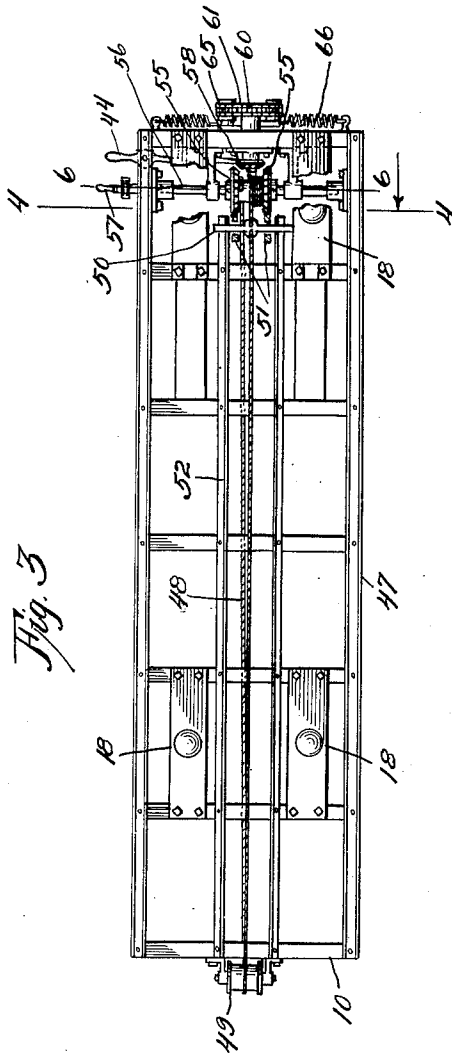
Patented June 21, 1921.

3 SHEETS—SHEET 2.



Witness:

R. Hamilton



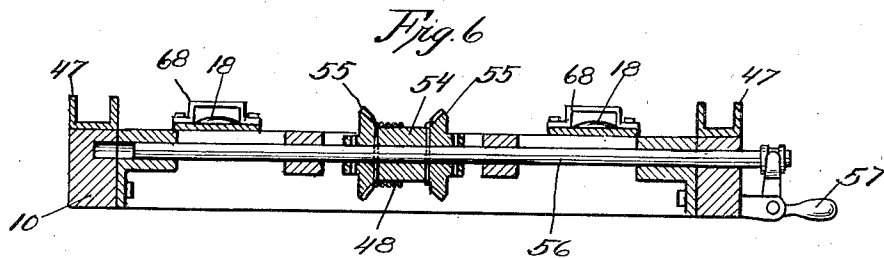
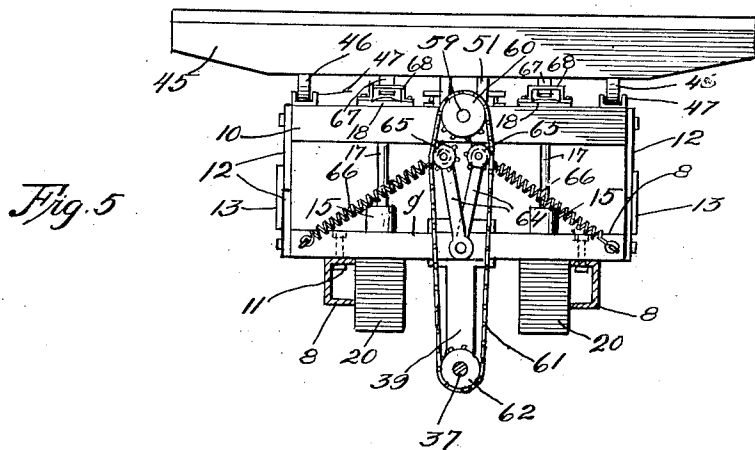
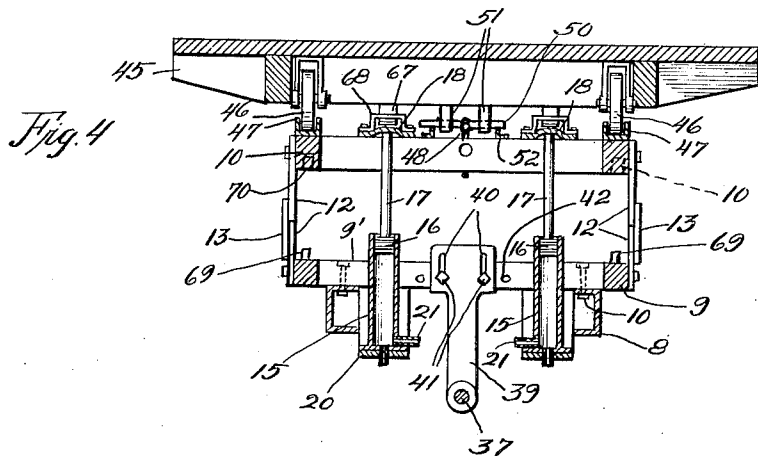
Inventor:
William L. Stone,
By *Thorpe & Leonard,*
Attorneys.

W. L. STONE.
ADJUSTABLE AND REMOVABLE TRUCK PLATFORM.
APPLICATION FILED AUG. 11, 1920.

1,382,328.

Patented June 21, 1921.

3 SHEETS—SHEET 3.



Witness:

R. H. Hamilton

Inventor:
William L. Stone,
By *Thorpe & Grand,*
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM LEE STONE, OF KANSAS CITY, MISSOURI, ASSIGNOR TO GREAT WESTERN COMMERCIAL BODY COMPANY, OF OMAHA, NEBRASKA, A CORPORATION OF NEBRASKA.

ADJUSTABLE AND REMOVABLE TRUCK-PLATFORM.

1,382,328.

Specification of Letters Patent. Patented June 21, 1921.

Application filed August 11, 1920. Serial No. 402,866.

To all whom it may concern:

Be it known that I, WILLIAM L. STONE, citizen of the United States, and resident of Kansas City, county of Jackson, State of Missouri, have invented a certain new and useful Improvement in Adjustable and Removable Truck-Platforms, of which the following is a complete specification.

The present invention relates to improvements in truck devices, with particular reference to trucks of the motor-driven type, and aims to provide an improved truck body supporting structure having novel adjusting features, and adapted to accommodate truck bodies of different forms and sizes upon the same supporting structure.

To this end, I have devised a truck having its chassis provided with a removable platform for supporting the truck body, together with means for effecting suitable vertical adjustment of this platform as well as for producing an endwise travel of the platform with relation to the truck chassis.

Preferably, in applying the invention to trucks of the motor-driven type, I employ means operated from the motor drive for effecting the desired adjustment of the platform and also for producing the endwise movement of the same.

In carrying out the invention, I have devised a truck construction, the platform supporting structure of which includes a vertically adjustable frame-work, the platform being provided with suitable rollers adapting it for endwise travel along said frame-work, and having an operating connection with the motor drive of the truck for producing such endwise movement of the platform. For effecting the vertical adjustment of the supporting structure, I provide a plurality of jack devices also adapted to be operated from the motor drive and provided with control means whereby said devices may be individually operated or any two or more of the same operated simultaneously.

It is also sought to devise a construction of the character described which may be applied and adjusted to practically any commercial make of motor trucks, and with but very little change being required for the purpose of adapting the improved construction thereto.

With the foregoing general objects in view, the invention will now be described by reference to the accompanying drawings

illustrating one form of construction which I have devised for embodying the proposed improvements, after which the novel features and combinations therein will be particularly set forth and claimed.

In the drawings,—

Figure 1 is a side elevation showing a motor truck having applied thereto a platform, with a platform supporting structure for embodying the present improvements, said supporting structure being illustrated in partly elevated position;

Fig. 2 is a horizontal sectional view, taken on the line 2—2 of Fig. 1;

Fig. 3 is a plan view of the platform supporting structure, with the platform member removed, certain portions of the frame being broken away to more fully disclose the parts of the platform driving mechanism;

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 3, and on a larger scale and illustrating the platform in position;

Fig. 5 is a transverse section taken on the line 5—5 of Fig. 1, and also on a larger scale;

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 3, on an enlarged scale; and

Fig. 7 is an enlarged detail sectional view, taken on the line 7—7 of Fig. 2.

Referring now to the said drawings in detail, these illustrate the invention as applied to the chassis frame 8 of a motor truck, upon which I mount a platform supporting structure comprising a bed frame 9 supported directly upon the frame 8, and a platform carrying frame 10 adapted to be adjusted vertically with relation to the frame 9, by means hereinafter described. The said frame 9 is secured to the truck by means of series of bolts 11 engaging transverse portions of said frame 9 and securing the same to the frame 8; on the other hand, the frame 10 is permitted a certain degree of vertical movement with reference to the frame 9, and is guided in this vertical movement by means of a plurality of pairs of guide brackets 12 secured to said frames 9 and 10 respectively, the lower brackets 12 of each pair being provided with a retaining plate 13 overlapping the companion bracket 12, as clearly illustrated in Figs. 1 and 4. The bracket structure is arranged to permit all necessary vertical movements and to guard against any backward or sidewise horizontal

movement of the frame 10 with reference to the frame 8, and at the same time accommodating any slight angular twisting movements of the supporting structure, due to a certain amount of angular adjustment hereinafter referred to.

The frame member 10 is carried by the bed-frame 9 through the medium of a plurality of hydraulic jack devices comprising a cylinder 15 for each of the corner portions of the frame 9, each cylinder 15 being provided with a plunger 16 and plunger rod 17, the upper end of which is adapted to engage the under face of a cap piece 18 secured to transverse portions 19 of the frame 10. Each of the cylinders 15 is supported by means of a hanger bracket 20 which is supported from transverse portions 9' of the frame 9. The cylinders 15 are each provided with an inlet pipe connection 21 (see Figs. 2 and 4) leading from a multiple-way valve comprising a valve casing 22 to which all of the pipes 21 are connected while the casing 22 is provided with a single inlet connection 23 communicating with a suitable pump 24, as shown in Fig. 2. Inclosed by the casing 22 is a valve element 25 provided with a plurality of series of valve ports 26 (see Fig. 7) so arranged as to provide communication between the connection 23 and the pipes 21 separately and individually, or between the connection 23 and any two or more of said pipes 21 simultaneously, in order that the several jack devices may be correspondingly operated. The pump 24 is provided with an intake connection 27 communicating with a suitable tank or reservoir 28 for maintaining a supply of the liquid used for the hydraulic medium, and the cylinders 15 are all likewise provided with outlet connections 29 provided with suitable control valves 30 and leading to a common pipe connection 31 communicating with the tank or reservoir 28.

The pump 24 is provided with a drive chain 35 operating around a clutch sprocket wheel 36 which is loosely journaled upon a shaft 37, which is provided as a power take-off from the motor drive of the clutch, being operatively connected at its forward end with the transmission mechanism 38 of the truck. The rear end of said shaft 37 is journaled in a hanger 39, the upper end of which is formed with slots 40 adapted for adjustable connection by means of bolts 41 with one of the transverse portions 9' of the frame 9. Additional bolt openings 42 are provided in the said transverse member 9' so that by virtue of this adjustment combined with the adjustment afforded by the slots 40, the hanger 39 may be adjusted for the proper support of the rear end of the shaft 37, regardless of slight variations in the height of the latter due to different forms, sizes or makes of trucks. The pump

drive is adapted to be clutched with the shaft 37 by means of a sliding clutch element 43, which is shifted by means of a suitable lever 44 into engagement with the clutch sprocket 36.

Upon top of the upper frame 10 is mounted a truck or platform 45 which is provided at its opposite sides with a plurality of rollers 46 adapted to travel in longitudinal track channels 47 provided at the opposite sides of the frame 10. Thus, the platform 45 is arranged not only for removably mounting the same upon top of the frame 10, but also for endwise movement along said frame, as, for example, in the transfer of said platform from the truck supporting structure to a dock or other platforms where the truck is to be loaded or unloaded. This endwise movement of the platform 45 is produced by means of a cable 48 operating around a guide pulley 49 at the rear end of the frame 10 and provided with a cross bar 50 adapted for detachable engagement with a pair of forked brackets 51 depending from the frame of the platform 45. For maintaining the cross bar 50 in operative engagement with the brackets 51, the frame 10 is provided with a pair of tracks 52 which are traversed by said cross bar 50 during the movement of the cable 48 (see Figs. 3 and 4). At the forward end of the frame 10, the cable 48 is passed several times around a drum 54 (see Fig. 6) equipped with a pair of oppositely facing bevel gears 55 secured to a transverse shaft 56 which is mounted in bearings permitting longitudinal shifting of said shaft 56, one of the ends of which shaft is provided with a hand lever 57 for shifting shaft 56 and thereby alternately engage the bevel gears 55 with a bevel pinion 58 mounted on a short longitudinal shaft 59. The shaft 59 is also fitted with a sprocket wheel 60 over which operates a chain 61 driven from a clutch sprocket wheel 62 mounted on the shaft 37 on the opposite side of the clutch element 43 from the sprocket wheel 36. By operation of the lever 44, it is apparent that the clutch device 43 may be alternately engaged with said clutch sprocket wheels 36 and 62, according as it is desired to drive either the pump 24 or the cable 48 for producing endwise movement of the platform 45. For accommodating the drive from the shaft 37 to the shaft 39 for different elevations of the frame 10, a yielding take-up is provided for the chain 61, which comprises a pair of pivoted arms 64, each having an idle sprocket wheel 65 for engaging different portions of the chain 61, the said arms 64 being held in yieldingly spread relation by means of coil springs 66, as clearly illustrated in Fig. 5.

The under side of the platform 45 is provided with a latch or retaining finger 67 adapted, when the platform 45 is in fully

advanced position, as illustrated in Fig. 1, to engage a loop or keeper element 68 projecting upward from the frame 10, thus limiting the forward travel of the platform 45 as well as serving to more securely connect the same with the frame 10. The lower frame 9 may also be provided with dowel pins 69 adapted, when the frame 10 is in lowest position, to engage with recesses 70 in the under face of the frame 10, for positively preventing any tendency to relative horizontal play or movement between the frames 9 and 10 of the supporting structure.

It will thus be seen that I have devised a practical and efficient form of construction for carrying out the desired objects of the invention. By the proposed improvement, it is possible to adapt any given type or size of truck for removably carrying a range of different sizes, forms and shapes of platform 45 and the operation of loading or unloading of the truck body upon the platform 45 is greatly facilitated and expedited by the described mechanism for varying the elevation of the platform and moving the same in either direction endwise upon its supporting structure, as it will be seen that by operation of the valve control by means of the valve 25, and the actuation of the pump 24 through its drive connection from the shaft 37, any one or more of the plungers 16 may be actuated for lifting the frame 10 and the platform 45 supported thereby, so that either all four of the cylinders 15 may be operated simultaneously for elevating the platform or a lesser number of the cylinders 15 operated for producing a slightly angular lift under conditions requiring such variation in the operation of the jack devices. The elevation of the platform 45 is, of course, for bringing said platform even with a dock level, so that the platform may then, by operation of the drive connection to the cable 48, be moved endwise over on to the loading dock or platform, and thereafter to restore the platform 45 into its initial position upon the truck, either empty or with its new load, as will be readily understood. It is also apparent that the construction described may be adapted or adjusted to any form, size or make of truck chassis, since the shaft hanger 39 may obviously be adjusted to take care of any slight differences to be found in the position of the shaft 27 on the under side of the chassis frame 8. It will further be understood that all of the control levers or valves or other connections may be located so as to be within easy reach from the driver's seat on the truck and thus facilitate the

handling of the same in the different operations of loading or unloading of the truck.

While I have illustrated and described what is now deemed to constitute the preferred form of construction for embodying the proposed improvements, I desire to reserve the right to make such changes or modifications as may fairly fall within the scope of the following claims.

What I claim is:

1. The combination with a truck chassis, of a frame provided with a plurality of supporting devices interposed between said frame and chassis, a platform removably supported on said frame, and means for individually adjusting said supporting devices for varying the height of said frame above said chassis.

2. The combination with a truck chassis, of a frame provided with a plurality of hydraulic jack devices interposed between said frame and chassis, a platform removably supported on said frame, and a valve provided with connections to said jack devices and operable to either individually or simultaneously control all of said devices.

3. The combination with a truck chassis provided with a motor drive, of a frame provided with a plurality of hydraulic jack devices interposed between said frame and chassis, a platform removably supported on said frame, a pump operated from said motor drive and provided with connections for actuating said jack devices, and a valve provided with connections to said jack devices and operable to either individually or simultaneously control all of said devices.

4. The combination with a truck chassis provided with a motor drive, of a platform removably carried by said chassis, and provided with rollers adapting said platform for endwise movement relative to said chassis, and a reversibly-driven cable actuated from said motor drive and provided with a detachable connection with said platform and operable to produce endwise movement thereof in either direction.

5. The combination with a truck chassis provided with a motor drive, of a movable frame carried by said chassis and provided with guides restricting said frame to vertical adjusting movements, a platform provided with rollers supporting said platform for endwise movement along said frame, and means operable from said motor drive for both vertically adjusting said frame and producing endwise movement of said platform in either direction.

In witness whereof, I hereunto attach my signature.

WILLIAM LEE STONE.