

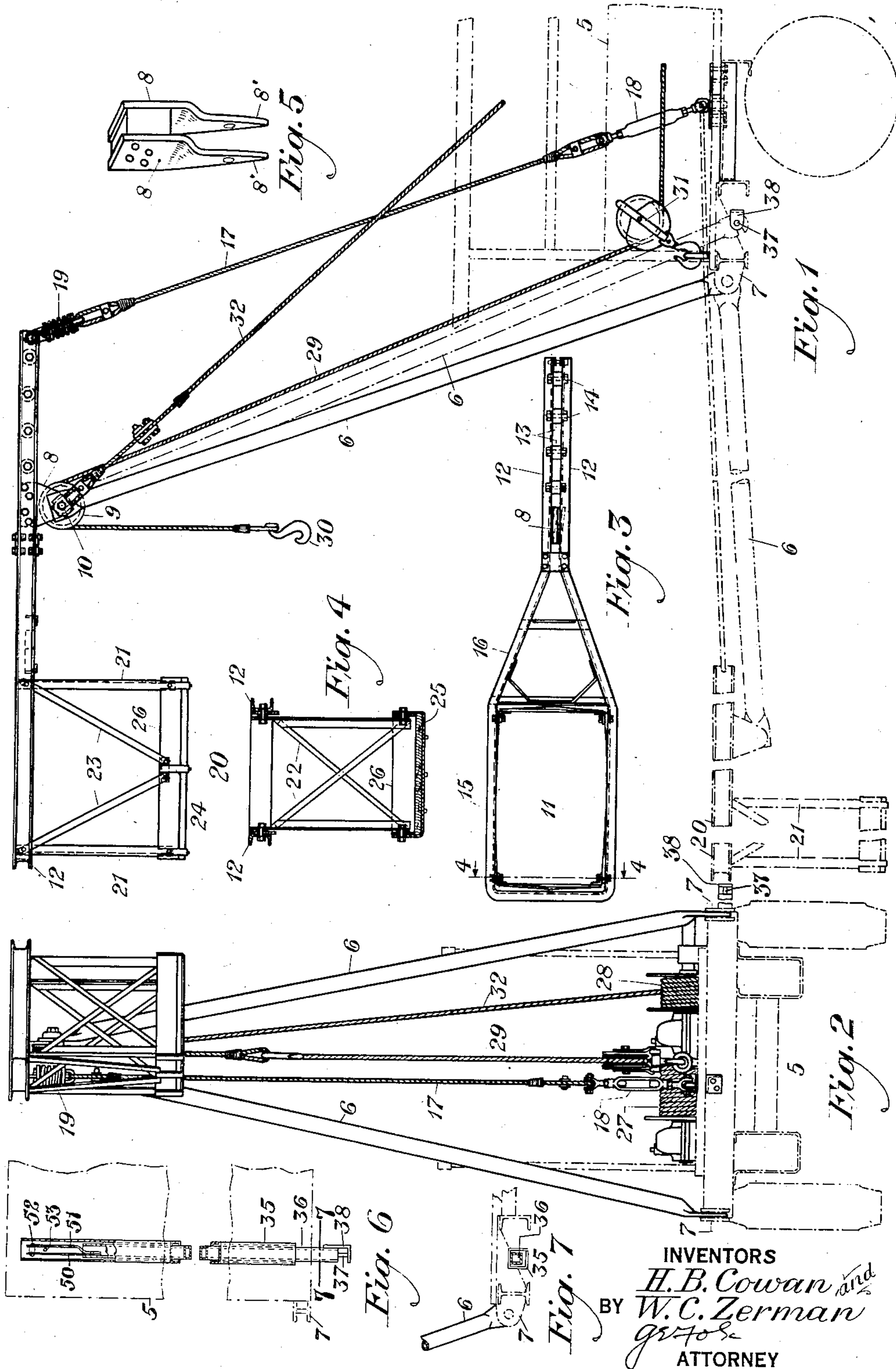
July 10, 1934.

H. B. COWAN ET AL

1,965,689

ADJUSTABLE AERIAL PLATFORM

Filed Jan. 28, 1933



INVENTORS

H. B. Cowan and
W. C. Zerman

BY

gr 708
ATTORNEY

UNITED STATES PATENT OFFICE

1,965,689

ADJUSTABLE AERIAL PLATFORM

Henry Benning Cowan, Llanerch, and William
Cody Zerman, Upper Darby Township, Dela-
ware County, Pa., assignors to American Tele-
phone and Telegraph Company, a corporation
of New York

Application January 28, 1933, Serial No. 654,066

7 Claims. (Cl. 189—11)

This invention relates to platforms, and more particularly to aerial platforms of the character adapted to be adjustably mounted on motor trucks and operated to desired heights by mechanism 5 carried thereby.

In the construction of aerial electric transmission lines considerable difficulty and time-consuming operations are involved in placing and securing the lines in position. These operations 10 require that the lineman climb poles or trees, in the case of tree trimming or threading the lines through the trees. It is also necessary for linemen to descend to the ground between operations on successive poles or trees.

It is an object of this invention to eliminate these difficult and time-consuming operations by providing a platform mounted on a motor truck and adapted to be adjustably raised or lowered by mechanism carried by the truck to enable the 20 lineman standing on the platform, to perform such work as may be required in the construction or maintenance of aerial transmission lines.

This and further objects will be apparent from the following description, when considered in 25 connection with the accompanying drawing, in which one embodiment of the invention is illustrated.

Referring to the drawing, Figure 1 is a side elevation of the improved adjustable platform 30 shown mounted on a truck, the platform and associated equipment being illustrated in extended position in full lines and in lowered position in dotted lines, and one of the legs is shown in dotted lines in an alternate mounting on the 35 side of the truck.

Fig. 2 is a rear end view of Fig. 1.

Fig. 3 is a plan view of the longitudinal frame which provides a support for the platform.

Fig. 4 is a section taken on the line 4—4 of 40 Fig. 3,

Fig. 5 is a perspective view of plate members which pivotally interconnect the elongated frame with the supporting derrick members whereby the platform may be positioned in offset relation 45 or at one side of the truck.

Fig. 6 is a plan view of a mounting for one of the derrick legs, which mounting is telescopically arranged to project beyond the side of the truck and provide an additional method to that shown 50 in Fig. 5, whereby the platform may be positioned in further offset relation to one side of the truck, and

Fig. 7 is a sectional end view taken on the line 7—7 of Fig. 6.

55 The elements included in this invention are

mounted to extend from the rear end of a motor truck 5. A pair of derrick legs 6, 6 are pivotally connected at their lower ends to suitable metal plates 7, 7 secured to the corners of the truck 5. The derrick legs are inclined toward 60 each other so that their upper extremities lie closely adjacent. Coinciding plate members 8, 8 which are suitably secured between the channel sections of the longitudinal frame member to be presently described, have downwardly extending 65 flanges 8', 8' positioned between the inner sides of the adjacent ends of the derrick legs. These flanges are offset or distorted with respect to the upper portion of the plate members 8, 8, as shown in Fig. 5. A sheave 9 is journaled between the 70 flanges 8', 8' at the ends of the derrick legs on a bolt 10 which passes through openings in said flanges and in the ends of the derrick legs. This bolt secures these elements together as may 75 be seen in Fig. 1 of the drawing.

The longitudinal frame member 11 (Fig. 3) comprises two channel sections 12, 12. Spacing tubes 13 are positioned between the sections at the forward portion of the frame, and bolts 14 passing through these tubes secure the sections 80 together in this relation. The rear portion 15 of the frame 11 is shown as being of substantially rectangular form, and this portion is interconnected to the forward portion of the frame just described by an intermediate portion 16 which is 85 of substantially triangular formation. As previously pointed out, the plate members 8, 8 are bolted between the channel sections 12, 12 of the longitudinal frame, and a spacer is provided between these plates. As the flanges 8', 8' of 90 these plates are distorted, the frame will be caused to assume an offset position with respect to its point of connection with the derrick legs and also to the longitudinal center of the truck.

An additional method of causing the frame to 95 assume a greater offset position with respect to the longitudinal center of the truck than is indicated above is shown in the mounting for one of the legs 6, as illustrated in dotted lines in Fig. 1. This mounting includes a rectangular tubing 35 100 which is secured in any suitable manner and in a transverse position to the under side of the truck 5. This mounting is positioned forwardly of the corner plates 7 on which the leg 6 is normally mounted. An inner tubing 36 of a form similar 105 to that of the tube 35 is telescopically mounted therein and suitable means are provided to limit the outward movement of the tubing 36 and to lock it in its extended position. This means for limiting the outward movement of the tubing 36, 110

as more clearly shown in Fig. 6, include a pair of steel straps 50 and 51. These straps are welded or otherwise fastened together at one of their ends to the inside of tube 36 and the major portion of the strap 51 is slightly offset from its companion strap 50 to provide a space between the two straps. The other or inner ends of the straps 50 and 51 are fastened together by means of a bolt 52 which passes through a spacer interposed between said straps at this point. A bolt 53 extends in a vertical direction through the tube 53 and lies between the separated portions of the straps 50 and 51, and the tubing 36 is limited in its outward movement when engagement is made between the spacer positioned between the straps and the vertical bolt 53. The telescoping arrangement between the tubes 35 and 36 in the manner indicated eliminates the extension of the tube 36 beyond the side of the truck when the tube 36 is not in use. The tubing 36 is provided with a pivot pin 37 which the slot in the leg 6 engages, and an angular strap 38 is suitably attached to the end of the tubing 36 and to the pivot pin 37 to prevent the displacement of the leg 6 from said pin. Thus, by mounting the leg 6 on the pin 37 of the telescoping tube 36 instead of connecting it to its normal mounting on the corner plates 7, the frame and its platform, to be presently described, will be caused to assume a greater offset position to one side of the truck. The point of attachment 7 for the left leg (Fig. 2) is the same when the right leg 6 is in either of its positions. This has the effect of rotating point 10 (the apex of the triangle) counter-clockwise about the left pivotal plate 7, which in turn shifts the axis of the platform from a line perpendicular to the plates 7, 7 to a line extending between the left plate 7 and the pin 37. It is not necessary to bend any part of either derrick leg as whatever change is made in the base of the triangle is compensated for by the loose fits at the corners of the triangle.

A guy rope 17 is attached at one end to a turn-buckle 18 secured to the truck body, and at the other end to a shock absorber 19, which in turn is attached to the inner or forward end of the longitudinal frame 11. The member 19 is of a character which will absorb all shocks encountered in the operation of the device, and the turn-buckle serves to provide adjustment of the guy rope 17. The guy rope 17 and the derrick legs 6, 6 lie in substantially parallel planes, and the distance between the connections of the guy rope to the truck 5 and the derrick legs to the truck is substantially the same as the distance between the connections of these members to the longitudinal frame 11. A parallelogram is thus formed between these members which changes due to the pantograph action which takes place between these elements when moved. The connection of the rope 17 with the longitudinal frame 11 causes the frame to always assume a horizontal position at various heights above the ground.

A platform 20 of substantially rectangular formation is positioned at the rear or outer end of the longitudinal frame 11. This platform is secured to the frame by means of bolts which pass through the channel members 12 of the longitudinal frame and to the tops of angle irons 21 which are vertically positioned at the corners of the platform. Diagonal cross-bars 22 are provided on the ends of the platform and are connected at one end to an upper corner of the angle iron 21, and at the other end to the opposite lower corner of said angle iron (Fig. 4). Inclined

straps 23 are provided on the sides of the platform and extend from the upper corners thereof to an approximate midpoint at the bottom of the platform, at which point they are bolted to a transverse support 24 to the base or floor 25 of the platform. The floor 25 may be of wood and is also supported at its ends and sides in any suitable manner. A raised guard 26 is provided about the sides of the floor 25 to prevent the falling of equipment or tools from the platform. The offset relation of the elongated frame support 11, as previously pointed out, will carry with it in this relation, the platform just described, thereby causing the platform to assume a position to the right of the center line of the truck, as shown in Fig. 2. This position of the platform to the right will facilitate linemen's operations on lines which usually are placed on poles positioned at the side of a road or the edge of a sidewalk.

The mounting of the legs 6 on the telescoping tubing 36 forwardly of the mounting plate 7 at the corner of the truck to which the legs are normally connected, as previously described, will cause the platform 20 to assume a position in further offset relation to the right of the truck than the position just outlined.

The truck 5 is shown as being provided with a winch having double drums 27 and 28 which are adapted to be operated individually. Tackle including a rope 29 is provided with a hook 30, and this rope extends through the sheave 9, carried by the derrick support 6, and snatch block 31 secured to the rear corner of the truck, and thence to one of the winches. This tackle may be used in loading and unloading operations. Rope 32 has its looped end attached to the bolt 10 upon which the sheave 9 is journaled. This rope passes from the bolt 10 and is wound on the winch drum 28. The winding and unwinding operations of this rope, control the adjustment of the frame 11 and its depending platform 20, by lowering and raising the top of derrick legs 6, 6. The rotation of the winch drums may be controlled in the usual manner by suitable mechanism connected with the truck engine.

It will be obvious from the foregoing that a lineman standing upon the platform may be transported from one location to another, and by the adjustment of the platform to the required heights may perform such work as is necessary in the construction or maintenance of aerial transmission lines. It will be further obvious that by the elimination of climbing and descending individual poles, or trees in accordance with this invention, this work may be effected with greater efficiency.

What is claimed is:

1. An aerial platform including a truck, a support pivotally connected at one end to the truck, a longitudinal frame pivotally connected to the other end of the support in offset relation to its point of connection, and a platform affixed to one end of said frame.

2. An aerial platform including a truck, a support pivotally connected at one end to the truck, a longitudinal frame pivotally connected to the other end of the support in offset relation to its point of connection, a platform affixed to one end of said frame, and means for adjusting the support to raise and lower the frame and platform.

3. An aerial platform including a truck, a support pivotally connected at one end to the truck, a longitudinal frame pivotally connected to the other end of the support in offset relation to its point of connection, a platform affixed to one end of said frame, shock absorbing means affixed to

the other end of said frame, and means for adjusting the support to raise and lower the frame and platform.

4. An aerial platform including a truck, a support pivotally connected at one end to the truck, a frame, means for pivotally connecting said frame with the support in offset relation to its point of pivotal connection, a platform affixed to said frame, and means for adjusting the support to raise and lower the frame and platform.

5. An aerial platform including a truck, a support pivotally connected with the truck, a longitudinal frame and attached platform pivotally mounted on the support, said frame being in offset relation to the support at its point of connection thereto, and said platform being positioned to one side of the truck, and means for adjusting the support to raise and lower the frame and platform.

6. An aerial platform including a truck, a pair of supporting legs pivotally connected at one end to said truck, a frame pivotally connected to the other ends of said supporting legs, a depending platform carried on one end of the frame, said

frame and platform normally assuming an offset position with respect to the longitudinal center of said truck, and means associated with one side of said truck for pivotally connecting one of said legs to cause said frame and platform to assume an offset position greater than in their normal position to one side of the truck.

7. An aerial platform including a truck, a pair of supporting legs pivotally connected in normal position at one end to rear corners of said truck, a frame pivotally connected to the other ends of said supporting legs, a depending platform carried on one end of the frame, said frame and platform normally assuming an offset position with respect to the longitudinal center of said truck, and means extensibly mounted on one side of said truck for pivotally connecting one of said legs forwardly of its normal position to cause said frame and platform to assume an offset position greater than in their normal position to one side of the truck.

HENRY B. COWAN.
WILLIAM C. ZERMAN.

100

105

110

115

120

125

130

135

140

145

150