Aug. 18, 1970 P. J. TIDWELL 3,524,520

TRAVELING SCAFFOLD

Filed Aug. 29, 1968 3 Sheets-Sheet 1

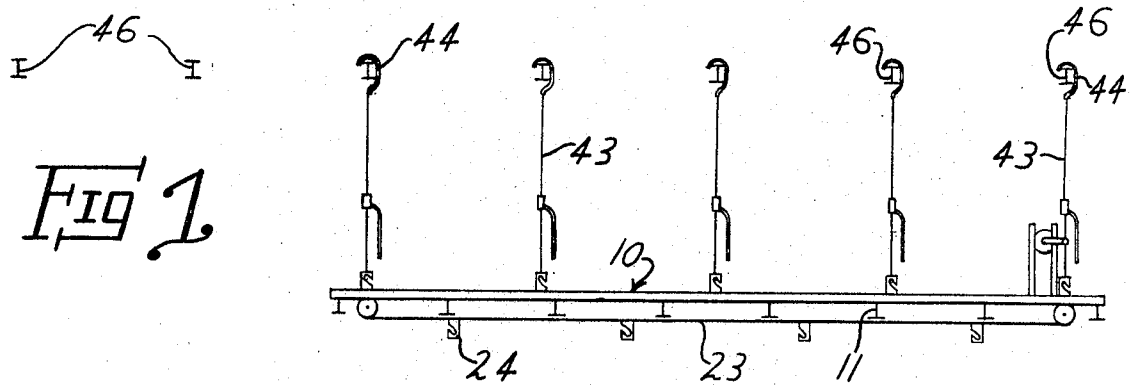


FIG 1.

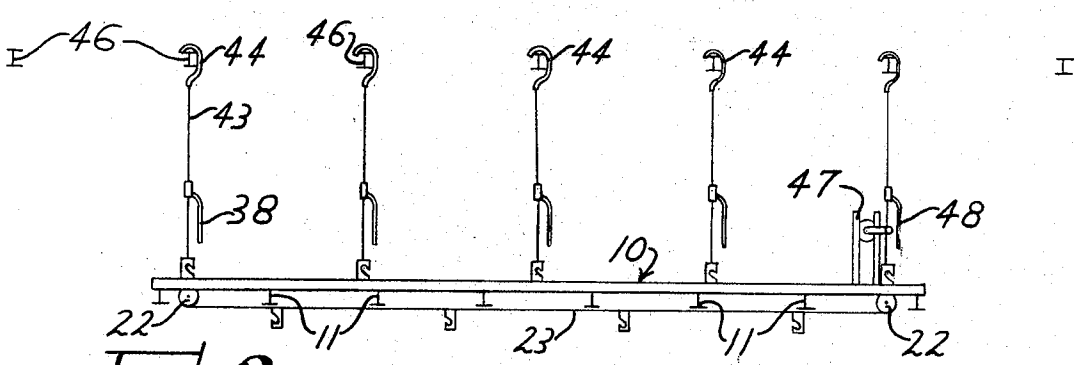


FIG 2.

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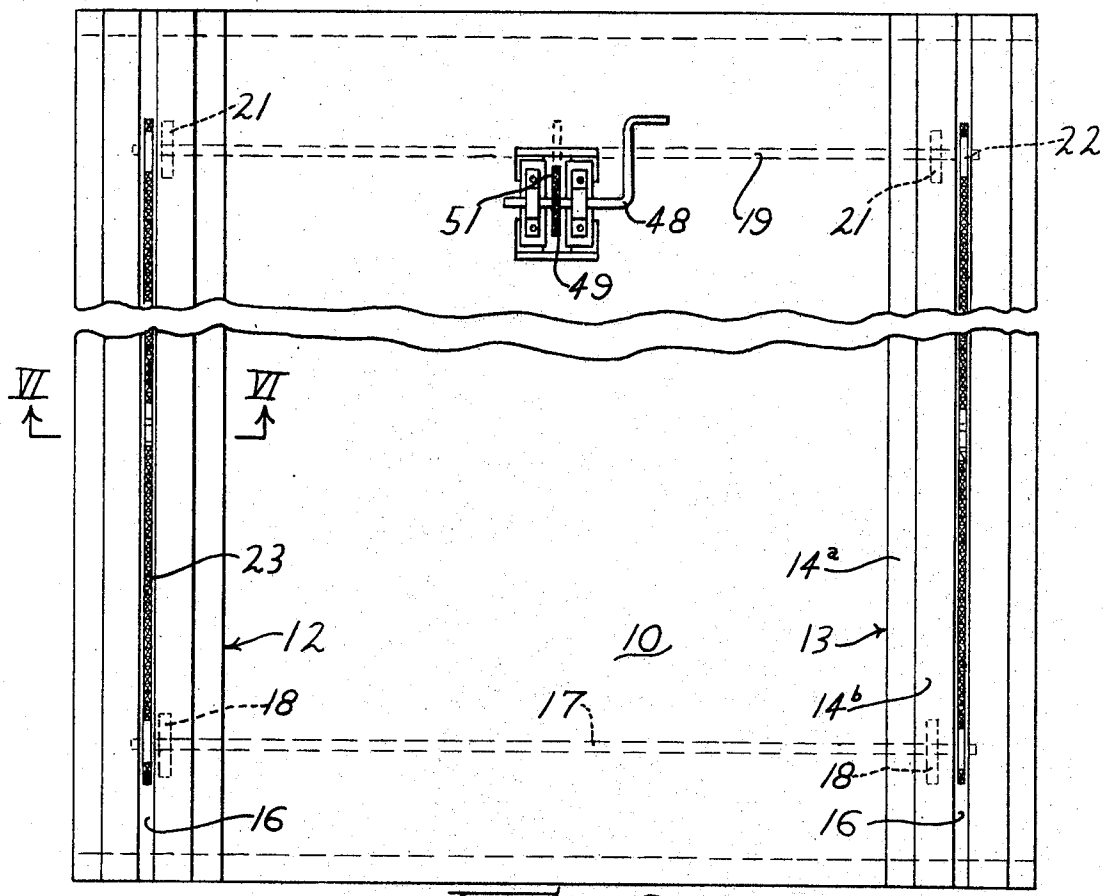


FIG 3

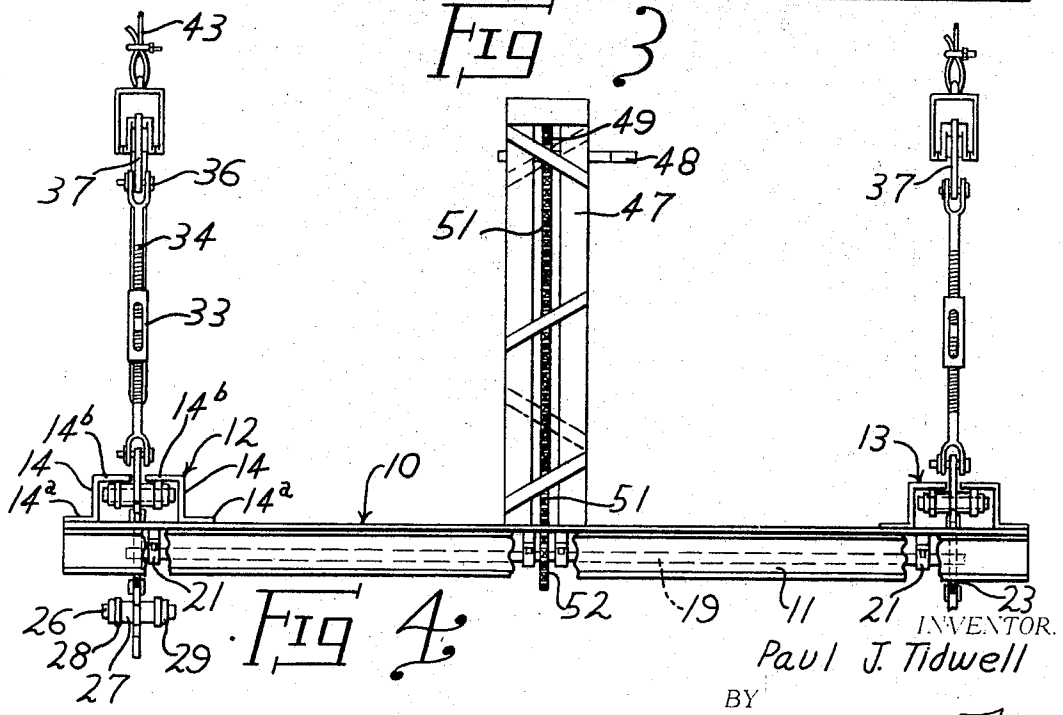


FIG 4.

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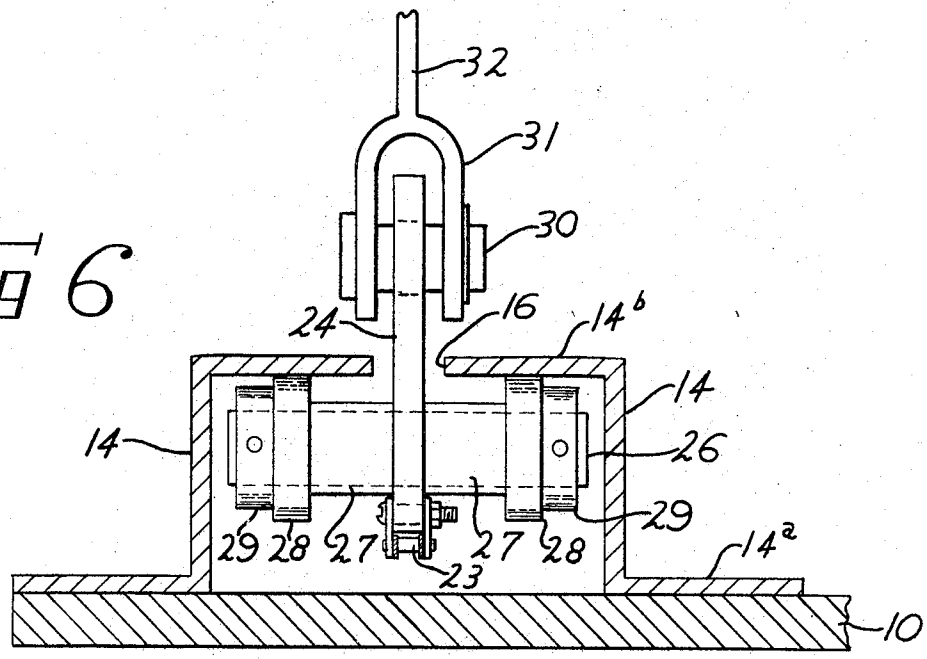
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TRAVELING SCAFFOLD

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FIG 6



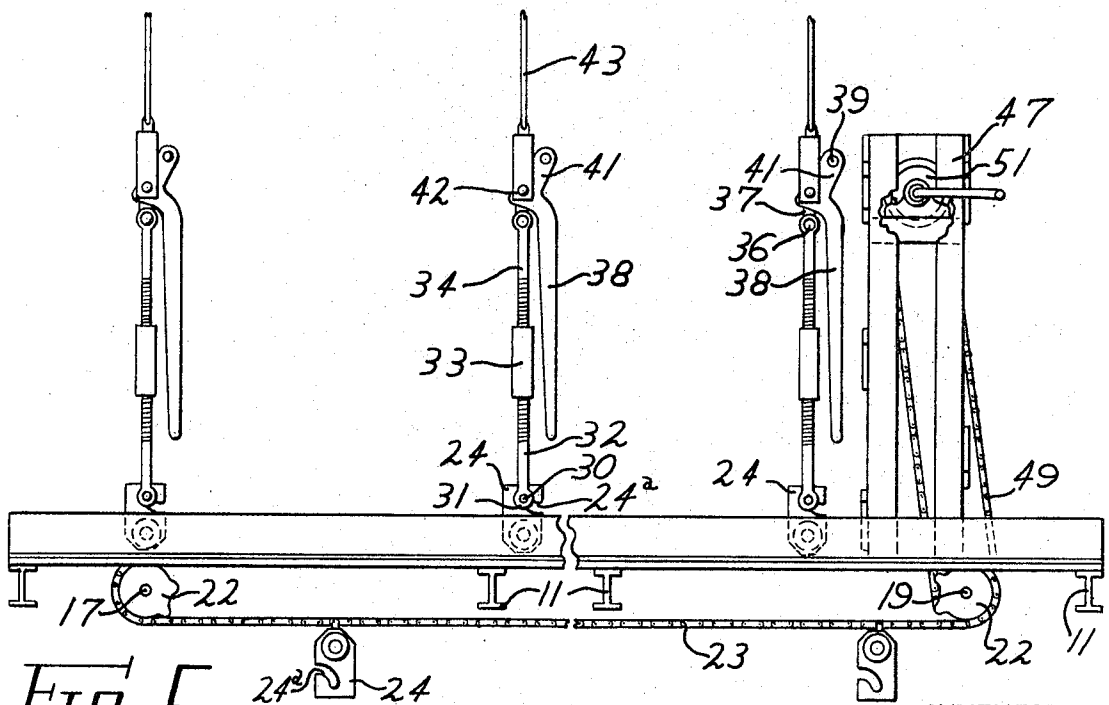


FIG 5

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TRAVELING SCAFFOLD

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Int. Cl. E04g 3/10
U.S. Cl. 182—36 6 Claims

ABSTRACT OF THE DISCLOSURE

A work platform type of scaffold adapted to be supported by an overhead structure, such as the parts of a building, and in which means is provided on the scaffold itself to move the scaffold relative to the members which support the scaffold from the overhead structure. A pair of flexible members such as chains are carried by the deck of the scaffold and these chains carry attachments for the suspension members. By removing a pair of the suspension members from one end of the scaffold, the scaffold may be moved relative to the supporting superstructure, and the suspending members which have just been removed may be attached to others of the attaching connectors on the chains, thereby to move the scaffold along.

This invention relates to traveling scaffolds.

In the art to which my invention relates, during the construction, repair, or maintenance of the ceilings of buildings and other structures it is desired to suspend from such ceiling or other superstructure a work platform or deck. Heretofore in the art, insofar as I am aware, means have been provided to move the scaffolds of this general type along the undersurface of the supporting structure. Such means, wtihout exception, have comprised trackways secured to the superstructure itself, together with rollers or the like attached to the upper ends of the suspending chains, ropes, or the like, which hold the scaffold. When moving the scaffold it was necessary to move all of the suspending members such as the ropes or chains, along with the scaffold, so that the scaffold could be moved from place to place. The prior art method of suspending these work platforms therefore has required the installation on the building of a track or runway for the roller supported suspending chains or the like.

My invention contemplates a scaffold in which the deck of the same may be provided with a pair of parallel trackways. Held captive in these trackways are a plurality of suspension member connectors. These connectors are joined by an endless flexible member such as a chain and this chain is supported on sprockets in turn mounted on shafts and which may be placed beneath the deck. Means are provided to move the chains in unison. A plurality of suspension members in the form of wire ropes or the like having hooks or other forms of attachment which may be placed over the beams of the superstructure from which the deck is to be supported have their lower ends removably connected to the connectors above the deck. When it is desired to move the scaffold from one place to another at least a pair of the members is disconnected adjacent one end of the scaffold and the chains are moved in unison, whereby the scaffold moves along relative to the supporting superstructure. The suspension members which have just been disconnected may then be reconnected to additional ones of the connectors which by this time will have moved along with the lower flight of the chain to a position over the sprockets, and thereby lie on top of the deck, or adjacent its upper surface, in position for the lower end of the suspension members to be connected thereto. As a convenience in disengaging and re-engaging the suspension members I may use linkage means in the same, such for instance as the usual load binders. When the load binders

are loosened the cables or suspension members are slackenend. Conversely, when reattached at the opposite end of the scaffold and tightened the load binders again tension the suspension members.

Apparatus illustrating features of my invention is shown in the accompanying drawing forming a part of this application in which:

FIG. 1 is a wholly diagrammatic side elevational view showing my improved scaffold suspended from overhead structure;

FIG. 2 is a view corresponding to FIG. 1 and showing the scaffold and supporting members shifted to the left as FIGS. 1 and 2 are viewed;

FIG. 3 is a fragmental plan view with certain parts omitted for the sake of clarity;

FIG. 4 is an end elevational view with certain parts broken away;

FIG. 5 is a side elevational view approximately to the scale of FIG. 4; and

FIG. 6 is an enlarged detail sectional view taken generally along line VI—VI of FIG. 3.

Referring now to the drawings for a better understanding of my invention I show the same as embodying a platform which may have a deck **10** fabricated of any suitable material and on which workers may stand to work on the ceiling of a building, a bridge, or other structure. The deck **10** may have cross members **11** for strengthening the same.

Mounted on the upper surface of the deck **10** are a pair of parallel trackways **12** and **13**. Preferably, these trackways embody Z-bars **14**, the horizontal legs **14***a* of which are secured to the deck, and the other horizontal legs **14***b* of which are spaced apart to form slots **16**.

At **17** I show a cross shaft which may be suitably journaled in bearings **18** beneath the deck. Another shaft **19** is mounted adjacent the other end of the deck, beneath the same, and suitably journaled in bearings **21**. On the ends of the shafts **17** and **19** and secured fixedly thereto are sprockets **22**. Passing over the sprockets, which are aligned with the slots **16**, are chains **23**, the upper flights of the chains running above the deck and the lower flights thereof running below the deck as illustrated. Furthermore, and as clearly shown, the upper flights of the chains **23** run in between the Z-bars **14**, beneath the slots **16**. Mounted at intervals on the chains are vertically disposed attachments **24**. These attachments may be in the form of bars, narrow enough to pass through the slots **16** and long enough to have attached thereto the suspending members for the platform as presently will appear. Passing through the attachments or connectors **24** are lengths of shaft **26**. On either side of the connectors or attachments **24** I provide spacer members **27** in the form of sleeves. Next outwardly on each side I provide ball bearings or similar anti-friction bearings **28**, these being larger in diameter than the sleeves **27** as shown. The assembly is completed by the provision of set collars **29**. The relative dimensions of the parts are such that the outer races of the ball bearings **28** run under the under surfaces of the horizontal legs **14***b* of the Z-bars, whereby the entire platform is supported from the connectors **24**, through the shaft **26** and the ball bearings **28**.

It will be noted that the attachments or connectors **24** are notched as at **24***a*. Adapted to fit in these notches are cross pins **30** which are carried in the bifurcated ends or clevis **31** formed at the lower end of a rod **32**. The rod **32** may form one part of a turn buckle **33**, the upper rod **34** of which may be pivotally connected at **36** to a link **37** forming part of a load binder. As is understood, the load binder embodies a handle **38** and the other end of the link **37** is pivoted at **39** to an upper extension **41** of the load binder, formed integrally with the handle **38**. The entire handle of the load binder is in turn pivoted

to a clevis 42 and the clevis may be attached to the lower end of a rope, cable or the like 43. The cable 43 may carry hook 44 at its top, or some other form of attaching means for securing the upper end of the cable 43 to an overhead structure, illustrated in the drawings diagrammatically as being I-beams 46. It will be apparent that by moving upwarly on the lower ends of the handles 38 the overall length of the suspending members 43 is increased, whereby the pins 30 may be withdrawn from the notches 24*a* of the connectors 24. The purpose of this will later appear.

Mounted in suitable framework 47 is a crank 48 which carries a sprocket 49. A chain 51 passes over the sprocket 49 and over another sprocket 52, fastened on the shaft 19.

From the foregoing the method of constructing and using and the advantages of my invention may now be more fully explained and understood. With the apparatus constructed as illustrated and assuming it is desired to suspend the same, as diagrammatically illustrated in FIG. 1, from an overhead structure which may embody the I-beams 46, it will be seen that this may be accomplished by raising the apparatus into place and placing the hooks 44 about the I-beams. Assuming now that it is desired, the worker having completed work immediately above the platform, to move the same, for instance to the left, from the position shown in FIG. 1 to the position shown in FIG. 2. To accomplish this the worker would raise upwardly on the handles 38 of the pair of load binders shown at the righthand side, FIGS. 1 and 2, whereby the suspending members 43, including the hooks 44 and the clevis members 31 thereof may be disengaged from the connectors 24 and the I-beams 46. With this set of suspending members removed, the crank 48 is manually turned, thus to move the upper flight of the chain to the right as shown in FIGS. 1 and 2. In view of the fact that all the remaining suspension members 43 are in place, the platform moves to the left, to the position shown in FIG. 2. By this time it will be apparent that the next set of connectors 24 which were on the lower flight of the chain in the position of FIG. 1, that is, the one nearest the lefthand end, would have moved to a position to lie above the deck. The worker now re-engages the clevis pins 30 in the slots 24*a* of the just arrived set of connectors 24 and places the hooks 44 over the next lefthandmost I-beams as shown in FIG. 2. The handles 38 are now moved downwardly, thus retensioning the members 43, thus completing the movement. The turn buckles may be used for levelling the platform. It will be apparent that this motion may be repeated indefinitely so long as there are I-beams or the like overhead from which to hang the members 44. Obviously, the platform may be moved to the right or left. Furthermore, it will also be understood that additional sets of the tracks, chains, and the like may be provided so that the platform can be moved both to the right and left and laterally in either direction relative to the fore and aft direction of movement.

It will also be noted that the clevis members 31 and the pins 30 are longer than the width of slots 16. Further, the shafts 17 and 19 are located inwardly from the ends of the platform. Therefore, it is impossible until one removes the clevises 31 from the endmost connectors 24 to move them downwardly through the slots 16. This therefore forms a safety measure since inadvertent, complete disengagement of the suspension members cannot be effected, nor can the chains be driven around the sprockets.

In view of the foregoing it will be apparent that I have devised an improved traveling scaffold which is completely independent of any overhead track system. The deck of the scaffold carries its own track system and all that is necessary to permit the same to be moved is some means to suspend it from some overhead structure. Operated as just described, the scaffold may be "walked" along by the workers remaining thereon in complete safety, and in minimum of time and with maximum convenience.

While I have shown my invention in but one form, it will be obvious to thouse skilled in the art that it is not so limited, but is susceptible of various other changes and modifications without departing from the spirit thereof.

What I claim is:

1. In a work platform,
(a) a plurality of suspension members shiftably attached at their lower ends to said platform and having upper ends disposed for connection to superjacent structure, thereby to support the platform from said structure, and
(b) means to shift the platform relative to said suspension members while suspended from said superjacent structure, whereby the platform may be moved relative to said superjacent structure.

2. In a work platform,
(a) a movable member mounted on the platform and restrained against upward movement relative to the platform,
(b) a plurality of suspension members secured at their lower ends to said movable member and having upper ends disposed for connection to superjacent structure thereby to support the platform from said structure, and
(c) means to shift the movable member relative to the platform, while suspended from said superjacent structure, whereby the platform may be moved relative to said superjacent structure.

3. Apparatus as defined in claim 2 in which said movable member is flexible and embodies upper and lower flights, said suspension members being secured to the said upper flight thereof.

4. Apparatus as defined in claim 2 in which there are at least a pair of said movable members spaced from each other, and means releasably securing said lower ends of the suspension members to the movable members, whereby upon releasing at least one of said suspension members adjacent one end of each of the movable members, the suspended paltform may be shifted relative to the supporting superjacent structure by shifting the movable member relative to the platform, and whereby said just removed suspension members may be reattached to the movable members adjacent the other ends thereof.

5. In a traveling work platform having a deck,
(a) a pair of parallel trackways on the deck,
(b) a plurality of suspension member connectors movably associated with the trackways,
(c) a flexible member connecting the suspension member connectors and holding them spaced apart along the trackways,
(d) a plurality of suspension members having their lower ends removably connected to the said connectors and adapted for connection to overhead structure, thereby to support the platform,
(e) means to move the flexible members in unison along the length of the platform, and
(f) means to slacken said suspension members, whereby an end pair thereof may be disconnected from said connectors, and the platform shifted by moving the flexible members relative to the platform, permitting said suspension members which have just been disconnected to be reattached to others of said connectors adjacent the end of the platform opposite that from which said suspension members were just disconnected.

6. In a movable work platform adapted to be suspended from overhead structure and embodying a deck,
(a) a pair of endless flexible members such as chains having upper and lower flights with means to drive the chains in unison,
(b) a plurality of suspension member connectors carried by the chains and adapted for at least three

thereof on each chain always to be positioned above the deck,

(c) means to restrain the connectors against upward movement relative to the deck,

(d) at least three sets of suspension members removably secured at their lower ends to said upper connectors and at their upper ends to the said overhead structure, thereby to support the platform,

(e) the aforesaid apparatus and arrangement permitting the platform to be shifted relative to the overhead structure by first disconnecting an end pair of said suspension members from their connectors, second, driving the chains in unison until another pair of connectors thereon become located on the upper flight of said chains, and third, securing said suspension members which were just removed to the connectors just named and to the overhead structure, whereby

the platform is again supported by said three sets of devices and at a different place relative to the overhead structure.

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U.S. Cl. X.R.

182—150