United States Patent [19]

Chabot

[11] **3,788,424**

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[54] **HOIST ASSEMBLY FOR USE ON SCAFFOLDS**

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[30] **Foreign Application Priority Data**

Feb. 17, 1972 Canada 134978

[52] **U.S. Cl.** ..... **182/129,** 254/4 R

[51] **Int. Cl.** **E04g 1/00**

[58] **Field of Search**. 254/4, 148; 248/161; 182/129; 214/1.5, 1.6, 1 S, 1 SW

[56] **References Cited**

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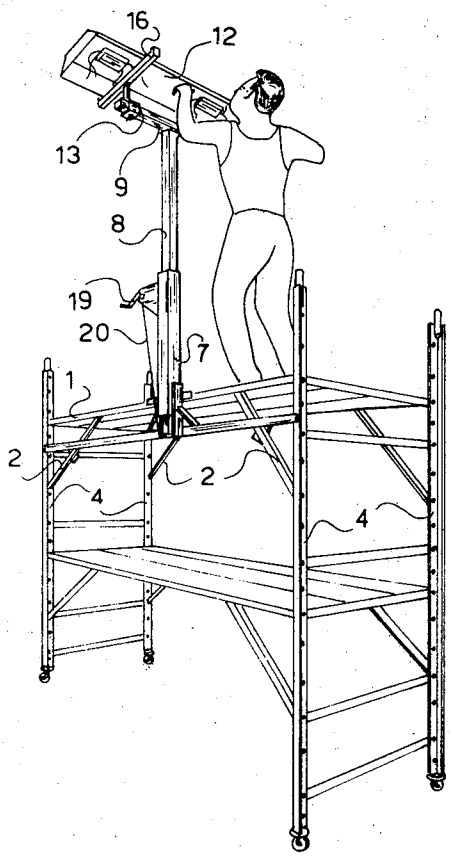
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Primary Examiner—Othell M. Simpson
Assistant Examiner—Robert G. Watson

[57] **ABSTRACT**

A hoist assembly to be used on scaffolds to support a fixture such as a fluorescent unit for the installation thereof and including a post holder, a post slidable upright into the post holder, a fixture carrying head rotatably mounted onto the upper end of the post, a winch to control the elevation of the post and carrying head, and brackets advantageously constructed and arranged to merely hook the hoist assembly to braces of the scaffold, thereby securing the same without any fastening, such as bolting, pinning or the like.

2 Claims, 13 Drawing Figures



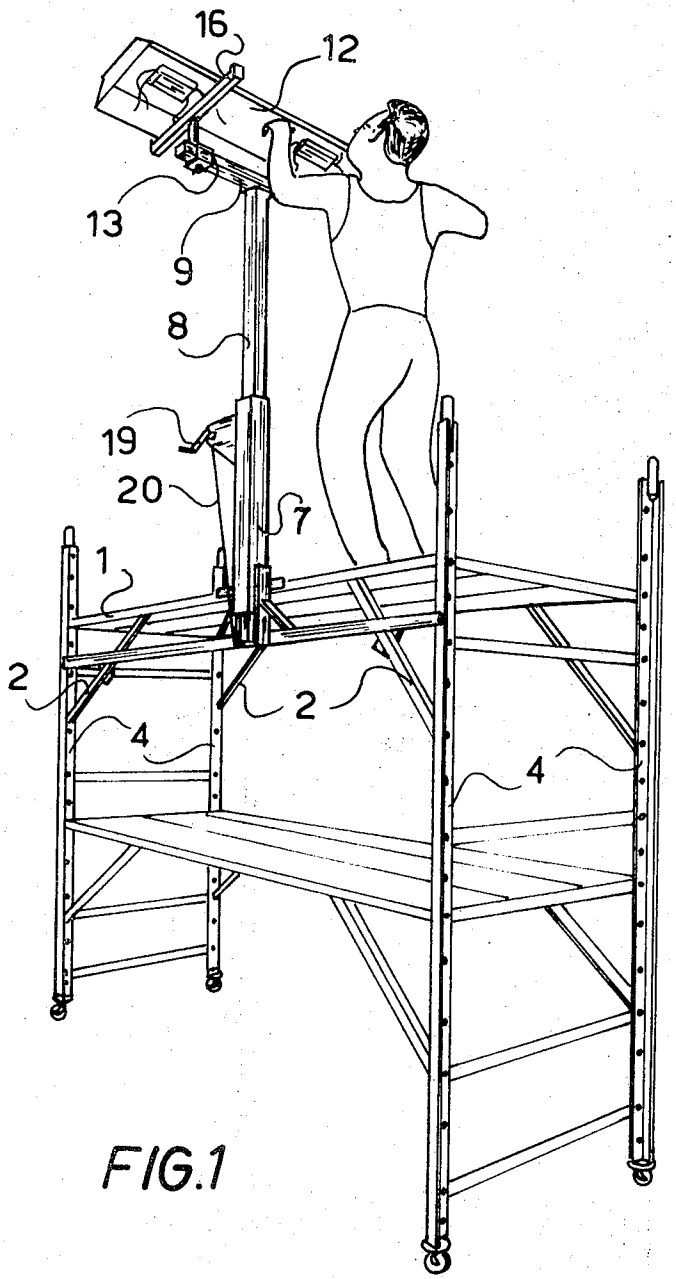


FIG.1

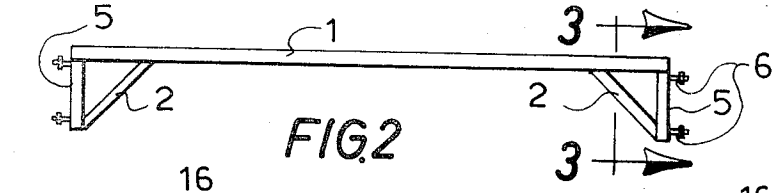


FIG.2

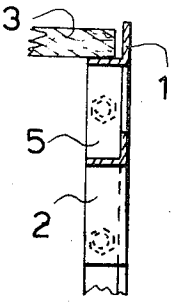


FIG.3

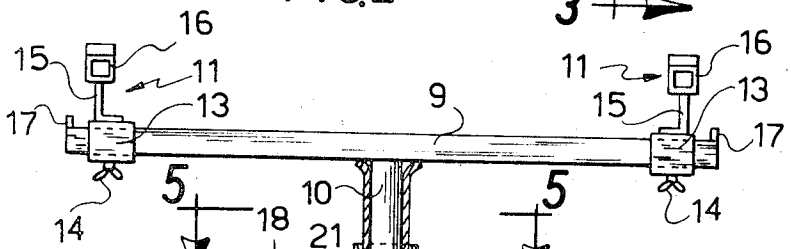


FIG.4

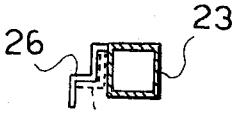
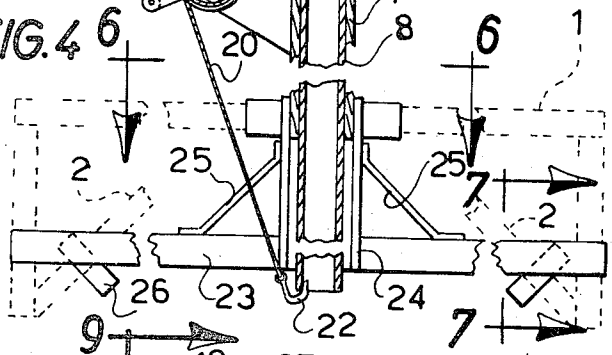


FIG.7



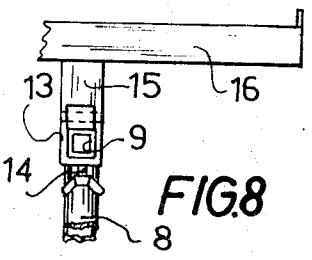


FIG.8

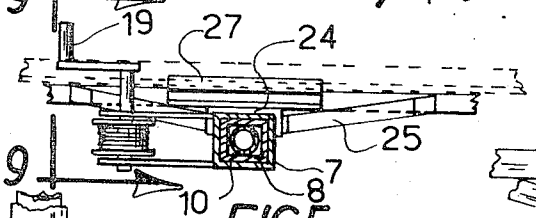


FIG.5

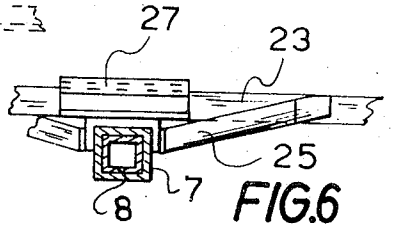


FIG.6

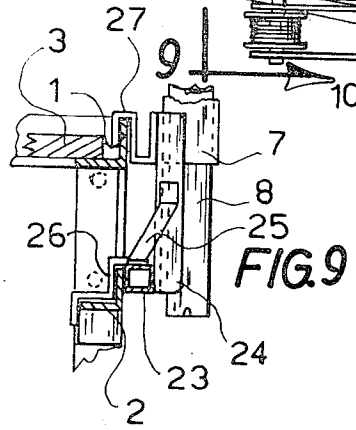


FIG.9

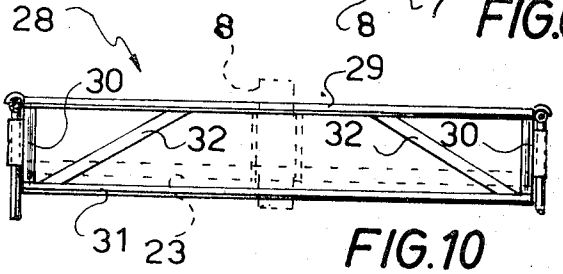


FIG.10

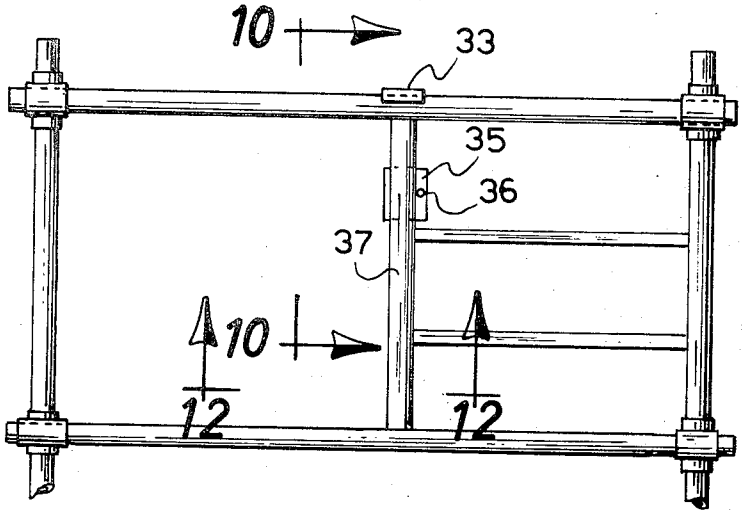


FIG.11

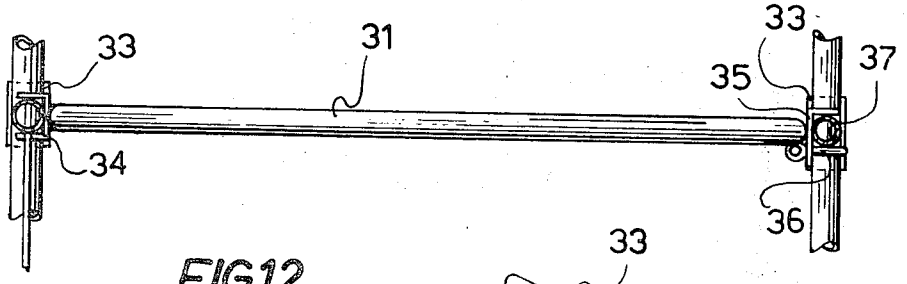


FIG.12

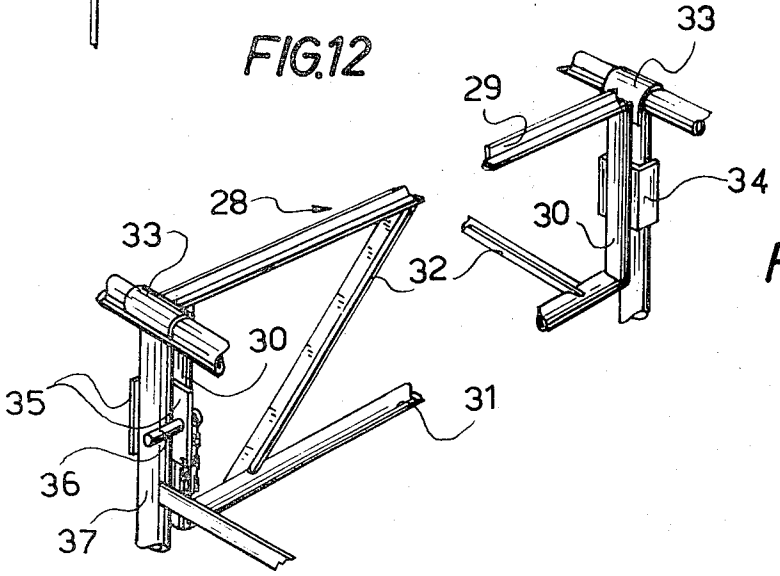


FIG.13

HOIST ASSEMBLY FOR USE ON SCAFFOLDS

This invention relates to a hoist apparatus for the installation of fluorescent light and other fixtures and, more particularly, to a hoist apparatus of the type adapted to support a fixture in position for the suspended installation thereof.

Hoist apparatuses of the above type have so far been proposed to assist the electricians in installing and removing fluorescent fixtures in particular the long ones, as are installed in larger buildings. The hoist apparatuses of the above type which are known in the prior art each includes a supporting foot adapted to stand on the floor, an upwardly extendable column or post, a fixture carrying head and a winch mechanism fixedly secured to the column or post. Each of the above-mentioned known hoist apparatuses is unstable due to the relative size of their foot and the fact that it is not fixed to any other structure, has a hoist mechanism which is angularly and longitudinally fixed relative to the post and is therefore difficult to reach in certain cases, has necessarily a finite height relative to the floor and, consequently, cannot be used for installations beyond such finite height, has a fixture carrying head which is unadjustable and unsuitable for certain types of fluorescent light fixtures, and is displaced separately from the scaffold which is used by the electrician making the installation and therefore needs time and care to be displaced.

It is a general object of the invention to provide a hoist apparatus of the above type which substantially avoids the disadvantages of the above-mentioned known hoist apparatuses.

It is another general object of the invention to provide a hoist apparatus of the above type which is particularly adapted to be mounted onto a scaffold and which therefore is displaced with the scaffold, may reach any height which is reached by the scaffold and is sturdy and stable.

It is another object of the invention to provide a hoist apparatus of the above type which may be easily and quickly installed and used by a single person and which does not normally require any tool to be erected.

It is another object of the invention to provide a hoist apparatus of the above type including a fixture carrying head which is adjustable to carry different sizes and types of fluorescent light and other fixtures and which is rotatable to different angular directions to allow horizontal alignment of the fixtures.

It is another object of the invention to provide a hoist assembly of the above type which is adapted to be secured to a scaffold without any fastening, such as bolting, pinning or the like, whereby to facilitate and accelerate the installation thereof, particularly by a single person.

It is another object of the invention to avoid the need of separate parts particularly to install the hoist assembly onto a scaffold of the type made of angle members.

It is a further object of the invention to provide a hoist assembly which is adapted for use onto the presently conventional scaffold of either the tubular type or the type made of angle members.

It is a still further object of the invention to provide a hoist assembly of the above-mentioned type having a fixture carrying head which may be easily adjusted by hand.

The invention will now be described in detail with reference to a preferred embodiment thereof, which is illustrated, by way of example only, in the accompanying drawings, wherein:

FIG. 1 is a perspective view illustrating a hoist assembly according to the invention in operative position on a scaffold;

FIG. 2 is a side view of a platform of conventional construction as is used with scaffolds of the type made of angle members;

FIG. 3 is a cross-sectional view as seen along line 3—3 in FIG. 2;

FIG. 4 is an elevation view partly in cross-section of the hoist assembly of FIG. 1;

FIGS. 5, 6, and 7 are cross-sectional views as seen along lines 5—5, 6—6, and 7—7 respectively in FIG. 4;

FIG. 8 is a detail view of a fixture carrying head forming part of the hoist assembly of the preceding Figures;

FIG. 9 is a cross-sectional view as seen along line 9—9 in FIG. 5;

FIG. 10 is a side view of a frame according to the invention, as seen along line 10—10 in FIG. 11, for mounting the hoist assembly onto a scaffold of the tubular type;

FIG. 11 is an end view of a frame section of the tubular type with a frame according to the invention operatively attached thereto;

FIG. 12 is a cross-sectional view as seen along line 12—12 in FIG. 11 showing a bottom view of the frame; and

FIG. 13 is a perspective view of the frame of FIGS. 10, 11, and 12 shown in operative position onto a scaffold of the tubular type.

The hoist assembly according to the invention illustrated in FIGS. 1 to 9 inclusive is operatively mounted onto an adjustable, portable scaffold of a conventional type made of angle members and including a platform holding frame 1 (see FIG. 2) to the corners of which are secured depending upright members 5 which are reinforced by inclined lateral braces 2 secured to frame 1 and to members 5. Bolts 6 protrude from upright members 5. Two pairs of leg assemblies 4, each provided with supporting casters, are positioned at each end of the platform holding frame 1. The latter is detachably secured at an adjustable level to the leg assemblies 4 by inserting the bolts 6 in selected ones of the plurality of holes made in the leg assemblies 4. The platform 3 forming a walkway is supported by frame 1.

The hoist assembly includes a post holder 7 formed of square tubing section and a post 8, also of square tubing, operatively slidable upright into the post holder 7. A fixture carrying head is mounted onto the post 8 and includes a bar 9 held transversely of the post 8 by a pivot pin 10 secured endwise thereto and rotatably extending into the open upper end of the same. The fixture carrying head further includes a pair of fixture stands 11 slidably mounted onto the transverse bar 9 serving as a track therefor. As shown in FIG. 1, the stands 11 are suitably spaced part to carry a fluorescent unit 12 or any other fixture, such as a ductwork.

Each stand 11 includes a sleeve 13, of square cross-section, slidably engaging the transverse bar 9, also of square cross-section. A wing nut 14 engages the square

sleeve 13 to tighten the latter in desired position along the bar 9. A upright 15 is secured onto each sleeve 13 and carries a transverse bar 16 rigidly secured thereto. The transverse bar 9 is provided with projections 17 at opposite ends thereof to limit the outward displacement of the sleeves 13.

A winch including a drum 18, a handle 19, a pawl and ratchet, not shown, and a cable 20 is rotatably mounted by brackets 21 against the side of the upper end portion of post holder 7. A hook 22 is tied to the free end of the cable 20 and is arranged to engage the lower end of the post 8. The latter and the fixture carried by the above-mentioned head may therefore be elevated to the desired height by actuation of the handle 19 and operation of the pawl and ratchet, as is well known.

An arm 23 is transversely secured on one side of the post holder 7 by a channel member 24 and inclined struts 25. A pair of brackets 26 are secured adjacent the opposite ends of the transverse arm 23 and suitably shaped to engage over the inclined angle braces 2 of the platform holding frame 1, as best shown in FIGS. 7 and 9. Another bracket 27 is secured to the upper end of the channel member 24 vertically above arm 23 and is suitably shaped to hook over the side of frame 1, whereby to cooperate with the brackets 26 in supporting the hoist assembly onto the scaffold. The post holder 7 is firmly held in vertical position and yet can be quickly mounted or removed from the scaffold. Handle 19 is always easily accessible to the worker standing on platform 3 for any platform level, because the hoist assembly is directly hooked to the platform holding frame 1 and to braces 2, which form a unit with frame 1.

As illustrated in FIGS. 10 to 13 inclusive, the hoist assembly may also be used with a scaffold of the tubular type. To do this, the hoist assembly includes a frame 28 having braces 29, 30, and 31 arranged into a rectangular configuration and stiffened by inclined braces 32. The braces 29 and 32 are formed of angular members and are relatively spacially joined together as the braces 1 and 2 of the afore-mentioned platform. The above-mentioned frame is arranged to be secured in operative upright position onto a conventional scaffold of tubular type by hook members 33, a channel member 34 and an angle member 35 welded, or otherwise fastened, to the braces 29 and 30, as best shown in FIG. 13. A pin 36 extends through the angle member 35 to secure the latter against an upright tubular member 37 of the scaffold.

I claim:

1. The combination of an adjustable portable scaffold with a hoist assembly to install fixtures from said scaffold, said scaffold having a pair of detachable leg assemblies and detachable connecting means rigidly uniting said leg assemblies and including a platform supporting frame and inclined braces attached to said frame, said leg assemblies having means to detachably secure said frame and braces at different adjusted levels, a platform removably supported by said frame, serving as a walkboard for persons standing on the same, said hoist assembly comprising a post, a tubular post holding means in which said post is fitted for support and lengthwise displacement, a manually operated elevation means mounted on the upper end portion of said tubular post holding means and engaging said post to displace the latter relative to said post holding means and to lock the same in adjusted position, a hook secured to said post holding means and removably engaging a side of said frame, an arm rigidly secured to said post holding means and spaced below said hook and extending transversely of said post holding means substantially equally on each side thereof and bracket means secured to the two outer end portions of said arm substantially equally spaced on each side of said post holding means and removably engaging said braces, so constructed and arranged that said hoist assembly can be quickly detached from said scaffold when not in use and said manually operated means remain easily accessible to a person standing on said platform for any adjusted level of said platform relative to said leg assemblies, and a fixture carrying head mounted on the upper end of said post for displacement therewith.

2. The combination as claimed in claim 1, wherein said fixture carrying head includes a track member, a pivot member secured to the center of said track member and pivotally mounted within the top end portion of said post for rotation of said track member in a plane perpendicular to the axis of said post, uprights carried by said track member and longitudinally adjustable thereon, and a transverse bar rigidly secured intermediate its ends to the top end of each upright, said transverse bars adapted to hold a fixture so as to clear said track member.

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