May 14, 1968 N. A. O'REILLY 3,382,988

PORTABLE PANEL HOIST

Filed March 6, 1967 2 Sheets-Sheet 1

Fig. 1.

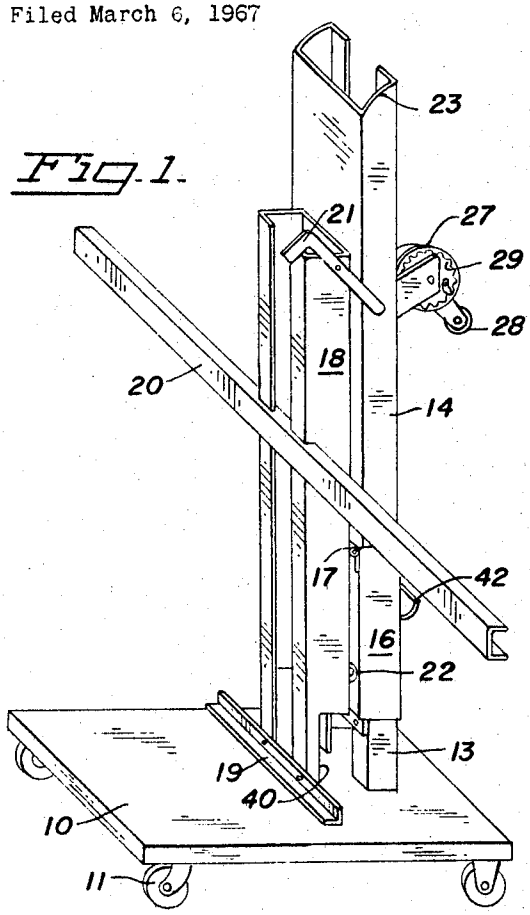


Fig. 2.

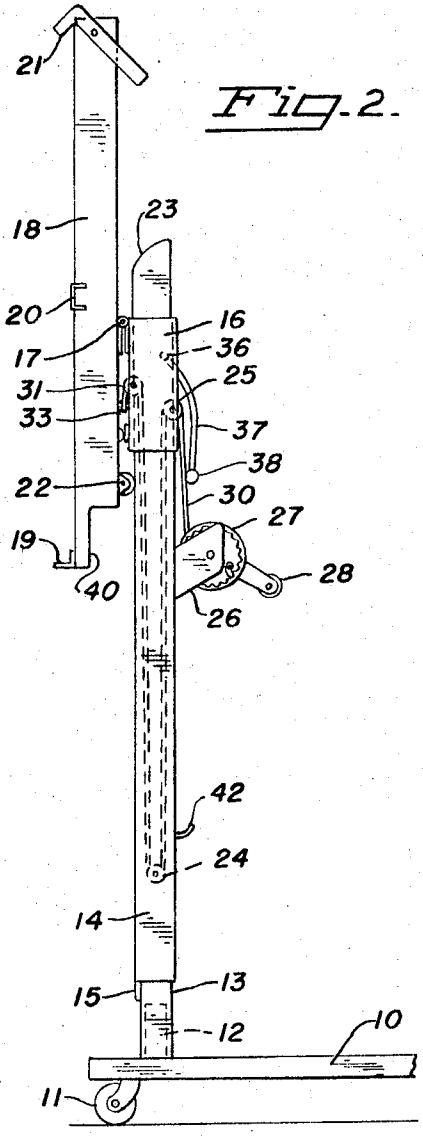
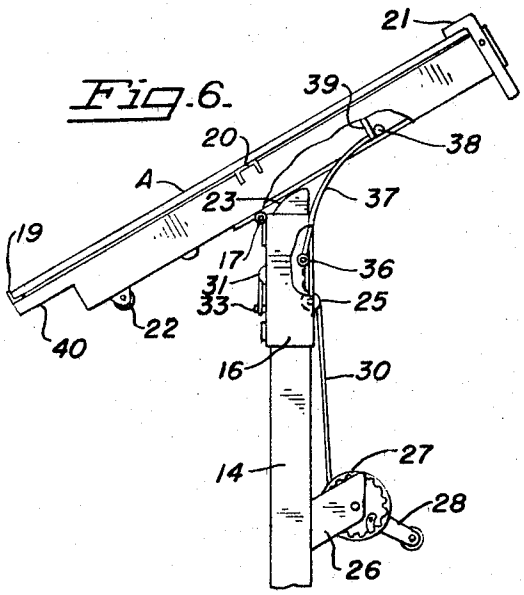


Fig. 6.



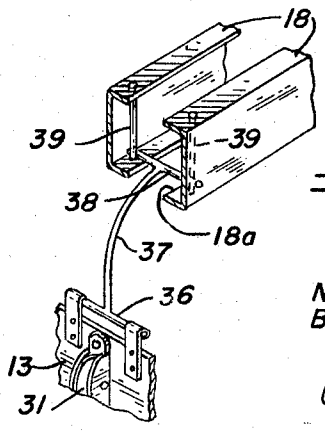


Fig. 7.

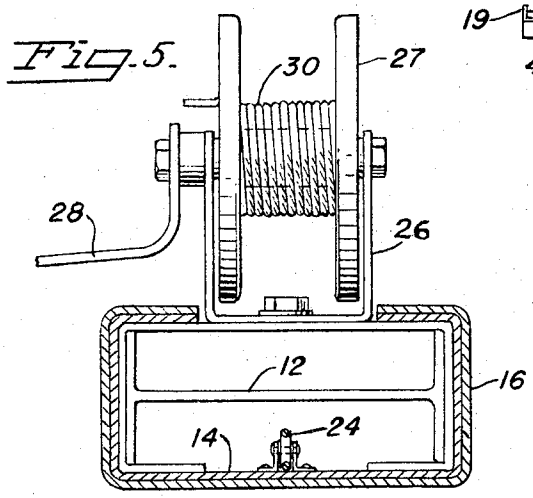
INVENTOR
NOEL A. O'REILLY
BY
J. E. Trabucco
ATTORNEY

May 14, 1968 N. A. O'REILLY 3,382,988

PORTABLE PANEL HOIST

Filed March 6, 1967 2 Sheets-Sheet 2

Fig. 5.



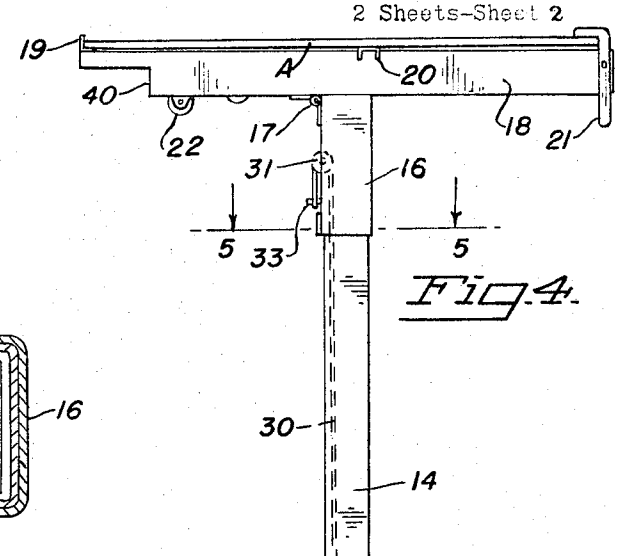


Fig. 4.

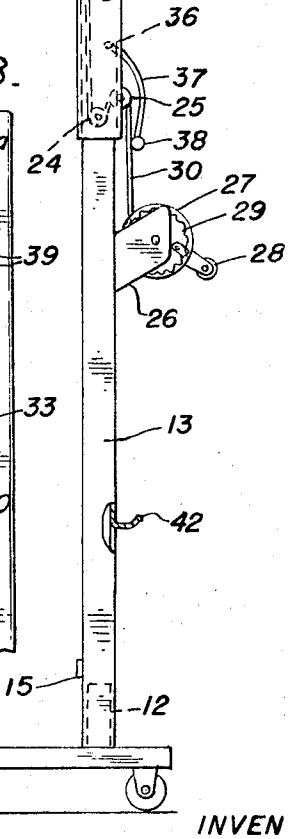


Fig. 3.

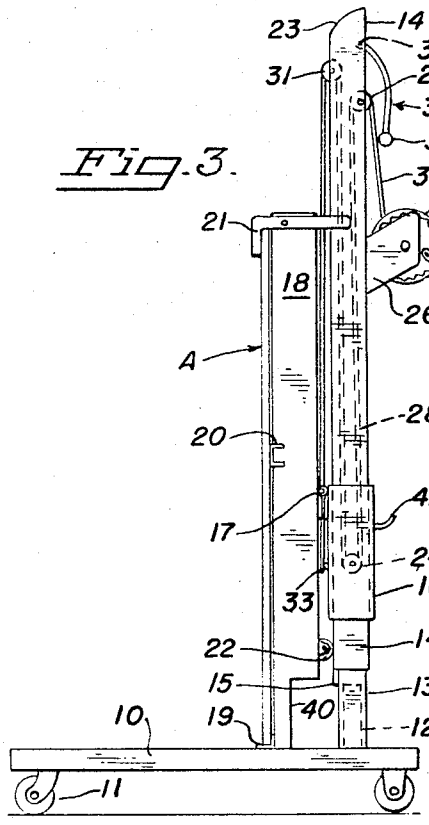
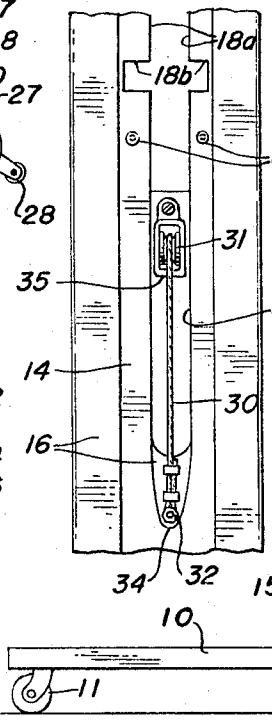


Fig. 8.



INVENTOR
NOEL A. O'REILLY
BY
J. E. Palucco
ATTORNEY

United States Patent Office 3,382,988 Patented May 14, 1968

3,382,988

PORTABLE PANEL HOIST

Noel A. O'Reilly, 915 Heather Road,
Colma, Calif. 94015

Filed Mar. 6, 1967, Ser. No. 620,712
7 Claims. (Cl. 214—1)

ABSTRACT OF THE DISCLOSURE

A portable hoist for elevating wallboard panels, plywood sheets or the like, having a vertically adjustable upright panel supporting carrier which is adapted to be elevated to a suitable side wall unloading area by winch motivated means, and which upon being further elevated is adapted to automatically swing to a horizontal position so the panel mounted thereon may also be positioned horizontally and then further elevated to an unloading area near a ceiling to reduce to a minimum the manual effort required in attaching the panel to the ceiling.

This invention relates generally to hoists and more particularly to a portable hoist of the type adapted for use in elevating building materials such as wallboard panels from the floor level to a suitable unloading area above.

The primary object of the present invention is to provide a portable hoist for elevating wallboard panels, plywood sheets or the like, having a vertically adjustable upright panel supporting carrier which is adapted to be elevated to a suitable side wall unloading area by winch motivated means, and which upon being further elevated is adapted to automatically swing to a horizontal position so the panel mounted thereon may also be positioned horizontally and then further elevated to an unloading area near a ceiling to reduce to a minimum the manual effort required in attaching the panel to the ceiling.

Another object of my invention is the provision of a novel panel hoist of the kind characterized wherein means is provided to change the position of the panel supporting carrier on a mobile platform so the panel may be held in parallel and close relationship with respect to a side wall to which such panel is to be applied, thereby facilitating the handling of panel.

Other and further object of my invention will be pointed out hereinafter or will be indicated in the appended claims or will be obvious to one skilled in the art upon an understanding of this disclosure. For the purpose of this application, I have elected to show herein certain forms and details of a portable panel hoist representative of my invention; it is to be understood, however, that the embodiment of my invention herein shown and described is for purposes of illustration only and that, therefore, it is not to be regarded as exhaustive of the variation of the invention in the art.

In the accompanying drawings:

FIG. 1 is a perspective view of a panel hoist embodying my invention;

FIG. 2 is a side elevational view of the hoist, showing the panel supporting carrier in a vertical partially raised position;

FIG. 3 is a side elevational view showing the position of the carrier before it is elevated;

FIG. 4 is a side elevational view showing the carrier in a horizontal fully raised position;

FIG. 5 is a sectional view taken on the line 5—5 of FIG. 4, on an enlarged scale;

FIG. 6 is a side view on an enlarged scale of a part of the hoist, showing the means to swing the carrier from a vertical to a horizontal position;

FIG. 7 is a perspective view, partly in section, of a part of the hoist, also showing in detail the means to change the position of the carrier; and,

FIG. 8 is a front view of the carrier.

Referring to the drawings, the numeral 10 designates a mobile platform, preferably of rectangular shape, mounted on casters 11. Secured to the platform adjacent on end thereof is an upright base member 12 which detachably fits within the lower end of a stationary elongated upright hollow frame member 13 of substantially rectangular cross-sectional shape. The lower end of the frame member 13 engages with the platform 10 to provide firm supporting means for the movable parts of the hoist.

Slidably fitting on the frame member 13 is an intermediate elongated vertically adjustable sleeve-like element 14 which in its lower position rests on a forwardly projecting bar 15 secured to the frame member, or if preferred the said element may be sufficiently long to engage with the platform for supporting purposes.

Slidably fitting on the vertically adjustable element 14 is an outer sleeve 16 of substantially rectangular shape in cross-section which is adapted to be adjusted upwardly and downwardly on the said element. Secured to the upper end of the forward side of the sleeve 16 by hinge means 17 is a panel carrier 18 of somewhat rectangular cross-sectional shape, having an elongated rear side and a horizontal panel supporting element 19 secured to its lower end and also having a substantially horizontal elongated backing bar 20 secured thereto at a point about midway between its upper and lower ends. A panel A supported in substantially vertical position on the element 19 (which is preferably L-shaped in cross-section) is releasably held against the backing bar by a keeper 21 pivotally mounted on the upper end of the panel carrier. The carrier is provided near its lower end with rearwardly protruding rollers 22 which engage with the sleeve-like element 14 to avoid undue friction in the upward and downward movement of the carrier on the said element. The upper end of the element 14 is cut away at its lateral sides to provide upwardly extending curved tracks 23 which are adapted to engage with the panel carrier 18 in its movement from a vertical to a horizontal position and then from a horizontal to a vertical position, as will be later described.

Mounted on the forward side of the sleeve-like element 14 near the lower end thereof is a pulley 24, and mounted on the frame member near the upper end of the rear side thereof is a second pulley 25. Mounted on a bracket 26 secured to the rear side of the frame member 13 at a point substantially below the upper end thereof is a winch 27, the drum of which is rotated by a hand crank 28 or other suitable means. A suitable pawl and ratchet means 29 is provided on the winch to control the drum. A flexible cable 30 secured at one end thereof to the drum of the winch extends upwardly and over the pulley 25, then downwardly inside the sleeve-like element 14 to and under the pulley 24, then upwardly and over a third pulley 31 mounted on the upper end of the forward side of the sleeve-like element 14, then downwardly to a suitable securing device 32, such as a bolt, secured to the forward side of the sleeve 16. The sleeve is cut away at its forward side to provide an open slot 33, the lower end of which is closed as at 34 to provide abutting means to engage with a forwardly projecting member 35 secured to the upper end of the forward side of the sleeve-like element 14, such projecting member in the present instance being the fixed pulley block on which the pulley 31 is rotatably mounted. Thus, when the sleeve 16, upon being moved upwardly, carries the means 34 thereon into engagement with the fixed projecting mem-

ber 35 on the element a connection is made between the sleeve and the sleeve-like element 14 to then effect the upward movement of the said element and the sleeve as a unit.

The forward side of the frame member is formed with a vertical slot to avoid interference with the upward and downward movement of the pulley 24 which is mounted on a bracket secured to the forward side of the element 14. The sleeve 16 and the sleeve-like element 14 are both provided at their rear sides with vertical slots of suitable widths to clear the winch bracket 26 secured to the rear side of the frame member 13. It is to be noted that there is a telescopic arrangement between the frame member 13 which is stationary, the sleeve-like element 14 which slides upwardly and downwardly on the frame member and the sleeve 16 which is adapted to slide upwardly and downwardly with respect to the sleeve-like element. A wall board panel A supported in an upright position may be elevated while in such a position to a maximum height by rotating the winch drum so the cable 30 is sufficiently wound thereon to first raise the sleeve toward the upper end of the sleeve-like element 14, after which by reason of the connection being effected between the sleeve and the said element, these two members together with the carrier and the panel supported thereon may be further elevated as a unit.

One of the important functions of the present invention is to provide means to elevate a panel while in a horizontal position to a height near the ceiling to which it is to be attached. The means employed in carrying out this function will now be described.

Pivotally connected as at 36 to the frame member 13 at the upper edge of the rear side thereof is curved bar 37 having a T-shaped end portion or head 38, the said bar being adapted to swing forwardly to an inclined position wherein the said end portion engages with the rear side of the panel carrier 18. The rear side of the panel carrier 18 is provided with a longitudinally extending vertical slot 18*a* having a width less than the length of the T-shaped head 38, the said slot being open at its upper end and having a length to extend downwardly to a point at least substantially below the central part of such rear side. The rear side of the panel carrier 18 is also provided with a short transverse slot 18*b* which connects with the vertical slot 18*a* to form lateral extensions or openings of sufficient length to allow the T-shaped head 38 of the bar 37 to pass therethrough. The transverse slot 18*b* is positioned somewhat near but above the central portion of the rear side of the carrier 17, and secured to such rear side at opposite sides of the slot 18*a* and at points below the transverse slot 18*b* are forwardly extending supporting members 39, such as elongated bolts, which are positioned to intercept and support the T-shaped head 38 of the bar 37 when it falls through such transverse slot 18*b*. When the carrier 18 and the panel A supported thereon are to be automatically changed from vertical to horizontal positions the bar 37 is manually swung forwardly to an inclined position wherein the T-shaped head 38 rests on the rear side of such carrier. When the carrier is raised sufficiently by means of the winch 27 to bring the transverse slot 18*b* to a position coinciding with the head 38, the said head falls forwardly therethrough to engage with and rest on the supporting members 39. Upon further elevating the carrier the head 38 travels rearwardly on the supporting members 39 until it reaches the rear side of the carrier. As the carrier continues its upward movement the head 38 exerts a rearward pressure on the upper portion of such carriage and thereby causes it to swing about the hinge means 17 to a near horizontal position. The continued upward movement of the sleeve 16, through the hinge means connection, causes the carrier to assume a substantially horizontal position with the rear side thereof engaging with the upper end of such sleeve. The head 38, during the movement of the carrier to a horizontal position travels rearwardly to swing the bar 37 to a rearwardly inclined position and when the head reaches the transverse slot 18*b* it falls therethrough to again position the bar in a downwardly extending inactive position. At this point in the upward movement of the sleeve 16, the abutting means 34 at the closed end of the slot 33 in the sleeve has reached the projecting member 35 on the sleeve-like element 14, thereby effecting a connection between the sleeve and the sleeve-like element so as to make possible the elevation of the then horizontally disposed carrier and the panel A to an area near the ceiling. The ratchet and pawl means may be adjusted to hold the winch drum against a reverse rotary movement until the panel is unloaded from the carrier. The carrier, the sleeve-like element and the sleeve may be lowered through the force of gravity upon releasing the drum for reverse rotary movement.

The position of the frame member 13 on the base member 12 may be reversed so as to face the carrier in the opposite direction, thereby permitting the panel supported on such carrier to be in close proximity to the side wall to which it is to be applied. The lower end portion of the carrier 18 is cut away as at 40 to provide suitable clearance with respect to the rear end of the platform 10 when the frame member 13 is changed on the base member 12 to face the carrier in the opposite direction. The stationary frame member 13 is formed with a handgrip member 41 to facilitate the handling of the hoist.

What I claim is:

1. A portable panel hoist comprising in combination:
   (A) an upright elongated stationary frame member;
   (B) an elongated sleeve-like element mounted for up and down adjustment on the frame member;
   (C) an outer sleeve mounted for up and down adjustment on the sleeve-like element;
   (D) a carrier pivotally secured to and adjustable upwardly and downwardly with the sleeve;
   (E) means to adjust the sleeve upwardly on the sleeve-like element;
   (F) means to connect the sleeve and the sleeve-like element upon the sleeve reaching a predetermined elevated position on the sleeve-like element, whereby the sleeve and the sleeve-like element may be further elevated as a unit on the frame member; and
   (G) means supported on the frame member and engageable with the carrier to pivotally move the carrier to a position wherein the panel supported thereon is in a substantially horizontal position.

2. A portable panel hoist according to claim 1, wherein the upper end of the sleeve-like element is formed with upwardly extending parallel tracks to engage with and guide the carrier to a position wherein the panel supported thereon is in a substantially horizontal position.

3. A portable hoist according to claim 1, wherein the panel supporting carrier embodies means to releasably hold a panel on the carrier.

4. A portable hoist according to claim 1, wherein the frame member is mounted on a mobile platform.

5. A portable hoist according to claim 1, wherein the means to connect the sleeve and the sleeve-like element comprises a projecting member on the sleeve-like element and an abutment on the sleeve arranged to engage with one another when the sleeve reaches a predetermined position on the sleeve-like element.

6. A portable hoist according to claim 1, wherein the means to adjust the sleeve upwardly on the sleeve-like element comprises:
   (A) a winch mounted on the rear side of the frame member at a point below the upper end of such frame member;
   (B) a first pulley mounted on the upper end of the frame member;
   (C) a second pulley mounted on the lower end of the sleeve-like element;

(D) a third pulley mounted on the upper end of the sleeve-like element;

(E) a cable fastening member secured to the forward side of the sleeve at a point below the upper end thereof; and

(F) a cable connected at one end to the winch and at its other end to the said fastening member on the sleeve, the said cable extending upwardly from the winch and over the first pulley, and then downwardly to and under the second pulley, and then upwardly to and over the third pulley, and then downwardly to the fastening member on the sleeve.

7. A portable panel hoist according to claim 1, wherein the carrier has a rear substantially vertical side and the means to move the carrier to a position wherein the panel supported thereon is in a substantially horizontal position, comprises:

(A) a bar pivotally connected at one end to the upper end of the frame member, and having a laterally extending head at its other end, the said bar being mounted for swinging movement to a forwardly inclined position wherein the head rests on the rear side of the carriage;

(B) a vertical open slot in the rear side of the carriage, the slot having lateral extensions below the upper end of such slot to allow the head to fall forwardly therethrough upon the sleeve reaching a predetermined height on the sleeve-like element; and

(C) forwardly projecting members on the rear side of the carrier to intercept and support the head as it falls forwardly through the extensions, the said head being adapted to engage with the rear side of the carrier as the said sleeve is elevated on the sleeve-like element to adjust the carrier to a position wherein the rear side thereof and the supported panel thereon are in substantially horizontal positions.

References Cited

UNITED STATES PATENTS

3,178,038	4/1965	Love	214—1
3,305,219	2/1967	Rhodes	214—1 X

ROBERT G. SHERIDAN, *Primary Examiner.*

F. E. WERNER, *Assistant Examiner.*