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2,672,319

WALLBOARD HOIST

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Fig. 1.

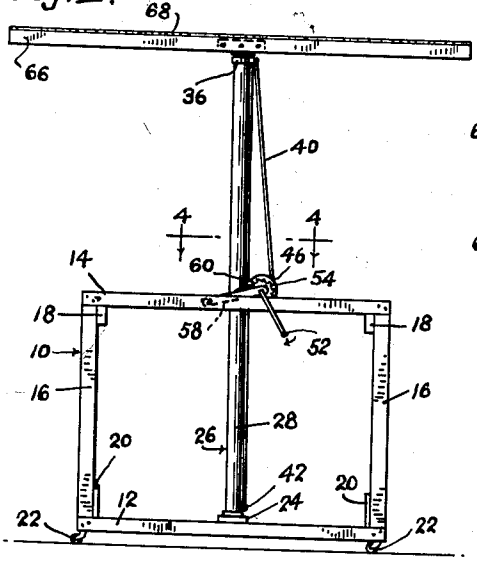



Fig. 3.

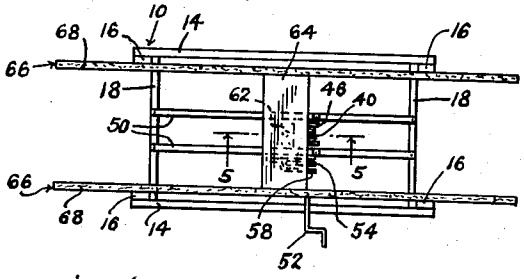



Fig. 4.

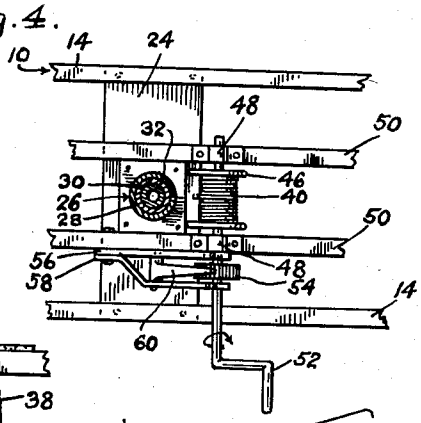



Fig. 2.

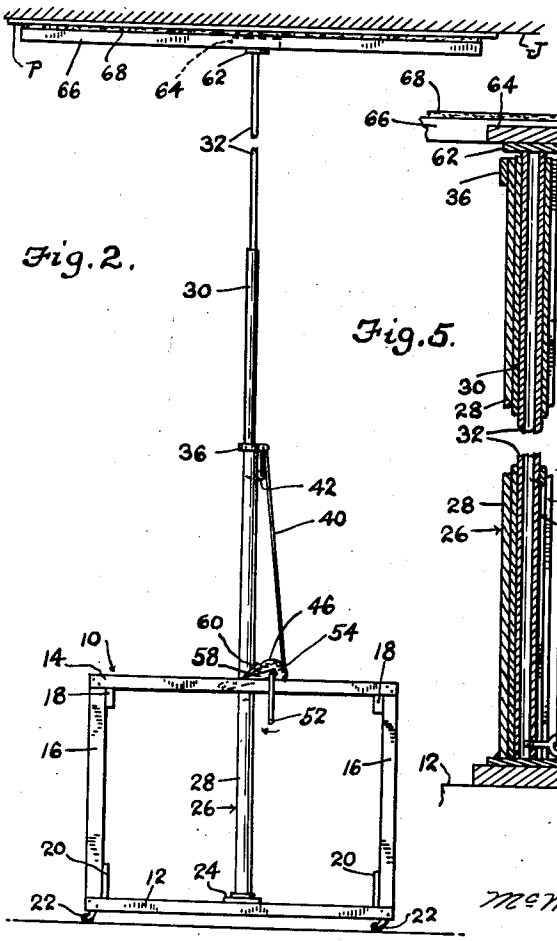
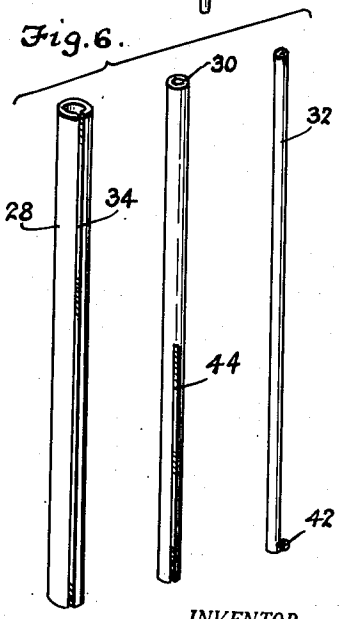



Fig. 5.




Fig. 6.




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# UNITED STATES PATENT OFFICE

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## WALLBOARD HOIST

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Application July 8, 1952, Serial No. 297,733

1 Claim. (Cl. 254—148)

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This invention relates to a hoist for wall board panels.

Among important objects of the invention are to provide a hoist that will be of a generally improved type; will be inexpensive; will be rugged; will be readily portable; easily extended to any of a substantial number of adjusted heights; capable of one-man operation; and automatically but releasably retained in each position to which it is adjusted.

Summarized briefly, the invention includes a rollable, box-like, open support frame; an extensible mast carried thereby and formed of a plurality of telescopically related tubular members; drum-and-cable means operatively associated with the several members for adjusting the same between any of various extended positions and a normal inoperative position in which they are telescoped fully within and are coterminous with one another; and fork-like panel support means carried by the uppermost of said members.

Other objects will appear from the following description, the claim appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, and wherein:

Figure 1 is a side elevational view of a hoist formed in accordance with the present invention;

Figure 2 is a side elevation in which the mast is extended;

Figure 3 is a top plan view;

Figure 4 is an enlarged section on line 4—4 of Figure 1;

Figure 5 is a section, still further enlarged, on line 5—5 of Figure 3; and

Figure 6 is a perspective view of the tubular members of the mast, separated from one another.

A supporting frame 10 is of box-like, open formation, and has a pair of lower longitudinal frame members 12 parallel to and spaced vertically of a pair of parallel, upper frame members 14. At each end of the support frame, a pair of vertical, parallel posts 16 is provided, extending between and rigidly secured at their respective ends to the opposite ends of the upper and lower members 12, 14. Upper cross braces 18 are fixedly secured at their opposite ends to and extend horizontally between the opposite ends of the upper members 14, and are also secured to the upper ends of the posts 16. Lower cross braces 20 are fixedly joined to and extend between the opposite ends of the lower members 12, said braces 20 extending between and being fixedly attached to the lower ends of the posts 16.

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Casters 22 are mounted at the several corners of the frame, at the lower end thereof, to support the same for rollable movement. This permits the frame to be positioned with accuracy below the particular ceiling joists J to which a panel P is to be secured.

Extending horizontally between and fixedly connected at its ends to the intermediate portions of the lower frame members 12 is a mast base plate 24, and fixedly attached at its lower end to the medial portion of said plate is a vertically ascending mast designated generally at 26. The mast is disposed centrally of the support frame and is formed of a plurality of tubular members telescoping within one another. These comprise a bottom tubular member 28 into which is telescoped an intermediate tubular member 30, a top tubular member 32 being telescoped into said intermediate member. The bottom member is stationary at all times, being provided at its lower end with an attaching plate bolted or otherwise fixedly connected to the base plate.

As shown in Figures 5 and 6, I form in the bottom tubular member a longitudinal slot 34 that extends fully from end to end of the bottom member. A collar 36 is affixed to the upper end of the bottom member and is formed with spaced, laterally extended ears between which is rotatably mounted a pulley 38. A cable 40 is trained about said pulley, and is attached at one end to an attaching element or eye bolt 42 secured to and laterally projected from the lower end of the top tubular member 32. . The shank of the eye bolt extends through the slot 34, and also through a slot 44 (Figure 6) formed in the intermediate member 30 and extending longitudinally of the intermediate member, from its lower end to a location intermediate its ends.

The other end of the cable is wound about a spool 46 having gudgeons journaled in bearings 48 aligned transversely of the support frame, at the upper end of the frame, adjacent the mast. The bearings 48 are mounted on bearing support bars 50 extending longitudinally of the frame in parallel, spaced relation, said bars 50 being fixedly connected at their ends to the respective upper cross braces 18.

A hand crank 52 is attached to the spool as an extension of one of the gudgeons thereof, and secured to the shank of the crank is a ratchet wheel 54 disposed between dog support arms 56, 58. The arm 56 is straight and has an opening at one end through which the shank of the crank extends, the arm being bolted at its other end to one of the bars 50. The arm 58 is bolted at

one end to the arm **56** and is offset outwardly of the arm **56** intermediate its ends, the other end of arm **58** having an opening receiving said shank. A dog **60** is pivotally mounted between arms **56, 58** and is weighted to engage the ratchet wheel against rotation in one direction whenever the cable is to be wound upon the spool for the purpose of extending the mast. When the mast has been extended to a selected extent, the dog engages the ratchet wheel and will hold the wheel against rotation in a cable-unwinding direction, until such time as the dog is manually swung out of engagement with the wheel.

It is to be noted that when the mast is in its normal, inoperative position, the several tubular members (Figure 5) will be fully telescoped within one another, and since they are all of the same length, the overall length of the mast at this time will be no greater than the length of the bottom or fixed tubular member. When, however, the mast is to be extended, the user rotates the crank clockwise as shown by the arorws in Figures 1, 2, and 4. As the cable is wound upon the spool, it will cause the eye bolt to be pulled upwardly, longitudinally of the slots of the bottom tubular member and the intermediate member. When the eye bolt engages the upper end wall of the slot **44**, it will elevate the intermediate member, conjointly with the top member, which will have already been extended partly from the intermediate member during the inital movement of the eye bolt. Ultimately, the eye bolt will engage against the collar **36**, at the upper limit of its travel, and the mast will now be extended to its maximum extent. It is to be noted, in this connection, and is an important characteristic of the construction, that the intermediate member, when extended to its maximum extent from the bottom member, will have a substantial part of its length still disposed within the bottom member. At the same time, the top member will have a substantial part of its length disposed within the intermediate member, and thus, the extended mast will be possessed of a high degree of rigidity. This result is obtained by reason of the particular formation and relative arrangement of the several tubular members and of the elevating means associated therewith. The eye bolt secured to the lower end of the top member prevents the top member from being extended fully from the intermediate member, due to the fact that the slot of the intermediate member terminates a substantial distance short of the upper end of the intermediate member. The intermediate member, meanwhile, is still telescoped to a substantial extent within the bottom member when the eye bolt engages against the collar **36** at the upper end of the bottom member.

Means is provided at the upper end of the top member for supporting a panel P in position to be nailed to the ceiling joists J. To this end, I provide a support plate **62**, that is fixedly attached to the upper end of the top member, said support plate having fixedly connected thereto the intermediate portion of a cross member **64**. To the respective ends of the cross member **64**, I affix the intermediate portions of a pair of elongated, panel support arms **66**, extending longitudinally of the support frame in spaced, parallel relation. Pads **68** or their equivalents are provided upon the arms **66** to prevent damage to the panels P.

In view of the detailed description which has been provided, a complete summary of the operation appears unnecessary. It is believed mainly important to note that the construction is one that permits the device to be readily shifted about, for location at the precise point, below a ceiling, at which the panel is to be nailed up. After the panel has been raised, the single worker performing the operation is enabled to shift the device bodily to locate the panel exactly at the place desired. This is of importance, since panels of this type usually must be located in such a manner as to provide a space of approximately one eighth of an inch between the sides of the panel and the panels adjacent thereto, this space being necessary to receive the joint cement used in conjunction with a perforated tape for concealing the joints between the adjacent panels. Once the panel has been so located, the user can rotate the crank further, to the extent of one or two additional notches of the ratchet wheel, to bring the panel into full engagement with the ceiling joists.



It is believed apparent that the invention is not necessarily confined to the specific use or uses thereof described above, since it may be utilized for any purpose to which it may be suited. Nor is the invention to be necessarily limited to the specific construction illustrated and described, since such construction is only intended to be illustrative of the principles of operation and the means presently devised to carry out said principles, it being considered that the invention comprehends any minor change in construction that may be permitted within the scope of the appended claim.

What is claimed is:

A hoist for wall board panels comprising a support frame; an extensible mast carried thereby and formed of a plurality of telescopically related tubular members all of which are formed to substantially the same length and are coterminous in the fully telescoped positions thereof, said members including a top tubular member provided at its lower end with a laterally projecting attaching element, an intermediate tubular member formed with a longitudinal slot extending from its lower end and terminating short of its upper end, said attaching element extending through said slot for elevating the intermediate member on extension of the top member a distance sufficient to engage the attaching element against the upper terminus of the slot, and a bottom tubular member secured fixedly to the support frame and having a longitudinal slot extending for the full length thereof, the attaching element extending through the last-named slot so as to be shiftable longitudinally thereof on elevation of the top and intermediate members; a pulley mounted on the upper end of the bottom member; a cable trained about said pulley and connected at one end to the attaching element; and a drum rotatably mounted on the support frame and about which the other end of the cable is wound.

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