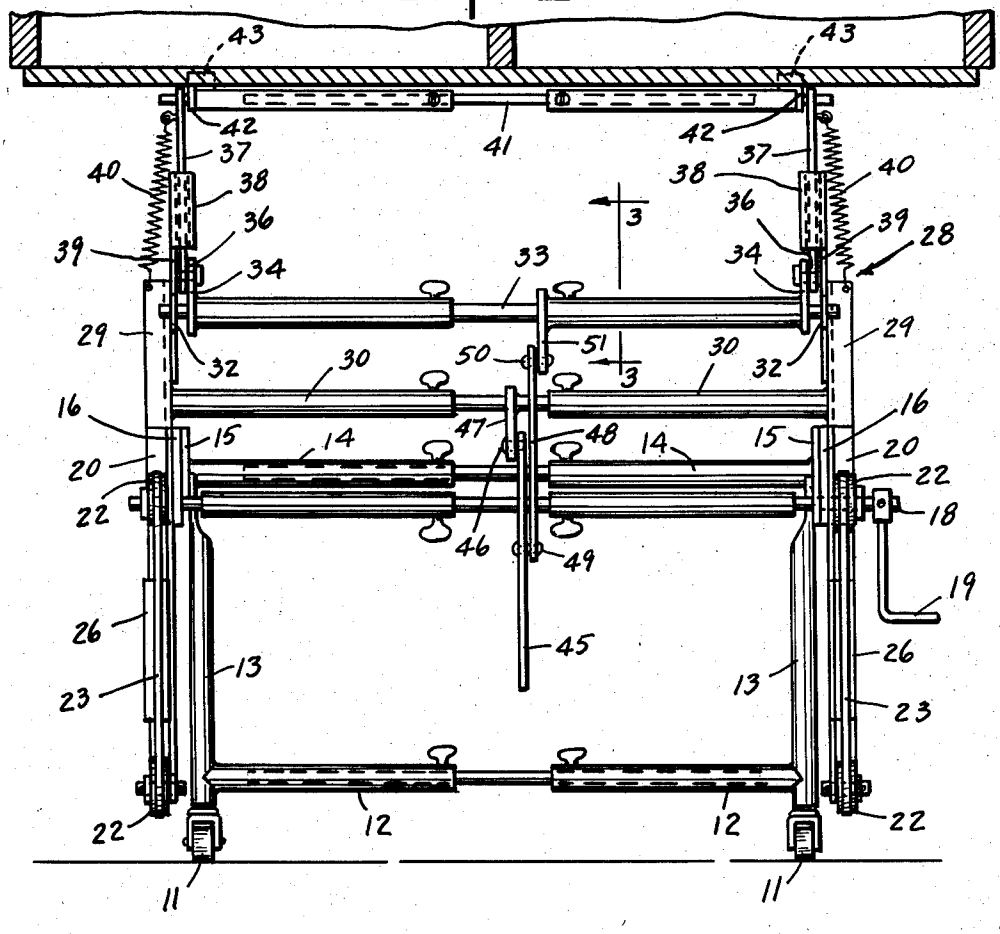
Aug. 11, 1959 H. D. BRUNNEMER ET AL 2,899,084

HANDLING AND ELEVATING DEVICE FOR POSITIONING WALL AND CEILING BOARD

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FIG. 1



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FIG. 2

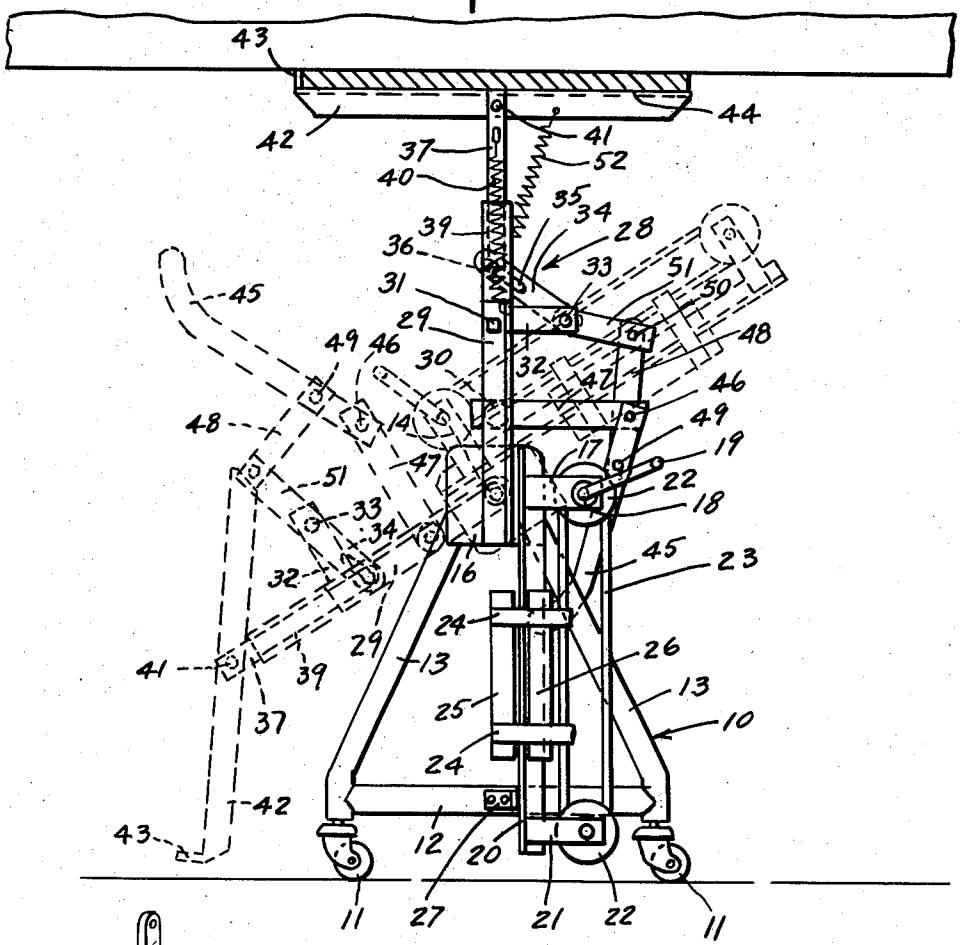
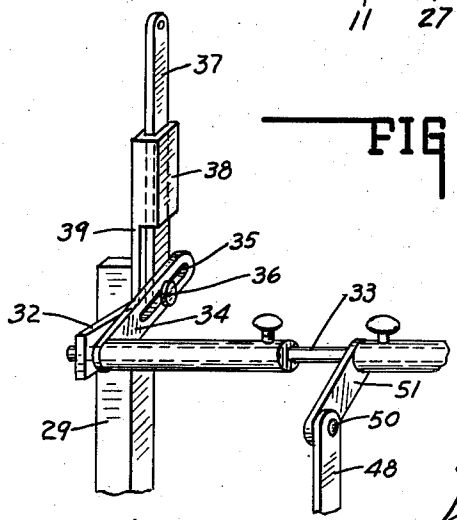


FIG. 3



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HANDLING AND ELEVATING DEVICE FOR POSITIONING WALL AND CEILING BOARD

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7 Claims. (Cl. 214—1)

This invention relates to a device for use in handling and elevating wall and ceiling board into nailing position. More particularly it relates to a sheet rock handling device for use in elevating it to the desired wall or ceiling position incident to nailing it in place.

Heretofore it has been the practice in this art for a T to be fashioned out of two-by-fours or the like with the crosspiece being approximately 8 feet high. These T's are used to wedge the standard 4' x 8' sheet rock sections against the ceiling. In order to so wedge the sections the T's must be at an angle. If it should turn out that the section is not in the right position then it is necessary to shift the T and to move the section. This is a difficult task in view of the height involved and the weight of the material, and requires the efforts of more than one man. In those instances where an even heavier 4' x 16' section of the sheet rock is being applied, it is necessary that there be several of the T's. The more of them that are employed the more the problems and the greater the expense in applying the sheet rock.

It is the primary object of the present invention to eliminate the cumbersome and unwieldy T's or other similar supports that have previously been used to apply sheet rock or like material to a wall or ceiling. To this end the present device has as one of its features a vertically adjustable height section which is of such character and construction that it may easily be lowered or raised to facilitate the accurate location of the sheet rock on a ceiling or wall.

It is a still further object of the present invention to provide a device which eliminates the breakage that attends the use of the previously described T's. This breakage has been inevitable, because of the weight of the sheet rock, whenever it is allowed to fall to the floor. With the conventional T's being disposed of necessity at an angle it has not been uncommon for the sheet rock to slip off and fall to the floor.

It is also an object of the present invention to provide a device of such character and construction that it may easily and readily be disassembled following use and stored or transported in a relatively small space.

It is a still further object of the present invention to provide means which engage the wall or the ceiling at a predetermined time in the elevating process so as to automatically level the sheet rock section in position whether on a wall or on a ceiling.

It is a still further object of the present invention to provide a device which will enable one man to apply or position sheet rock sections in place. No particular "muscle power" is required as has heretofore been the case in this art because of the substantial weights involved.

Another object of the present invention is to reduce the expense of applying such sheet rock sections. This is accomplished through the reduction in the manpower required and in the elimination of sheet rock breakage.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings—

Fig. 1 is a front elevation view of the invention.

Fig. 2 is an end elevation thereof in one position with the elevating and handling mechanism being shown in a second position in dotted lines.

Fig. 3 is a perspective view of a portion of the invention when viewed approximately from the position 3—3 of Fig. 1, in the direction of the arrows, and more particularly of the slidable extension, its housing and guide and adjacent members.

In the drawings the base structure upon which the device is supported is shown generally at **10**, it consisting of the casters or wheels **11**, the lower, rectangle-forming crosspieces **12**, the four upwardly extending inwardly converging legs **13** and the upper crossbar **14**. The legs and the crossbar may be secured to the brackets **15** at the upper, opposite ends of the base structure. A second bracket **16** is provided adjacent each of said first brackets, it being journalled on the shaft **14** and movable relative thereto.

Extending outwardly from these second brackets **16** are the stub arms **17** that carry the shaft **18**, the shaft being turned by a handle **19**. Extending downwardly from a point adjacent the inner end of each arm to a point below the crosspieces **12** is an angle iron **20**. At the lower end of each angle iron is provided a second stub arm **21** which is substantially the same size as the first mentioned arms **17** and is in the same vertical plane therewith. Mounted on the shaft **18** and on the arms **21** are the pulley wheels **22**. About these wheels are trained V-belts **23**. Connected to the V-belt at a predetermined point through the medium of the straps **24** are the spaced, elongated counterweights **25** and **26**. As will be observed from Fig. 2, the weights ride on either side of the adjacent arm of the angle iron **20** and are thereby automatically kept in position.

The above described assembly is normally upright and is swingable about the axis of the shaft **14** as hereinafter described. A stop **27** is provided on one of the crosspieces **12** to limit any over-swing, i.e. a swing beyond the vertical position of the assembly.

Extending upwardly from the brackets **16** is a superstructure or upper section shown generally at **28** which includes the adjustable height mechanism. This mechanism consists of an upstanding member **29** which is secured in any suitable way to each bracket **16** and is swingable therewith. Secured to each member by any suitable means such as the bolts **31** at a point above the crossbar **30**, and extending outwardly therefrom are the arms **32**. Connecting these opposed arms is the shaft **33** which has a pair of plates **34** pivotally connected to it at its opposite ends. These plates are slotted at **35** and extend upwardly where they have a loose connection at **36** with the slidable extension **37**. This extension is mounted in the housing or guide **38** which in turn is connected by the plate **39** to the members or angle irons **29**.

As will be observed from the figures, a coil spring or the like **40** connects each extension with the members **29** for the purpose of biasing them to their retracted position. Adjacent the upper end of the extensions is pivotally mounted the shaft **41** which carries transversely extending arms or T's **42** for forming a supporting table or platform for the sheet rock. The arms each have the upstanding flanges **43** formed at one end thereof. The arms have a coating **44** of rubber or the like on their upper face to prevent the sheet rock from slipping or sliding off when the table is in any other than a horizontal position.

Springs **52** are provided to make certain that one end of the arms is biased slightly downwardly or inwardly, as the case may be, towards the base structure so that

the arms are in an inclined position when the table is in the position shown by the dotted lines in Fig. 2. The springs are connected at one end to the arms or T's **42** and at their other end to the plate **39**, as shown in Fig. 2. In this way, once the sheet rock is "loaded" upon the table with the bottom of the sheet resting on the flange **43**, the sheet rock will not fall off but will be retained in place. A further function is also served by the springs and it will be described hereinafter.

The entire assembly thus described is movable about the axis of the shaft **14** from the nailing or applying position shown in full lines in Fig. 2 to the "loading" position shown in dotted lines therein. The base structure, of course, must remain stationary once the device has been moved to the desired location. To this end some sort of a locking device (not shown) may be employed to prevent the casters from moving.

In order to adjust the height of the table, i.e. move the extensions relative to their guides, a lever arrangement or linkage is provided. It consists of the handle **45** which is pivotally connected at **46** to the arm **47** secured to the shaft **30**. A link **48** is pivotally connected at one end **49** to the handle and at its other end **50** to the link **51** that is secured to the shaft **33**. As previously described, the plates **34** are secured at one end to the shaft **33** and have a tongue and slot or the like connection **36** with the vertically adjustable extension **37**. Thus once the handle **45** is swung downwardly the linkage or levers will move the extension to extended position and along with it the table that is pivotally secured at its upper end. By the same token, when the handle is swung arcuately downwardly the table and extension will be moved upwardly to retracted position.

In use the device may be easily and readily wheeled by just one worker to the point where the sheet rock is to be loaded upon the table. When this point is reached, the worker may already have adjusted the weights **25** and **26** by turning the handle **19** so that there is some semblance of balance between the upper and lower section of the assembly. Of course, if desired, the worker may already have adjusted the weights outwardly away from the axis of the assembly so as to compensate for the increased weight there will be on the upper section thereof once the sheet rock is loaded thereupon. That is to say, the weights may already have been adjusted so as to make it easier for the assembly even with its added weight to be swung arcuately to a point where it is in upright position.

As will be observed from the dotted lines in Fig. 2, when the upper section is in sheet rock loading position, the table will be inclined rearwardly. This inclination is caused by the action of the springs **52**. Thus as the sheet rock is placed on the table with the bottom edge thereof resting upon the flange, the table and the sheet rock will be inclined rearwardly to prevent the latter from falling off. The assembly is then ready to be swung arcuately so that the sheet rock may be elevated to the desired nailing position whether it be on a wall or on the ceiling. In those instances where it is to be nailed in place on a ceiling, the assembly will be swung to its normally upright position at which point the lower section will engage the aforementioned stop. During such swinging movement to upright position, the table will retain substantially the same angle of inclination. This is because the springs will still be biasing the one end downwardly or inwardly towards the base structure. This inclination not only serves the function of preventing the sheet rock from falling off the table immediately following loading as previously described, but also performs the function of keeping the leading edge or end of the table (i.e. the end to which the springs **52** are connected) at a point below the trailing edge during the latter portion of the swinging movement of the assembly. The leading edge will not at any time be higher than the uppermost point above the floor reached by the ends of the extensions. In this way the leading edge is prevented from engaging the ceiling as it is being swung with the assembly from one position to another.

When the assembly has been swung with the sheet rock to the upright position, the linkage arrangement may then be actuated to elevate the table, i.e. move the extension to its extended position, which position is such that the sheet rock is contiguous to and in abutment with the ceiling. It is evident from the foregoing description that as the table is so elevated, the so-called trailing edge will first engage the ceiling since it will be higher than the leading edge as previously described. Once the trailing edge engages the ceiling and as the upward movement of the extensions are continued, the table automatically is levelled thereby bringing the upper face of the sheet rock into abutment with the ceiling where it may be nailed. In those instances where the sheet rock may not be in alignment or register with the adjacent, already secured sheet, the entire device may easily and readily be wheeled to the desired point at which time the stop means (not shown) associated with the casters may be actuated to retain the device in that position. Once the sheet rock is nailed in position the linkage arrangement may be actuated to lower the table. The device may then be wheeled to the loading station for another piece of sheet rock. The weights can be adjusted as desired to compensate for (1) the condition of the assembly when there is no sheet rock on the table, (2) its condition when there is a 4′ x 12′ section of sheet rock thereupon, and (3) its condition when a 4′ x 16′ sheet rock or other size ceiling or wall board is thereupon.

In order to accommodate the larger sized sections of sheet rock the longitudinal shafts may be telescopically formed as shown in the drawings, with wing nuts **53** or the like being provided for holding the sections at the desired length. The provision of these telescopic sections also is of value in enabling the entire device to be disassembled into relatively small sections.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention and the scope of the claims are also desired to be protected.

The invention claimed is:

1. A handling and elevating device for positioning wall and ceiling board comprising a base structure, a normally upright assembly pivotally connected intermediate its ends to said structure adjacent the upper end thereof, said assembly having an upper section and a lower section swingable between upright position and material loading position, said upper section including a member movable between extended and retracted positions for varying the length of said upper section, a sheet rock supporting platform pivotally connected midway between its ends to said member, said platform having a leading end leading the opposite end as said assembly swings from material loading position to upright position, resilient means interconnecting said leading end of the platform and said member for biasing said leading end of said platform towards said base structure as said assembly swings from material loading position to upright position, and means mounted on said device for moving said member between extended and retracted positions.

2. A handling and elevating device for positioning wall and ceiling board comprising a base structure, a normally upright assembly pivotally connected intermediate its ends to said structure adjacent the upper end thereof, said assembly having an upper section and a lower section swingable between upright position and material loading position, said upper section including an extension relatively movable between extended and retracted positions for varying the length of said upper section, a sheet rock

supporting table extending transversely of said extension and pivotally connected intermediate its ends to the upper end thereof said table having a leading end that leads its opposite end as said upper and lower sections swing from material loading position to upright position, resilient means connecting the leading end of said table to said upper section for normally biasing that one end towards said base structure as said sections swing from material loading position to upright position, linkage means mounted on said device and operably associated with said extension for extending or retracting it, and said lower section having adjustable counterweights mounted thereupon.

3. A handling and elevating device for positioning wall and ceiling board comprising a base structure, a normally upright assembly pivotally connected intermediate its ends to said structure adjacent the upper end thereof, said assembly having an upper section and a lower section swingable between upright position and material loading position, said upper section including a guide, an extension slidably mounted in said guide for varying the length of said upper section, a sheet rock supporting table including a pair of spaced arms, said arms each including leading and trailing ends and being pivotally connected intermediate their respective ends to the upper extremity of said extension, spring means connected to the leading end of each arm for biasing that end towards said base structure as said sections swing from material loading position to upright position, a second spring means connecting said extension and said guide for biasing said extension to retracted position, linkage means connected to said device for extending or retracting said extension, and said lower section having adjustable counterweights mounted thereupon.

4. A handling and elevating device for positioning wall and ceiling board comprising a base structure, a normally upright assembly pivotally connected intermediate its ends to said structure adjacent the upper end thereof, said assembly being swingable about the axis of its connection between sheet rock loading and nailing positions and having an upper section and a lower section, said lower section including means for normally retaining said assembly in upright position, said upper section having a guide, an extension slidably mounted in said guide and movable between extended and retracted positions for varying the length of said upper section, a sheet rock supporting table having a leading and a trailing end and being pivotally connected intermediate said ends to the upper extremity of said extension, said table including crossarms extending transversely relative to said extension and normally forming a T at the top thereof, said crossarms each having a flange formed a one end and a coating on its upper face for resisting the sliding off thereof of said sheet rock, spring means interconnecting the leading end of said table and said upper section for biasing said leading end towards said base structure as said assembly swings from loading to nailing position, and linkage means mounted upon said device and operably associated with said extension for moving it to and from said extended and retracted positions.

5. A handling and elevating device for positioning wall and ceiling board comprising a base structure, a normally upright assembly pivotally connected intermediate its ends to said structure adjacent the upper end thereof, said assembly being manually swingable to and from sheet rock loading and nailing positions and having an upper section and a lower section, said upper section including a pair of guides, an extension slidably mounted in each guide and movable between extended and retracted positions for varying the length of said upper section, a sheet rock supporting table including a pair of crossarms and an interconnecting shaft, said crossarms each having a leading and a trailing end and being pivotally connected intermediate said ends to the upper extremity of an extension, resilient means connecting the leading end of each cross arm to a guide for biasing said leading end towards said base structure as said assembly swings from loading to nailing position, said crossarms each having a flange formed at the other end thereof, a linkage connecting the upper section and said extensions and operable to extend or retract said extensions relative to said guides, said linkage including means for locking said extension in its extended position, said lower section including a pair of vertically spaced pulleys, an endless belt trained about said pulleys, said belts having weights secured thereto and movable therewith towards and away from the axis of said assembly, and a handle for turning said pulleys for varying the position of said weights.

6. A handling and elevating device for positioning wall and ceiling board comprising a wheeled base structure, a normally upright assembly pivotally connected intermediate its ends to said structure adjacent the upper end thereof, said assembly having an upper section and a lower section swingable between material loading position and upright position, said upper section including a guide and an extension slidably mounted in said guide for varying the length of said upper section, a sheet rock supporting table pivotally connected intermediate its ends to the upper extremity of said extension, said table including crossarms having a leading end and normally forming a T at the top of said extension, spring means connected to said leading end of each crossarm for biasing that end downwardly and inwardly towards said base structure as said sections swing from loading to upright position, said crossarms having a flange at one end and a coating for resisting the sliding of said sheet rock on the upper faces thereof, a linkage connecting the upper section and said extension, said linkage being operable to extend or retract said extension relative to said guide for varying the length of said upper section, said linkage including means for locking said extension in its extended position, spring means connecting said extension and said guide and normally biasing said extension towards retracted position therewithin, said lower section including a shaft, a pair of pulleys mounted at opposite ends of said shaft, a second set of pulleys mounted in vertically aligned relation to said first pair, endless belts trained about each pair of aligned pulleys, said belts having weights secured thereto and movable therewith, a handle for turning said shaft and said pulleys for varying the positions of said weights relative to the pivotal connection of said assembly to said base structure, and a stop connected to said base structure engageable by said upright assembly when in a vertical position.

7. A handling and elevating device for positioning wall and ceiling material comprising a base structure, a normally upright assembly pivotally connected intermediate its ends to said structure and swingable about its connection between material loading and upright nailing positions, said assembly including a material supporting platform having a leading end and a trailing end, said platform being pivotally connected intermediate said ends adjacent the upper extremity of said assembly, and resilient means interconnecting the leading end of said platform and said assembly for biasing the leading end of said platform towards said base structure as said assembly swings from loading to nailing position.

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