

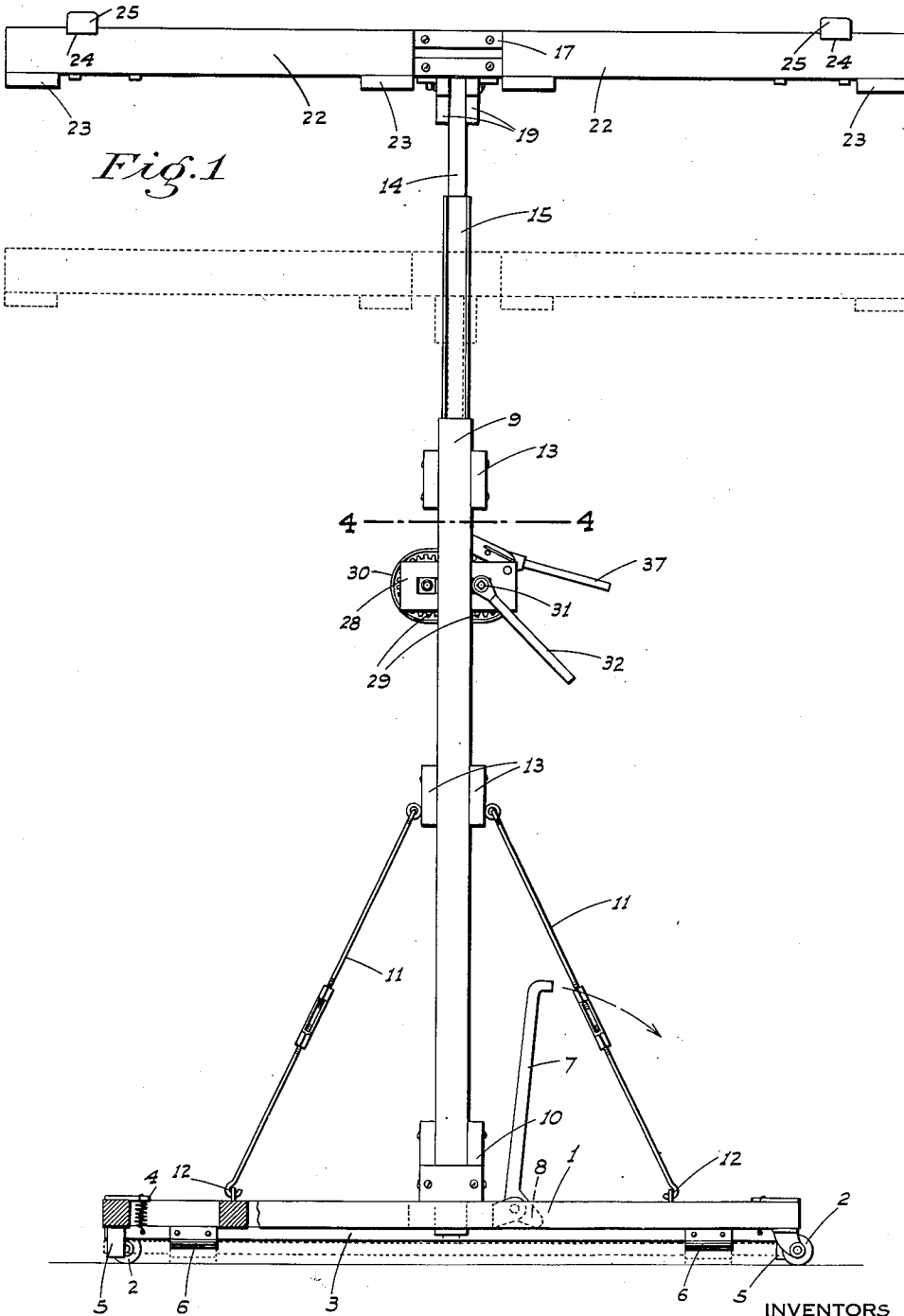
Dec. 28, 1943.

A. F. BAKER ET AL
CEILING AND WALL JACK

2,337,796

Filed Nov. 22, 1941

3 Sheets-Sheet 1



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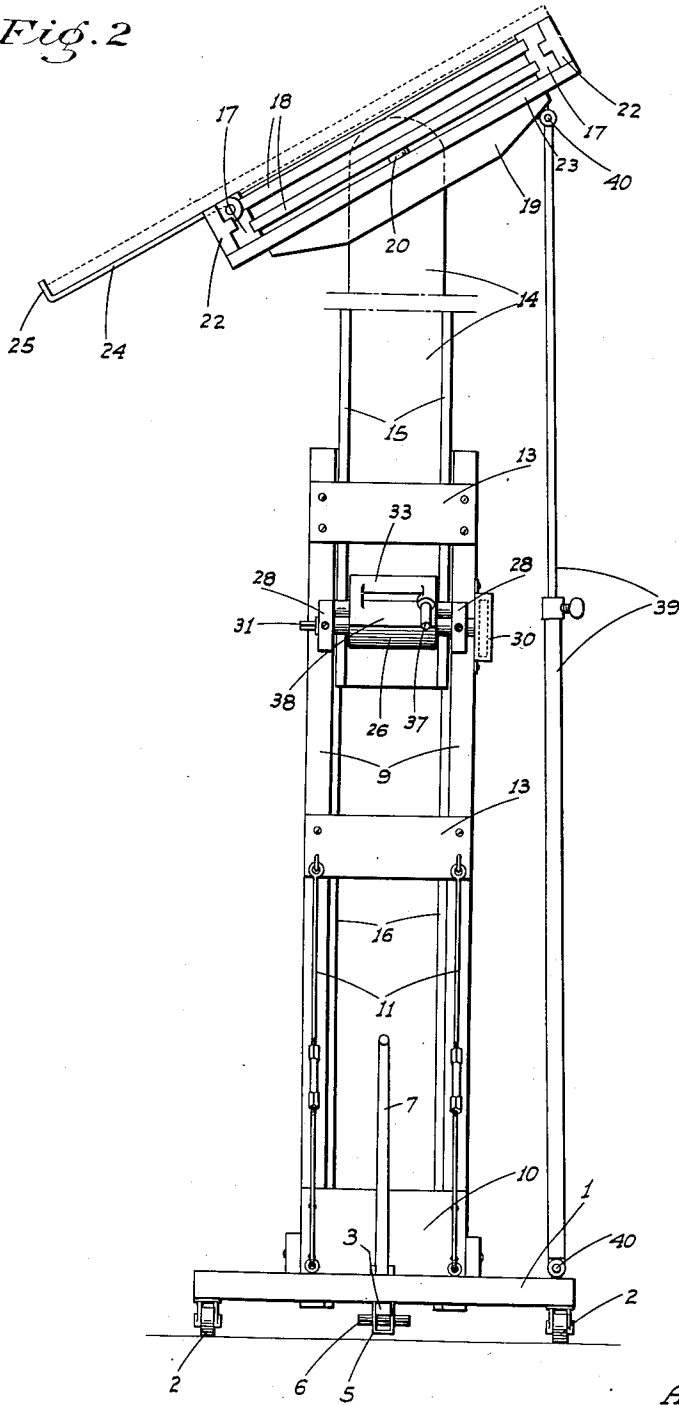
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Fig. 2



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Fig. 3

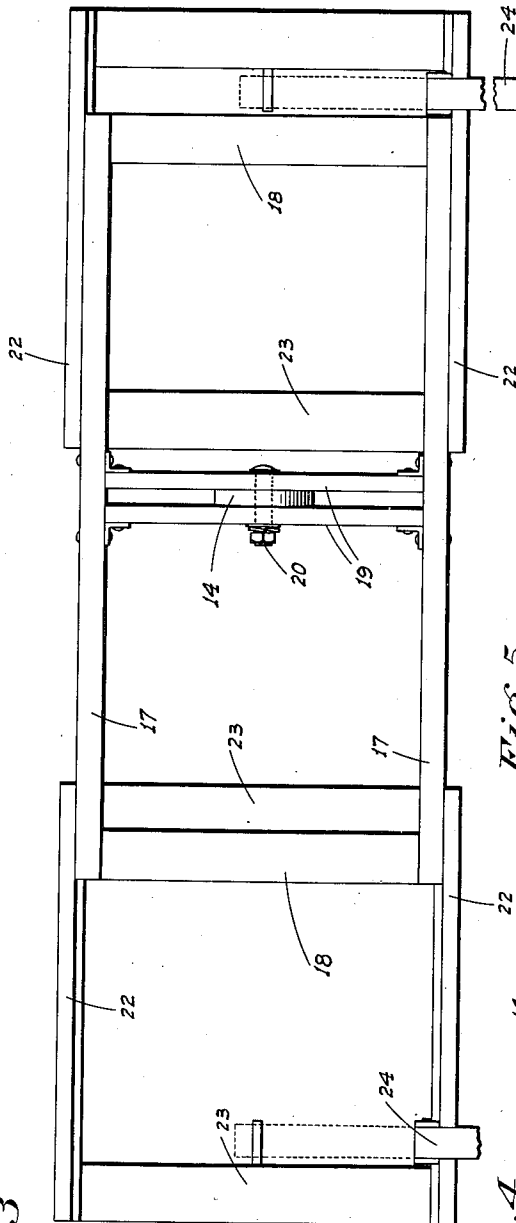


Fig. 4

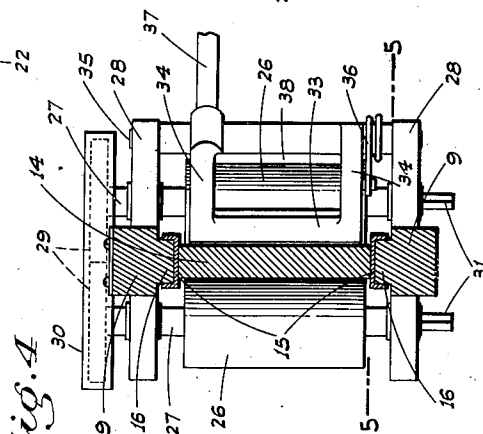


Fig. 5

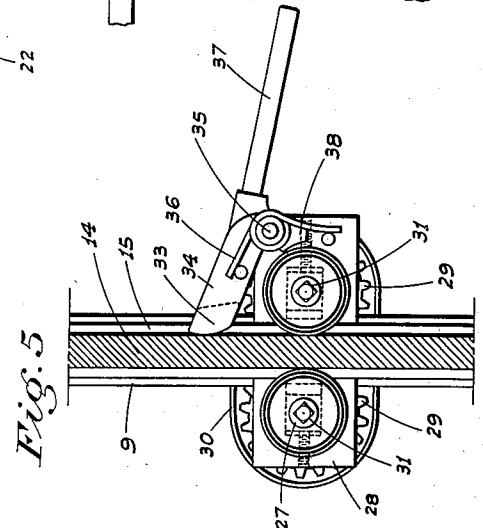
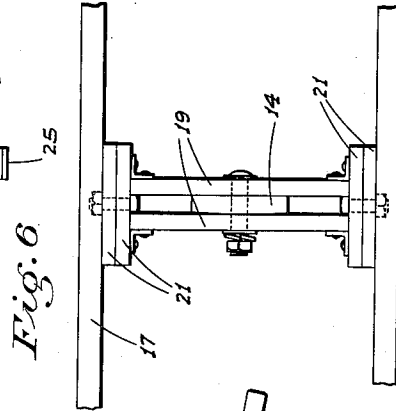


Fig. 6



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CEILING AND WALL JACK

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This invention relates in general to building construction equipment, and in particular the invention is directed to, and it is our principal object to provide, a jack mechanism arranged to support, elevate and maintain in position for securing to a ceiling or wall, a sheet of wall board or the like.

Another object of the invention is to provide a wall board jack mechanism which is arranged for adjustment to support different size sheets of the material, and at an angle corresponding to the angle of the surface to which the sheet is to be applied.

A further object of the invention is to provide novel means to effect and control the elevation and lowering of the sheet supporting head assembly of the jack mechanism.

It is also an object of the invention to provide a floor brake on the base of the device; such brake being automatically operative when the sheet supporting head assembly is in lowered position for loading, or the brake may be manually applied at any time.

A further object of the invention is to produce a simple and inexpensive device, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects we accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation of the device in an elevated position.

Figure 2 is an end view of the device in an elevated position and with the head assembly angularly adjusted.

Figure 3 is a plan view of the head assembly as partly extended.

Figure 4 is an enlarged cross section on line 4—4 of Fig. 1.

Figure 5 is a cross section on line 5—5 of Fig. 4.

Figure 6 is a fragmentary plan view of a modified form of connection between the head assembly and vertical lift post.

Referring now more particularly to the characters of reference on the drawings, our improved jack mechanism comprises a rectangular elongated base 1 supported adjacent the corners by means of caster wheels 2. This base is provided with a normally inoperative floor brake which comprises a centrally and longitudinally extending bar 3 suspended at its ends by tension springs

4 and guided for vertical movement by means of guide brackets 5 secured on and depending from the base 1. The bar 3 carries longitudinally spaced downwardly projecting floor-engaging shoes 6, points or the like, which, when engaged with the floor, frictionally grip the latter, preventing relative movement of the base 1. The bar 3 may be lowered so as to bring the shoes 6 into floor-engaging position by means of a hand lever 7 pivoted on the base for swinging movement in a vertical plane above but parallel to bar 3, and having an eccentric or cam element 8 on its lower end and engaging said bar, so that the latter is lowered and the brake applied by a pull on the lever. The brake will remain applied if the lever is lowered beyond dead center position of the cam. Also, in the manner which will be hereinafter described, the floor brake is automatically applied when the sheet-supporting head assembly is in lowered position.

A pair of rigid uprights 9 are mounted on base 1 in transversely spaced relation, such uprights being seated at their lower ends in a socket unit on base 1 centrally between its ends; these uprights being stabilized by adjustable and diagonal tie-rods 11 which extend from the uprights above the socket downwardly to hooked connection with eyes 12 on the base. If desired, the uprights 9 may be removable from the socket unit 10 whereby with release of tie rods 11 from eyes 12 the uprights, together with connected portions of the mechanism, may be removed from the base for transportation from job to job. The uprights 9 are connected together on opposite sides by means of vertically spaced cross plates 13.

A lift post 14 is disposed between uprights 9 and projects some distance thereabove, such lift post being rectangular and elongated in cross section and the opposite edges being fitted with outwardly facing guide channels 15 which engage track or rail portions 16 formed on adjacent faces of uprights 9.

At its upper end the lift post 14 is fitted with the supporting head assembly for the sheet of wallboard or the like, said head assembly comprising a main head frame of rectangular configuration and which includes side rails 17 and connecting end rails 18. This main head frame is supported on the lift post 14 by means of longitudinally spaced cross members 19 between which the upper end of the lift post snugly engages and to which said upper end of the lift post is pivoted by means of an adjustable pivot and tension bolt 20. It will be seen that by virtue of the above

connection between the main head frame and the lift post, said frame may be tilted laterally in either direction, and as is clearly shown in Fig. 2. If it is desired to also provide for longitudinal tilting of the main head frame, the longitudinally spaced cross members 19 are not rigidly connected with the side rails 17 and cooperating friction disc units 21, with connecting pivot bolts, are interposed between the ends of said cross members 19 and the side rails 17, as shown in Fig. 6.

In order to provide longitudinal adjustment of the head assembly the main head frame is provided at both ends with auxiliary or extension frames which include side members 22 having a mortise and tenon slide fit with the side rails 17, said side members being connected underneath by end members 23 beyond the ends of the main head frame. It will be seen that with longitudinal and outward sliding movement of the extension frames the effective length of the head assembly is materially increased.

In order to accommodate sheets of material of relatively great width, the extension frames on one side are fitted on opposite sides with hinged swing arms 24 which normally lie within said frames but which may be swung up and out at right angles thereto, so that their upper surface is flush with the upper edge of the frames. The outer end of each arm has an upstanding shoulder 25 or the like to form a stop for the adjacent edge of the supported sheet.

The following mechanism is employed for the purpose of effecting and controlling the raising and lowering of the lift post 14. Cushion rollers 26 frictionally engage the post 14 on opposite sides and for the full width thereof at a point some distance below the upper end of uprights 9, such cushion rollers 26 being supported by shafts 27 whose ends project through and beyond supporting plates 28 mounted on the uprights.

As clearly indicated in Fig. 5, the shafts 27 are carried in horizontally movable blocks in the plates 28, whose position is adjusted by counter-sunk set screws in the plate. In this manner, the friction of the rollers 26 against the post may be adjusted as may be necessary, while wear may be readily taken up as it occurs. Also, the post may thus be centered in the guides for proper cooperation therewith. At one end the shafts 27 are connected by meshing gears 29 suitably housed as at 30, while at the other end the projecting portion of the shafts are rectangular, as indicated at 31, for the selective reception of a ratchet wrench 32. It will be seen that with the reciprocation of wrench 32, when the same is correctly applied to one of the shaft portions 31, the rollers 26 will be rotated in a direction to elevate the lift post 14.

In order to lock such lift post in elevated position, we provide a cam brake 33 which extends the full width across one face of the lift post 14 immediately above one of the rollers 26, engaging such face in a manner to normally prevent retractive or lowering movement of said post 14. This cam brake 33 is formed at its ends with arms 34 which project outward to connection with a cross shaft 35 rotatably supported at its ends in the bearing plates 28. The cam brake 33 is normally urged into engagement with the lift post 14 by its own weight, aided by a coil spring 36.

In order to release the cam brake and permit lowering of the lift post 14, a handle 37 projects outwardly from brake 33, and upon depression

of this handle the cam brake 33 is relieved from the post 14, permitting the latter to lower by gravity. In order to assure against too rapid a descent of lift post 14, a brake shoe 38, integral with arms 34, is mounted on cross shaft 35 and is normally clear of the adjacent cushion roller 26. However, upon downward movement of handle 37 to a predetermined extent beyond the point of release of cam brake 33, shoe 38 frictionally engages said adjacent roller 26 and the braking action thus applied to such roller is transmitted to the lift post.

When the lift post reaches its lowermost point, the lower end of said post engages bar 3 of the floor brake, pushing said bar down until the shoes 6 strike and frictionally engage the floor, thereby effectively preventing shifting movement of the base. While the head assembly is being loaded,

In use, a sheet of wallboard or the like is placed in supported relation on the head assembly; such assembly being adjusted by means of the extension frames or the hinged swing arms 24, or both, in order to provide relatively full support for said sheet. The stops 25 in the hinged swing arms engage the side edges of the sheet of wallboard when the head assembly is tilted laterally, as shown in Fig. 2, and prevent said sheet from sliding off its support.

After the sheet of material is placed atop the head assembly, the ratchet wrench 32 is actuated, causing lift post 14 to elevate to a point where the supported sheet of material engages the surface to which it is to be applied, and which may be a horizontal ceiling area or an angularly disposed area to conform to which the head assembly may be adjusted. When the sheet of material is thus disposed in place, the cam brake 33 prevents retraction of the lift post and the sheet of material may be secured to the engaged building surface. Thereafter, by manipulation of handle 37 the lift post is permitted to slide down, the device is moved to the next point of use, and another sheet of material placed on the head assembly, whereupon the method above described is repeated.

In order to prevent possible tilting of the head frame from any set position while it is being loaded, and at which time said frame is apt to be subjected to considerable jarring shocks, a telescopic holding unit 39 extends between the base and head frame on the side opposite that toward which the frame is tilted. This unit is pivotally mounted at its opposite ends by pins 40, which may be removed, so that the unit may be detached from the apparatus if its use is not required.

From the foregoing description it will be readily seen that we have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described our invention, what we claim as new and useful and desire to secure by Letters Patent is:

1. A jack for sheet building material, comprising a base, a lift post upstanding from the base, means mounting the post for vertical movement, releasable means operating to hold the post in an elevated position, a brake arranged to control the speed of lowering movement of said post,

said brake being operative only upon release of said holding means, and a sheet supporting head assembly mounted on the upper end of the post.

2. A structure as in claim 1 in which said releasable holding means comprises a cam brake unit normally engaged with said post, there being a handle projecting from said unit, the handle being movable to release the cam from the post.

3. A jack for sheet building material comprising a base, spaced uprights mounted on the base, a lift post mounted between said uprights for guided vertical movement, a friction roller engaging one side of the post, manually actuated means to rotate the roller in a direction to elevate the post, releasable means to hold the post in elevated position, a normally inoperative manually actuated friction brake mounted for engagement with said roller, and a sheet supporting head assembly mounted on the upper end of the post.

4. A structure as in claim 3 in which said releasable means includes a handle; said handle being arranged, upon moving in a predetermined direction, to release said means and with continued movement to apply said brake.

5. A jack for sheet building material comprising a base, spaced uprights mounted on the base, a lift post mounted between said uprights for guided vertical movement, friction rollers engaging said post on opposite sides, shafts projecting from said rollers, bearing plates on the uprights supporting said shafts and through which said shafts project, meshing gears mounted on said shafts at one end, means on the opposite end of one shaft to rotate the latter, a cam brake normally engaging one side of the post adjacent one of the rollers and normally operative to prevent lowering of the post, said cam brake being pivotally mounted for swinging movement away from the post, means to so swing the cam brake, a friction brake member mounted in rigid relation to and for movement with said cam brake, said friction brake normally being adjacent but clear of said one roller but arranged to engage the latter in braking relation upon movement of the cam brake from the post a predetermined distance, and a sheet supporting head assembly mounted on the upper end of the post.

6. A jack for sheet building material, including a lift post, means mounting said post for vertical movement, a sheet supporting head frame, said head frame including spaced side members, adjacent but spaced cross members connecting said side members intermediate the ends of the latter, the upper end of said post snugly engaging between said cross members, and a pivot bolt connecting said upper end of the post and said cross members; there being friction disc units pivotally connected between corresponding ends of said cross members and the adjacent one of said side members.

7. A jack for sheet building material including a lift post, means mounting said post for vertical movement, and a sheet supporting head assembly mounted on the upper end of said post; said assembly comprising an elongated main head frame of rectangular form, and extension frames mounted on the main head frame at the end portions for outward sliding movement in opposite directions, the upper edges of the main and extension frames being substantially flush; there being sheet supporting arms hinged to the sides of said extension frames for outward swinging movement in a vertical plane from a normal po-

sition substantially flush with the upper edges of the extension frames.

8. A structure as in claim 7 in which the upper edge of each hinged arm is provided with an upstanding shoulder adjacent the outer end of the said arm.

9. A jack for sheet building material, comprising a wheel supported base, a lift post mounted on said base for vertical movement relative thereto, a sheet supporting head assembly mounted on the upper end of the post, and a normally inoperative floor brake unit mounted on the base; the post upon lowering of the same to a down position being arranged to apply said floor brake unit.

10. A jack for sheet building material, comprising a wheel supported base, a lift post mounted on said base for vertical movement relative thereto, a sheet supporting head assembly mounted on the upper end of the post, and a normally inoperative floor brake unit mounted beneath the base, said unit including a depressible bar, springs resisting depression of the bar and floor engaging brake elements on the bar; the lower end of the post when in down position engaging and depressing the bar and setting the brake elements.

11. A jack for sheet building material comprising a base, a lift post upstanding from the base, means mounting the post for vertical movement, a sheet supporting head frame, means mounting said head frame on the upper end of the post for tilting adjustment in a vertical plane, and a longitudinally adjustable holding unit connected between the base and head to one side of the post.

12. A jack for sheet building material comprising a base, a lift post upstanding from the base, means mounting the post for vertical movement, a sheet supporting head frame, means mounting said head frame on the upper end of the post for tilting adjustment in a vertical plane, and a longitudinally adjustable holding unit connected between the base and head to one side of the post, said holding unit being telescopic and including means normally preventing telescopic adjustment thereof.

13. A jack for sheet building material, including a lift post, means mounting the post for vertical movement, a sheet supporting head frame, said frame including a cross member, means pivoting said cross member intermediate its ends in connection with the upper end portion of the lift post for tilting movement in a vertical plane, and other means pivotally connecting said cross member at its ends in connection with the remainder of the head frame for tilting movement of the latter in a vertical plane at a right angle to said first named plane.

14. A jack for sheet building material, including a lift post, means mounting the post for vertical movement, a sheet supporting head frame, said frame including a cross member, means pivoting said cross member intermediate its ends in connection with the upper end portion of the lift post for tilting movement in a vertical plane, and other means pivotally connecting said cross member at its ends in connection with the remainder of the head frame for tilting movement of the latter in a vertical plane at a right angle to said first named plane, said other means comprising friction disc units.

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