Oct. 2, 1956 C. E. PHILLIPS 2,765,201

CEILING JACKS

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Fig. 1

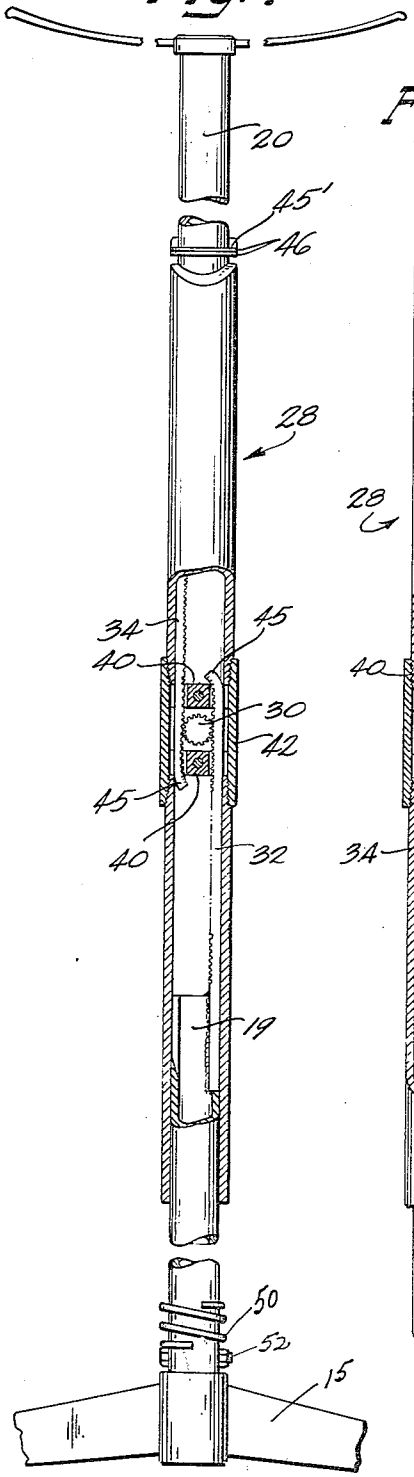


Fig. 2

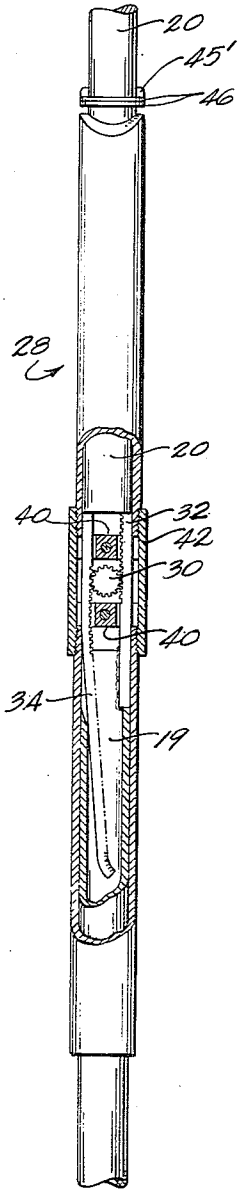
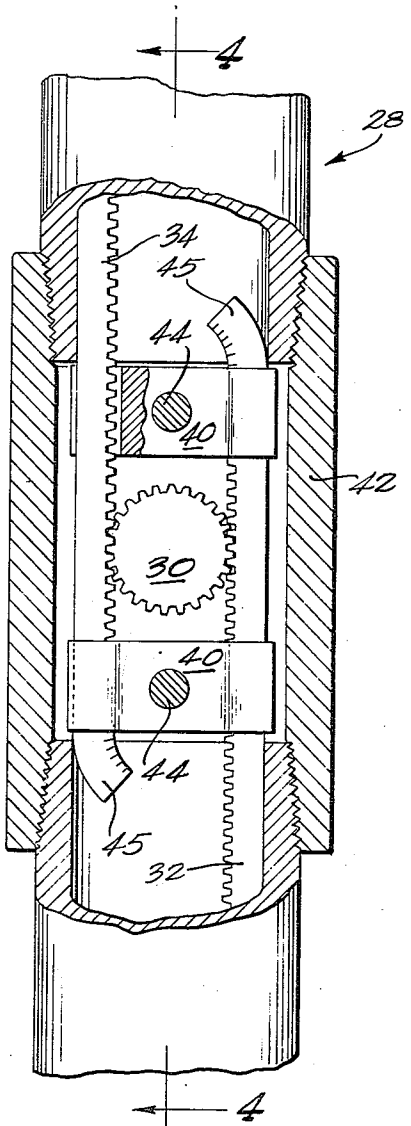


Fig. 3



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Fig. 4

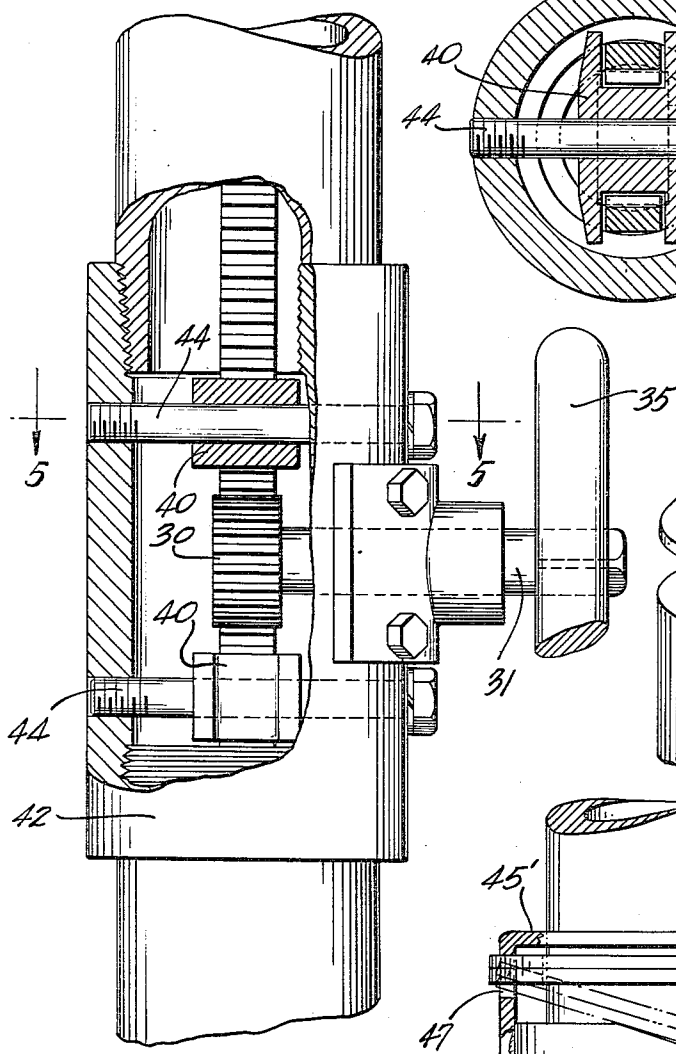


Fig. 5

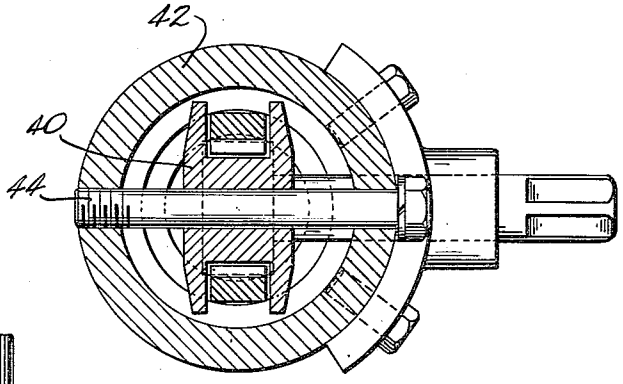
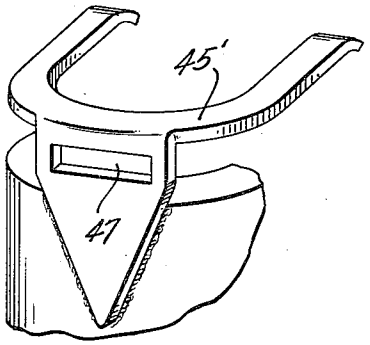


Fig. 6



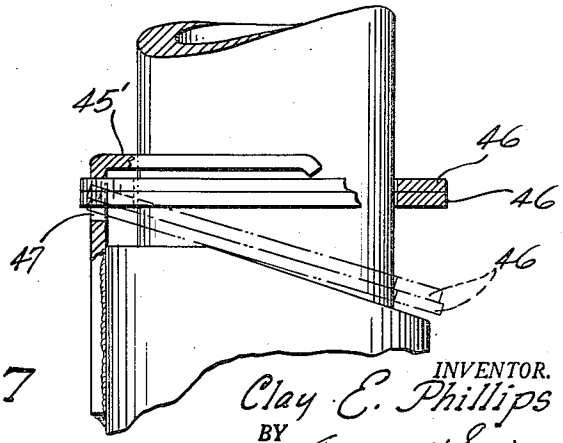


Fig. 7

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Fig. 8

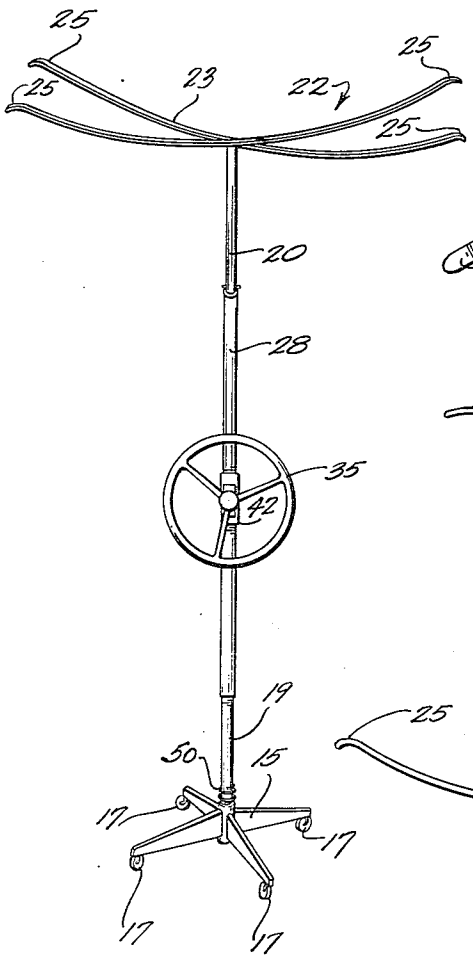


Fig. 9

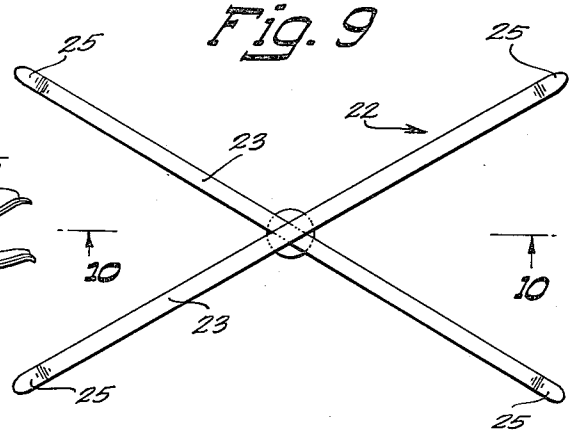


Fig. 10

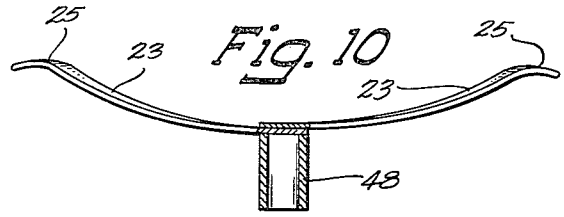




Fig. 11

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CEILING JACKS

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Application March 16, 1953, Serial No. 342,478

2 Claims. (Cl. 304—29)

This invention relates to supports and more particularly to a ceiling jack adapted to raise and support a section of gypsum board, or the like, against ceiling joists during construction.

Gypsum boards for ceilings or walls are usually made in sizes up to four by twelve foot panels and are approximately one-half to three quarters of an inch in thickness. A board of such dimension is entirely too heavy for one man to hold against a ceiling and at the same time drive nails to secure the board to ceiling joists. The present invention contemplates a ceiling jack which will enable a single workman to raise and support a section of gypsum board, or the like, against the ceiling and secure it in that position by nailing.

An object of the present invention is to provide a ceiling jack that will support a section of gypsum board, or the like, against the ceiling joists during nailing.

Another object is to provide a ceiling jack that will reduce the labor required in securing gypsum board, or the like, to a ceiling.

Another object is to provide a ceiling jack which will insure speedy accurate alinement of the work pieces.

A further object is to provide a ceiling jack that will enable a single worker to raise large panels against a ceiling readily.

A still further object is to provide a ceiling jack that will serve to raise and support a large ceiling panel so that the panel may be secured to the ceiling with a minimum of effort.

Other objects will become apparent from the following specification, which, when taken in conjunction with the accompanying drawings illustrate a preferred embodiment of the invention.

In the drawings:

Fig. 1 shows an elevational view partly in section, of a ceiling jack made in accordance with the present invention and showing the jack in raised position;

Fig. 2 is a view similar to Fig. 1 showing the center portion of the jack in lowered position;

Fig. 3 is an enlarged vertical cross-section showing the operating mechanism for the jack with the jack raised;

Fig. 4 is a cross-section taken on the line 4—4 of Fig. 3, looking in the direction of the arrows;

Fig. 5 is a cross-section taken on the line 5—5 of Fig. 4, looking in the direction of the arrows;

Fig. 6 is a perspective view of the top of the post with a portion of the locking member secured thereto;

Fig. 7 is a side view of the locking member shown in Figs. 1, 2 and 6;

Fig. 8 is a perspective view of the entire jack showing the spring support in place thereon;

Fig. 9 is a top plan view of the spring support, per se;

Fig. 10 is a cross-section taken on the line 10—10 of Fig. 9, looking in the direction of the arrows; and

Fig. 11 is a side elevational view of the supporting spring, per se.

Referring first to Fig. 8, which shows in perspective, the complete ceiling jack, the jack comprises a spider-

like base 15 mounted on casters 17 and supporting a tubular standard 19. An adjustable tubular support 20 is positioned above and in axial alinement with the standard 19 and carries, at its upper end, a resilient spider 22, the spider comprising two or more semi-elliptic spring leaves 23 (Figs. 9, 10 and 11) so as to give support to a panel (not shown) at not less than three, and preferably four points, 25, 25, 25, 25. A tubular sheath 28 envelopes the upper portion of the standard 19 and the lower portion of the support 20. The sheath houses a pinion 30 (Figs. 1–4) which operates racks 32—34 to raise and lower the support 20. The pinion 30 is operated by a wheel or crank 35 (Fig. 8) through an axle 31.

Referring now to Figs. 1–5, inclusive, the standard has the rack 32 welded into a slot in the upper end of the standard, the rack extending upwardly past the center of the sheath 28. Similarly, the racck 34 is secured in a slot in the lower end of the support 20 and extends downwardly past the center of the sheath 28.

The racks 32 and 34 are guided in the sheath 28 by a pair of rack guides 40—40. The guides 40—40 are retained in a sleeve coupler 42 which joins the two halves of the sheath 28—28. The guides 40—40 are held in the coupling by bolts 44—44 which pass across the coupling between its threaded ends.

The ends of the racks 32—34 are bent over as at 45 to prevent the ends of the racks from passing the guides and also to guide the end of the upper rack into the hollow interior of the tubular standard 19, and to guide the end of the lower rack into the hollow interior of the tubular support 20 when the jack is in lowered position.

The sheath 28—28 is made in two parts, joined by the coupler 42 in order to make the jack easy to assemble.

The support 20 is held in elevated position by a stop, the details of which are shown in Figs. 6 and 7. The stop member comprises a U-shaped bracket 45′ fixed to the top of the sheath 28 with the ends of the U lying substantially perpendicular to the axis of the support. A plurality of rings 46, having an inside diameter slightly larger than the outside diameter of the support, surrounds the support and are retained in an aperture 47 in the bracket 45′.

The flexible panel support 22 is made of two semi-elliptical springs 23 secured on the top of a stub post 48. The two springs 23—23 are arranged at an angle to each other in order to give four support points 25 so that the ceiling jack will, of itself, support an entire large panel.

When the stop is released by raising the edge of the rings 46 the weight of the support causes the support to lower automatically spinning the gear 30. When the support is thus allowed to drop the sudden stop at the lower limit of travel of the support would strip the gears, necessitating repairs.

To stop the downward movement of the support, a helical spring 50 (Figs. 1 and 8) is mounted on the standard 19 and retained above the base spider 15 by a nut and bolt 52, so that as the sheath 28 lowers it contacts the spring to bring the jack to a gradual stop.

The stub post 48 is adapted to have a sliding fit within the top of the support 20 so that it may be removed for shipping or packing.

Operation

In operation a ceiling panel such as a large gypsum board panel (not shown) is placed on top of the spring support 22 it being supported at four points 25. At this time the support 20 is in its lowermost position.

To raise the panel the wheel 35 is turned which turns the pinion 30. The pinion 30, being in mesh with both the rack 32 and the rack 34 raises the sheath 28—28 on

the standard **19** and at the same time raises the support **20** with respect to the sheath **28—28** and with respect to the standard **19**, thus raising the panel into position against the ceiling. With the panel in contact with the ceiling, the panel may be adjusted to exact position, after which the crank or wheel **35** may be given an additional turn to cause the resilient spider **23** to press the panel firmly against the ceiling for nailing.

When the support **20** is moving upwardly the discs **46** loosen on the support permitting the support to rise through the discs. When the upward movement of the support **20** stops, however, the discs drop down due to one side being retained in the slot **47** in the bracket and grip the support **20** locking the support in its upper position and preventing the support **20** from lowering.

In this position the panel may be nailed securely to the ceiling without help of other workers.

After the panel is seured in place the crank is turned to raise the support slightly thus loosening the grip of the discs **46** on the support. The discs **46** may then be held up manually and the wheel **35** spun to lower the support **20** to receive the next panel.

The provision of the wheel **35** enables the jack to be shifted readily to any desired position without the necessity of touching the panel itself.

It will be understood that the hereinbefore described form of the invention is to be taken merely as a preferred embodiment thereof and that various changes in size, shape and arrangement of parts may be made without departing from the spirit of the invention or the scope of the subjoined claims.

That which is claimed as new and is desired to be secured by United States Letters Patent is:

1. In a jack of the character described, a base, a tubular standard carried by said base and projecting thereabove, a tubular support member mounted above said standard and co-axial therewith, a sheath enclosing the upper portion of the standard and the lower portion of the support, a rack on said standard projecting upwardly within said sheath toward said support, a second rack on said support extending downwardly within said sheath toward said standard and spaced from said first named rack, co-operating means including camming surfaces between the standard and the racks and between the support and the racks to permit telescoping of the racks past the adjacent ends of the standard and the support, and a pinion carried in said sheath engageable with both said racks to actuate the support.

2. In a jack of the character described, a base, a tubular standard carried by said base and projecting thereabove, a tubular support member mounted above said standard, a sheath enclosing the upper end of said standard and the lower portion of the support, a rack on said standard projecting upwardly within said sheath toward said support and extending in one position thereinto, a second rack on said support extending downwardly within said sheath toward said standard and extending in one position thereinto, said rack being spaced from said first named rack cooperating means including camming surfaces between the standard and the racks and between the support and the racks to permit telescoping of the racks past the adjacent ends of the standard and the support, a pinion carried in said sheath engageable with both said racks to raise the support, means within said sheath to retain the racks in engagement with said pinion, and means to releasably retain the support at its highest point.

References Cited in the file of this patent

UNITED STATES PATENTS

1,121,698	Weiss	Dec. 22, 1914
1,213,800	Piper	Jan. 23, 1917
1,486,797	Piper	Mar. 11, 1924
1,762,397	Kinser	June 10, 1930
1,879,865	Wright	Sept. 27, 1932
2,648,160	Benson	Apr. 26, 1949

FOREIGN PATENTS

10,350	Great Britain	1893
530,505	Great Britain	Dec. 12, 1940