Aug. 29, 1950 D. LIGHT ET AL 2,520,686

JACK

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Fig. 1.

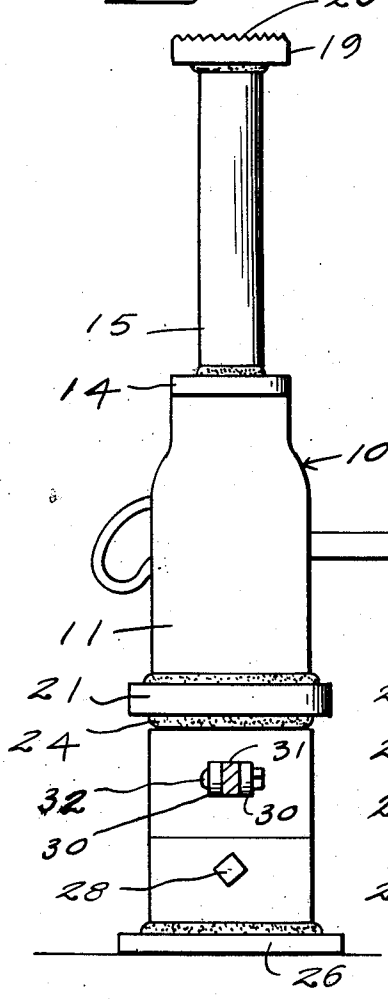



Fig. 2.

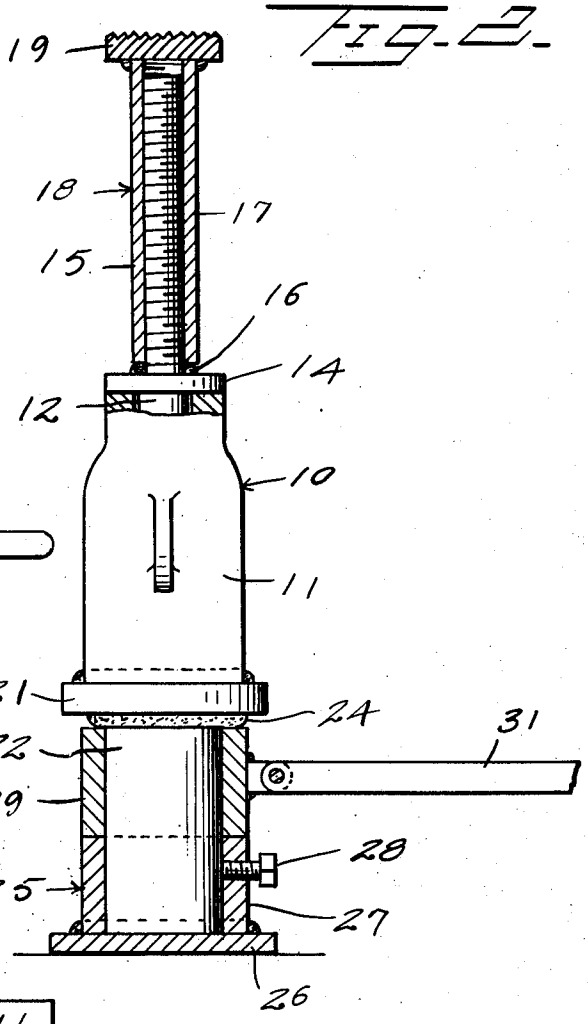
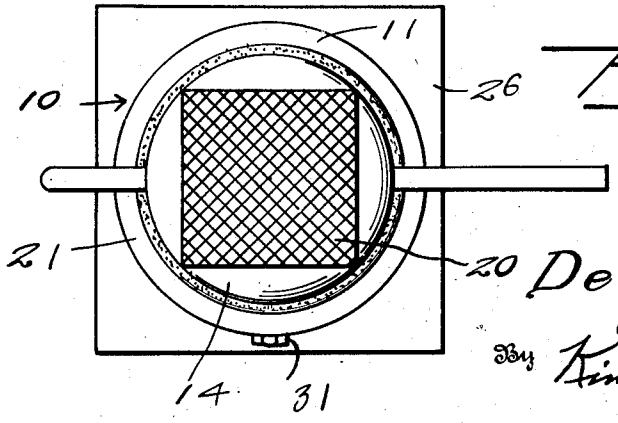



Fig. 3.




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## JACK

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3 Claims. (Cl. 248—354)

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This invention relates to jacks, and more particularly to an extensible jack for use in coal mines and the like.

It is an object of this invention to provide an improved jack for use in supporting troughs used for conveying coal to the mine trucks. The jacks used in this work are moved about with the troughs four or five times a day as the miner progresses or changes his location in the mine. The work is done in restricted areas where it is difficult to make the necessary adjustments for supporting the troughs. With the use of the jacks presently used for this purpose it takes three or four men from fifteen to twenty minutes to set the jacks and we have found that by using a jack constructed according to this invention, one man can do the necessary work in about two minutes, thus saving about an hour a day for a four man crew of miners.

Another object of this invention is to provide an improved jack of the kind to be more particularly described hereinafter in which an approximate adjustment may be made before the jack is fixed in place so that a minimum amount of actual jacking will be required to set the jack in place.

With the above and other objects in view, our invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a side elevation, partly broken away and partly in section, of an improved mine trough supporting jack constructed according to an embodiment of our invention,

Figure 2 is a side elevation, partly broken away and partly in section,

Figure 3 is a top plan view.

Referring to the drawing, the numeral 10 designates generally a jack used in coal mines and the like for supporting the troughs on which the material is deposited immediately after it is removed from the mine. The troughs with which the jacks 10 are to be used are changed in their position in the mines as frequently as four or five times a day, and it is necessary to lower the supporting jacks each time the trough is moved. There are a number of jacks presently used for this work which require the labor of four or five men for nearly half an hour each time it is desired to lower the jacks and set up the trough in a different position.

The jack 10 of this invention is designed to be operated by one man in a shorter period of time

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so that more time may be used for actual mining. The jack 10 is formed of a casing 11 within which a jack shaft 12 is disposed. The jack shaft 12 is raised and lowered within the casing 11 by any suitable conventional means. In jacks for this work, usually gears and threaded bolts are used for actuating the jack shaft 12.

A head 14 is fixed to or formed on the upper end of the jack shaft 12. A threaded bolt 15 is fixed on the upper side of the head 14 by welding 16, or other suitable fastening means. The bolt 15 is substantially coaxial and concentric with the jack shaft 12.

A tubular sleeve 17, having internal threads, is threadably engaged about the bolt 15 to provide an upper extension member 18 for the jack shaft 12. A head or pad 19 is fixed on the upper end of the sleeve or tubular member 17. The upper side of the head 19 is knurled as at 20, to provide a friction surface for supporting the jack. The tubular member 17 is adapted to be adjusted by rotation about the bolt 15 to an approximate adjustment so that the jack 10 may be disposed in its desired place in such a manner that only a small amount of geared jacking is required.

A reinforcing band or sleeve 21 is fixed about the lower end of the casing 11. The casing 11 is of a conventional construction for jacks and as the jack for mining purposes is subjected to increased vertical loads, the reinforcing band 21 will sufficiently reinforce the casing.

A downwardly extending cylindrical lug 22 is fixed on the lower end of the casing 11 by welding 24 or other suitable fastening means. The lug 22 is concentric to the annular casing 11 and coaxial with the bolt 15 and jack shaft 12. A base 25 is provided for the jack 10 and is formed of a lower horizontal plate 26 having a cylindrical or tubular member 27 fixed on the upper surface thereof. The lower end of the cylindrical lug 22 is adapted to engage within the cylindrical member 27 so that it may be rotated to a desired position.

A set screw 28 engages through the walls of the member 27 and abuttingly engages the outer side wall of the lug 22 for securing the lug and jack 10 in selected rotated position. A sleeve 29 is disposed about the lug 22 between the upper end of the member 27 and the lower end of the casing 11. The member 29 is free for rotation about the lug 22.

A pair of outwardly extending arms 30 are fixed on one side of the member 29 and a trough supporting rod or shaft 31 is pivotally engaged therebetween. A pivot pin or bolt 32 engages be-

tween the horizontally spaced apart arms 30 and through one end of the shaft 31. The other end of the shaft 31 is adapted to be rockably connected to the trough, although this is not shown in the drawing.

In the use and operation of this jack 10, the extension member 18 may be adjusted to the approximate dimensions of the opening within which the the jack 10 is to be engaged. When the jack and trough supporting arm 31 are set in position only a small amount of movement of the jack shaft 12 is required for fixedly securing the jack 10 in place. The necessary rotation of the jack 10 relative to the trough may be readily accomplished by rotating the jack within the cylindrical sleeve 29 so that the actuating means for the jack shaft 12 may be disposed in a readily accessible position.

We do not mean to confine ourselves to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

Having thus described our invention, what we claim is:

1. An improved jack comprising a casing, an extensible jack member in said casing, a threaded bolt carried by said extensible member, a tubular jack extension on said extensible member threadable on said bolt, a tubular supporting base, a jack supporting bearing member on the bottom of said casing engaging in said base, means adjustably securing said bearing member engaging the upper edge of said base in said base, and a rotatable collar about said bearing member between said base and said casing.

2. An improved mine trough supporting jack



comprising a jack, an extensible member in said jack, an adjustable extension member carried by said extensible member, a tubular base, a depending jack supporting member on said casing engaging in said base, a collar rotatably carried by said supporting member, and a trough engaging arm rockably connected to said collar.

3. An improved mine trough supporting jack comprising a casing, a jack shaft extensibly carried by said casing, a threaded bolt carried by said jack shaft, a sleeve threadably engaging said bolt above said casing, a head on the upper end of said sleeve, a cylindrical supporting shaft fixed on the lower end of said casing, a base including a lower ground engaging plate, a tubular vertically extending jack supporting member on said plate, said supporting shaft engaging in said tubular member, a sleeve rotatable about said supporting shaft between said base and said casing, means securing said sleeve in a selected adjusted position on said shaft and a trough engaging member pivotally mounted on said latter sleeve.

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## REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| Re. 21,349 | Jarrett | Feb. 13, 1940 |
| 2,239,578 | Sloane | Apr. 22, 1941 |
| 2,270,778 | Bebinger | Jan. 20, 1942 |