(No Model.) 2 Sheets—Sheet 1.

J. BARRETT.

RACK FOR OIL WELL JACKS.

No. 574,056. Patented Dec. 29, 1896.

Fig. 1.

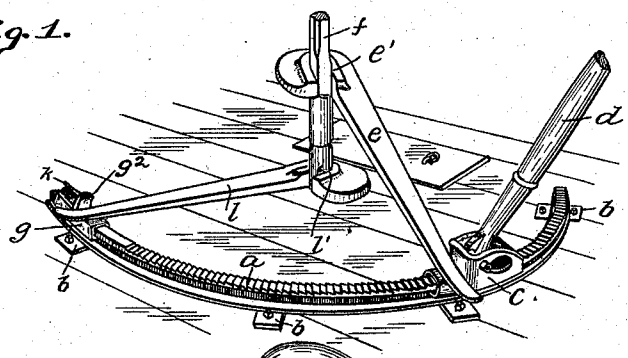


Fig. 2.

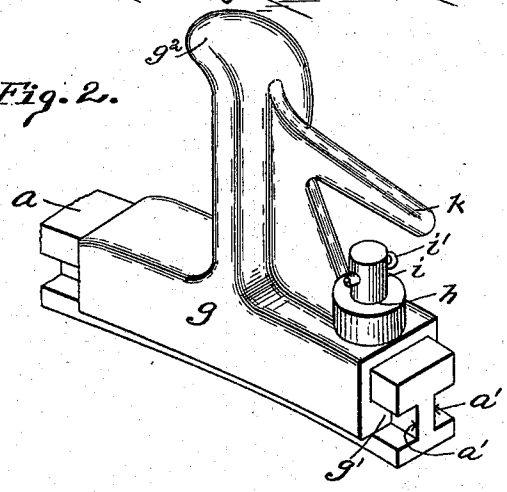
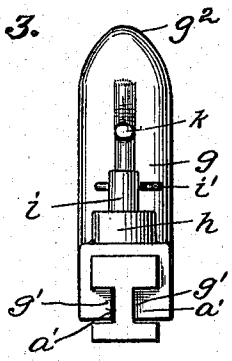


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

J. BARRETT.

RACK FOR OIL WELL JACKS.

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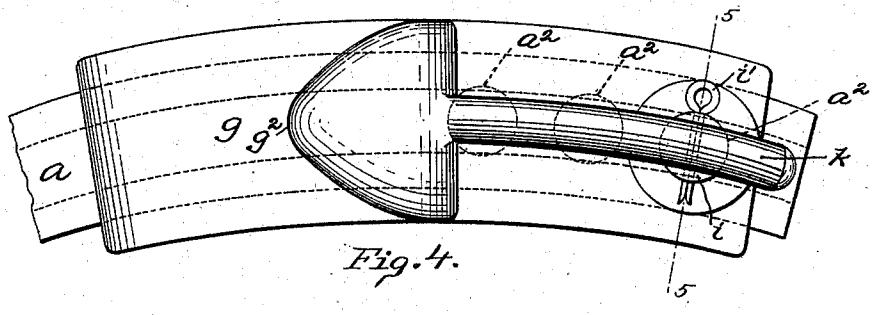

Fig. 4.

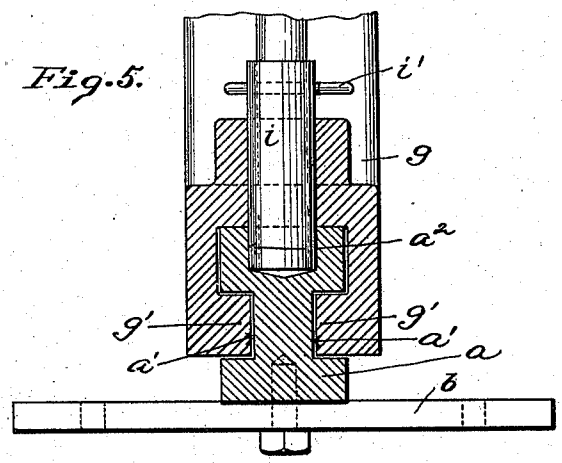

Fig. 5.

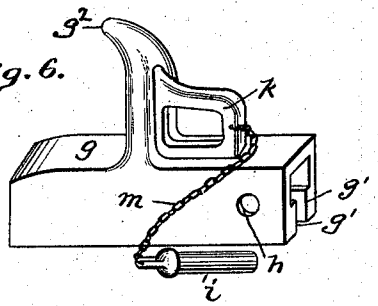

Fig. 6.

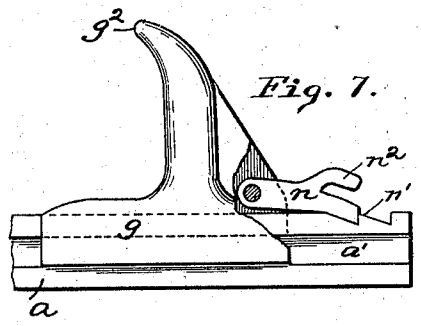

Fig. 7.

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UNITED STATES PATENT OFFICE.

JOSIAH BARRETT, OF BELLEVUE, PENNSYLVANIA.

RACK FOR OIL-WELL JACKS.

SPECIFICATION forming part of Letters Patent No. 574,056, dated December 29, 1896.

Application filed June 4, 1896. Serial No. 594,232. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH BARRETT, a resident of Bellevue, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Racks for Oil-Well Jacks; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to rack-bars for oil-well jacks.

The form of oil-well jack to which my invention applies is that which consists of a rack-bar preferably curved, having a carriage engaging therewith, and mechanism arranged to engage said rack-bar and move the carriage with step-by-step motion, together with a stationary wrench and a movable wrench adapted to engage the drill-rod, the outer end of the stationary wrench abutting against a suitable pin on the rack-bar. In this form of jack as heretofore constructed ordinarily the wrench-pin, against which the outer end of the stationary wrench abuts, passed through an opening in the end of the rack-bar and down through the floor of the drilling-platform. As there is considerable strain brought to bear on this wrench-pin in the operation of the jack in coupling or uncoupling the drill-rod, the lower end of said pin, on account of the leverage exerted by it, is liable to cut into the wood of the floor and act to loosen the rack-bar which is bolted down to said floor. In one form of these jacks this wrench-pin passes down through two plates which are bolted to the end of the rack-bar, and when great strain is brought upon said pin said plates are liable to be loosened or displaced in the operation of the jack.

The object of my invention is to provide a rack-bar for such jacks with a movable abutment thereon, against which the outer end of the stationary wrench rests, which can be readily removed from the rack-bar or applied thereto, and which will relieve the strain on the rack-bar, as well as the wear and tear upon the floor of the drilling-platform.

To these ends my invention comprises, generally stated, a curved rack-bar for oil-well jacks, having a carriage mounted thereon, and mechanism for moving said carriage over said rack-bar in a step-by-step movement, a sliding abutment at one end of said rack-bar, against which the immovable wrench-bar rests, and mechanism for locking said sliding abutment in place on said rack-bar.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of an oil-well jack with my invention applied thereto. Fig. 2 is an enlarged detail view of one end of my improved rack-bar. Fig. 3 is an end view of my improved rack-bar. Fig. 4 is a plan view thereof. Fig. 5 is a section on the line 5 5, Fig. 4. Figs. 6 and 7 are modified forms of my invention.

Like letters indicate like parts in each of the figures.

The oil-well jack illustrated in the drawings is one to which my invention may be conveniently applied; and it consists of the curved or segmental rack-bar *a*, which is I-shaped in cross-section and which has the plates *b* secured to the bottom flange thereof, by means of which said rack-bar is bolted down to the floor of the drilling-platform. These plates may be arranged at suitable intervals on said rack-bar.

Mounted on the rack-bar and adapted to travel thereon is the carriage *c*, which carries certain mechanism for providing for the movement of said carriage over said rack-bar, said mechanism forming no part of this invention and accordingly is not illustrated in detail. The carriage is operated by means of the lever *d*. A movable wrench *e* has the jaw *e'* at its inner end adapted to engage with the drill-rod *f*, the outer end of said movable wrench being adapted to rest against the front end of the carriage *c*. Mounted on the outer end of the rack-bar *a* is the sliding abutment *g*, said abutment having the inwardly-projecting ledges *g'*, adapted to engage with the grooves *a'* of the rack-bar, whereby said abutment is adapted to slide readily to and fro on said rack-bar. The outer end of said rack-bar *a* has a smooth upper face free from teeth and there is nothing to interfere with the ready movement of the sliding abutment thereon.

The sliding abutment *g* has the seat *h* formed therein adapted to receive the pin *i*.

The rack-bar a has the recesses a^2 formed at suitable intervals therein, and when the seat h is brought into coincidence with one of said recesses a^2 the pin i will drop into one of said openings a^2 and lock the sliding abutment g in position at that point. The pin i has the pintle i' at its upper end to prevent said pin i from falling from the seat h. This pintle i' also serves as a handle which may be grasped by the operator in raising said pin to unlock the abutment to remove the same or to change its position upon the rack-bar.

The sliding abutment is provided with the handle k for convenience in sliding the same, and said handle projects back over the pin i, so that it prevents the removal of the pin from the seat h, as upon the raising of said pin i the top thereof will strike against the handle k and prevent its being withdrawn from its seat. In this way the pin is always connected securely to the sliding abutment, so that it is not liable to drop out and become lost. The pintle i' prevents the pin i from dropping from its seat when the sliding abutment is removed from the rack-bar.

The upper end of the sliding abutment g has the tongue g^2, which tends to prevent the end of the wrench from disengaging itself from the said abutment. The letter l designates the stationary wrench, which has the jaw l', adapted to engage with the drill-rod, the outer end of said stationary wrench resting against the abutment g.

I do not limit myself to the exact construction shown for locking the sliding abutment to the rack-bar, and accordingly in Figs. 6 and 7 I have shown other ways of locking the sliding abutment to the rack-bar.

In Fig. 6 the seat h is formed in the sides of the sliding abutment, and the recesses a^2 in the rack-bar are formed in the side of said rack-bar. A chain m or like connection secured to the handle k and to the pin i acts to attach the pin to said sliding abutment.

In Fig. 7 I have illustrated a pawl n, pivoted to the sliding abutment and adapted to engage with a tooth n', formed in the upper face of the rack-bar. The pawl has the handle n^2 formed thereon, by means of which the pawl may be disengaged from said rack-bar to allow for the removal of the sliding abutment.

There are other forms in which my invention may be embodied which I have not deemed it necessary to illustrate.

In practice when it is desired to couple or uncouple the drilling-rod the several parts are arranged as shown in Fig. 1, the stationary wrench l having its outer end in engagement with the abutment g. It is apparent that when the operation of coupling or uncoupling begins the abutment g forms a firm support for the wrench l, while at the same time it relieves the strain upon the rack-bar. There is no leverage, as in the case where a wrench-pin passes down through the rack-bar and through the floor, to act to displace the rack-bar and loosen its hold upon the floor. All the strain that is brought to bear upon the bolts which hold the rack-bar to the floor is that force which the operator applies to move the carriage over the rack-bar, and that is not sufficient to displace the rack-bar.

The sliding abutment which forms my invention is one that can be conveniently handled and readily removed or applied, as may be desired.

The abutment may be readily slipped from the rack when not in use and can be set at one side out of the way of the drillers. As the available space around the drilling-hole for the movements of the drillers is very small the removal of an obstruction which would be in their way is of great advantage.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, and locking mechanism for holding said abutment in place, substantially as set forth.

2. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, a locking member on said sliding abutment, and a recess formed in said rack-bar with which said locking member engages, substantially as set forth.

3. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests having a seat therein, a pin engaging said seat, said rack-bar having a recess formed therein with which said pin engages, substantially as set forth.

4. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests having a seat therein, a pin in said seat, and a handle on said sliding abutment in line with said pin, said rack-bar having a recess therein adapted to receive said pin, substantially as set forth.

5. In an oil-well jack, the combination with a rack-bar having grooves in the sides thereof and having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, said sliding abutment having inwardly-projecting ledges adapted to engage said grooves, and locking mechanism for securing said sliding abutment to said rack-bar, substantially as set forth.

6. In an oil-well jack, the combination with a rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, said sliding abutment having a seat therein, a pin engaging said seat, said pin having a pintle at the upper end thereof and said rack-bar having a recess adapted to receive said pin, substantially as set forth.

In testimony whereof I, the said JOSIAH BARRETT, have hereunto set my hand.

JOSIAH BARRETT.

Witnesses:
ROBT. D. TOTTEN,
ROBERT C. TOTTEN.