(No Model.)

M. VAN BUREN BARRON.

POWER JACK.

No. 287,792. Patented Nov. 6, 1883.

Fig. 3.

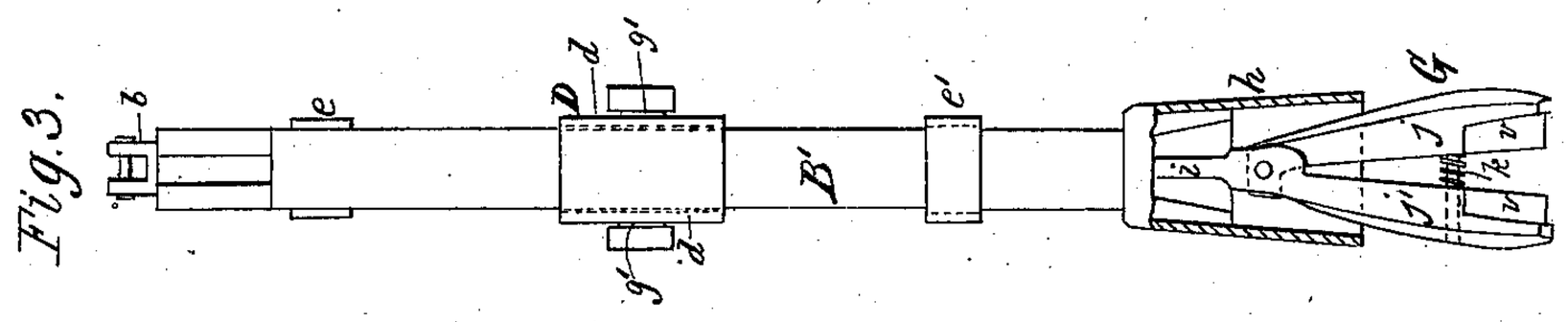


Fig. 5.

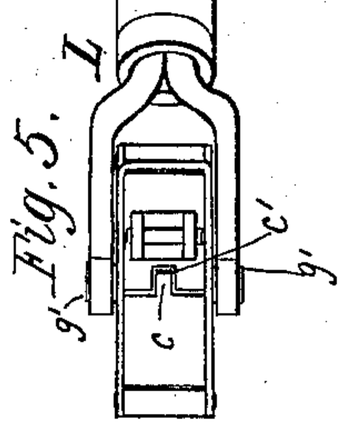


Fig. 4.

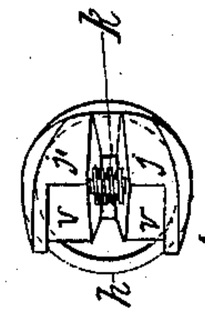


Fig. 6.

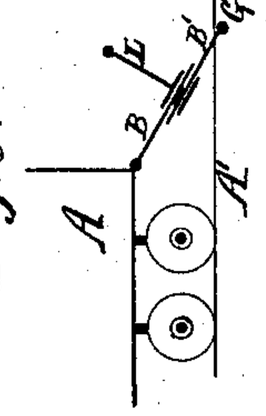
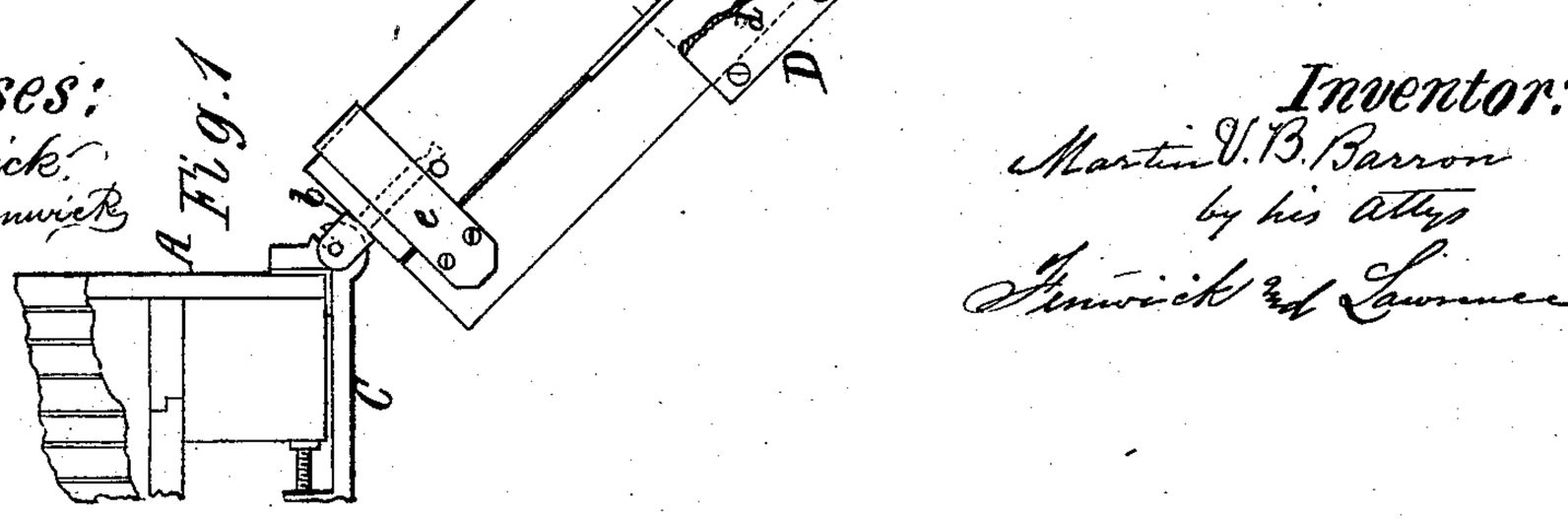


Fig. 2.

Fig. 1.



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UNITED STATES PATENT OFFICE.

MARTIN VAN BUREN BARRON, OF EAU CLAIRE, WISCONSIN.

POWER-JACK.

SPECIFICATION forming part of Letters Patent No. 287,792, dated November 6, 1883.

Application filed May 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, MARTIN VAN BUREN BARRON, a citizen of the United States, residing at Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented a new and improved power-jack for moving railroad cars on their tracks, and for moving other heavy bodies; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings and letters of reference marked thereon, forming a part of this my specification of said invention, in which drawings—

Figure 1 is a side view of my improved power-jack represented as having its lower end applied to a railroad-track and its upper end to an object to be moved, the several parts of the jack being in their normal position preparatory to applying power to move the object with which the upper end of the jack is connected. Fig. 2 is a central longitudinal section of the jack represented in side view in Fig. 1, and with the operating-lever handle of the jack moved from its position shown in solid lines in Fig. 2 to its position shown in dotted lines, and with the main bars of the jack moved along upon each other from their position shown in Fig. 1 to their position shown in Fig. 2, so as to accord with the movement of the lever-handle from its position shown in solid lines in Fig. 2 to its position shown in dotted lines in Fig. 2. Fig. 3 is a front elevation of the jack, its lower cone-shell end being represented partly in section, in order to expose in position the clamping-jaws of the jack. Fig. 4 is an inverted plan view of the lower end of the jack, and Fig. 5 is a plan view of the top of the jack, and Fig. 6 is a diagram indicating the jack applied to move a car upon a railroad-track.

In Figs. 1 and 2, A indicates a portion of a body to be moved, which, for example, may be a part of a railroad-car supported upon wheels, which rest upon the track A′, to which the lower end of the jack is applied.

B indicates the sliding bar of the jack, having its upper end provided with a swivel, as *b*, with which connection may be made with a proper clamp, as C, applied to the object A to be moved.

B′ indicates a bar upon which the bar B slides in a longitudinal direction during the operation of the jack, a portion of the length of each of the bars being made with a tongue, *c*, to travel in a groove, *c′*, of its fellow bar, thereby imparting to each other steadiness of action when in operation.

D is an inclosing-band of the bars B B′, its two sides *d d* being composed of metal, while the end pieces may be of wood or iron, and the same held together by screws or bolts, as signified in Fig. 1. This band D is made to fit around the bars B and B′, so as to hold the bars in working juxtaposition, and yet slide up and down upon the bar B′, while at the same time the bar B is made to slide up and down through the band D when the jack is operated. Bands *e e′*, applied as shown, also serve to hold the bars B B′ in working juxtaposition, while they also permit of the longitudinal movement of the bars. About central of the length of the bars B B′ a portion of each is cut away, as shown, to receive a rack, as *f f′*, and a pinion, *g*, the teeth of the pinion being made to engage with the teeth of each rack, as clearly indicated in Fig. 2. The pinion *g* is fixedly keyed upon its shaft *g′*, which centrally passes through the band D, and has a bearing in each of the sides *d* of said band, the ends of the shaft being made square, to fit into the square-formed eyes of a hand-lever, L, applied to the shaft, as shown. It will thus be seen that the hand-lever L has for its fulcrum the shaft *g′* of the pinion-wheel *g*, and that said shaft has its bearings on the metal sides *d d* of the loose band D, which surrounds the bars B B′, so that when the lever is moved upward from its normal position shown in Fig. 1 a distance as shown in solid lines in Fig. 2 the cogs of the pinion *g* will travel up over the rack *f′* of the bar B′ just in accord with the elevation of the lever L, while at the same time the cogs of the pinion engaging with the rack *f* of the bar B will force the bar B upward a corresponding distance. In other words, the band D is made to travel up and down upon the bar B′ by the up and down movements of the lever L, and as the pinion *g* has its bearings in the band D it travels up and down coincident with the

band, and hence the shaft g' of the pinion becomes a traveling fulcrum for the hand-lever L, and by this means a given throw of the hand-lever will cause the bar B to move double the distance it would travel were it operated by a pinion having but one given position or operating always in the same horizontal plane.

As shown in the figures, the lower end of the bar B′ terminates in a hollow conical portion, *h*, the same being made tapering or cone form, for a reason which will hereinafter appear, and internally from its lower end the bar B′ is bored out, as shown, in order to receive the shank *i* of a gripper, G. The gripper G is composed of two metal jaws, *j j′*, one of which, *j′*, is integral with the shank *i*, while the other is made separate, and the two hinged together, as shown. As indicated in Fig. 3, a pin is seated in the jaw *j*, around which is a coil-spring, *k*, which serves to keep the jaws spread apart, as shown in said figure, when the jaws are not in action. Opposite this pin, as shown in dotted lines, the jaw *j′* is perforated, so that the pin may enter the perforation when the jaws are closed and the spring compressed. The jaws at their outer sides have a bulging or tapered form, as shown, so that when the cone-piece *h* is pressed down upon their tapering surfaces the jaws will be forced together, and thus grip the rail A′ when placed thereon, as indicated in Figs. 1 and 2. As shown in Fig. 3, a portion of the jaws *j j′* is cut away, so as to leave a plane surface, as at *v v*, to suitably rest upon the rail A′ when the jack is in use, as indicated in Figs. 1 and 2. A screw-nut, *r*, upon the shank *i* of the gripper G limits the upward thrust of the gripper, while a pin, *r′*, passed through the bar B′, prevents the gripper from falling out of connection with said bar, and the gripper thus held in position is capable of swiveling around as occasion may require—that is to say, local circumstances might be such as to require the hand-lever L to be operated either above or below, or either at the right or the left hand side of the jack—and to provide for such contingency the bar B is made with a swivel-connection, *b*, while the gripper G on the bar B′ is made to swivel also.

Having applied the jack, for example, as signified in Fig. 1, with the gripper G astride the rail A′, the machine is ready for operation, to move forward the object A. The operator now commences to raise the lever L, which act instantly forces down the bar B′, thus forcing the cone-piece *h* down upon the sloping sides of the gripper G, thereby causing its jaws *j j′* to firmly grip the rail A′. The upward movement of the lever L is now continued, the band D travels up the bar B′, the pinion *g* travels up the rack *f*, the pinion *g*, acting upon the rack *f* of the bar B, forces the bar B against the object A, thereby moving the object A until the full limit of the throw of the bar B has been reached, as indicated in dotted lines at A^2. The operator now reverses the movement of the lever L, thus causing the pinion *g* to exert a downward pull upon the bar B, and at the same time draw up the bar B′. The bar B′ being now drawn upwardly, the cone-piece *h* is released from binding contact with the jaws *j j′*, while at the same time the spring *k* forces the jaws out of gripping contact with the rail, and the gripper G is by the continued depression of the lever L automatically dragged along on the rail A′ until the jack has again assumed a position, as shown in Fig. 1, ready to repeat the operation. It will be seen that while the jack is moving the object A from its position shown in solid lines in Fig. 2 to its position shown in dotted lines A^2 the jack will accommodate itself to its varying inclination by the gripper G, swinging on the rail A′, but at the same time without moving longitudinally of the rail.

My improved power-jack may be used for drawing objects together by first expanding the bars B B′ to the limit of their "throw," then attaching the outer ends of the respective bars to the respective objects, and then by the lever L forcing the bars back to their position, as indicated in Fig. 1.

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

1. In a power-jack, two main bars, B B′, each provided with a rack, as at *f f′*, and operated by a moving pinion, which in operation travels bodily in the direction of the length of the bars, substantially as and for the purpose described.

2. A power-jack provided with two main bars, one of which, at its upper end, is provided with a swivel attachment, and the other with a swiveling gripping device at its lower end, substantially as and for the purpose described.

3. In a power-jack, a gripping device which is brought into action by the downward pressure of the the bar to which it is applied, substantially as and for the purpose described.

4. The movable pinion *g*, in combnation with a movable band, D, and toothed bars B B′, substantially as and for the purpose described.

MARTIN VAN BUREN BARRON.

Witnesses:

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