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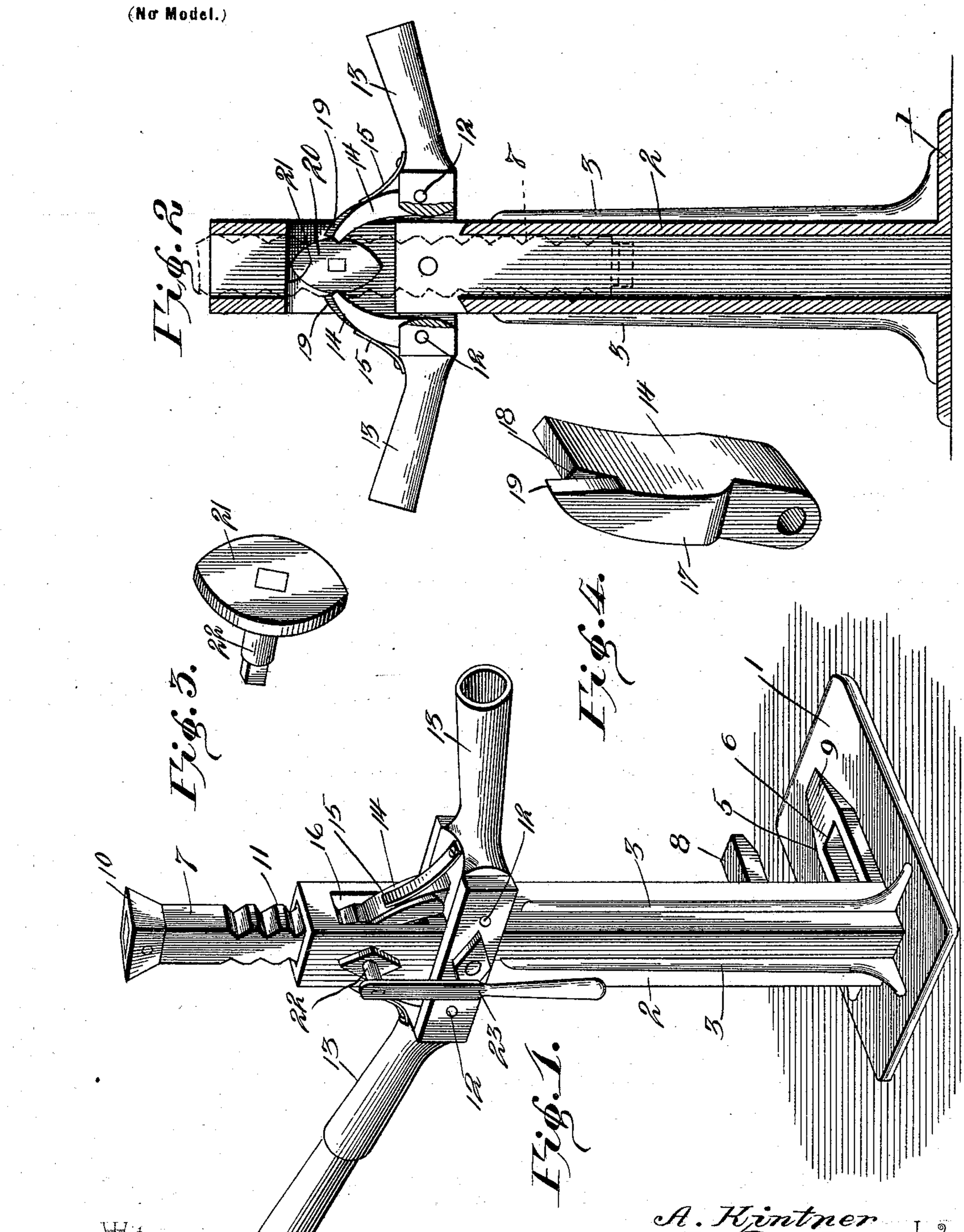
A. KINTNER & D. BONHAM.

TRACK JACK.

(Application filed June 23, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

AMZI KINTNER AND DONA BONHAM, OF RUTLEDGE, MISSOURI.

TRACK-JACK.

SPECIFICATION forming part of Letters Patent No. 637,801, dated November 28, 1899.

Application filed June 23, 1899. Serial No. 721,633. (No model.)

To all whom it may concern:

Be it known that we, AMZI KINTNER and DONA BONHAM, citizens of the United States, residing at Rutledge, in the county of Scotland and State of Missouri, have invented a new and useful Track-Jack, of which the following is a specification.

This invention relates to track-jacks, and particularly to that class in which there is a rocking head carrying hinged dogs or pawls that alternately act upon opposite lines of ratchet-teeth at each side of a vertically-movable staff or lifting-bar.

One of the objects of the invention is to improve the efficiency of devices of this class, and particularly in combining therewith means for throwing the dogs or pawls out of engagement with the ratchet-teeth on the staff or lifting-bar, which is maintained in inoperative position by the gravitation of a connected part or operating device therefor.

A further object of the invention is to position the rocking head at such an angle to the lifting-foot of the staff that when the jack is applied in operative position the hand pikes or bars connected up to the said rocking head will project and work in planes parallel with the track, which prevents the operator from being thrown into the ditch or on the usual slope adjacent a track-bed, and thereby enable him to lift to better advantage.

Additional objects and advantages will appear in the subjoined description; and the invention consists, essentially, of a staff-socket in which a staff is vertically movable and provided with opposite lines of ratchet-teeth and a lower outstanding foot horizontally disposed, a rocking head being pivotally mounted on the staff-socket and having oppositely-extending hand-pikes or bar-sockets and dogs centrally disposed in reverse position and constructed with cam-receiving recesses at one side, with which a disengaging cam of substantially elliptical form coöperates and is held in inoperative position by the gravitation of an operating-handle or analogous device connected thereto.

The invention further consists of the details of construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a track-jack embodying the features of the invention. Fig. 2 is a longitudinal vertical section of the same, looking toward the front and showing the staff in dotted lines therein. Fig. 3 is a detail perspective view of the disengaging or releasing cam. Fig. 4 is a similar view of one of the dogs.

Similar numerals are employed to indicate corresponding parts in the several views.

The numeral 1 designates a base-plate from which rises a staff-socket 2, located near one end, so as to protect the greater portion of the said base-plate and adapt it for disposition under a rail. The staff-socket 2 is strengthened by ribs 3, extending thereover and connecting with the base plate or rest 1, and at one side an elongated slot is formed and opens into a seat 5 on the base plate or rest 1. The opening of the staff-socket 2 extends completely through the base plate or rest 1, and the seat 5 also has a rectangular or other opening 6 therein, which also continues through the said base-plate.

Within the staff-socket a vertically-movable staff or lifting-bar 7 is mounted and has at its lower end a right-angular foot or outstanding projection 8, which is adapted to move through the slot 4 when elevated and to make a flush fitting with the seat 5 when depressed. The outer portion 9 of the seat 5 slopes downwardly at an incline, so as to permit the insertion of the seat under a track-rail to position the outstanding foot or projection 8 in an uplifting relation to the said rail. The staff or lifting-bar 7 is also provided with a head 10, having an upper flat surface that may be conveniently used in jacking up or lifting sills or other structural devices. Opposite edges of the staff or lifting-bar 7 are formed with ratchet-teeth 11, which are in exact alinement in all their parts in a transverse direction or similarly positioned and not in alternation, as in devices heretofore constructed.

On the staff-socket 2, at a suitable point below the upper end thereof, a rocking head 12 is pivotally mounted and has projecting outwardly from opposite ends at upward angles of inclination hand bar or lever sockets 13, which stand in planes at right angles to the plane of projection of the foot 8. The pivot

of the said rocking head is located in a plane coincident with the median line of the base plate or rest 1, so that the entire device will be supported in a stable manner during its operation and not tilted or rocked, as in devices heretofore constructed and having the pivotal point of the rocking head in irregular position. The dogs or pawls 14 are pivotally mounted in the opposite end portions of the rocking head 12, said dogs being arranged directly opposite in reverse positions and held projected inwardly by plate-springs 15, bearing thereagainst and held in immovable connection at their lower ends to the opposite end portions of the rocking head outside of the position of the said dogs or pawls. The dogs or pawls 14 are movable in slots or openings 16 in the upper portions of opposite sides of the socket and take into the teeth 11 of the staff or lifting-bar 7, which are exposed to the said slots or openings. The construction of each of the dogs is clearly shown in Fig. 4, and the main difference of arrangement in the present instance over the form heretofore usually adopted resides in an enlargement 17 on one edge beyond the pivotal point and extending below the biting ends of the dogs. At the outer end of the enlargement a recess 18 is formed, which provides a straight face 19 on the enlargement 17, and these recesses in the opposite dogs are located inwardly in the socket 2, close to the inner surface of one wall, where a substantially elliptical cam 20 is rotatably mounted. The cam 20 is let into a recess 21, so as to free or clear the adjacent side of the staff or lifting-bar 7, and is made fast to the inner end of a spindle 22, having a weighted operating-handle 23 on the outer end thereof, which stands beyond the plane of the adjacent side of the rocking head 12. The weight of the operating-handle 23 is sufficient to overcome the frictional tendency of the spindle 22 and the weight of the cam 20, and when said handle is released or not moved for operating the cam it automatically gravitates and assumes the position shown by Fig. 1, thereby always maintaining the cam in its normal position, as shown in Fig. 2, and clear of contact with the faces 19 of the projections 17, carried by the dogs or pawls 14. The depth of the recesses 18, considered relatively to the transverse axial line drawn through the cam when in normal position, is such that the said dogs will be permitted to have free movement in their lifting function relatively to the staff 7 without causing the said faces 19 to bear upon the opposite curved edges of the cam.

The general contour of the cam and the mode of application thereof to the handle 23 is such that when the cam is turned in either right or left position it will exert an equal outward pressure on the dogs 14 by bearing against the faces 19 of the projections 17, the said projections having sufficient lateral extent to take up the difference of width of opening in the socket 2 at their points of location and due to the recess 21, in which the cam is located. The said faces 19 of the projections 17 always stand in line with the opposite edges of the cam and the thickness of the cam is about or exactly equal to the width of the said faces.

In operation the rocking head 12 is reciprocated on its pivot and the dogs 14 take into the ratchet-teeth 11 on the staff or lifting-bar 7, and the latter is gradually elevated through the staff-socket 2. This movement of the staff or lifting-bar 7 will simultaneously elevate the foot 8, and the said staff being located a greater distance to one side of the central transverse line of the base plate or rest 1 sufficient room is obtained for easily inserting the said base plate or rest under a track-rail to be elevated. When it is desired to lower the staff or lifting-bar, the handle 23 is grasped and the cam 20 turned in either direction, and the opposite curved edges thereof coming in contact with the faces 19 of the enlargement 17 on the dogs 14 simultaneously throws out the latter and releases their biting ends from the teeth 11 on the staff or lifting-bar 7, and thereby permits the latter to drop by gravity in the socket. In placing the jack in relative position to a track-rail it will be understood that the foot 8 should be first completely lowered within its seat 5. The base plate or rest 1 and the seat 5 can then be readily inserted under the rail, and the said foot is regularly raised to effect an elevation of the part desired to be moved. The inclination or bevel of the seat 5 assists in the easy mounting of the base plate or rest 1 under the track-rail to be raised, and it will be observed that as the cross-head is rocked the operating bars or levers will be in a plane at right angles to the said foot, thereby permitting the operators to stand on a level or in such position as to obtain the greatest purchase and apply a greater lifting power to the device than can be obtained in a jack having the cross-head extending in the same direction as the lifting-foot of the staff.

In the operation of the rocking head 12 the inner binding ends of the dogs 14 are held continuously in engagement with the opposite teeth, the one holding while the other is taking a new position, and all the parts are of a form and dimension to produce a strong jack.

It is intended, of course, that the hand bars or levers be disconnected from the sockets 13 when the use of the jack is discontinued or during its transportation from one point to another, and changes in the general proportions, size, and minor details of construction to suit different applications might be resorted to without departing from the nature of the invention or sacrificing any of the advantages incident thereto.

Having thus described the invention, what is claimed as new is—

1. In a track-jack, the combination of a staff-socket, a staff or lifting-bar movably

mounted therein and provided with ratchet-teeth on opposite edges, a rocking head on the staff having opposite dogs pivotally connected thereto and adapted to engage the teeth of the said staff or bar, and a cam interposed between portions of and operable to release said dogs from the staff or bar and having gravitating means for holding it inactive, said cam being also free of contact with any part of the rocking head.

2. In a track-jack, the combination of a staff-socket, a staff movably mounted therein, a rocking head on the staff-socket provided with dogs to engage the said staff, and a double-ended cam interposed between portions of the said dogs and having gravitating means connected thereto for normally holding it inactive, the said cam being free from contact with any part of the rocking head.

3. The combination with a staff-socket having a staff movably mounted therein and provided with opposite teeth, of a rocking head pivotally applied to the said socket and carrying oppositely-positioned dogs having enlargements with outer recesses, a double-ended cam interposed between the recesses of the enlargements of the said dogs, and gravitating means connected to the cam for normally holding the latter inactive.

4. In a track-jack, the combination of a staff-socket having a slot in one side, a staff or lifting-bar movably mounted therein and provided with ratchet-teeth on opposite edges and having its lower terminal formed as a right-angular foot movably projecting through said slot in the socket and extending entirely from one side of the staff, a rocking head movably mounted on said socket and disposed in a plane at right angles to the said foot and also having positively-extending receptive devices for hand bars or levers, and dogs carried by said rocking head and adapted to engage the ratchet-teeth on opposite edges of the staff or lifting-bar.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

AMZI KINTNER.
DONA BONHAM.

Witnesses:
J. W. EDELEN,
C. A. KENOYER.