C. P. WILLIS.

Ratchet Carriage-Jack.

No. 168,312. Patented Sept. 28, 1875.

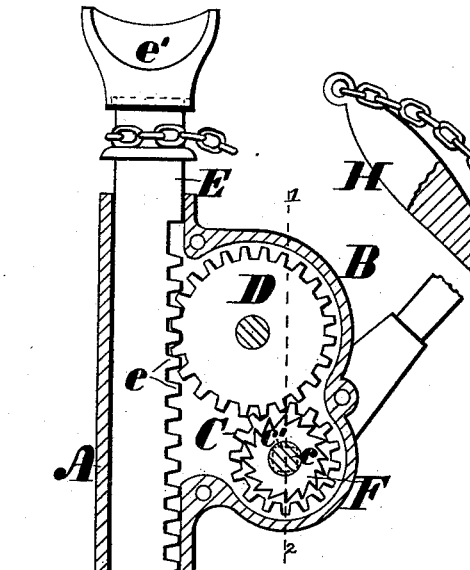

Fig. 2.

Fig. 1.

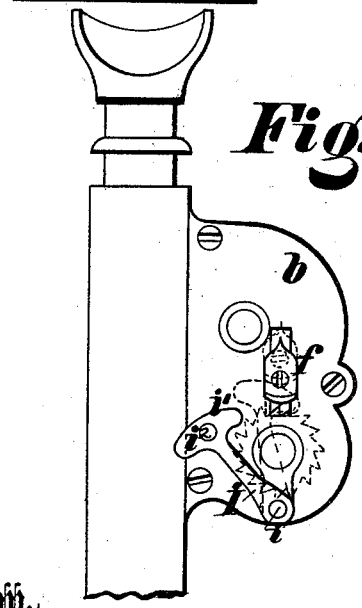

Fig. 3.

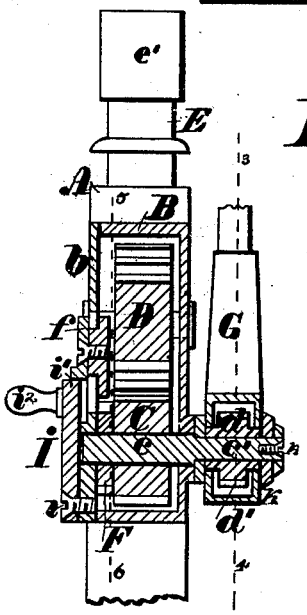

Fig. 4.

Witnesses

Saml. Plan. Stevens

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UNITED STATES PATENT OFFICE.

CHARLES P. WILLIS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN RATCHET CARRIAGE-JACKS.

Specification forming part of Letters Patent No. **168,312**, dated September 28, 1875; application filed September 9, 1875.

To all whom it may concern:

Be it known that I, CHARLES P. WILLIS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ratchet Carriage-Jacks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a vertical longitudinal section on the line 5 and 6. Fig. 2 is a vertical longitudinal section on the line 3 and 4. Fig. 3 is a broken side elevation. Fig. 4 is a vertical transverse section on the line 1 and 2.

My invention consists in the novel construction and combination of parts, as hereinafter fully described.

Referring to the accompanying drawing, A shows a hollow column or post, supported on a base or foot, A′. Said column is cast or formed with an offset or chamber, B, the sides or walls of which afford bearings for two cog-wheels, C, and D, gearing with each other. The cog-wheel D also gears with a rack, *e*, formed on a rod, E, which slides within the column A, and is furnished with a swiveled head, *e′*. F represents a ratchet-wheel fast on the shaft *c* of the wheel C, and *f* a pawl sliding vertically in a slot, *f′*, in one of the sides *b* of the chamber B, and engaging with said ratchet. The opposite end of the shaft *c* is squared, as shown at *c′*, and on this end fits a ring or collar, *d*, having a square opening, so as to turn with said shaft, but not on it. This ring or collar fits in a circular opening in a short lever, G, provided with a spring-pawl, *g*, which engages with teeth *d′* on the periphery of the ring *d*.

By this means, when the lever G is advanced in the direction of the arrow the shaft *c* will be turned, but when moved in the opposite direction it (the lever) will turn upon the ring *d*, and the shaft *c* will not thereby be turned.

H represents a handle, secured by a chain, *h*, to the rod E, and adapted to fit in a socket, *g′*, in the lever G, and serve as a handle for moving the latter. I is a short lever, pivoted at *i* to the side *b*, having a cam-head, i^1, and stud i^2, said lever, when raised to a vertical position, serving to hold the pawl *f* out of engagement with the ratchet-wheel F.

The operation is as follows: The jack being placed in position, the rod E is raised vertically by taking hold of the head *e′* and drawing it up until the said head meets the axle or other article to be lifted. The handle H is then inserted in the socket *g′*, and the lever G reciprocated in the manner customary with ratchet-drills and similar articles, producing a forward motion in the wheels C D, and sliding the rod E upward. When it is desired to lower the rod, or cause it to slide within the column A, the lever I is turned up, so as to hold the pawl *f* out of engagement with the ratchet F. The handle H is then withdrawn from the socket *g′*. The gravity of the rod E will then cause it to slide down in the column A, the wheels C and D, and the lever G on the shaft *c*, revolving backward. To repeat the action the lever I will be turned down, so as to permit the engagement of the pawl *f* with the ratchet F, and the handle H inserted in the socket *g′*, as already described.

The object of making the handle detachable is to permit its withdrawal, so as to prevent it from striking the operator when the rod E is descending.

K represents a washer, and *k* a screw for holding the lever G in position on the shaft *c*.

What I claim as my invention is—

1. In combination with the gear-wheels C and D and sliding rod E, the ratchet-wheel F, fast on the shaft *c* and the pawl *f*, substantially as shown and described.

2. In combination with the sliding pawl *f* and slotted chamber B, the lever I, for holding said pawl out of engagement with the ratchet-wheel F, substantially as shown and described.

3. In combination with the gear-wheel C and ratchet F, the squared-end shaft *c*, ring

d, and ratchet-lever G, substantially as shown and described.

4. In combination with the column A, having the offset B, the gears C D, sliding rod E, having rack *e*, the ratchet-wheel F, with pawl *f*, the levers G and I, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of August, 1875.

CHARLES P. WILLIS.

Witnesses:

JOHN RODGERS,

M. DANL. CONNOLLY.