E. T. CARSWELL.

LIFTING-JACKS.

No. 195,572. Patented Sept. 25, 1877.

Fig 1.

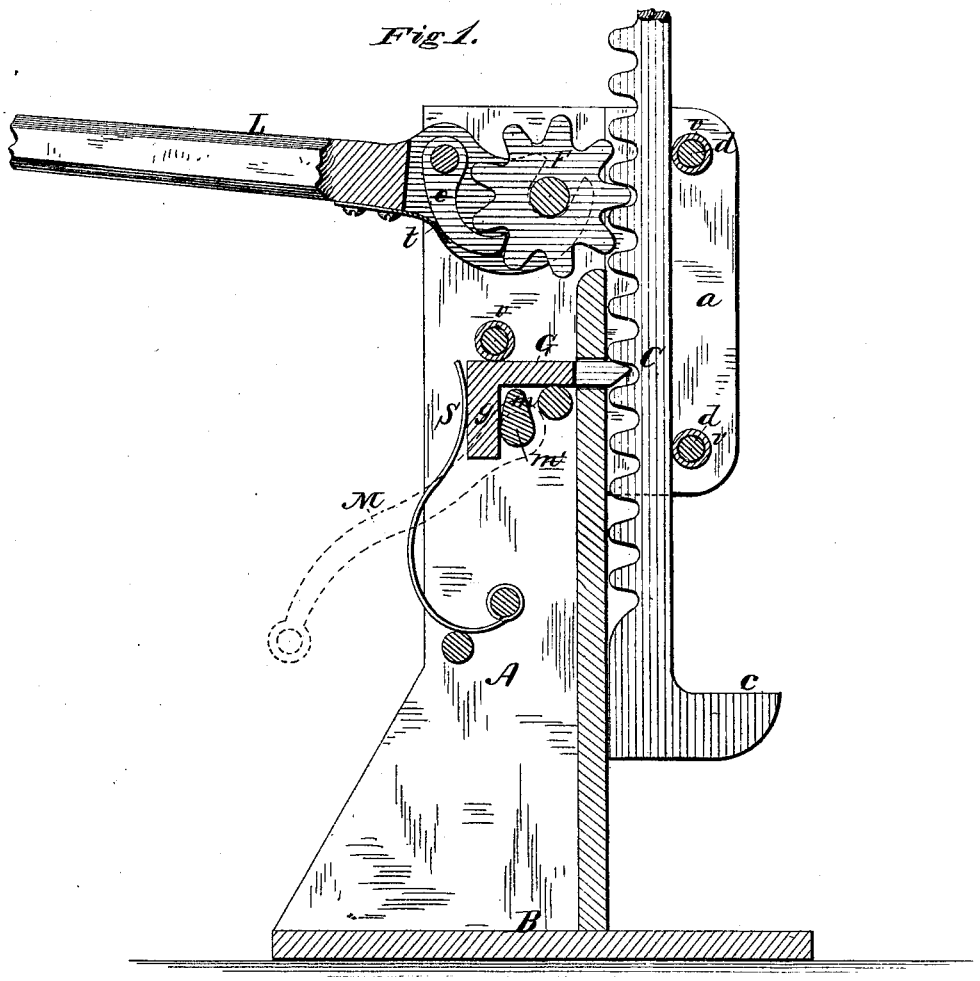
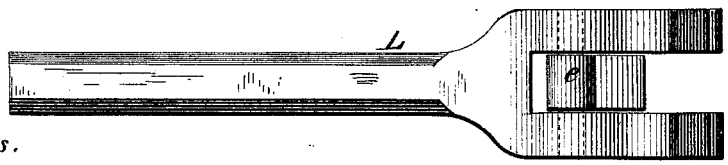


Fig 2.



Witnesses.

Harry King

T. McKenny.

Inventor.

Edwin T. Carswell

By Hill Ellsworth

His Attys.

UNITED STATES PATENT OFFICE.

EDWIN T. CARSWELL, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN LIFTING-JACKS.

Specification forming part of Letters Patent No. **195,572**, dated September 25, 1877; application filed March 17, 1877.

To all whom it may concern:

Be it known that I, EDWIN T. CARSWELL, of Wilmington, in the county of New Castle and State of Delaware, have invented a new and Improved Lifting-Jack; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of the jack, and Fig. 2 is a plan view of the operating-lever.

Similar letters of reference in the accompanying drawings denote the same parts.

The primary object of this invention is to provide for the use of railroad-employés, when repairing the track, a convenient and effective instrument for raising and holding the rails up to the grade while adjusting the ties under them and filling in the road-bed; but the instrument is not confined to this use alone, as it is adapted to many other purposes where materials are to be raised a short distance and held temporarily in their raised position.

The invention consists, first, in the improved stop or pawl, by which the rail can be almost instantly dropped and the instrument disengaged on the sudden approach of a locomotive; secondly, in the employment of a detachable spring-dog lever; and, thirdly, in the general combinations of the parts, as I will now proceed to describe.

In the drawings, A is the frame, which is mounted on a suitable base, B, adapted to rest on the ground between the ties, but not to sink into the road-bed. C is a vertically-sliding rack-bar working between two cheeks or flanges, *a a*, on the face of the frame, and held in place by removable pins *d d*, and provided with a toe or hook, *c*, which engages under and raises and lowers the rail or other article to be operated upon. F is a cog-wheel by the rotation of which the rack-bar is raised; and G is a sliding stop or pawl, beveled on its under side, which, when projected, engages with the rack-bar, and holds it up, or, when withdrawn, releases the rack-bar and allows it to fall.

The pawl G is combined with a spring, S, which tends to project it constantly forward, but with a yielding force, and with an eccentric, *m*, attached to a shaft, *m'*, and operated by a crank or lever, M, which eccentric, or its equivalent, bearing against a flange, *g*, on the pawl, is capable of retracting the pawl at any moment by a movement of the lever or handle.

The wheel F is operated by a removable spring-dog lever, L, the dog of which is shown at *e* and the spring at *t*. When not in use the lever can be removed and the apparatus packed and handled more conveniently. All the bolts against which any of the sliding parts bear may be provided with loose rolling sleeves, as shown at *v v v*, to diminish the friction of the wearing-surfaces.

The practical operation of this improved device is very simple, convenient, and effective. The instrument is placed on the ground, the rack-bar brought up against the side of the rail with the toe underneath it; the lever is then operated, and the rack-bar begins to rise, lifting the rail with it. The upward movement of the rack-bar causes the cog acting on the inclined under edge of the pawl to force the latter back till the cog passes its point, when the spring S thrusts the pawl forward again, causing it to enter between the cog and the next one below it, and prevent the rack-bar with its load from falling, while the handle of lever L is drawn up preparatory to another movement.

In this manner, by alternately raising and depressing the handle of lever L, the rail is lifted to the desired height, where it will be held by the stop G while the workmen adjust the ties and fill in the earth. If, during the operation, a locomotive should suddenly approach and require the track to be cleared, the workman has only to touch the lever M with his hand or foot in order to instantly drop the rail and release the jack therefrom, thus enabling him to remove the jack at a moment's notice and leave a clear track.

During the lifting of the rail the upward progress of the rack-bar from cog to cog will be indicated to the ear by the click of the pawl, and to the eye by the sudden starting of the handle M, as the pawl from time to time is forced into the recesses between the cogs.

The device is very simple in construction

and convenient to handle, and, being of great power, is easily operated by the workmen.

I claim as my invention—

1. In combination with a lifting-jack having the sliding rack-bar and rotating cog-wheel, the detachable and removable spring-pawl lever, substantially as described.

2. The combination of the jack standard or frame, vertical sliding rack-bar, spring-pawl, G, and lever M, connected to the spring-pawl for the purpose of operating it, substantially as described.

3. The combination of the standard, vertically-sliding rack-bar, cog-wheel for operating the rack-bar, lever for operating the cog-wheel, spring-pawl for holding the rack-bar, and lever and eccentric for releasing the spring-pawl, substantially as described.

EDWIN T. CARSWELL.

Witnesses:
MELVILLE CHURCH,
FRANK MCKENNY.