J. HANSELL.

Car-Starter.

No. 206,562. Patented July 30, 1878.

FIG. 1.

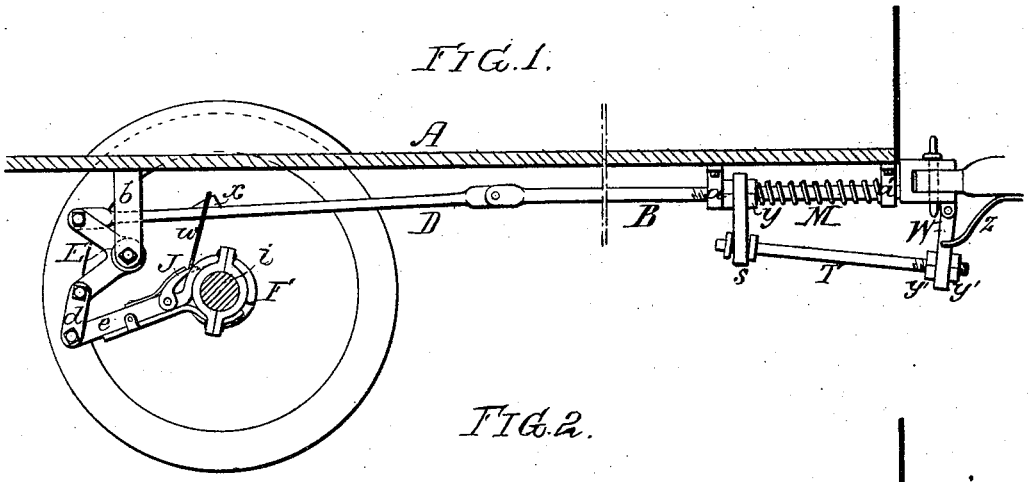


FIG. 2.

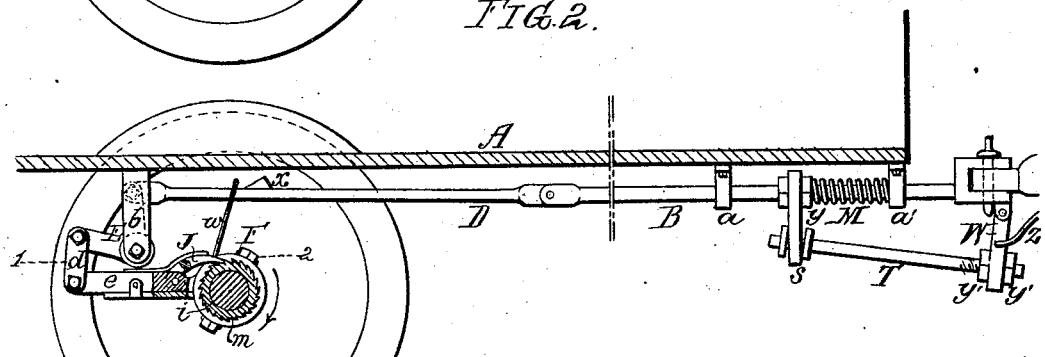


FIG. 3.

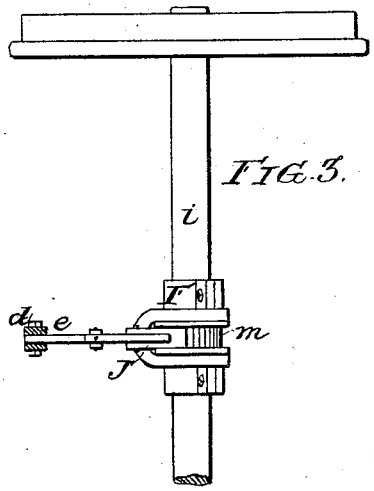
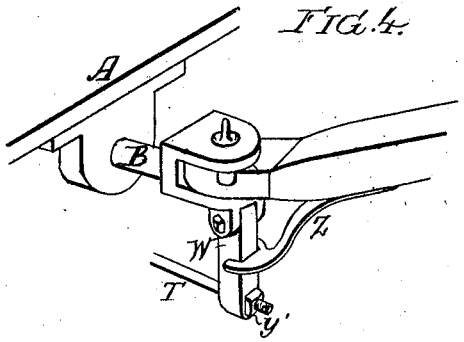


FIG. 4.



Witnesses,
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UNITED STATES PATENT OFFICE.

JACOB HANSELL, OF PHILADELPHIA, PA., ASSIGNOR TO HIMSELF, THOMAS H. KEMBLE, AND JAMES P. McCLINTIC, OF SAME PLACE.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **206,562**, dated July 30, 1878; application filed July 1, 1878.

To all whom it may concern:

Be it known that I, JACOB HANSELL, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Car-Starters, of which the following is a specification:

The object of my invention is to construct a simple and effective device for starting street-cars—an object which I attain in the following manner, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section of sufficient of a street-car truck to illustrate my invention; Fig. 2, the same, with the parts in a different position; Fig. 3, a sectional plan view of Fig. 1 on the line 1 2, and Fig. 4 a perspective view of part of the front end of the truck.

A is part of the main sill or frame of the truck, having on the under side bearings *a a'*, in which is guided a rod, B, forked at the front end for the reception of the usual projection or eye on the pole of the car, to which it is attached by the ordinary bolt.

The rear end of the rod B is connected by means of a link, D, to one arm of a bell-crank lever, E, hung to a bearing, *b*, on the frame A, the other arm of this lever being connected by means of a link, *d*, to the outer end of an arm, *e*, which projects from a frame, F, loosely hung to the front axle, *i*, of the car, and embracing a ratchet-wheel, *m*, the latter being securely keyed to said axle *i*.

To bearings on the frame F is hung a pawl, J, which is provided with a yoke, *w*, the latter extending up over the top of the link D, and, when the parts are in the position shown in Fig. 1, being acted upon by a cam, *x*, on said link, so as to raise the point of the pawl J clear of the teeth of the ratchet.

Between the front bearing, *a'*, and a nut, *y*, on the rod B intervenes a spiral spring, M, the tension of which can be regulated by adjusting said nut *y*.

When a car is standing still the parts are in the position shown in Fig. 1, so that the first effect of the movement of the horses will be to compress the spring M and pull forward the rod B. This will move the link D and withdraw the cam *x* from under the yoke *w*, so that the pawl J will fall into gear with the teeth of the ratchet *m*, and the movement of the bell-crank lever E will effect the raising of the end of the arm *e*, and cause the frame F to be turned, as shown in Fig. 2, the pawl J imparting a corresponding movement to the ratchet *m*, and consequently to the axle *i* and its wheels.

As soon as the spring M has been compressed to, or nearly to, its full extent, the pull upon the rod B is imparted to the bearing *a'*, and thence to the frame A of the truck; but before this takes place the wheels will have been so far turned that the car has commenced to move, so that the heavy drag upon the horses, which results when the dead weight of the car is started by a direct pull, is prevented.

Hung to a bar, S, on the rod B is a rod, T, the front end of which passes through the lower portion of a bar, W, pivoted at the upper end to lugs on the front end of the rod B.

On the under side of the pole of the car is the usual brace *z*, and the lower end of the latter is forked and embraces the bar W.

The rod T has two nuts, *y' y'*, one on each side of the bar W, so that by properly adjusting these nuts the said bar W can be moved forward or backward, thus acting on the pole through the medium of the brace *z*, and elevating or depressing the end of said pole, as desired.

I claim as my invention—

1. The combination of the axle *i* and its ratchet *m*, the frame F, hung to the axle and carrying the pawl J, the bell-crank lever E, the rod B, spring M, and connecting-rod D, all substantially as specified.

2. The combination of the axle and its ratchet, the pawl J and its yoke *w*, the frame F, bell-crank lever E, connecting-rod D, having a cam, *x*, and the spring-rod B, as specified.

3. The combination of the rod T, its nuts *y' y'*, and the hinged arm W with the pole of the car and its brace *z*, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB HANSELL.

Witnesses:

HARRY A. CRAWFORD,

HARRY SMITH.