

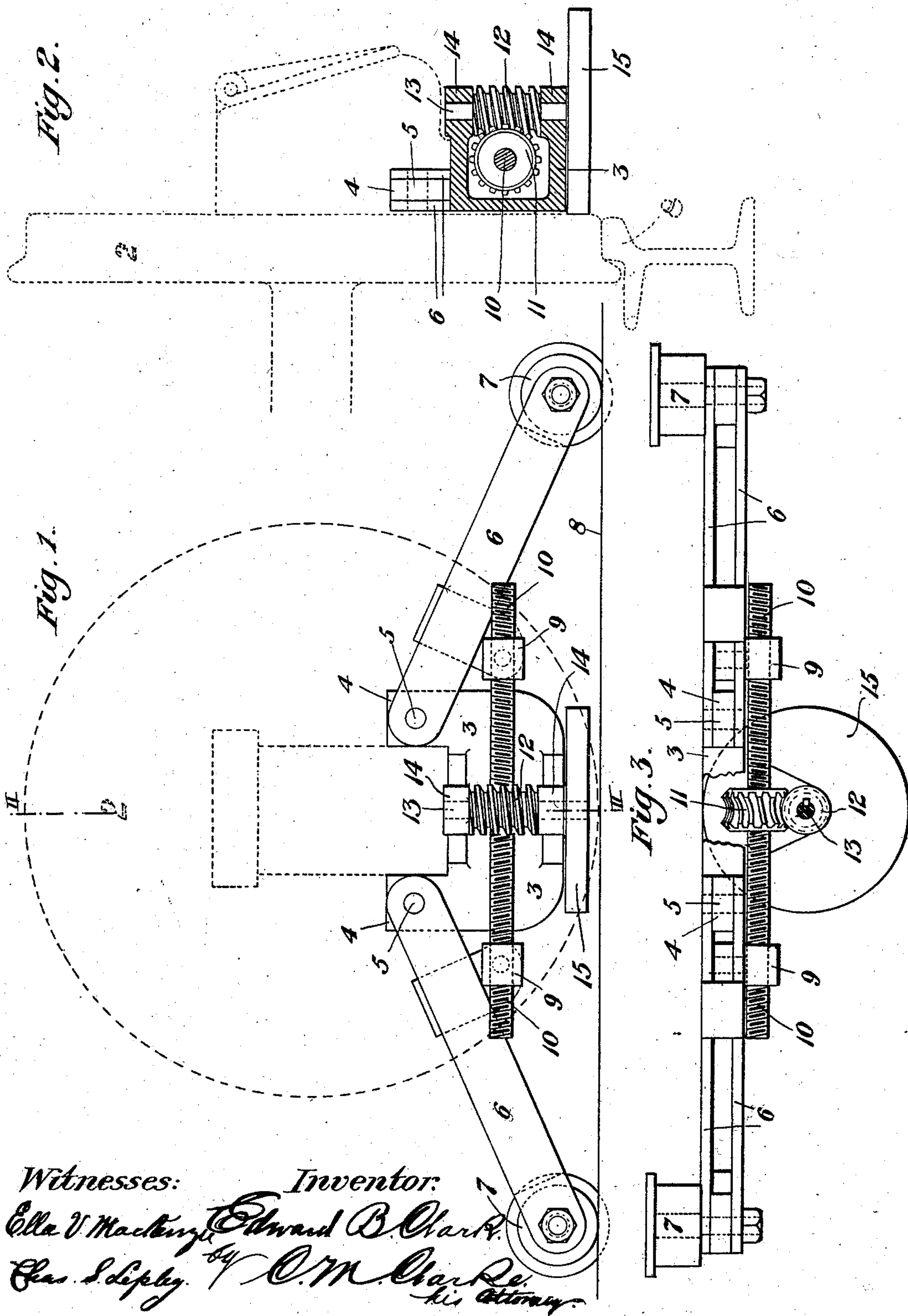
No. 698,372.

Patented Apr. 22, 1902.

E. B. CLARK.
LIFTING JACK FOR CARS, &c.
(Application filed Dec. 27, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 5.

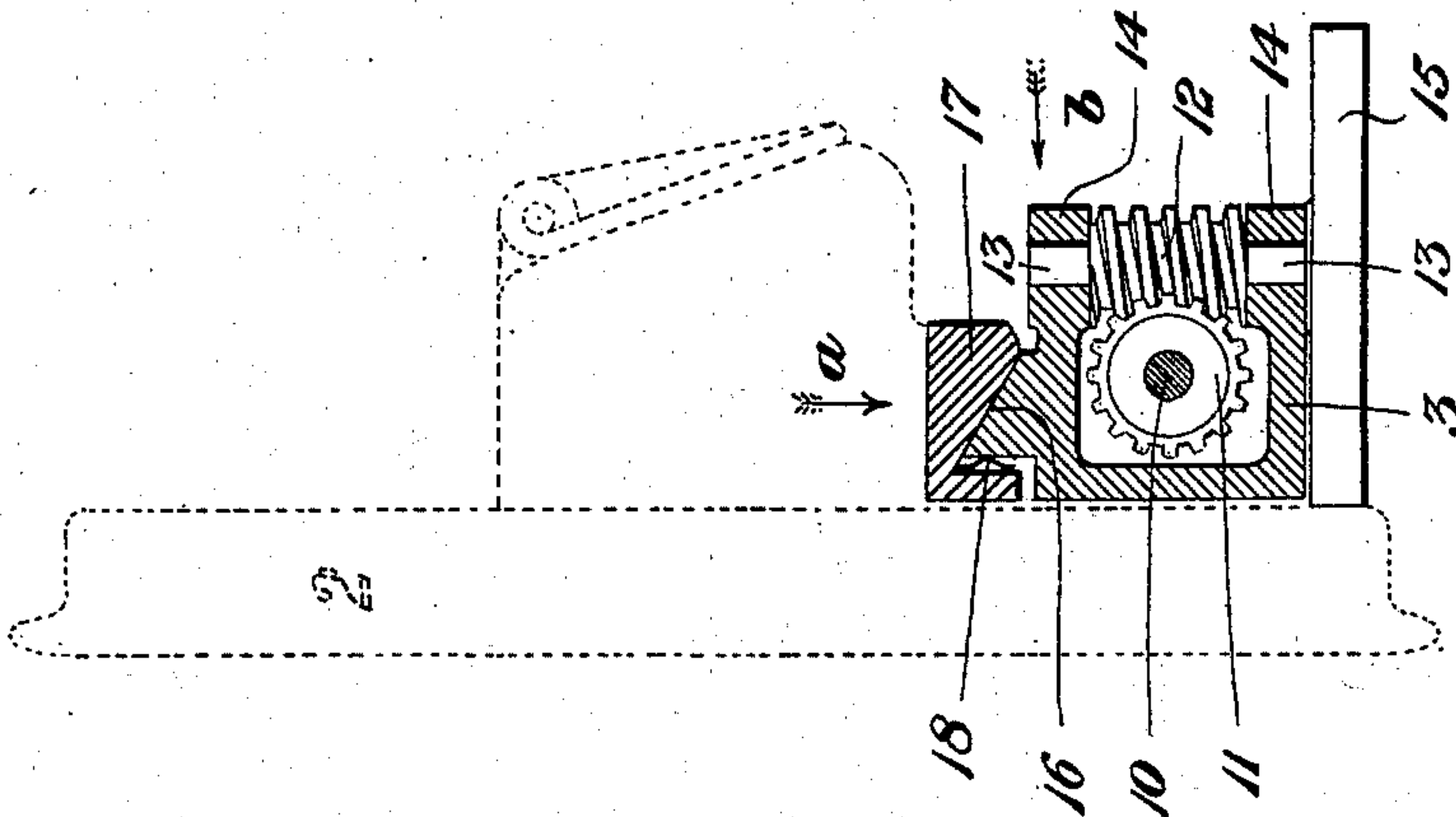
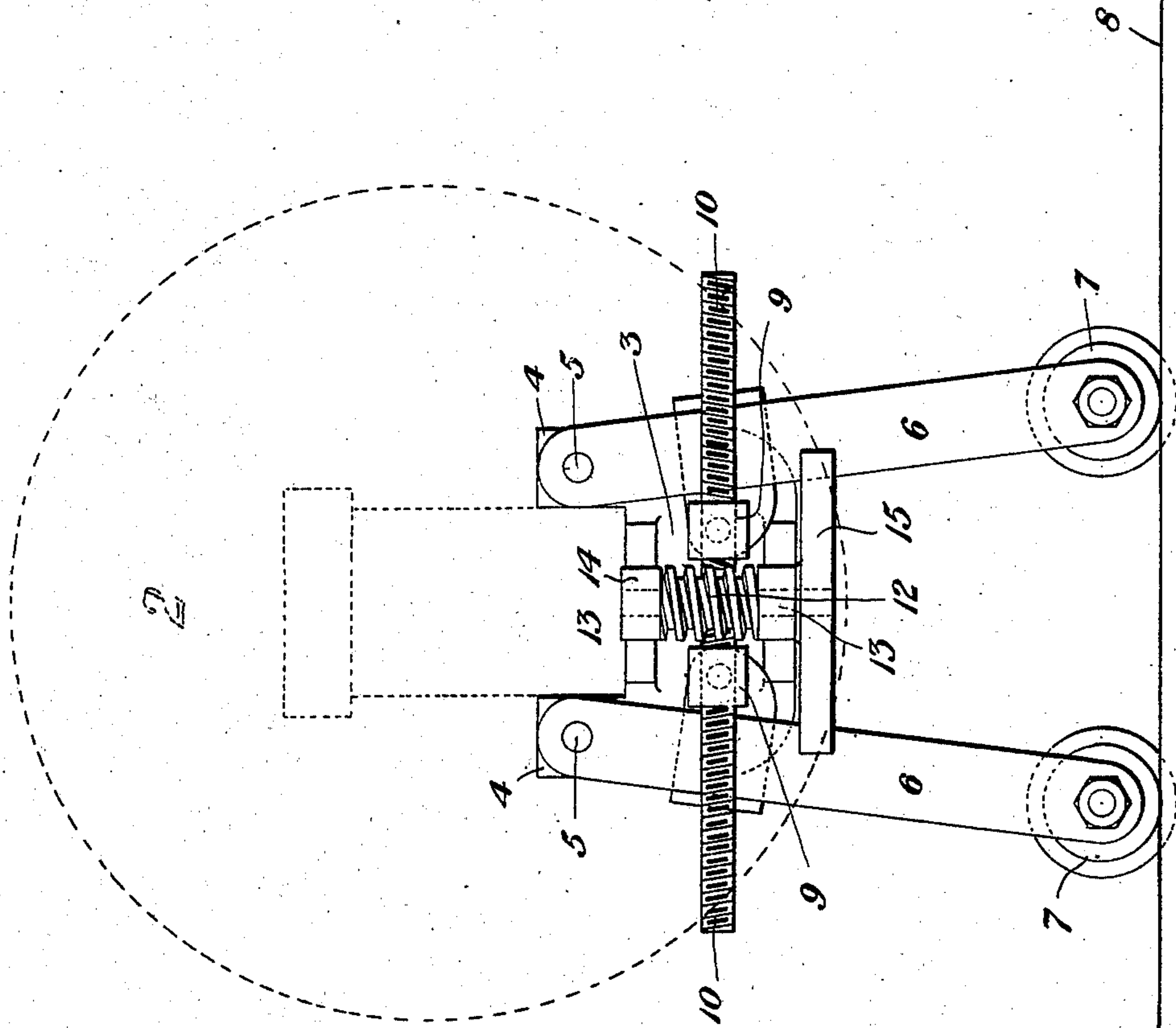


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD B. CLARK, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF THREE-FOURTHS TO WILLIAM P. DILWORTH, DE WITT DILWORTH, AND AMOS STECK, OF PITTSBURG, PENNSYLVANIA.

LIFTING-JACK FOR CARS, &c.

SPECIFICATION forming part of Letters Patent No. 698,372, dated April 22, 1902.

Application filed December 27, 1901. Serial No. 87,428. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. CLARK, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Lifting-Jacks for Cars, &c., of which the following is a specification, reference being had therein to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a view in side elevation of my invention, showing the application to a car-truck at the commencement of the raising operation. Fig. 2 is a vertical section there-through on the line 11 11 of Fig. 1. Fig. 3 is a plan view, partly broken away. Fig. 4 is a view similar to Fig. 1, showing the legs drawn in and the truck raised. Fig. 5 is a view similar to Fig. 2, illustrating a modified construction embodying means for exerting inward pressure against the car-wheel.

My invention consists of a device for lifting the trucks or axles of electric cars or other vehicles, and is designed more particularly for the purpose of utilizing the power of the current through the rotation of the car-wheels, so as to apply such motive power to the operative elements of the lifting apparatus or jack.

The invention is constructed and is adapted to be used in the manner hereinafter set forth.

Referring to the drawings, 2 represents one of the wheels of a pair to which the motive power of an electric or other motor is applied for propelling the car in the manner well understood and not necessarily, therefore, herein illustrated or described. The jack consists of a framework 3, having upper bearings 4, to which are pivoted at 5 the arms 6, in the outer terminals of which are journaled the flanged wheel 7, adapted to engage the rail 8, as shown, in alinement with the wheel 2. To each of the arms 6 is pivotally connected, as by a swivel-joint, a threaded nut 9, through each of which, respectively, passes the right and left hand threaded shaft 10, having at its middle portion the worm-wheel 11, in engagement with the worm 12, mounted

upon a vertical shaft 13, journaled at each end in bearings 14 in the frame 3. Upon the lower end of the shaft 13 is mounted a disk 15, which disk is adapted to bear against the outer rim or face of the car-wheel 2 and to be held against it with sufficient force to provide a good frictional contact.

While various clamping means may be employed to hold the wheel into good frictional contact with the car-wheel, the means shown in Fig. 5 may be conveniently used so as to utilize the weight of the car, trucks, &c.

In this construction the upper portion of the frame 3 is provided with an inclined face or bearing 17, having a similarly-inclined face, so that the downward force of gravity, as indicated by arrow *a*, will exert an inward pressure on the frame 3 and wheel 15, as indicated by arrow *b*.

Suitable retaining-flanges and means for normally extending the bearing may be provided—as, for instance, a spring 18.

The upper portion of the frame is designed to embrace and provide a bearing for the journal-box of the axle, with which box the frame is adapted to interfit and to be clamped, so as to continually exert such inward pressure of the disk against the wheels. Such adjustment and location will be assisted and maintained by the engagement of the flanges of small wheels 7 against the inner side of the thread of the rail 8. After having been thus adjusted on each side for each wheel 2 current is supplied to the motor, the wheels 2 will revolve and will impart movement to the disks 15, transmitting motion through the gearing to shaft 10, which will exert inward movement through the nuts to arm 6, drawing the arms inwardly, the wheels 7 traveling along the track and raising the car-wheels and the entire end of the car upwardly therefrom, as clearly illustrated in Fig. 4. In such position the car may be moved along the track supported at one end on small wheels 7.

When it is desired, the motor is reversed, reversing the direction of rotation of the car-wheels, whereupon the operation of the jack is likewise reversed and the car-wheels are again lowered upon the track and the jack is

removed. If it is desired to first slightly raise the car-wheels off of the track without rotating them, and thereby prevent traction upon the rails, the disks 15 may be rotated one or more times by the hand before the apparatus is set into operation by the rotation of the car-wheels, thus obviating the traction of the wheels upon the rails.

If desired, the periphery of the disks 15 may be toothed or corrugated, as may also the faces of the car-wheels, for the purpose of insuring driving engagement. It will also be understood that the proportions, design, or arrangement of the operating-gearing may be varied or modified to suit varying conditions of use or application; also, that various other changes or modifications may be made by the skilled mechanic without departing from my invention, and I desire to include all such changes and variations as within the scope of the following claims.

What I claim is—

1. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, and means adapted to be actuated by the car-wheel for drawing the arms inwardly to raise the truck.

2. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, nuts secured to the arms, and a threaded shaft engaging the nuts, with means adapted to be actuated by the car-wheel for turning the shaft.

3. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, nuts secured to the arms, a threaded shaft engaging the nuts, and gearing for rotating the shaft adapted to be actuated by the car-wheel.

4. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, nuts secured to the arms, a threaded shaft en-

gaging the nuts provided with a worm-wheel, and a shaft provided with a worm engaging the worm-wheel, with means for turning the shaft adapted to be actuated by the car-wheel.

5. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, nuts secured to the arms, a threaded shaft engaging the nuts provided with a worm-wheel, a worm engaging the worm-wheel, and provided with a disk adapted to be turned by contact with the car-wheel.

6. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, nuts secured to the arms, a threaded shaft engaging the nuts provided with a worm-wheel, a worm engaging the worm-wheel and provided with a disk adapted to be turned by contact with the car-wheel, and means for exerting inward pressure of the disk against the car-wheel.

7. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto provided with supporting-wheels, means adapted to be actuated by friction of the car-wheels for moving the arms to raise the truck, and means for exerting inward pressure of such frictionally-actuated means against the car-wheel.

8. Lifting mechanism for cars, &c., consisting of a truck-bearing frame, arms pivoted thereto having bearing-terminals adapted to move along a bearing-base, nuts secured to the arms, a threaded shaft engaging the nuts provided with a worm-wheel, a worm engaging the worm-wheel, and means adapted to make frictional contact with the car-wheel for actuating the worm.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD B. CLARK.

Witnesses:

C. M. CLARKE,
JAS. J. MCAFEE.