

(No Model.)

2 Sheets—Sheet 1.

G. B. SICCARDI.  
PROPELLING MECHANISM FOR CARS.

No. 428,639.

Patented May 27, 1890.

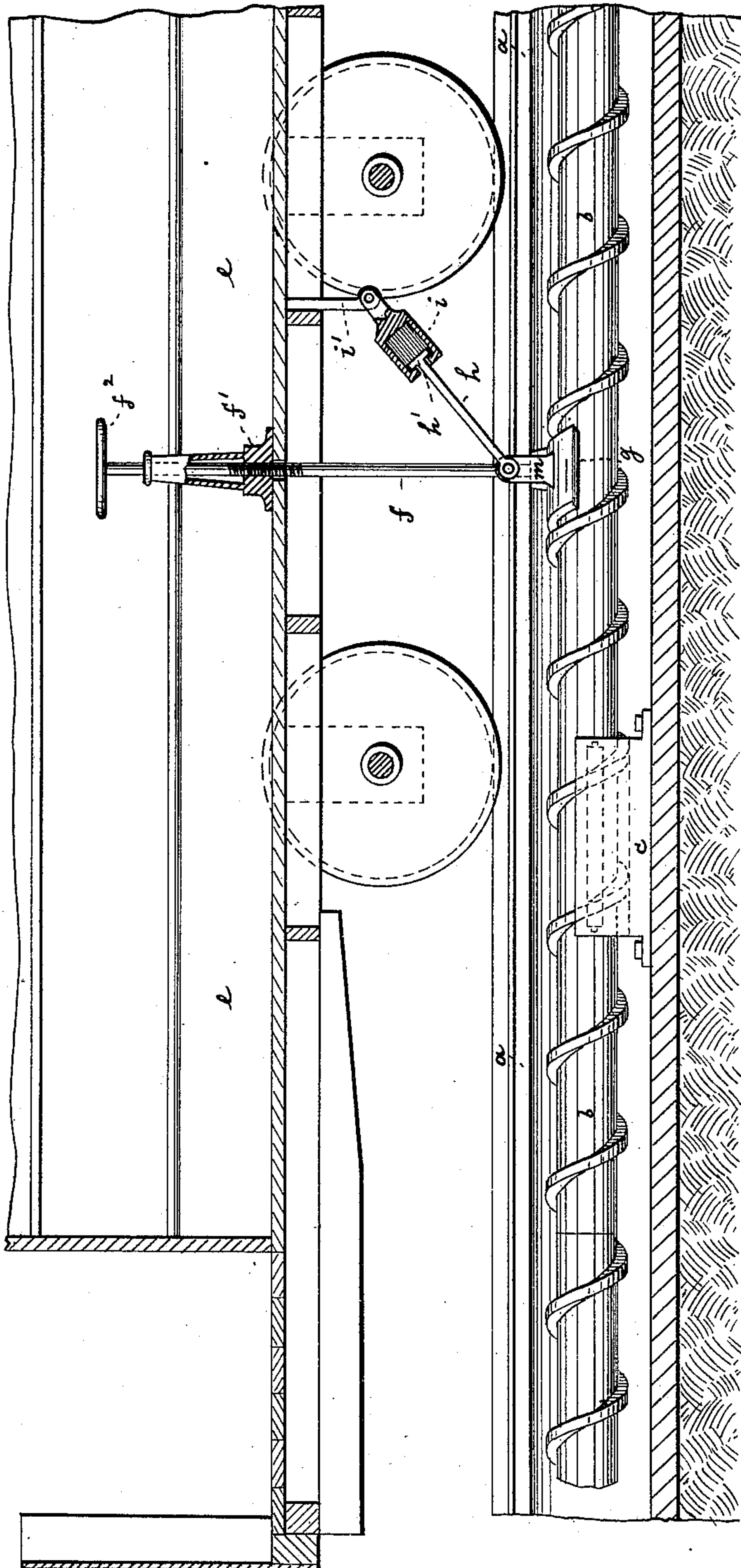


FIG. 1



FIG. 3

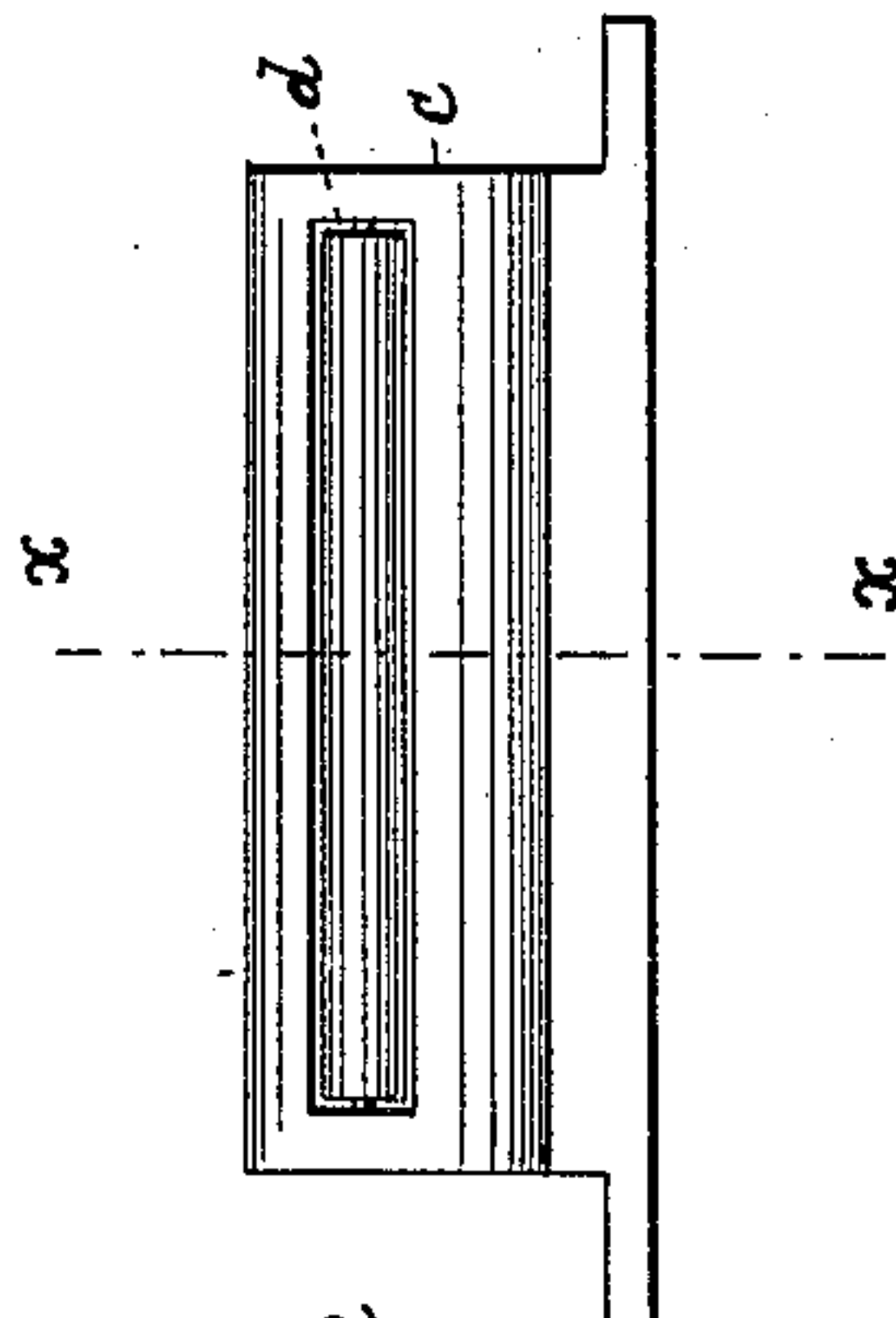


FIG. 2

WITNESSES

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*Wm. Wagner*

INVENTOR

*G. B. Siccardi*  
by his attorneys  
*Roeder & Brien*

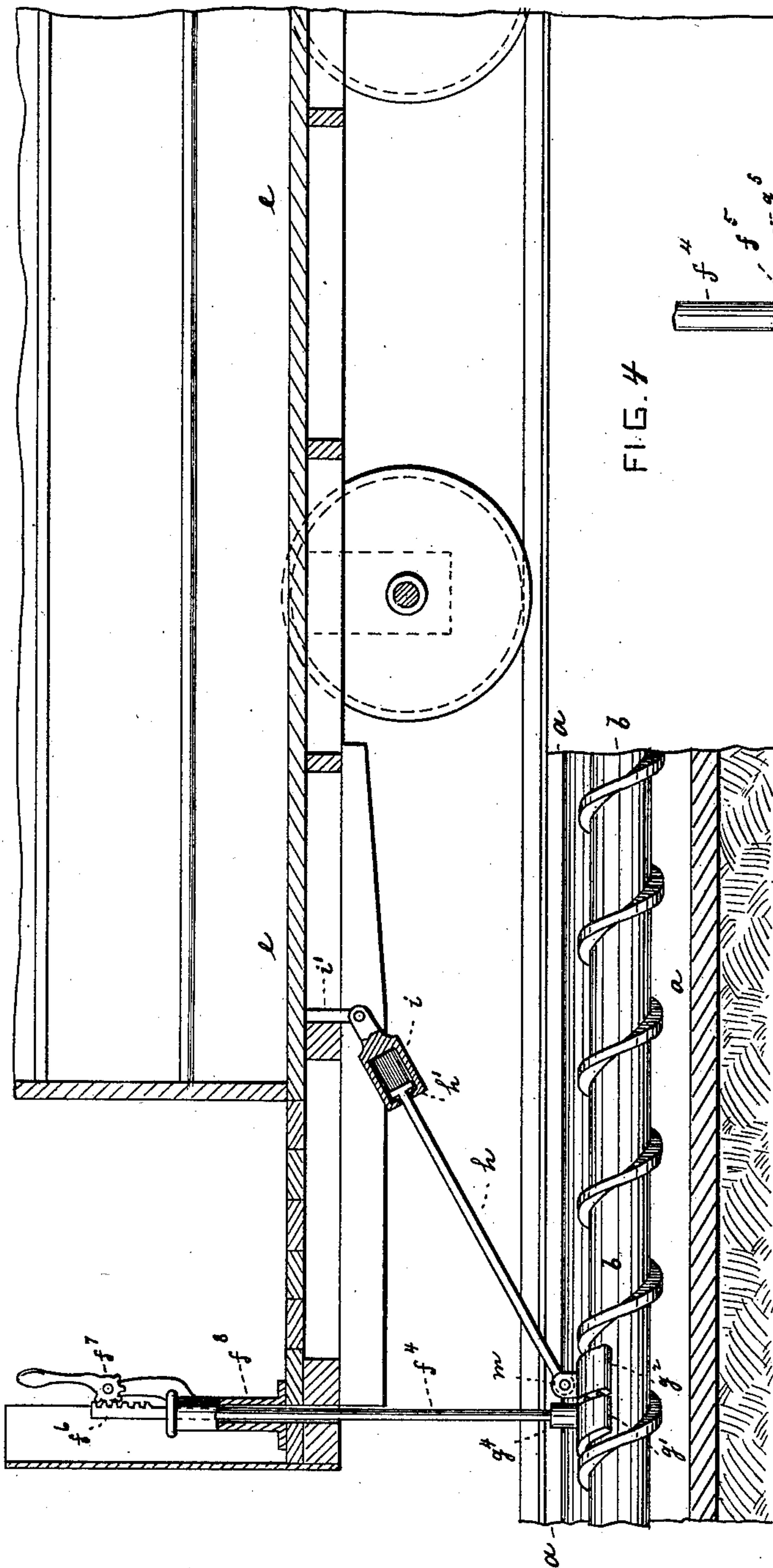
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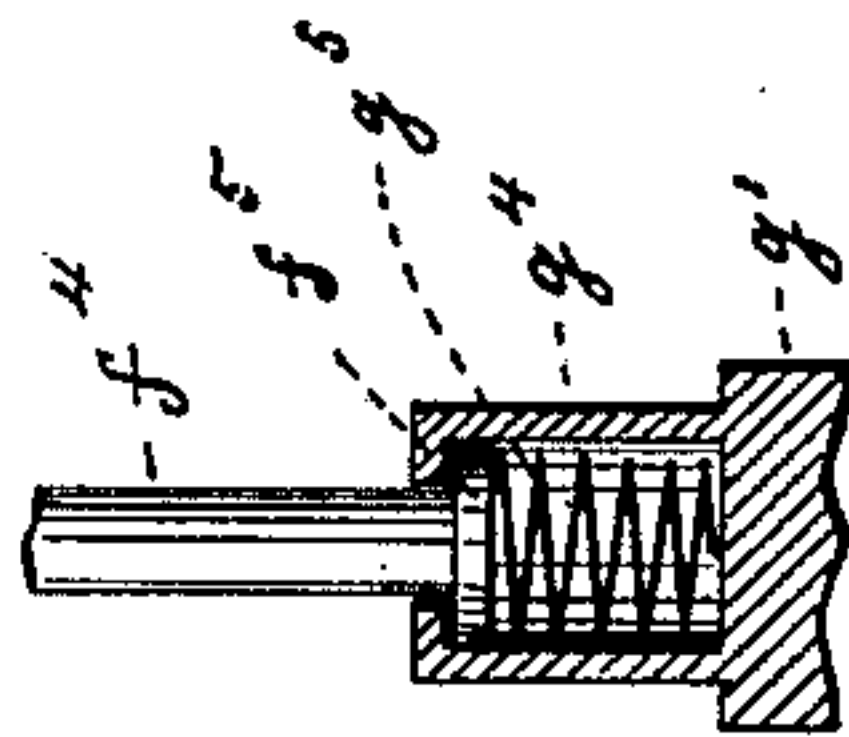
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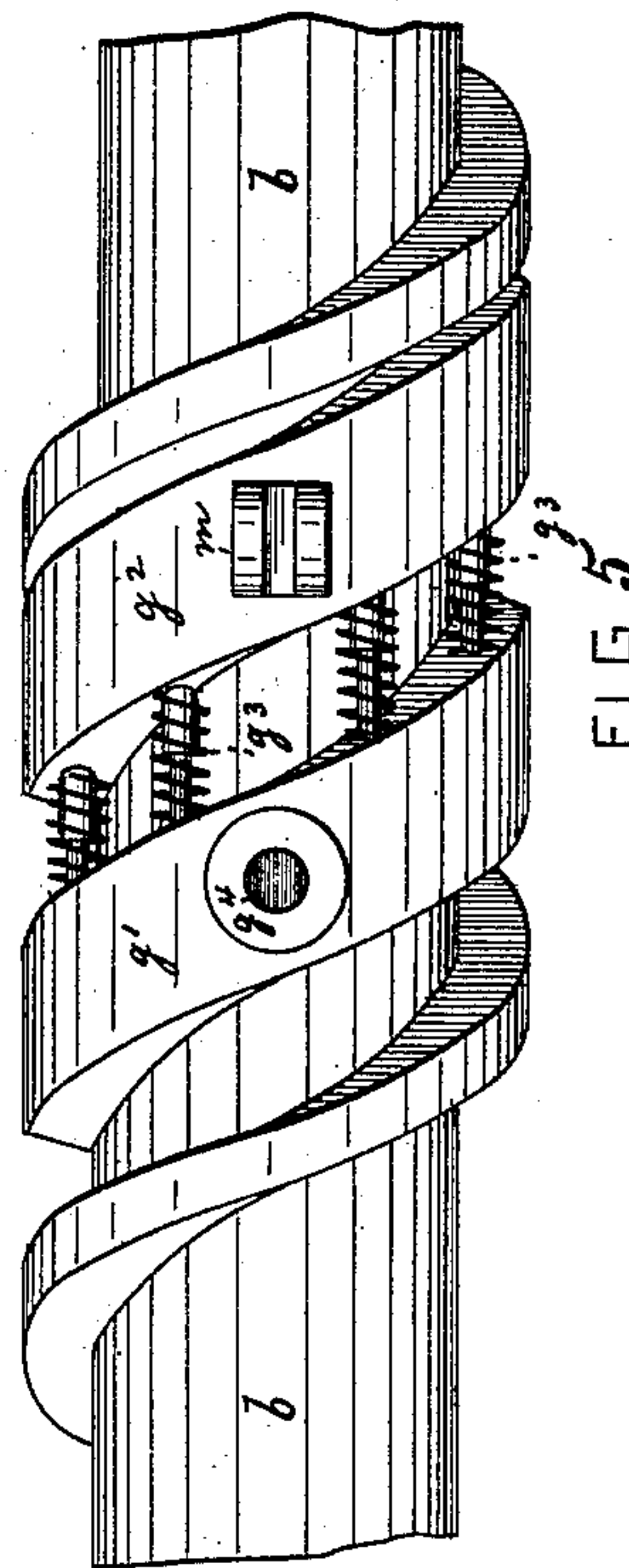
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4.5.13



6. 1. 1.



13. 6. 5

WITNESSES

Wm. F. Lowe  
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# UNITED STATES PATENT OFFICE.

GIOVANNI B. SICCARDI, OF NEW YORK, N. Y.

## PROPELLING MECHANISM FOR CARS.

SPECIFICATION forming part of Letters Patent No. 428,639, dated May 27, 1890.

Application filed January 29, 1890. Serial No. 338,504. (No model.)

*To all whom it may concern:*

Be it known that I, GIOVANNI B. SICCARDI, of New York city, New York, have invented an Improved Propelling Mechanism for Cars, of which the following is a specification.

This invention relates to an improved propelling mechanism for cars; and it consists in the various features of improvement, more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a car and worm constructed according to my invention. Fig. 2 is a side view of one half of the pillow supporting the worm; Fig. 3, a cross-section on the line  $x x$ , Fig. 2, but showing both halves. Fig. 4 is a sectional elevation of a modification of my invention; Fig. 5, an enlarged top view of part of the worm and of the shoe, and Fig. 6 a vertical central section through tubular socket  $g^4$ .

The letter  $b$  represents a worm placed within a conduit  $a$ , extending between the two rails of a car-track. The worm  $b$  is placed at suitable intervals upon pillows  $c$ , having friction-pulleys  $d$ . These pulleys are of a length to extend over two convolutions of the worm. The worm  $b$  is designed to be revolved at suitable intervals by suitable machinery, which, however, does not advance it in a longitudinal direction.

$e$  is the railway-car, which is to be propelled from the worm by means of a suitable coupling or grip, which is movable up and down. When the coupling is down, its lower end will be engaged by the threads of the worm, which will advance it by pushing it forward. If the coupling is up, the motion of the worm will not be transmitted to the car.

The coupling may either be worked from the center of the car when I prefer to use the construction shown in Fig. 1, or it may be worked from the car-platform when I prefer to use the construction shown in Fig. 4.

With reference to Fig. 1 the letter  $f$  represents a screw-rod engaging a threaded socket  $f'$ , secured to the car and provided with hand-wheel  $f^2$  at its upper end. At its lower end the rod  $f$  carries a shoe  $g$ , adapted to be lowered upon the body of the worm  $b$  and between the threads thereof. For this purpose the rear end of the shoe is cut on the same

incline upon which the threads of the worm are cut, while the body of the shoe is curved in cross-section to snugly fit upon the worm.

To an upright  $m$  of shoe  $g$  there is pivoted one end of a bar  $h$ , the other headed end  $h'$  of which is received by a box  $i$ , pivoted to a hanger  $i'$  of car  $e$ . When the hand-wheel  $f^2$  is revolved in one direction, it will raise the shoe upward, and when turned in the other direction it will lower the shoe. During this motion the headed end of the rod  $h$  will move in and out of the box and the latter will turn on its pivot. Thus these parts will not offer any obstacle to the up-and-down motion of the shoe and rod  $f$ . In use the convolutions of the worm will push the shoe forward. The shoe will in turn by rod  $h$  and box  $i$  impart motion to the car.

In Fig. 4 I have shown the shoe operated from the platform and have illustrated some improved details of construction. In these figures the shoe is made in two parts  $g'$   $g^2$ , connected by rods and tubes that are surrounded by coiled spring  $g^3$ . This construction has for its object to reduce the shock in starting. The threads of the worm, pushing against the rear part, will throw this part forward against the action of springs  $g^3$ . These springs therefore take up the shock. From the forward section  $g'$  there projects upward a socket  $g^4$ , in which is placed a spring  $g^5$ . The upper end of the socket is entered into by the hand-rod  $f^4$ , having head  $f^5$  at its lower end and a rack  $f^6$  at its upper end, engaged by a pinion  $f^7$ , connected to a hand-lever. The rod  $f^4$  slides loosely in the sleeve  $f^8$ , which is secured to the car-body. The platform of the car, of course, has frequently a rocking or up-and-down motion, which would be apt to lift the shoe from out between the threads of the worm were the rod  $f^4$  connected to the body of the car by a screw-thread. For this reason I dispense with this connection and hold the shoe down upon the worm by its own weight. Thus as the car-platform rocks, the sleeve  $f^8$  will move around the rod  $f^4$  without imparting motion to it.

The spring  $g^5$  has for its object to prevent the motion of rod  $f^4$  from being transmitted to the shoe in case the hand-lever of pinion  $f^7$  should be locked.



In Fig. 4 the headed rod *h* and pivoted box *i* are retained, the same as in Fig. 1, for the purpose of transmitting the motion of the shoe to the car.

5 What I claim is—

1. The combination of a worm with a car having a vertically-movable shoe curved to fit upon the body of the worm between the threads thereof, substantially as specified.

10 2. The combination of a conduit with a worm placed therein, pillows for supporting the worm, and with a car having a vertically-movable shoe, the shoe having an inclined rear edge and being curved to conform to the curvature of the worm, substantially as specified.

15 3. The combination of a conduit with a worm placed therein and with a car, a vertically-movable hand-rod, a shoe connected to its lower end, and with a draw-rod *h* and piv-

20 oted box *i* connecting the shoe to the car, substantially as specified.

4. The combination of a conduit with a worm placed therein and with a car, a vertically-movable rod and a sectional spring-shoe connected therewith, substantially as 25 specified.

5. The combination of a conduit with a worm placed therein, pillows for supporting the worm and having friction-rollers, a car having a vertically-movable shoe, a hand-rod 30 for raising and lowering the shoe, and a sliding draw-rod for transmitting the motion of the shoe to the car, substantially as specified.

GIOVANNI B. SICCARDI.

Witnesses:

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A. JONGHMANS.