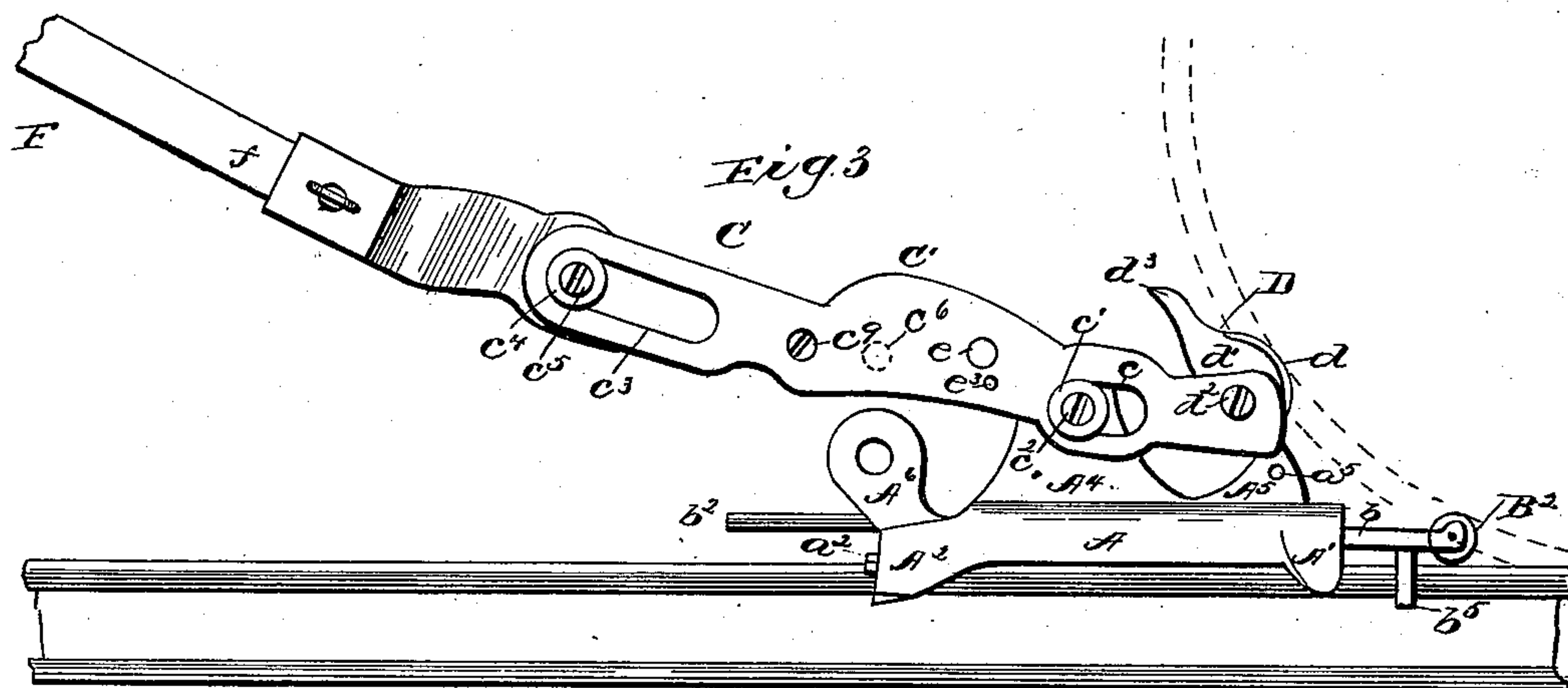
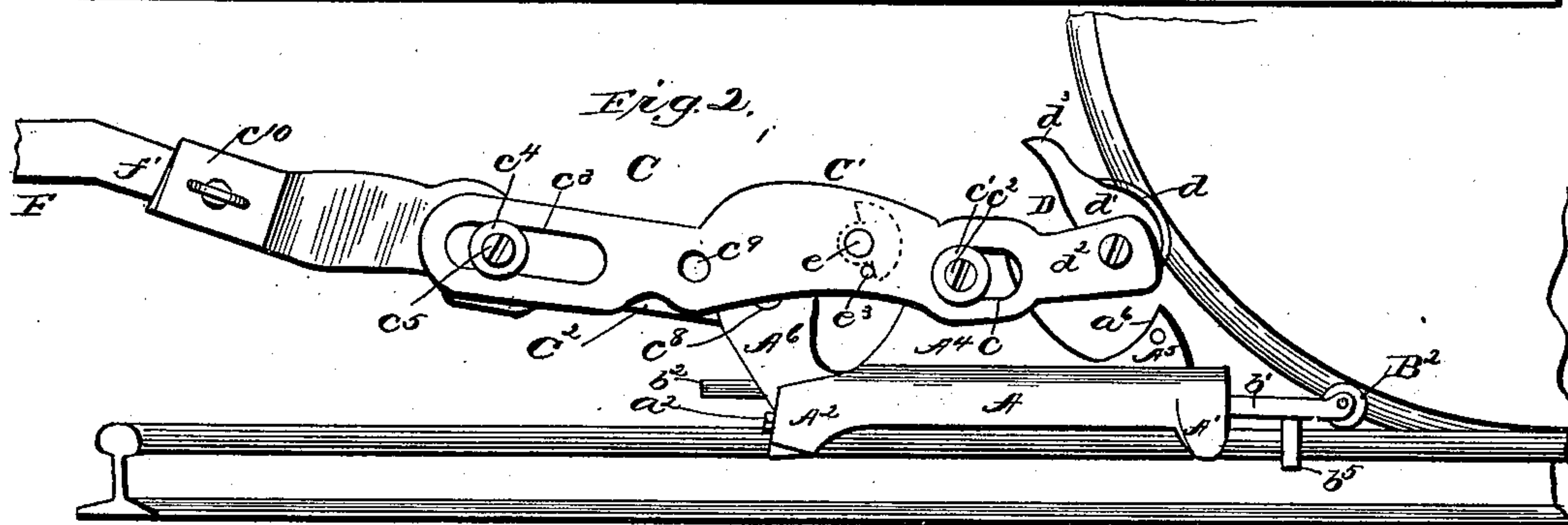
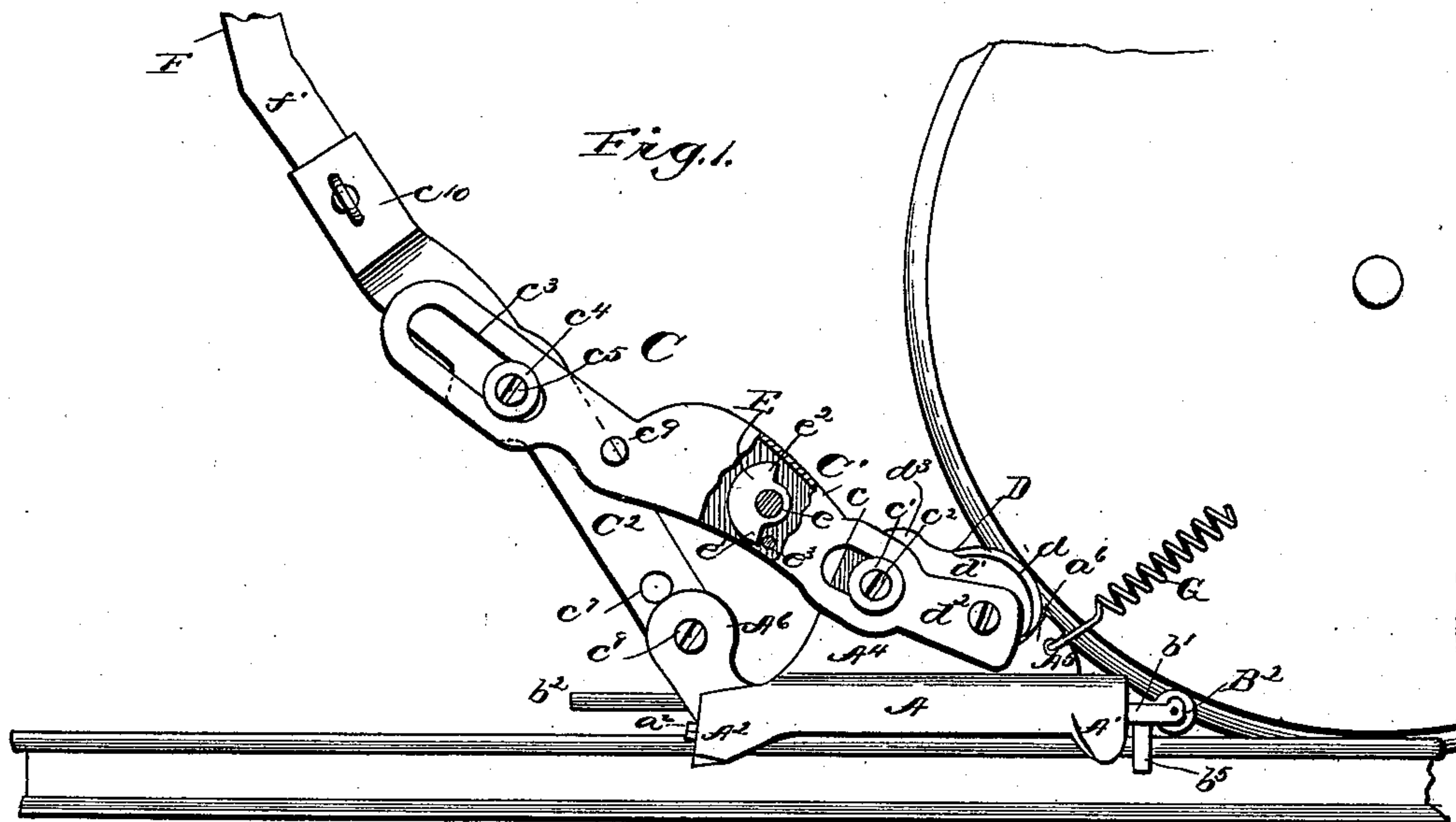


2 Sheets—Sheet 1.

No. 533,055.

Patented Jan. 29, 1895.



*witnesses:*

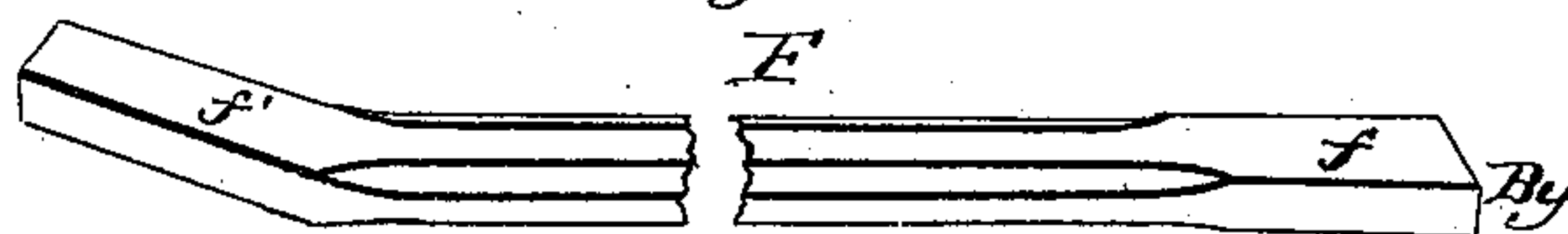
Jas. J. O'Neale.  
For Robert to go

*Fig. 9.*

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*Attorneys.*



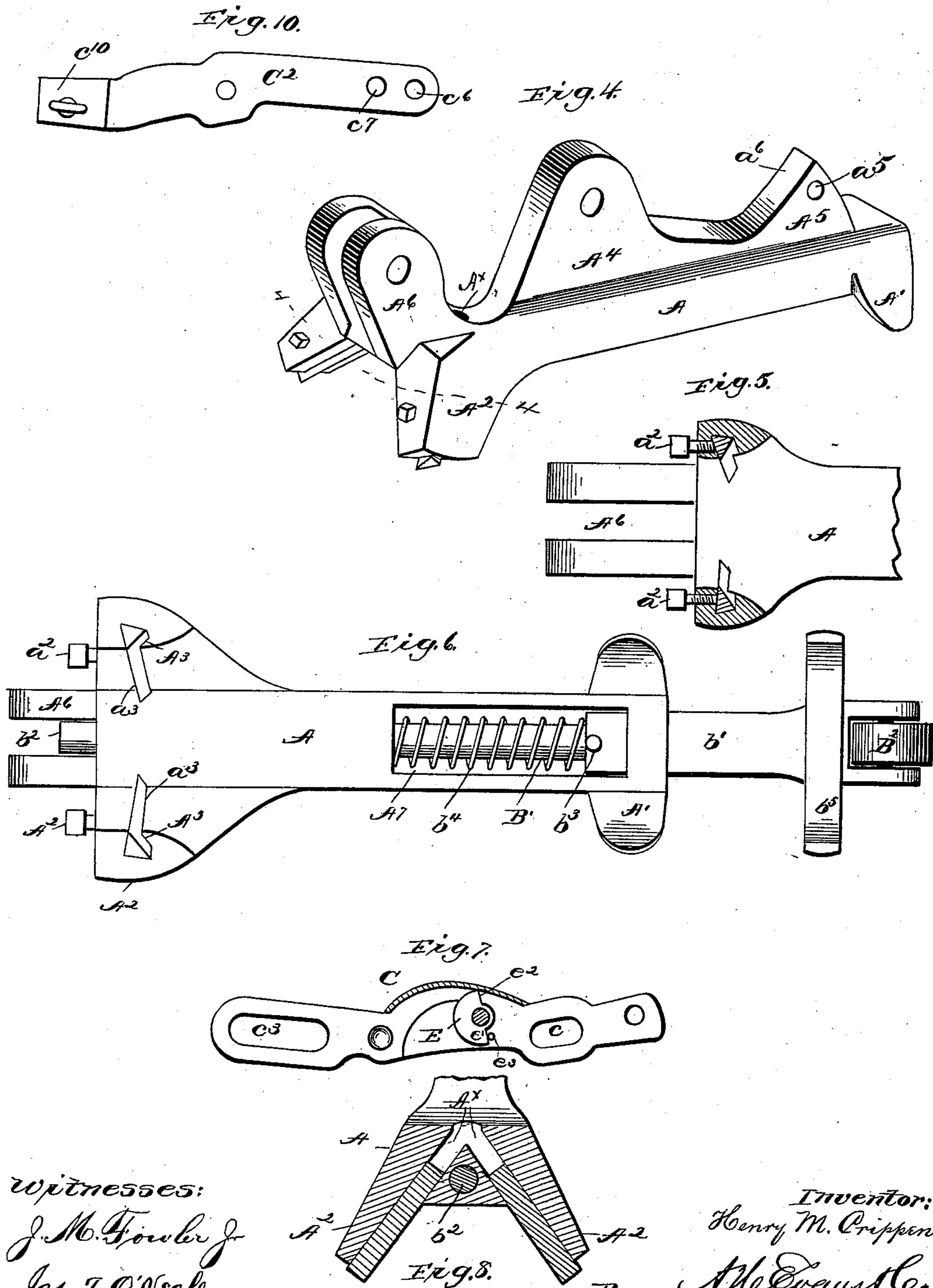
(No Model.)

2 Sheets—Sheet 2.

H. M. CRIPPEN.  
CAR MOVER.

No. 533,055.

Patented Jan. 29, 1895.



witnesses:  
J. M. Fowler  
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# UNITED STATES PATENT OFFICE.

HENRY M. CRIPPEN, OF ATHENS, OHIO.

## CAR-MOVER.

SPECIFICATION forming part of Letters Patent No. 533,055, dated January 29, 1895.

Application filed April 6, 1894. Serial No. 506,552. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY M. CRIPPEN, a citizen of the United States, residing at Athens, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Car-Movers, of which the following specification contains a full, clear, and exact description, reference being had to the accompanying drawings, forming part thereof, in which—

Figure 1, is a side elevation of my improved car mover in position to move a car; the lever being adjusted as a compound lever. Fig. 2, is a similar view, the lever having been forced down to move the car. Fig. 3, is a side elevation with the lever adjusted for action as a single or non-compound lever. Fig. 4, is a detail rear perspective of the base. Fig. 5, is a section on line 4—4 Fig. 4. Fig. 6, is a plan of the under side of the base, and Fig. 7, is a detail of the inner section of the operating lever, and Figs. 8, 9, and 10 are detail views.

The object of the invention is to afford a very powerful and comparatively inexpensive implement for moving or starting cars, and to provide the implement with a lever which may readily be converted from a compound to a simple lever and vice versa; also to generally improve the construction of such implements.

The invention will first be described and then specifically pointed out in the claims.

A, is the base adapted to lie longitudinally upon the tread of the rail, provided at its front end on opposite sides with lugs or flanges A' A' to engage the sides of the rail, and provided at opposite sides of its rear end with longer and heavier diverging jaws A<sup>2</sup> A<sup>2</sup> each of which has a vertically extending inclined groove A<sup>3</sup> triangular in cross section and opening at one angle into the space between the said two jaws. The rear walls of these grooves or channels A<sup>3</sup> are provided with screw-threaded apertures in which work the set screws a<sup>2</sup> a<sup>2</sup> the inner ends of which bear on the triangular steel blades a<sup>3</sup> a<sup>3</sup>. These blades at one angle project through the open sides of the grooves or channels, and bite on the rail. They may be removed and adjusted to bring any one of their edges and any portion thereof into operative position.

The grooves A<sup>3</sup> incline downwardly and rearwardly as well as outwardly which increases the biting action of the blades.

A<sup>x</sup> are apertures in the upper side of the base and leading into the upper ends of the grooves A<sup>3</sup> to permit the insertion of a punch for driving the blades downwardly. The upper side of the base is provided at about its middle with an apertured lug A<sup>4</sup> while a shorter lug A<sup>5</sup> projects from its front end and is provided with an aperture a<sup>5</sup> and an inclined or cam surface a<sup>6</sup> and on its rear edge. The rear end of the base is formed with a rounded bifurcated lug A<sup>6</sup> also provided with a transverse aperture.

The base is formed with a longitudinal bore or passage A<sup>7</sup> open at both ends, the rear opening being reduced, and in this bore or passage slides the shank B'. The shank B' is formed in two sections b' b<sup>2</sup> the rear section being of less diameter than the front section, and sliding through the opening in the rear wall of the bore or passage. The shank B' is provided at the juncture of its two diameters b' b<sup>2</sup> with a pin or screw b<sup>3</sup> which acts as a stop to prevent the shank from sliding too far forward. A spiral spring b<sup>4</sup> encircles the shank and throws it forwardly. The front end of the chock is provided with a roller B<sup>2</sup> which engages the car wheel close to the rail and in the rear of the roller there are formed jaws or guides b<sup>5</sup> to straddle the rail and hold the chock against lateral movement at its front end. The front section b<sup>2</sup> of the shank B' is made tapering or wedge shape so that when forced inwardly or rearwardly, it will bind in the front end of the bore or passage A<sup>7</sup> and be retained by friction. This provides a simple means for rendering the chock inactive whenever found desirable.

C, is the sectional convertible lever the forward member C' of which is formed with a longitudinal groove or recess in the under side and extending its entire length, and both ends of the section C' are bifurcated. The lever section C' is provided with transverse fulcrum slots c which receive the flanged anti-friction bearings or rollers c' mounted on the screw or bolt c<sup>2</sup> extending through the lug A<sup>4</sup> on the middle of the base. The lever section C' rocks and slides on the rollers or bearings



$c'$  but these rollers may be omitted if desired, and replaced by other suitable fulcrum devices.

D is an eccentric counterbalanced shoe having a wide curved working face  $d$ , and provided with an apertured web  $d'$  pivoted by the bolt  $d^2$  within the front bifurcated end of the lever. The upper ends of this shoe are provided with a counterbalancing weight  $d^3$  which returns to its normal position to present that part of the shoe having the least eccentricity to the car wheel at the beginning of the operation. The weight  $d^3$  strikes on the upper edge of the lug  $A^4$  which thus acts as a stop therefor.

E, is a cam pivoted on a screw or pin  $e$ , within the lever section  $C'$  just in rear of the slots  $c$  and provided at opposite points with shoulders  $e'$   $e^2$  which are adapted to alternately engage the stop pin  $e^3$  mounted in front of and below the pin or screw  $e$ . When the cam E is swung to the rear and its shoulders  $e'$  engage the stop pin  $e^3$  it is in its operative position, and when the lever is depressed the cam will engage the rounded edge of the lug  $A^6$  and force the lever quickly forward, but when the cam is swung to the front and its shoulder  $e^2$  engages the stop pin  $e^3$ , said cam will not engage the lug  $A^6$  but will be entirely out of the path thereof, and the lever will be forced forward more slowly but with a gain in power.

The rear end of the lever section  $C'$  at its sides is provided with elongated slots  $c^3$  which receive the flanged anti-friction bearings or rollers  $c^4$   $c^4$  mounted on the pin or screw  $c^5$  extending transversely through the middle portion of the lever section  $C^2$ , the forward end of said section being provided with two transverse apertures  $c^6$   $c^7$  the front one  $c^6$  being adapted to receive the pin or screw  $c^8$  which pivots it to the lug  $A^6$  when the lever is to operate as a compound lever as shown in Figs. 1 and 2, while the rear aperture  $c^7$  is adapted to align with similar apertures  $c^9$  in the lever section  $C'$  in order that the said pin or screw  $c^8$  may after removal from the lug  $A^6$  and aperture  $c^6$  be passed through said apertures  $c^7$   $c^9$  and lock the two lever sections  $C'$   $C^2$  together so that they will operate as a simple lever as shown in Fig. 3.

The rear end of the lever section  $C^2$  is formed with a socket  $c^{10}$  to receive the straight end  $f$  or the bent end  $f'$  of the handle bar F as shown in Figs. 1 and 2.

The operation is as follows: The implement is placed (see Fig. 1) on the rail adjacent to the wheel of the car or locomotive to be removed; the shock being retracted but free to be moved forward by its spring, and the eccentric shoe D with its point of least eccentricity against the wheel. In raising the lever to the position shown, its shoe D will strike the inclined or cam edge  $a^6$  of the forward base lug  $A^5$  which causes the lever to slide rearwardly as far as the slots  $c$  will permit; the anti-friction rollers  $c^4$   $c^4$  also reach-

ing their forward limit of travel in the rear slots  $c^3$   $c^3$ . Power is brought to bear on the handle-bar F which causes the lever section  $C^2$  to rock the section  $C'$  on its axes thus raising its forward end, and thereby causing the eccentric shoe D to rock on its axis, pressure being continued until the parts are in the position shown in Fig. 2, when the shoe will have been rocked to its point of greatest eccentricity, thereby greatly assisting the action of the lever in forcing the car or locomotive forward. The chock will have been steadily moved forward with the car and lock its wheel and prevent return movement. The steel blades will have prevented all slipping of the base owing to their sharp edges being inclined downwardly and rearwardly as well as outwardly.

In the adjustment shown in Fig. 3, the lever sections  $C'$   $C^2$  are locked together and thus the lever C will be a simple lever as heretofore explained.

The action of the cam E is the same whether the lever C be adjusted for action as a simple or as a compound lever.

If the car has to be moved any distance by the implement, I provide a spring G which is secured at one end in the aperture of lug  $A^5$  and its other end will be connected at some portion of the car truck so that the implement will be drawn along by the spring after each operation of the lever.

The handle-bar being squared at both ends may be reversed so as to raise or lower its free end as occasion may require, or it may be placed so as to bring its free end outside of the side rods of a locomotive.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A car mover comprising a base, a sectional lever the members of which are pivotally connected; the forward member of the lever being pivoted between its ends to the base to permit its forward end to operate on the car wheel, and the forward end of the rear lever section being separably pivoted to the base and adapted when separated therefrom to be secured fixedly to the said forward member to operate therewith as a single or simple lever, substantially as herein described.

2. A car mover provided with a convertible lever formed of two sections the rear section of which has a sliding pivotal connection with the rear end of the front section, and means for pivoting the front end of the rear section to the base of the implement or locking it to the front lever section to form a single or simple lever, substantially as herein described.

3. The combination with the base adapted to engage the rail, and having an apertured rear lug on its upper side, of a sectional convertible lever the front section of which is pivoted between its ends to the base and extending rearwardly over said lug, the rear section of the lever having a sliding pivotal connection with the rear end of the front lever



section, and also separably pivoted to said apertured lug; both lever sections having apertures adapted to be brought into alignment for receiving a pin or screw when the rear section is separated from said lug to lock said sections together, substantially as herein described.

4. The combination with the base, of a lever having a slotted pivotal connection therewith near its forward end and provided in rear of its axis with a reversible cam; a projection being formed on the base in the rear of the cam, and in the path thereof to force the lever forward while being depressed, substantially as herein described.

5. The combination with the base, of a lever having a sliding pivotal connection therewith; the said base having an incline or cam on the forward end of its upper side to engage the forward end of the lever and force the lever rearwardly while its rear end is being raised, substantially as herein described.

6. The combination with a base having three projections or lugs on its upper side, of the lever having a sliding pivotal connection with the middle lug, provided in rear thereof with a cam to engage the rear lug when the lever is depressed to move said lever forwardly; the front projection being in the downward path of the forward end of the lever to slide it rearwardly while the rear end is being raised, substantially as herein described.

7. A car mover comprising the base to engage the rail, a sectional lever pivoted near its forward end to the base, an apertured lug on the rear end of the base; the rear end of the front lever section having a grooved lower face longitudinally slotted sides and transverse pin or bolt apertures in advance thereof; and the rear lever section having pivoting devices mounted in said slots and having a transversely apertured forward end through which and the apertured base lug a pivot pin or bolt is adapted to be passed; said pin or bolt being also adapted to pass through the apertured forward end of the said rear section, and the apertures in the front lever section when the two sections are swung one within the other, substantially as herein described.

8. A car mover or starter comprising a base having rail-grasping jaws, a lever pivoted to the upper side of the base and provided at its forward end with a freely swinging pivoted shoe the outer working face of which is convex and eccentric to its axis; whereby when the shoe is placed with its point of least eccentricity against a wheel and the lever pressed down the said shoe will be rocked till its greatest point of eccentricity engages the wheel and thereby assist the lever in its action, substantially as herein described.

9. In a car mover, a lever provided at its forward end with a pivoted shoe having a convex working face eccentric to its axis and provided at its upper end with a rearwardly extending counterbalancing extension, substantially as herein described.

10. A car mover comprising the base, the lever having a sliding pivotal connection therewith and provided at its forward end with a pivoted eccentric to engage the wheel, and an incline or cam surface on the upper side of the base in the downward path of the eccentric to force the lever rearwardly, substantially as herein described.

11. In a car mover, the combination with the base, and the lever for moving the car of the spring pressed chock provided at its forward end with a chocking roller, the said roller being below the working end of the lever to engage the wheel and lock it against backward movement, as the car is moved by said lever substantially as herein described.

12. The combination in a car mover with the base and the lever for moving the car of a spring pressed chock having a chocking roller and a rail embracing-jaw or guide at its outer end, the said roller being below the working end of the lever to engage the wheel and lock it against backward movement, as the car is moved by said lever substantially as herein described.

13. In a car mover, the combination with the longitudinally bored base, of the spring pressed chock provided with a shank the outer portion of which is tapered to wedge into the bore of the base when fully retracted and held by friction, substantially as herein described.

14. In a car mover the combination with the longitudinally bored base, of the chock having a shank provided within the bore with a reduced section, a spiral spring thereon, a stop to prevent undue forward movement of the shank, and a roller on the outer end of the shank, substantially as herein described.

15. In a car mover, a base provided with the rail receiving jaws formed with the angular grooves or channels and with openings in the top leading thereto, and the angular blades conforming to the contour of the channels and projecting at one edge through the open sides thereof into the space between the jaws, the blades being adapted to be punched out of the groove by means of an instrument inserted downwardly through said top openings substantially as herein described.

16. A car starter comprising a base, a sectional compound lever pivoted to said base and convertible into a simple lever; the rear end of said lever being provided with a socket and the forward end having an eccentric to engage the car wheel, and a reversible handle bar having a straight and an angular or inclined end adapted to fit into said socket, substantially as herein described.

17. The combination with the base having jaws to engage the rail, and the operating lever pivoted on the base and adapted to move the car, of a spiral spring secured at one end to the forward end of the base and adapted at its other end to engage the truck; whereby as the lever is operated the car will be moved and expand the spring, and when the lever is reversed the spring will contract and draw the



base and its attached parts again into position, substantially as herein described.

18. A car mover comprising the base having the jaws provided with steel blades to engage the rail, a spring pressed chock, and a lever provided at its working end with an eccentric; the said lever being sectional and

convertible into a single or simple lever, or into a compound lever, substantially as herein described.

HENRY M. CRIPPEN.

Witnesses:

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J. P. WOOD.