

No. 682,639.

Patented Sept. 17, 1901.

D. J. ROSEN.

TROLLEY.

(Application filed June 13, 1901.)

(No Model.)

Fig. 1

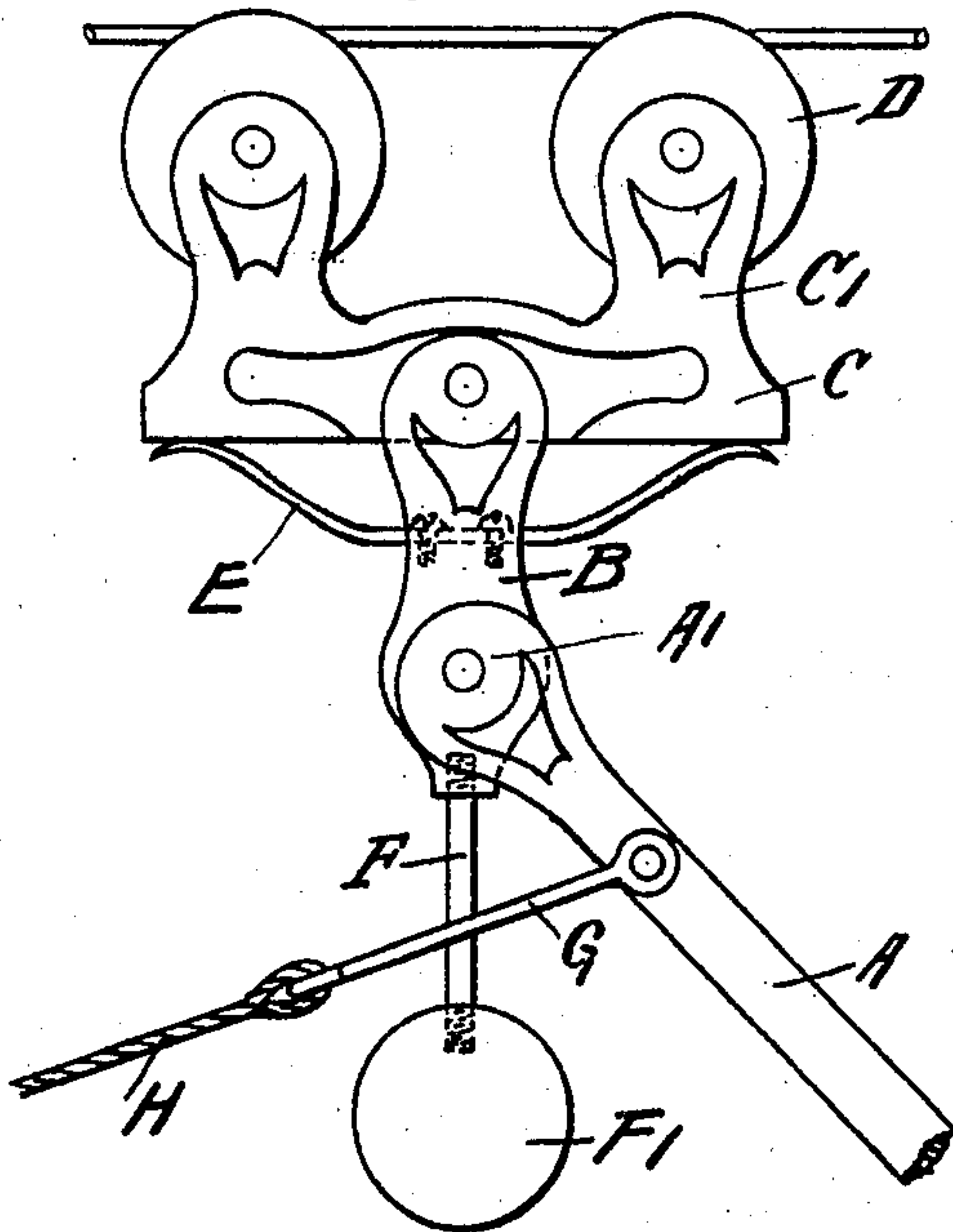


Fig. 2

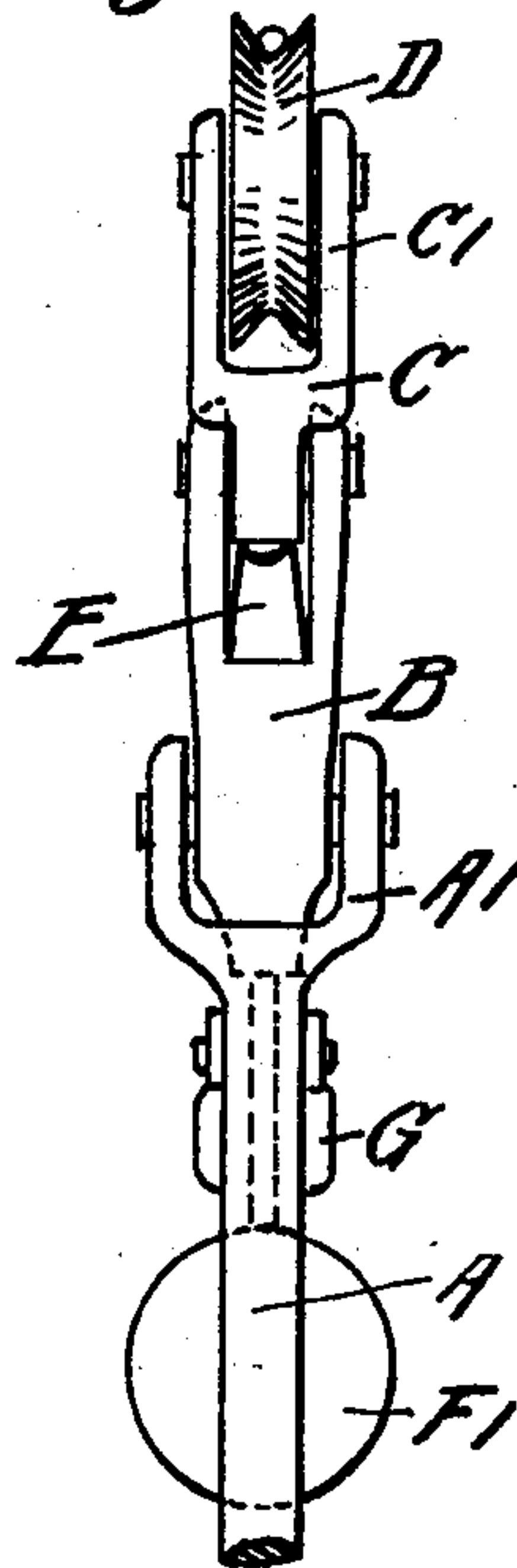


Fig. 3

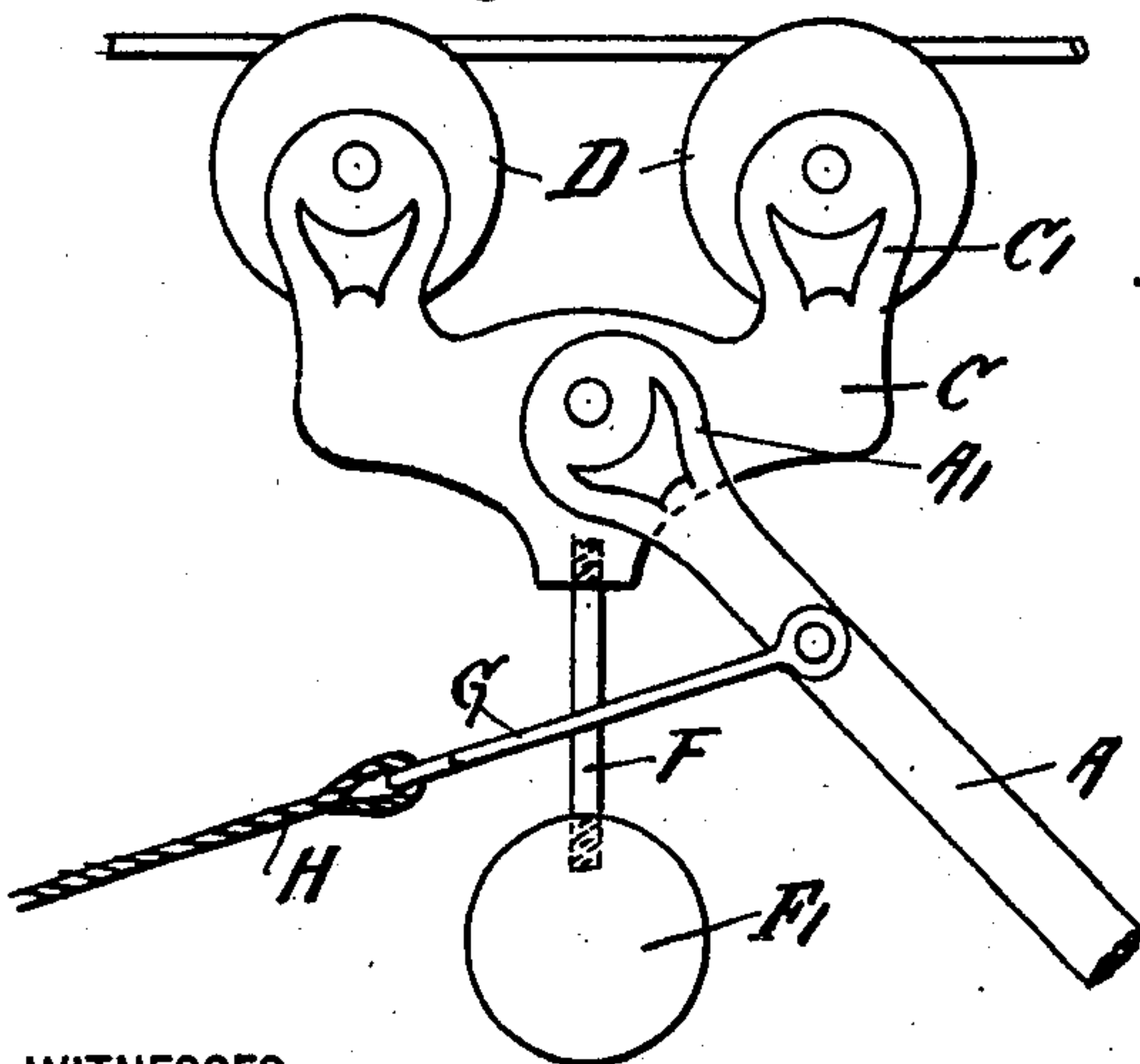
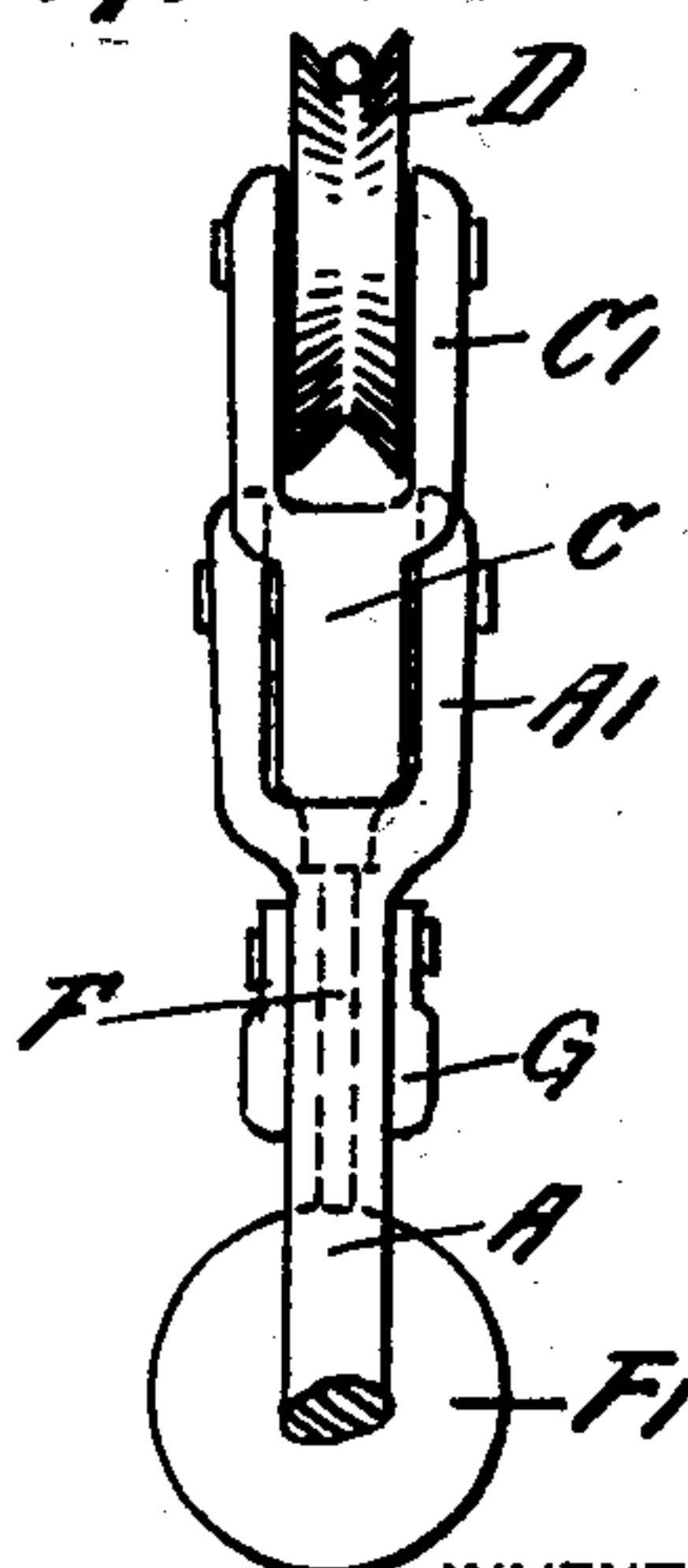


Fig. 4



WITNESSES:

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# UNITED STATES PATENT OFFICE.

DAVID J. ROSEN, OF BROOKLYN, NEW YORK.

## TROLLEY.

SPECIFICATION forming part of Letters Patent No. 682,639, dated September 17, 1901.

Application filed June 13, 1901. Serial No. 64,357. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID J. ROSEN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Trolleys, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

10 This invention relates to that class of trolleys which are provided with means or devices tending to retain them in position upon the wire; and the object of my invention is to provide a simple, improved, strong, durable, and effective device of this character by means whereof the trolley will always be maintained in effective contact with the wire and will accommodate itself to all irregularities of the said wire.

20 With this and other objects in view my invention consists of a trolley provided at its upper end with a normally vertical arm pivoted to the main trolley arm or rod and maintained in its vertical position by a weight at the bottom thereof, whereby it is freely swinging, and provided upon its upper ends with a yoke or device for carrying trolley-wheels.

30 It further consists of such a device in which the yoke is pivotally connected to the normally vertical arm and is made capable of yielding to very slight irregularities of the wire by means of a spring beneath the same and is supplied with two separate trolley-wheels which both engage the wire.

35 In the accompanying drawings, forming part of this specification, in which like reference-letters designate corresponding parts in the several views, Figure 1 is a side elevation of the upper end of a trolley constructed according to my invention and seated against a wire. Fig. 2 is a rear elevation of the same, and Figs. 3 and 4 are corresponding views of a modified form of device.

45 In the practice of my invention I form the upper end of the main trolley-arm A with a fork A' and pivot in the ends of the said fork a fork B. In the upper ends of the said fork B is pivoted a yoke C, the arms C' of which project vertically in the normal position of the device (shown in Fig. 1) and carry the contact-wheels D. Within the fork B is secured a fulcrum or plate spring E, the ends of which

bear upwardly against the ends of the yoke C to maintain it normally at right angles to the fork B. The lower end of the fork B has rigidly secured thereto a bar F, carrying a weight F', by which its normal vertical position is maintained.

To the fork A' of the main trolley-arm A, I pivot a yoke G, the lower or free end of which is connected with the usual manipulating-rope H. The bar F passes through this yoke and is screwed into both the forks B and the weight F'.

65 It will be observed that the spring E has two arms and is secured to the parts B at two different places by two different screws, which enables the arms to act independently, and these arms bear on the under sides of the opposite ends of the yoke or support C, and thus operate to equalize the action of said yoke or support and to keep the contact-wheels D in connection with the trolley-wires.

75 The operation of my newly-invented trolley will be readily understood from the foregoing description, taken in connection with the accompanying drawings, and the advantages resultant from the use thereof will be manifest to all who are conversant with devices of this character. The upward tendency of the trolley-rod under the usual spring-mounting thereof holds the device in a raised position. The general normal position vertically of or at right angles to the wire is maintained by the weight F' and spring E, and thereby both contact-wheels are constantly in engagement with the wire thereabove. However great the jar of the car or of the trolley-arm from any cause whatever, the effective position of the contacts will not be disturbed, and they cannot under ordinary conditions be accidentally dislodged from the wire. If one be thrown downwardly by impact with some irregularity of the wire or obstruction thereon, the other will contact with the wire and tend to return it similarly to contacting position instead of the wheel flying upwardly to either side, as is at present habitual. The spring E takes up all slight vibrations of either trolley-wheel, and this yielding action of the yoke C permits both wheels to be held equally in contact with the wire regardless of the proper balancing of the bar by the weight F'. As one wheel cannot depress without



raising the other, the pressing of the wire holds them both in contact.

In the modified form shown in Fig. 3 the yoke C is rigidly connected to the bar F, which supports the weight, and the fork A' of the trolley-arm A is pivoted directly to the said yoke, the spring being dispensed with. The operation is in the main the same.

I do not confine myself to the exact formation of parts and construction of details herein shown and described, as I conceive my invention to be novel in its plan and broad in its scope.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a trolley-arm of a support B pivoted in the end thereof, a yoke-shaped support C pivoted in the said first-named support, spring-arms secured to the support B and extending in opposite directions and bearing beneath the yoke-shaped support C and contact-wheels mounted in said yoke-shaped support, substantially as shown and described.

2. The combination with a trolley-arm, of a support B pivoted in the end thereof, a yoke-shaped support C pivoted in the said first-named support, spring-arms secured to the support B and extending in opposite directions and bearing beneath the yoke-shaped support C and contact-wheels mounted in said yoke-shaped support, said support B being also provided with a depending weight, rigidly connected therewith, substantially as shown and described.

3. A trolley provided at its upper end with

a fork pivoted thereto, and provided with means for balancing the same, whereby it is maintained normally at a desired angle to the wire, and spring-actuated contact devices pivotally connected to the said fork and capable of rocking motion relatively to the said wire.

4. A trolley formed with a forked upper end and provided with a fork pivoted therein, a yoke mounted upon the upper end of the said pivoted fork and formed with two arms carrying separate trolley-wheels which simultaneously contact with the wire, and a weight upon the lower end of the said fork to maintain the said trolley-wheels both normally in contact with the wire.

5. A trolley having pivoted to the upper end thereof a fork, a yoke pivoted between the upper ends of the said fork and formed with two arms, each carrying a trolley-wheel adapted for simultaneous contact with the wire, a spring secured in the fork between the ends thereof, and bearing against the ends of the said yoke, a bar secured in the said fork, a weight secured rigidly upon the lower end of the bar, and a yoke pivoted to the upper end of the trolley-arm and encircling the pivoted fork, the said yoke being connected with the guide-rope of the trolley.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 8th day of June, 1901.

DAVID J. ROSEN.

Witnesses:

F. A. STEWART,  
F. F. TELLER.