

(No Model.)

G. MOORE.
TROLLEY GUARD.

No. 502,629.

Patented Aug. 1, 1893.

Fig. 1.

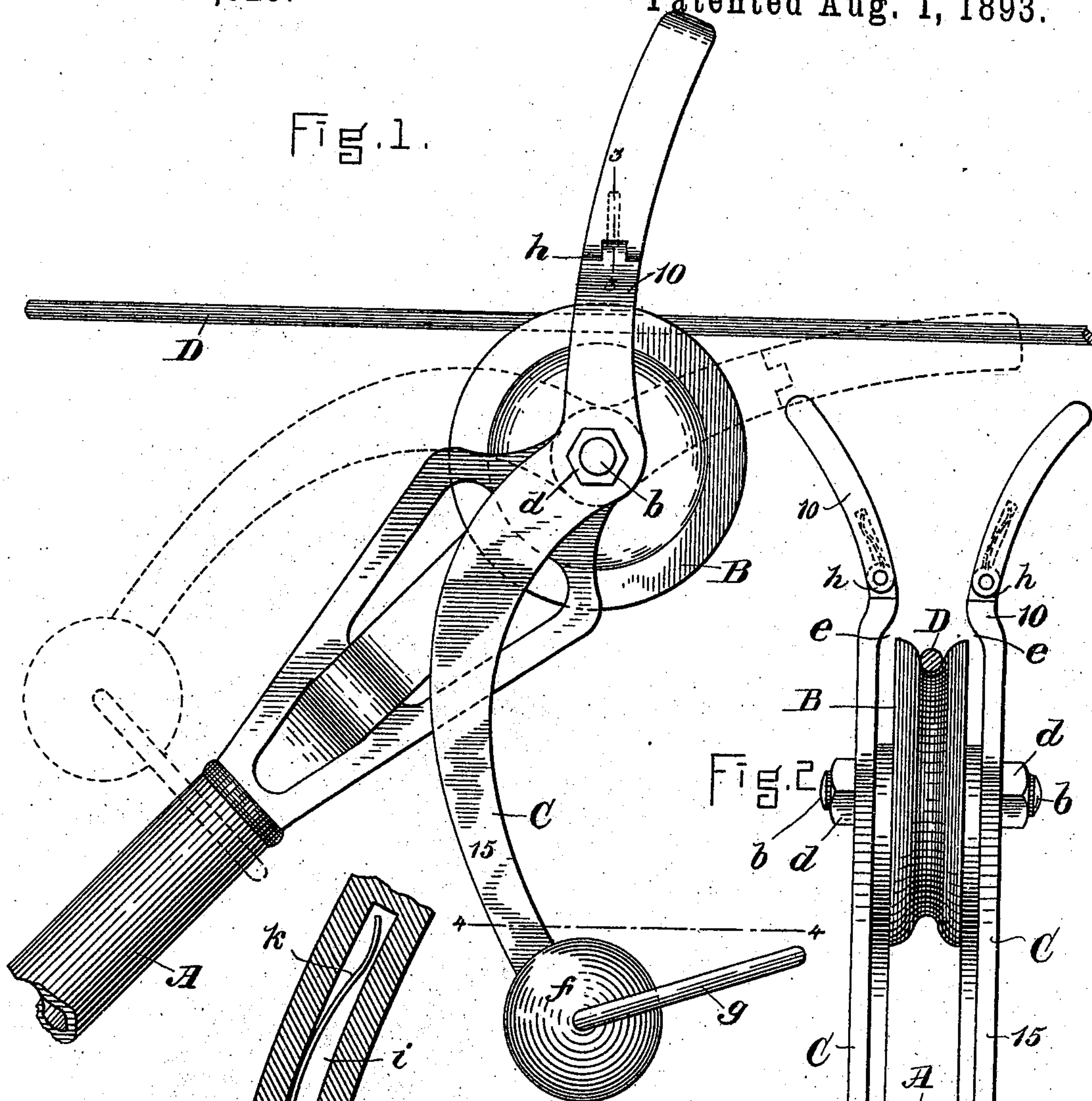


Fig. 2.

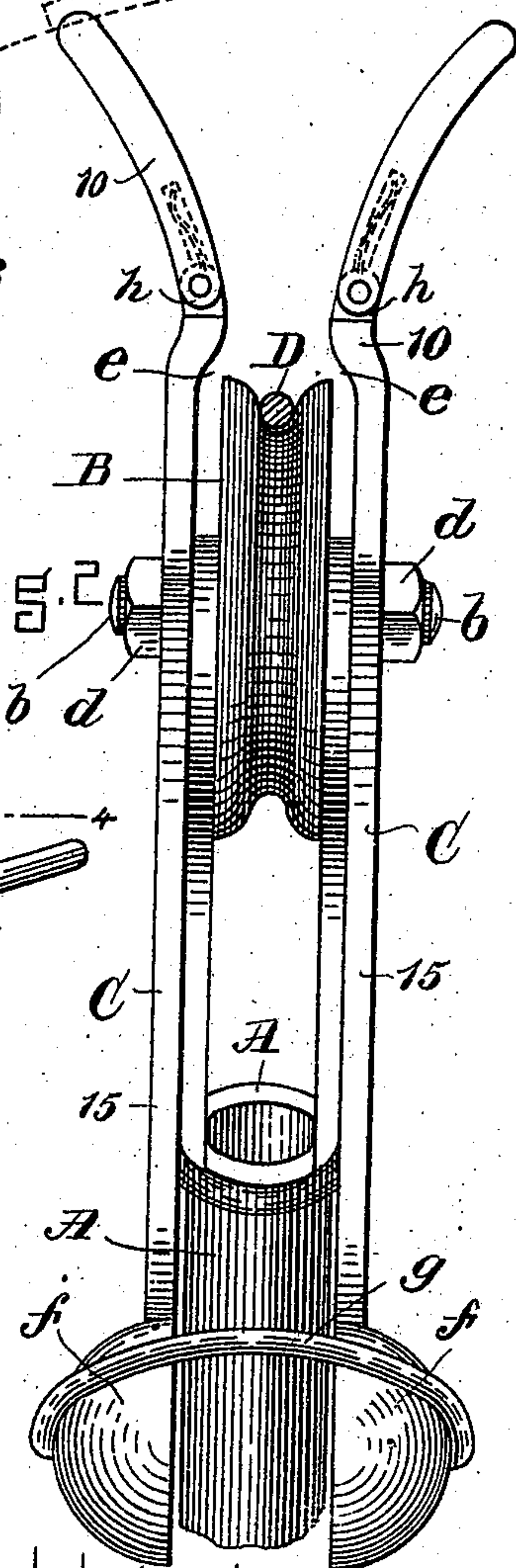


Fig. 3.

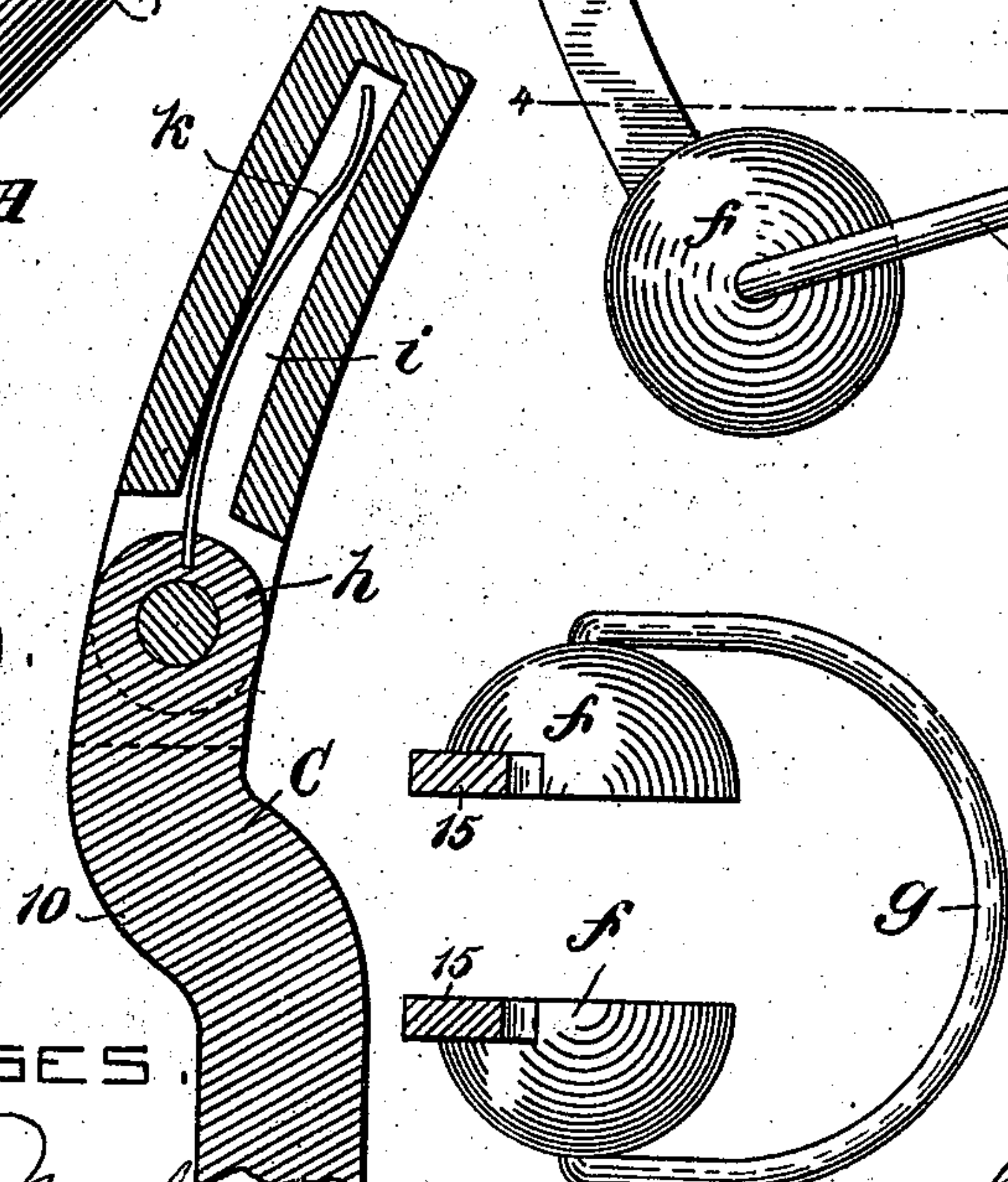
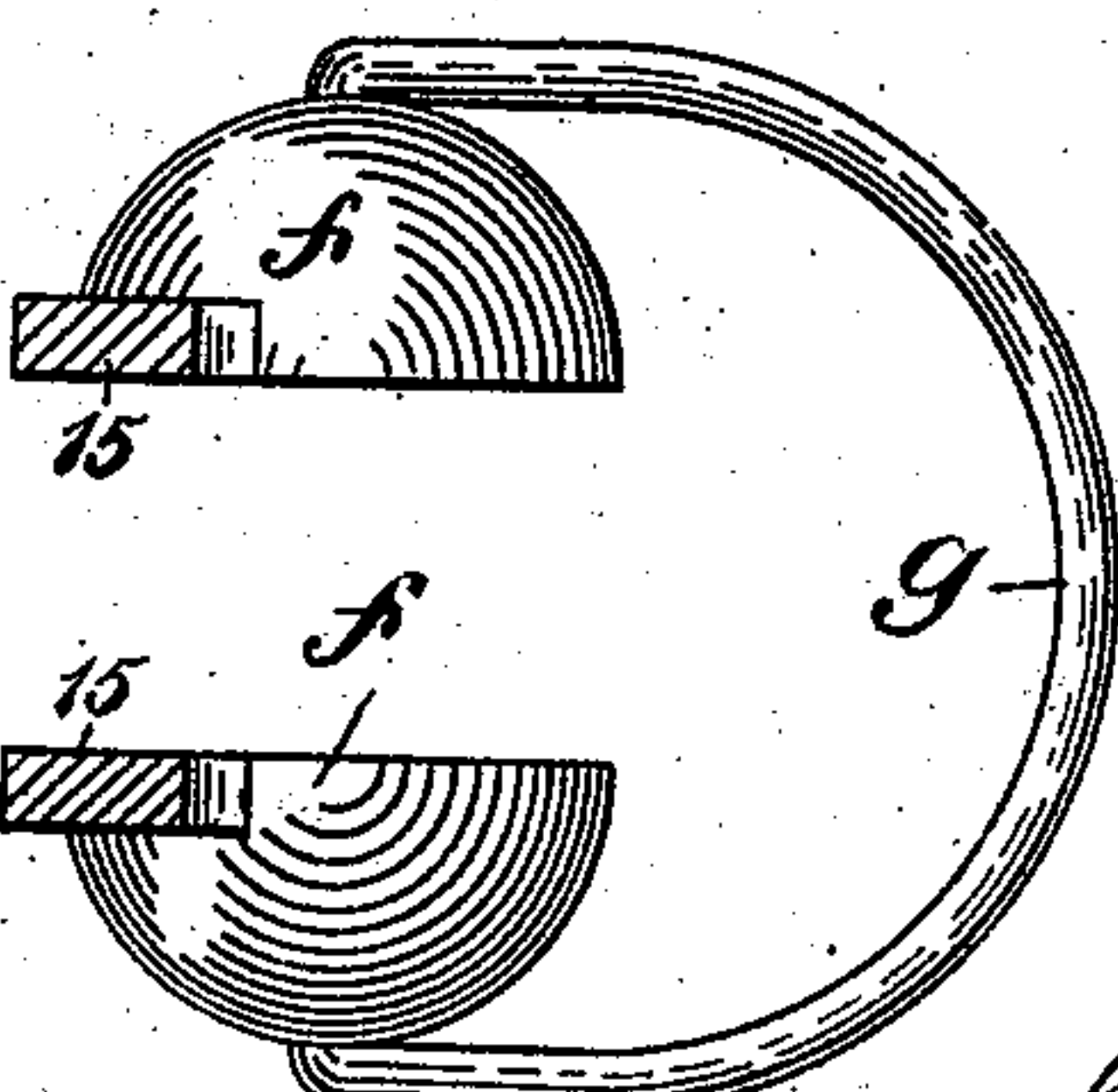


Fig. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE MOORE, OF BOSTON, MASSACHUSETTS.

TROLLEY-GUARD.

SPECIFICATION forming part of Letters Patent No. 502,629, dated August 1, 1893.

Application filed August 22, 1892. Serial No. 443,776. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MOORE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Guides for Trolley-Wheels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the upper portion of a trolley-arm and its wheel having my improved trolley-wheel guide applied thereto. Fig. 2 is a rear elevation of the same. Fig. 3 is a section through the upper end of one of the guide levers, on the line 3, 3 of Fig. 1. Fig. 4 is a sectional plan on the line 4, 4 of Fig. 1.

My invention relates to certain improvements in trolley-wheel guides which are employed to return the trolley-wheel at the upper end of the trolley-arm of an electric car to the circuit-wire in case it should be thrown off therefrom, and my invention has for its object to improve the construction of such guides whereby they are rendered more effective and reliable than heretofore.

To this end my invention consists in providing the upper ends or arms of the guide levers which extend above the flanges of the trolley-wheel on either side of the same, with spring joints or hinges, whereby said ends are permitted to yield laterally or transversely in either direction on encountering a "V-plate," "crossing" or other obstruction, thus preventing the trolley-arm from being forced to one side in such manner as to throw the trolley-wheel off the circuit-wire, as would be liable to occur if the upper ends of the guide levers were rigid and unyielding in a direction at right angles to the line of the circuit-wire, and my invention also consists in certain other novel features and combinations of parts hereinafter described and specifically pointed out in the claims.

In the said drawings A represents the trolley-arm of an electric car, and B the trolley wheel mounted as usual on the journal-pin or axial bolt *b* at the end of said trolley-arm.

C C are two arms or levers arranged on opposite sides of the trolley-wheel B, and fulcrumed on the ends of the journal or bolt *b*,

where they are secured by nuts *d d*. The upper arms 10 10 of the levers C C extend normally a suitable distance above the flanges of the trolley-wheel and the circuit-wire D, and are flared or inclined outwardly as shown in Fig. 2, forming yielding guides against which the circuit-wire D is brought into contact in the event of the trolley-wheel being thrown off therefrom, and by which said wheel is again brought into engagement with the wire D by the upward pressure of the trolley-arm, each of said arms 10 being curved inwardly at *e* at a point immediately above the wheel B, and lying close enough to said wheel to prevent the wire from passing between the side of the wheel and the arm. The lower arms 15 of the levers C C are provided with weights *f f* which serve to automatically return said levers to their normal upright position as shown in Fig. 1, after the upper arms 10 have been forced downward as shown in dotted lines in Fig. 1, by contact with a "V-plate," "crossing," or other obstruction with which they may be brought into contact during the passage of the car along the line. The weights *f f* are connected together by a V-shaped wire loop *g* extending out laterally therefrom as seen in Fig. 1, said loop being brought into contact with the trolley-arm A when the upper arms 10 are suddenly depressed, and thus forming a stop to prevent the weights *f f* from being suddenly thrown upward into contact with any portion of the overhead-construction, which might injure or break the same. The length of the loop or V-shaped wire *g* is such that it will permit the arms 10 to assume the position shown dotted in Fig. 1 before coming into contact with the trolley-arm A.

Each of the upper arms 10 of the levers C C is provided, at a point preferably a little above the flanges of the trolley-wheel B, with a transverse spring joint or hinge *h*, the construction of which is clearly shown in Fig. 3. The laterally movable or upper portion of the arm 10 is provided with a recess *i* for the reception of a flat spring *k* the lower end of which is seated in the lower portion of the arm at the joint, the spring thus serving to maintain the hinged or upper portion of the arm normally in an upright position and at the same time permit it to yield laterally or

at right angles to the line of the circuit-wire in either direction in case it should encounter a "V-plate," "crossing," or other portion of the overhead-construction which would
 5 tend to throw it in a lateral or transverse direction, and which if said arm was rigid or unprovided with a joint as described would be liable to force the trolley-arm to one side and throw the wheel B out of engagement with
 10 the circuit wire, which undesirable result is effectually prevented by providing the arms with spring-joints or hinges as described, whereby my improved guide is rendered effective and reliable under all conditions to
 15 which it may be subjected, a desideratum hitherto unattained in any device of this description with which I am acquainted.

I do not claim broadly a trolley-wheel guide consisting of arms or levers adapted to extend
 20 up above the trolley-wheel on either side of the same, as I am aware that such construction is not new. My guide, however, differs from those hitherto in use in having the upper portions of the guide levers or arms constructed to yield laterally, which is the essential feature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a trolley-arm and
 30 a trolley-wheel carried thereby, of the pivoted weighted guide levers C C, having their upper arms normally extended above the trolley-wheel, and each of said upper arms having a spring joint or hinge whereby it is permitted to yield laterally or at right angles to
 35

the line of the circuit-wire in either direction on encountering an obstruction, substantially as and for the purpose set forth.

2. The combination with a trolley-arm and a trolley-wheel carried thereby, of a guide
 40 consisting of a pair of yielding weighted levers C C fulcrumed at *b* and having their upper arms 10 inclined outward and normally extended above the trolley-wheel, and each of said upper arms 10 being provided with a
 45 joint or hinge *h*, and a spring *k*, the latter seated in the lower portion of the arm and extending up into a recess *i* in the upper portion of the same, whereby said arm is permitted to yield laterally or in a direction at
 50 right angles to the line of the circuit-wire, substantially as described.

3. The combination with the trolley-arm A and the trolley-wheel B mounted thereon, of the two guide-levers C C, pivoted to the trolley arm at *b* and provided at their lower ends
 55 with weights *ff*, and the looped or V-shaped wire *g* extending between and connecting said weights *ff* and forming a stop to limit the upward movement of the lower weighted arms
 60 of the guide-levers C C, all constructed and arranged to operate substantially as and for the purpose set forth.

Witness my hand this 20th day of August, A. D. 1892.

GEORGE MOORE.

In presence of—

P. E. TESCHEMACHER,
 R. H. MARSH.