

(No Model.)

D. LIPPY, I. E. FINFROCK, G. A. RINEHART &
D. R. FRANCIS.

TROLLEY.

No. 551,169.

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Fig. 1.

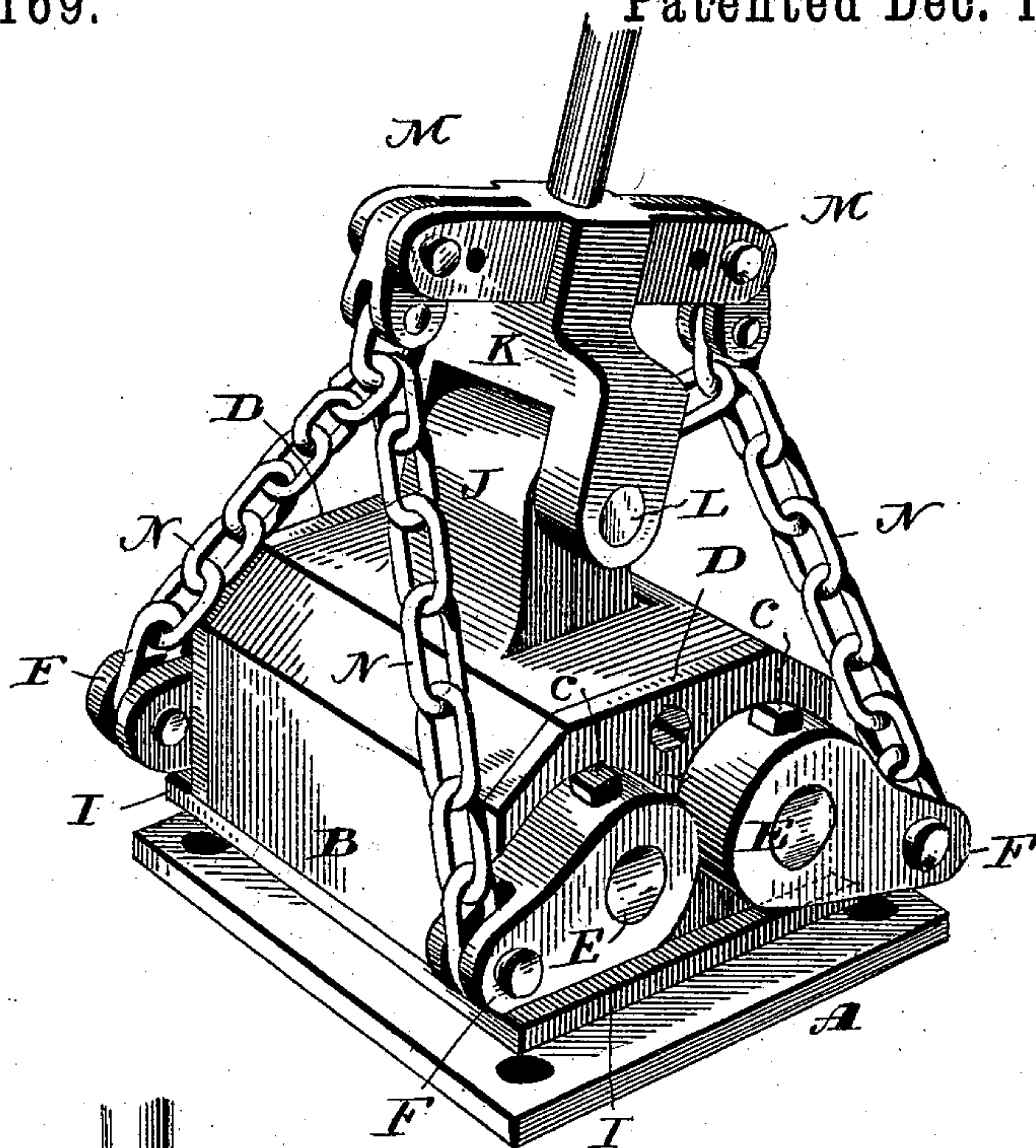


Fig. 2.

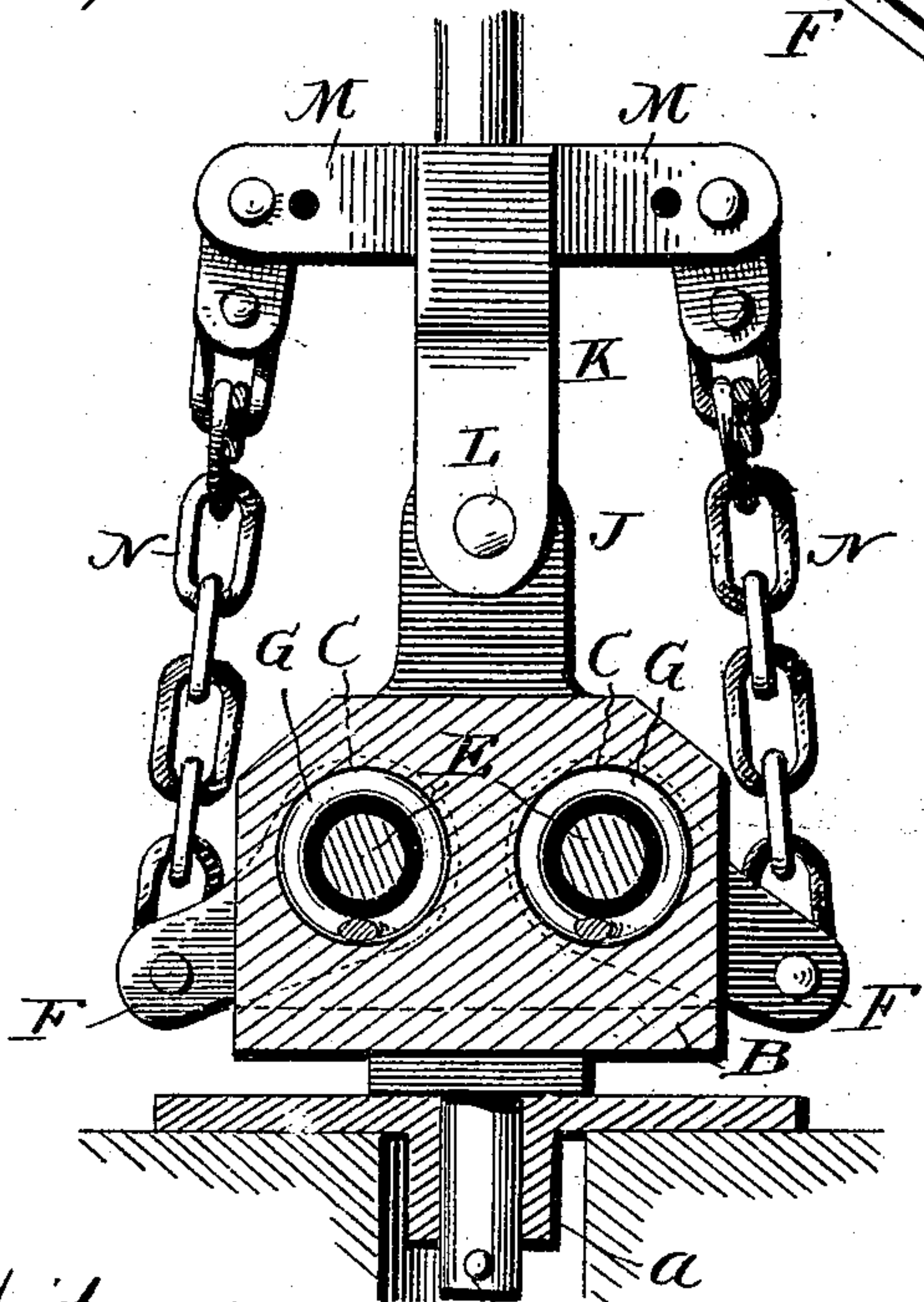
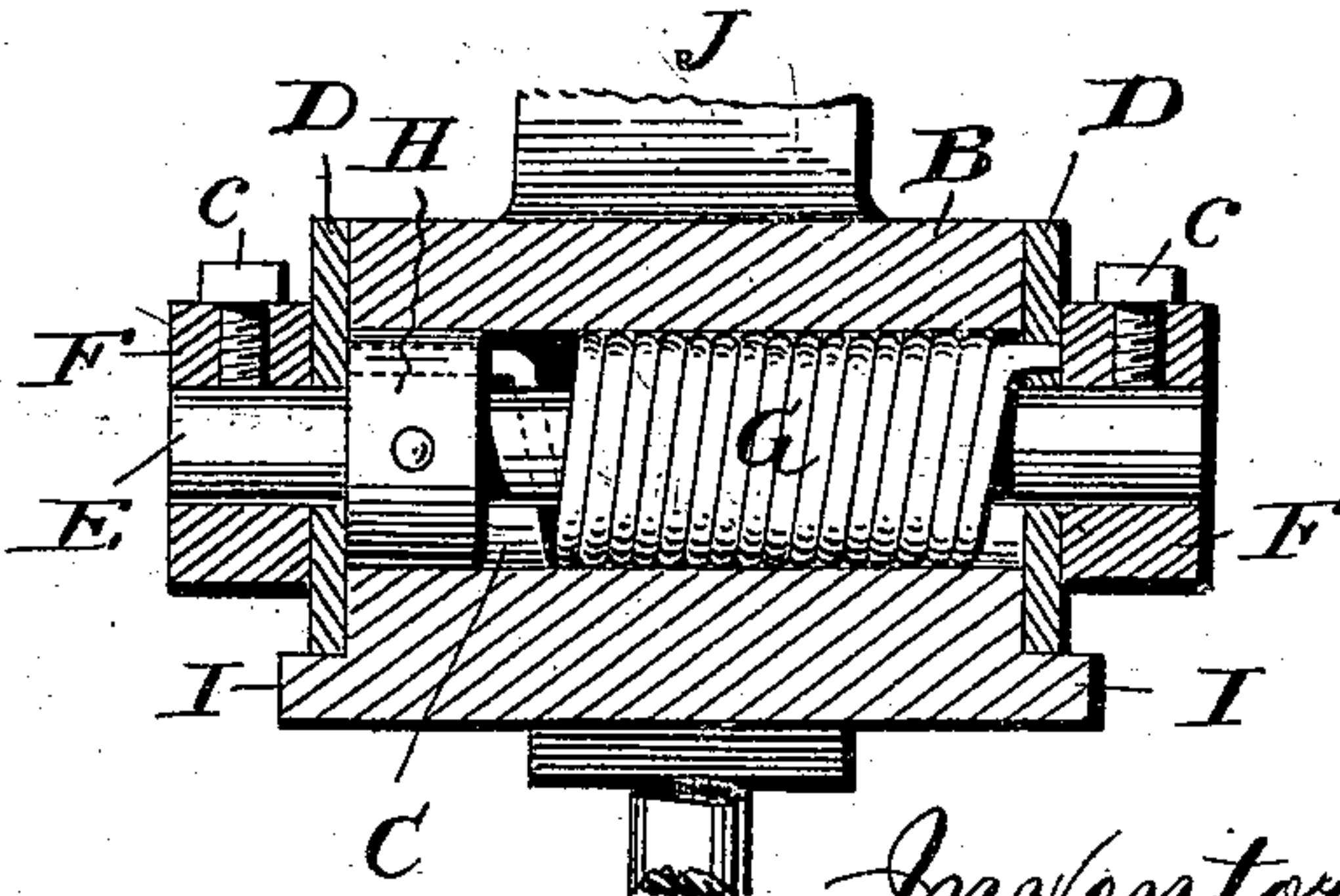


Fig. 3.



Witnesses

J. Williamson
J. C. Medder

Inventors
David Lippy,
Ira E. Finfrock,
George A. Rinehart,
David R. Francis,
per Cha. H. Fowler
Attorney.

UNITED STATES PATENT OFFICE.

DAVID LIPPY, IRA ELMER FINFROCK, GEORGE ATTIGG RINEHART, AND
DAVID RAITT FRANCIS, OF MANSFIELD, OHIO.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 551,169, dated December 10, 1895.

Application filed September 24, 1895. Serial No. 563,538. (No model.)

To all whom it may concern:

Be it known that we, DAVID LIPPY, IRA ELMER FINFROCK, GEORGE ATTIGG RINEHART, and DAVID RAITT FRANCIS, citizens of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Trolleys; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention relates to overhead trolleys for electric railways, and has for its object the provision of a more efficient and satisfactory base or support for holding the trolley-wheel against the conductor-wire than has heretofore been devised; and to this end said invention consists in the trolley base or support having the construction and combination of parts substantially as hereinafter specified.

In the annexed drawings, Figure 1 is a perspective view of our invention. Fig. 2 is a vertical section with the mast-head in elevation. Fig. 3 is a detail view of a section on a line parallel with one of the spring-shafts.

Referring to the drawings, A designates a bearing-plate which is secured to the top of a car in any suitable manner, and pivotally supports a casting in the form of a block B, the pivoting means being a pintle *b*, projecting from the block, and a socket *a* in the casting. Within the block are two parallel horizontal openings C and C, over both of which, at each end of the block, is placed a plate D, that is held to place by screws, and within each of which openings is a shaft E, that is of such length as to project through both plates D, and by which it is journaled. Outside of each plate each shaft has secured to it, as by a set-screw *c*, a radial arm F. Both arms of the same shaft project in the same direction, but opposite those of the other shaft. Encircling each shaft within the opening C is a coiled spring G, that has one end attached to a collar H pinned to the shaft and the other end engaging an opening in one of the plates D, whereby the tension of the spring may be caused to revolve the shaft, the di-

rection of revolution being such as to move the free ends of the shaft-arms downward. A rib or flange I is provided at each end of the block beneath the arms to engage and limit the downward motion of the arms under stress of the springs.

The block B has upon its upper side a vertical post J, to which is pivoted a mast-head K, that has arms upon opposite sides of the post, through which, and through the post, passes a pivot-pin L. Above its pivot the mast-head has two oppositely-extending arms M and M, that are located at a point in line with the transverse center of the pivot-pin L, and each of said arms is connected by downwardly-diverging chains N with the pair of arms F on the same shaft E. By the construction described it will be seen that the power of each spring is applied uniformly and equally to the mast-head at a central point, so that the latter may be moved easily and freely upon its pivot. The power of each spring is exerted to swing the mast to a vertical position, and of course when the mast is swung toward a horizontal position on one side or the other the appropriate spring will, by the turning of its shaft, have its tension increased. By reason of the chain connection between the shaft and the mast-head, although the tension of the spring will thus be increased, its effective power will be diminished, because the farther downward the mast moves the nearer the chain approaches the center of motion of the mast. The advantage of this construction is that as the power of the spring is greatest when the mast is in a vertical position, there is always ample pressure applied to the wheel to keep the same in contact with high wires, and as the power is lessened when the mast is at a point intermediate the vertical and the horizontal, danger of cutting the wheel from excessive pressure thereof against the wire is avoided. The power of the spring being slight when the mast is in a horizontal position, manipulation of the mast to shift its position is rendered easy, as is also the holding of the same to the roof of the car, when such is desirable.

While we prefer the specific construction of parts shown, the scope of our invention is not limited thereto, as changes in details may

be made which will involve no change in principle.

What we claim is—

1. The combination of the pivoted mast, a
5 shaft having two radial arms, connected with
the mast, and a coiled spring for rotating the
shaft, substantially as specified.

2. The combination of the block having two
10 parallel openings, plates at each end of the
block, a shaft passing through each opening,
and projecting beyond both plates, a coiled
spring encircling each shaft within the open-
ing and engaging the same and one of the
15 plates, two arms on each shaft where it pro-
jects through the plates, a mast head pivoted

to the top of the block, and having oppo-
sately extending arms, above and in line with
the transverse center of the pivot and chains
connecting each of said arms and a pair of
shaft arms, substantially as specified. 20

In testimony that we claim the above we
have hereunto subscribed our names in the
presence of two witnesses.

DAVID LIPPY.

IRA ELMER FINFROCK.

GEORGE ATTIGG RINEHART.

DAVID RAITT FRANCIS.

Witnesses:

L. J. MCCRAY,

T. Y. MCCRAY.