

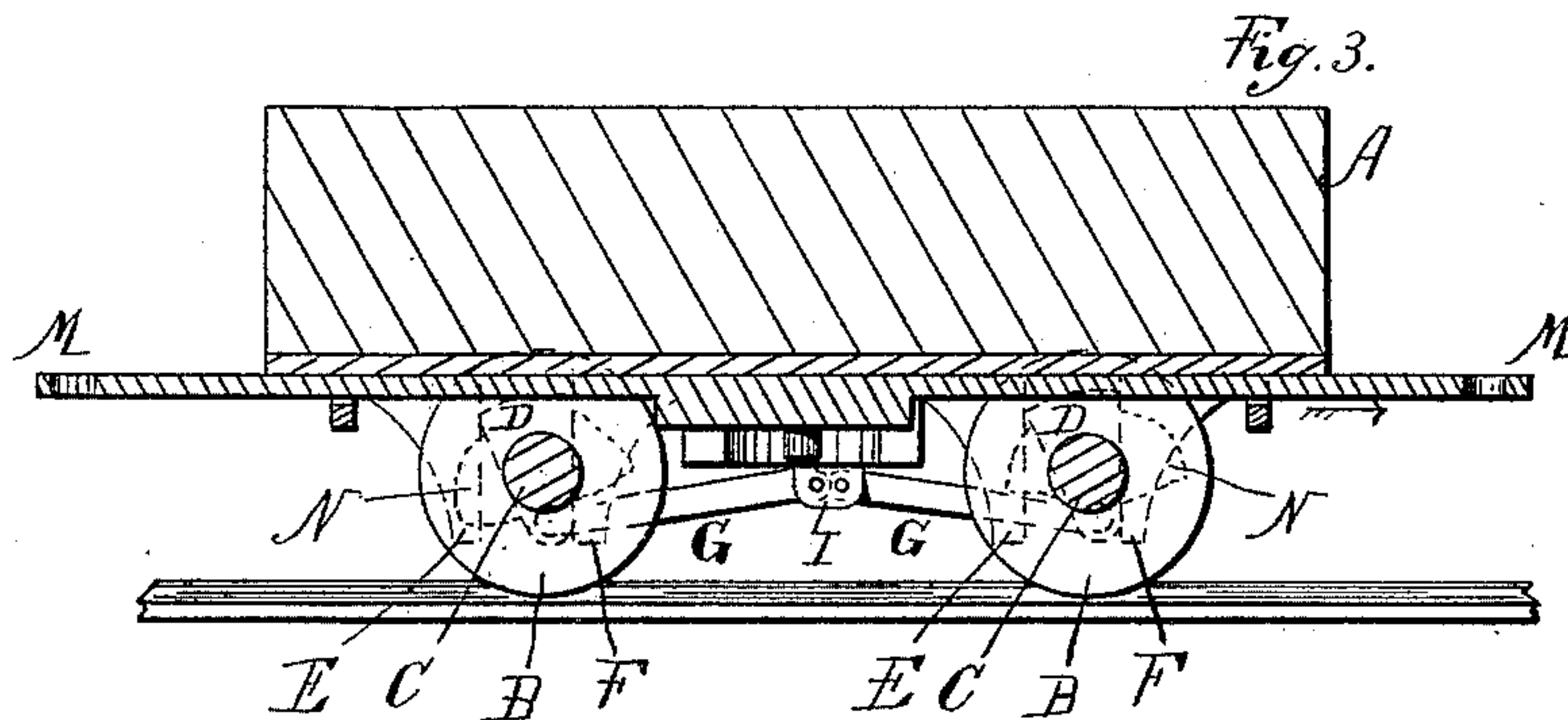
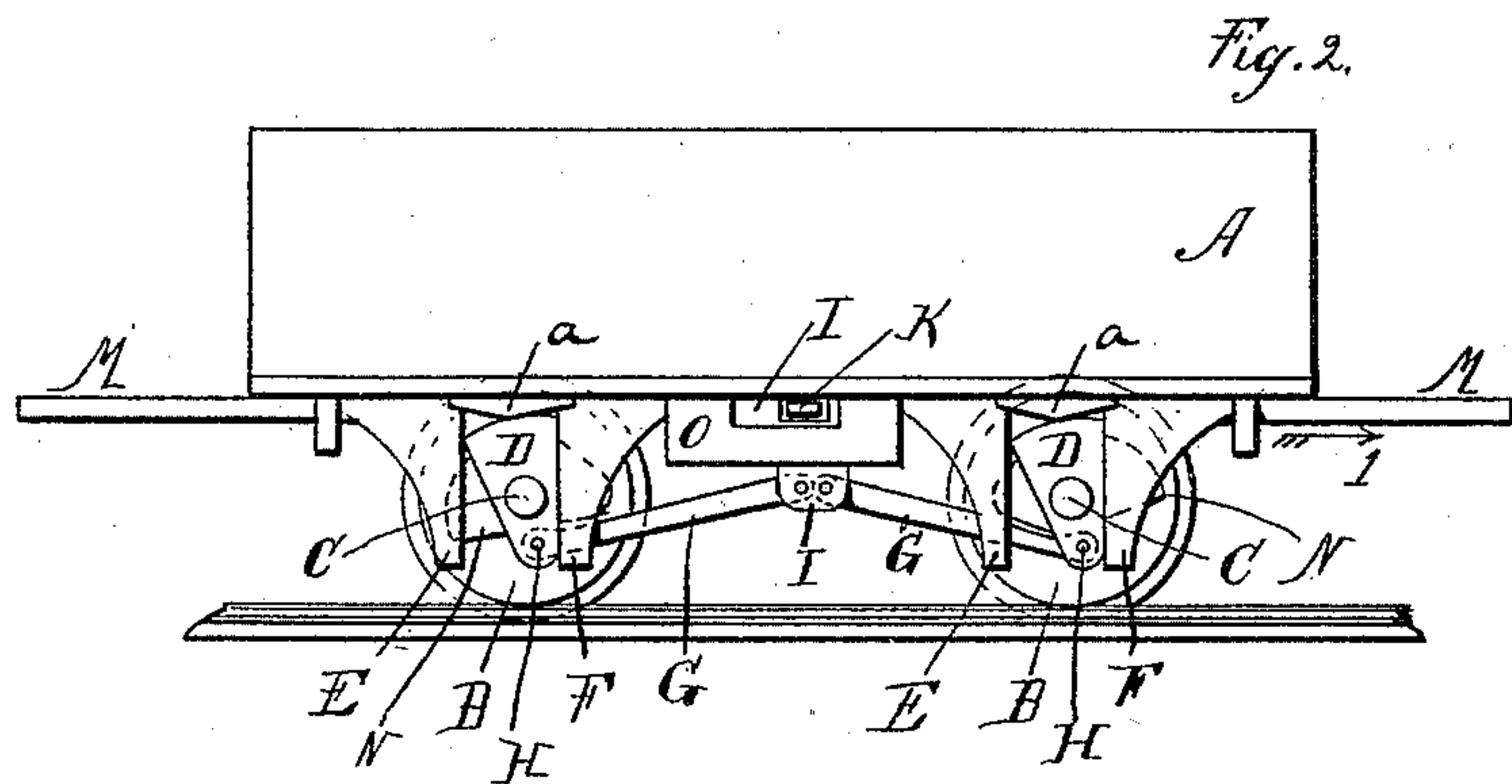
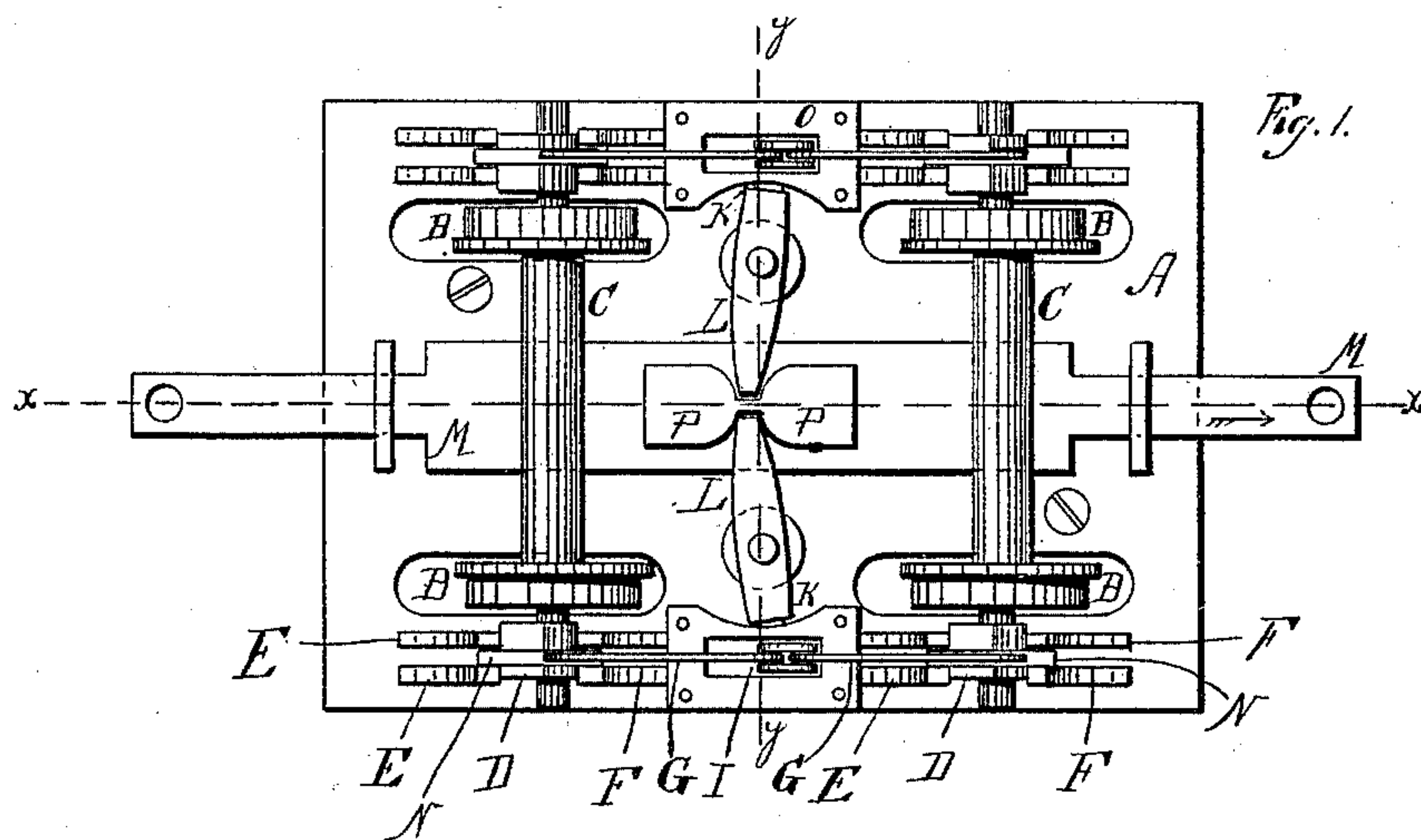
(No Model.)

3 Sheets—Sheet 1.

H. A. KINGSLAND.  
CAR STARTER.

No. 411,341.

Patented Sept. 17, 1889.



WITNESSES:

Oscar A. Michel.  
William Miller

INVENTOR

Hugh A. Kingsland

BY

Van Sauter & Hauff  
his ATTORNEYS

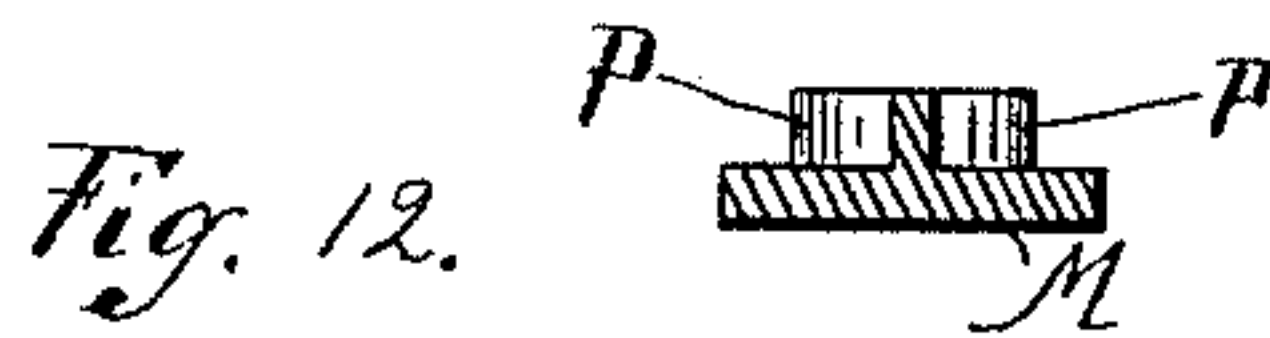
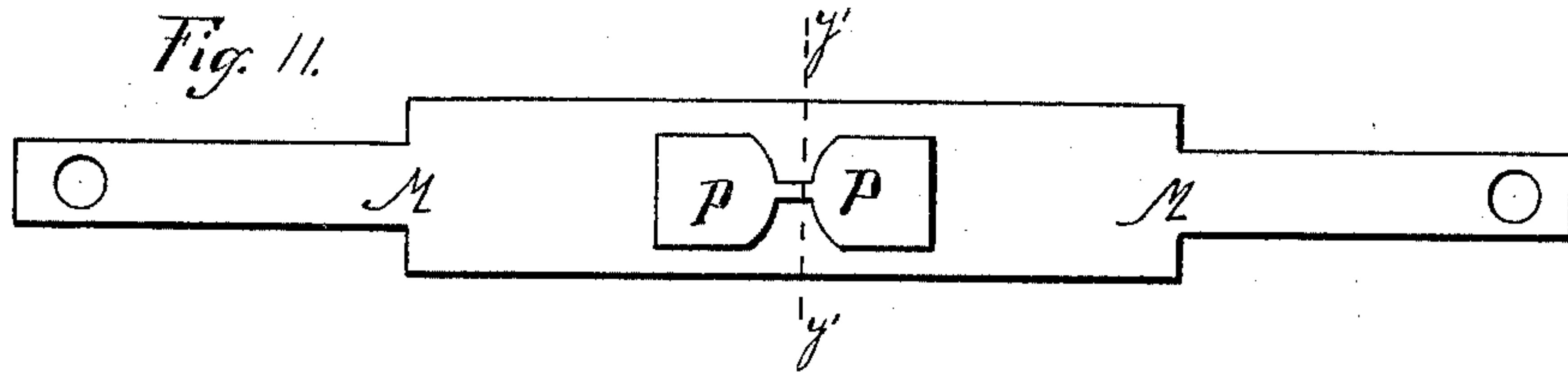
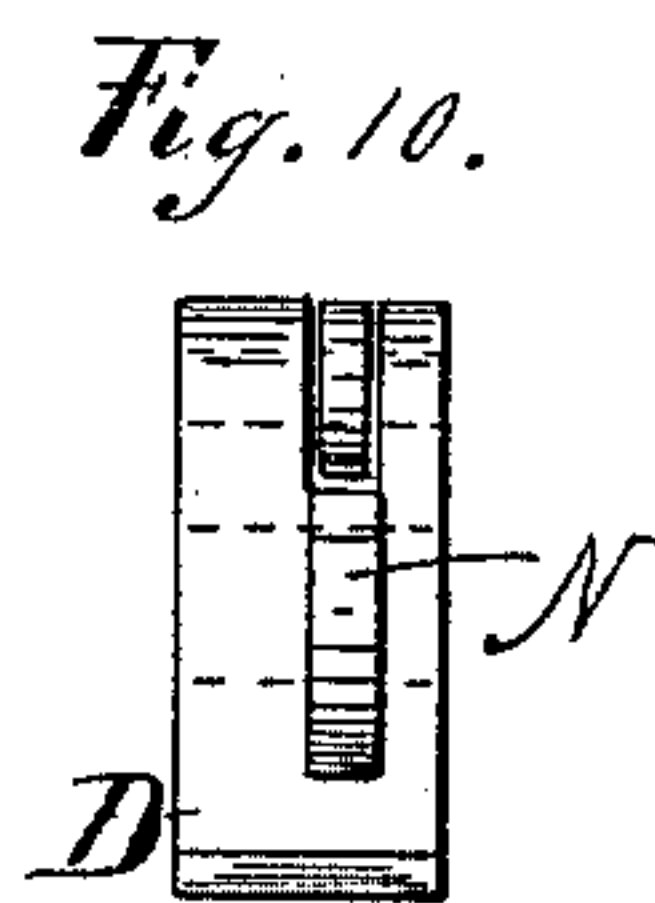
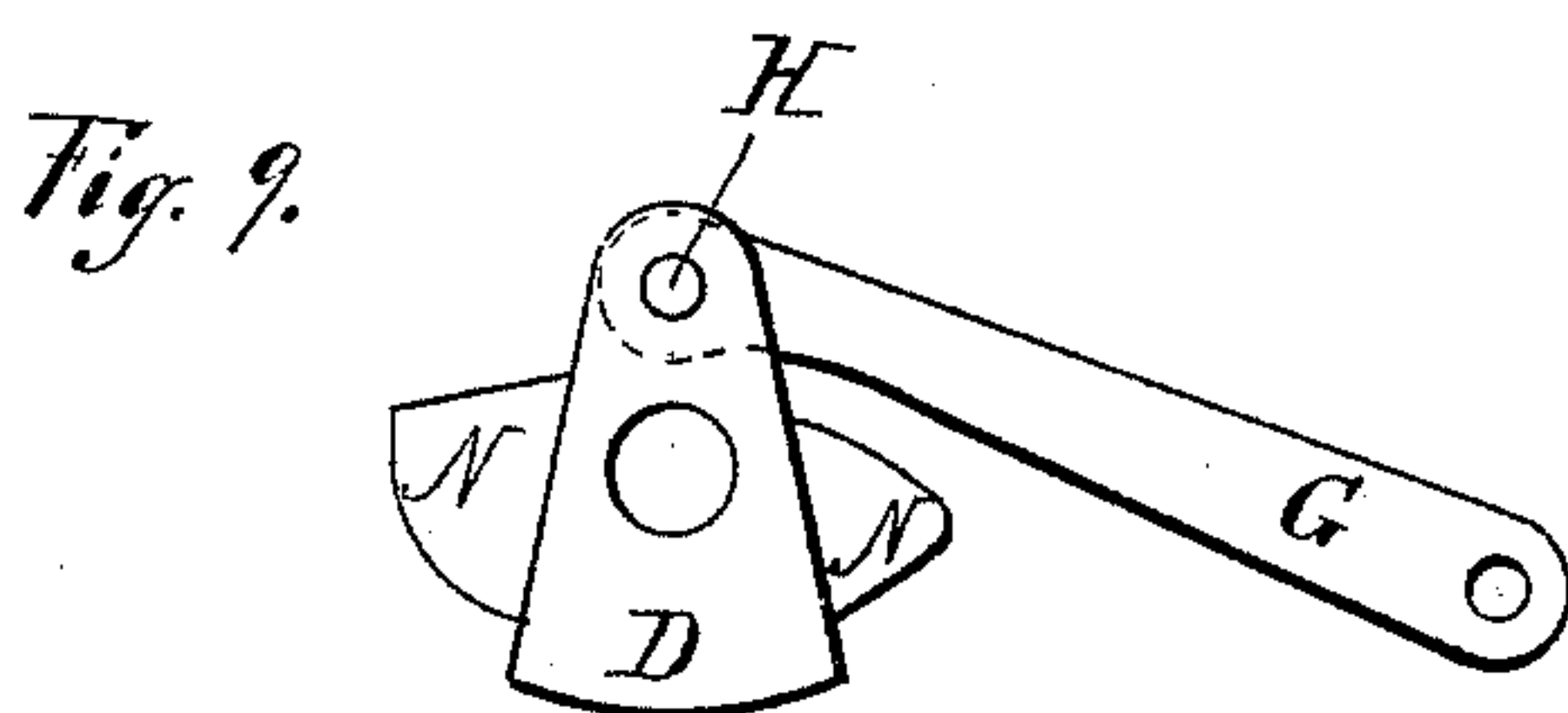
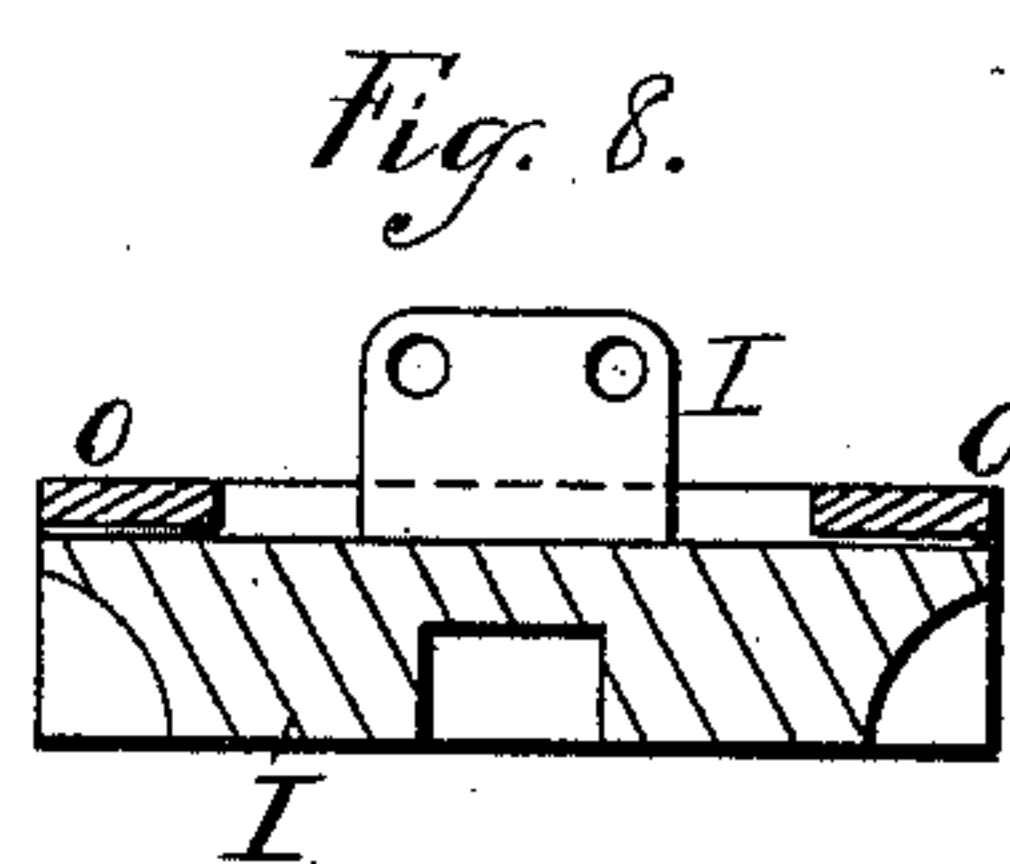
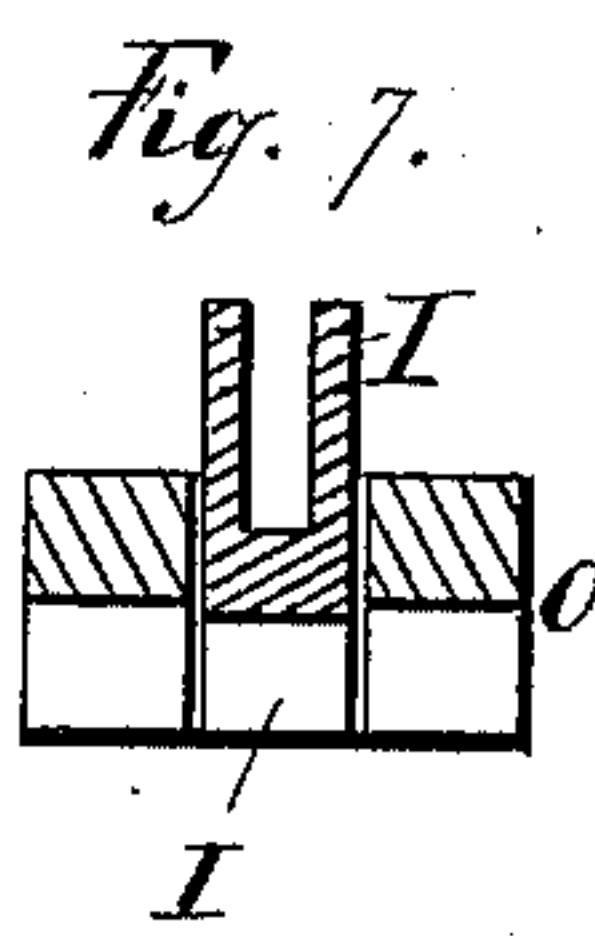
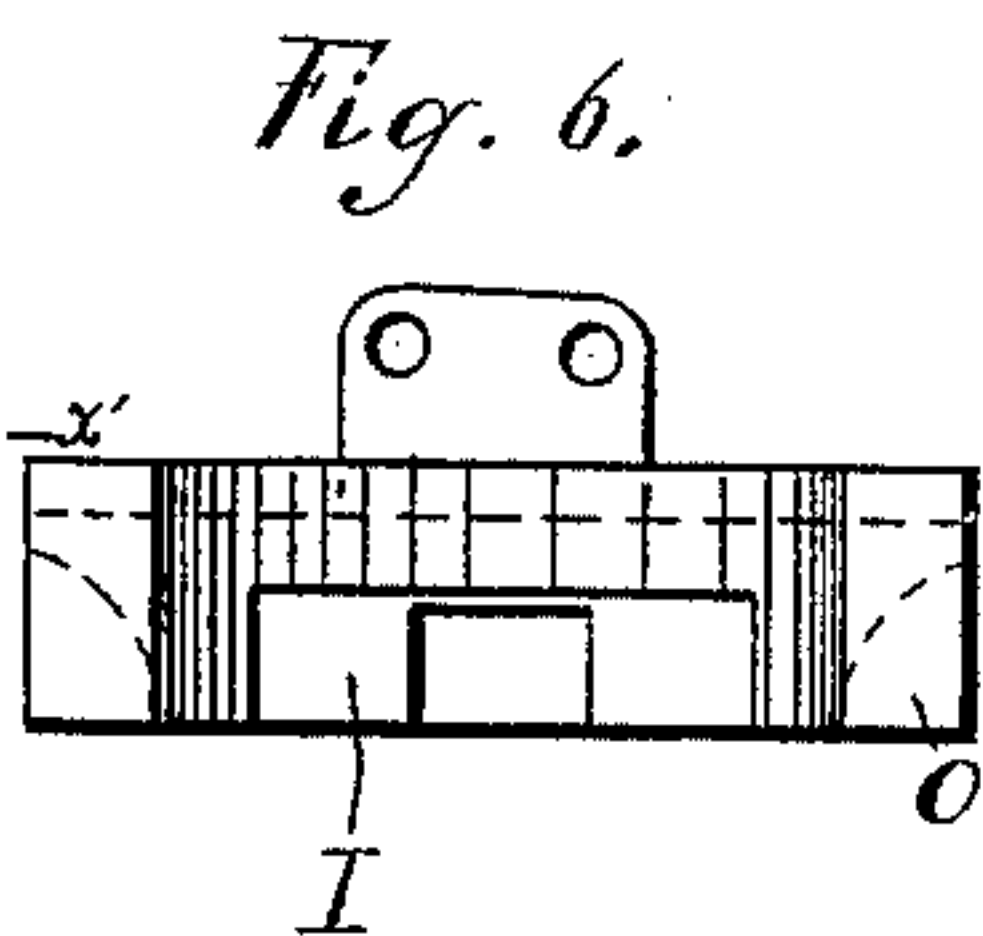
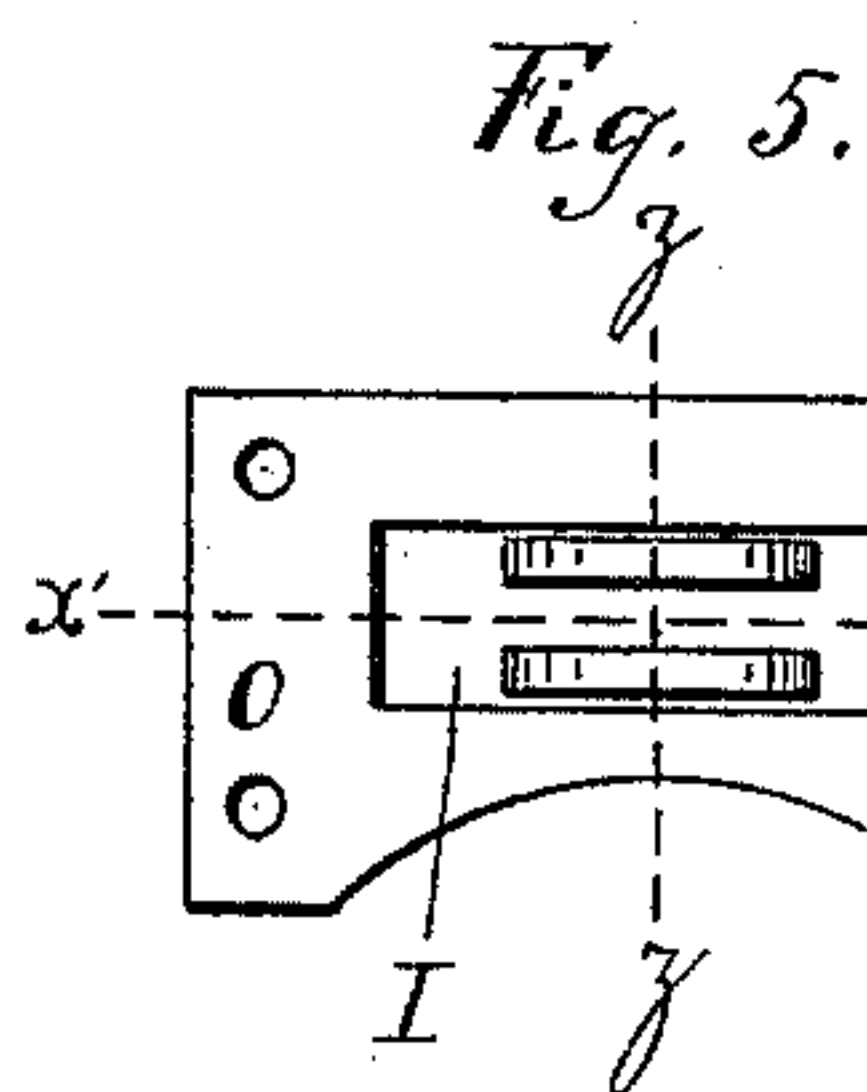
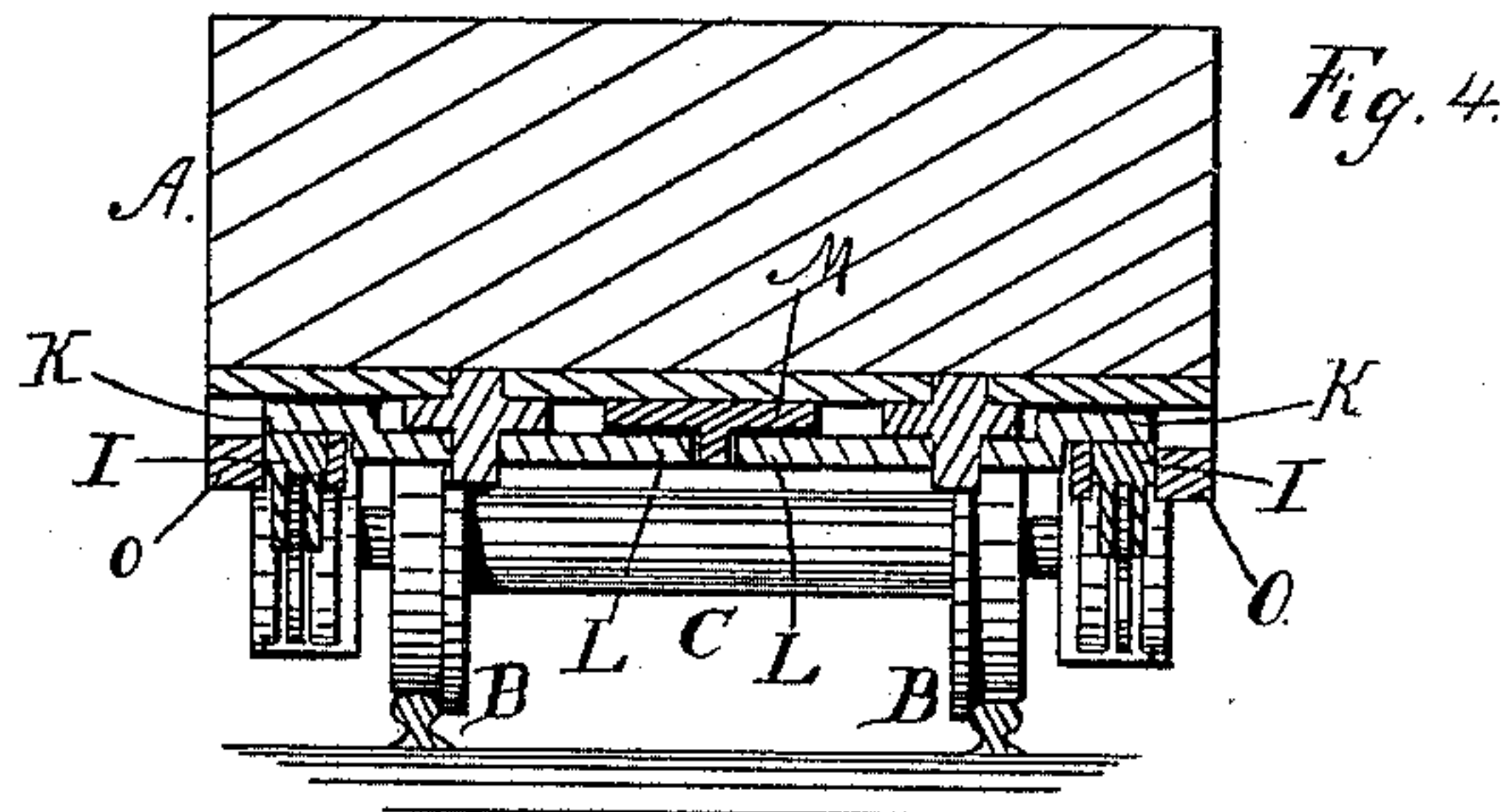
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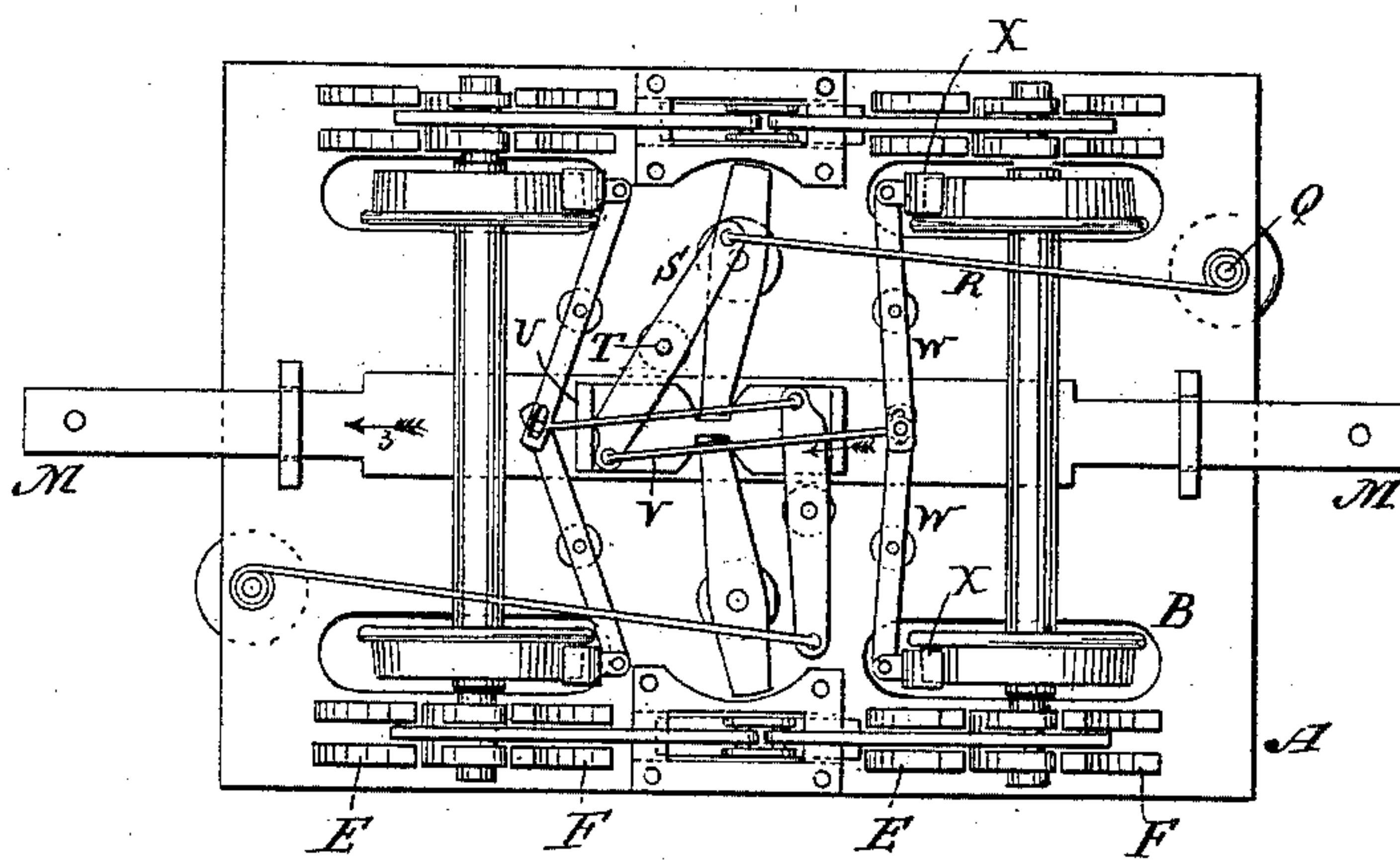
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*Fig. 13.*



WITNESSES:

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his ATTORNEYS



# UNITED STATES PATENT OFFICE.

HUGH A. KINGSLAND, OF BELLEVILLE, NEW JERSEY.

## CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 411,341, dated September 17, 1889.

Application filed June 15, 1889. Serial No. 314,368. (No model.)

*To all whom it may concern:*

Be it known that I, HUGH A. KINGSLAND, a citizen of the United States, residing at Belleville, in the county of Essex and State of New Jersey, have invented new and useful Improvements in Car-Starters, of which the following is a specification.

This invention relates to an improvement in car-starters; and the invention consists in making the wheels oscillatory in the line of movement or travel of the car, as set forth in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is an inverted plan view of a car and car-starter. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a section along  $x x$ , Fig. 1. Fig. 4 is a section along  $y y$ , Fig. 1. Fig. 5 is an inverted plan view of a slide. Fig. 6 is a side elevation of a slide. Fig. 7 is a section along  $z z$ , Fig. 5. Fig. 8 is a section along  $x' x'$ , Fig. 5. Fig. 9 is a detail view of an axle-box and link. Fig. 10 is an end view of Fig. 9. Fig. 11 is an inverted plan view of a draft-bar. Fig. 12 is a section along  $y' y'$ , Fig. 11. Fig. 13 shows brakes applied to the car.

Similar letters indicate corresponding parts.

The car-body A has wheels B, the axles C of which are mounted in boxes D, which can oscillate between the hangers E F. Links G are jointed at H to the boxes D, said links being also jointed to the slides I. The levers K L extend from the slides to the draft-bar M. Said bar is slidable or oscillatory. When force is applied to the draft-bar M in the direction of arrow 1 for the purpose of moving the car in said direction, said force slides the bar in the direction of arrow 1, thus moving the levers K L and slides I, so that the links G move the boxes D and wheels B backward, or in the direction opposed to arrow 1, in which the car is to go—that is, the boxes D are swung from the hangers F against the hangers E. This backward movement of the wheels B tends to move the car-body A forward, and the starting of the car is thus eased.

The hangers E F, as seen in Fig. 1, are slotted or forked, and the boxes D are provided with guides or arms N, adapted to move in the slots of the hangers, so that the boxes D are secured against lateral displacement. The

slides I are made to move in suitable boxes or guides O, Figs. 5 to 8, both inclusive, and portions of the slides I are shown forked, or made in the form of projecting arms, Fig. 55 7, and the links G can be readily jointed in said forked portion of the slide. The draft-bar M is shown as having shoulders P, between which the arms L of levers K L can be engaged, so that the motion of the bar 60 gives motion to the levers.

When the car is to be stopped from going in the direction of arrow 1, the brake Q is turned or tightened, thus winding up the chain R and swinging the lever S about its fulcrum T, so that the lever S presses against the shoulder U on the bar M and presses the bar M in the direction of arrow 3 back to its starting-point. At the same time the link V, running from the lever S, draws the brake-levers W so that the brake-blocks X are pressed against one pair of wheels, thus braking the wheels and also swinging the wheels back to their starting-point. A second brake is shown at the opposite end of the car from that occupied by brake Q, and such second brake can be used when the car is going in a direction opposed to arrow 1. 75

As seen in Fig. 2, curved or angular blocks or pieces  $a$  may be interposed between the car-body A and axle-boxes D, so as to enable the boxes D to oscillate easily. 80

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

1. The combination, with the car-body, of oscillatory wheels for said body, and a draft-bar connected to said wheels for oscillating the same, substantially as described. 85

2. The combination, with the car-body, the wheels, and oscillatory boxes for said wheels, of actuating-levers K L for said boxes, and a movable draft-bar connected to said levers, substantially as described. 90

3. The combination, with the car-body, the wheels, and oscillatory boxes for said wheels, of actuating-levers K L for said boxes, a movable draft-bar M, and slides I, connected to said levers, and links or connections G, extending from the slides to the boxes, substantially as described. 95

4. The combination, with the car-body and the wheels, of oscillatory boxes for said wheels, 100

slotted hangers for said boxes, and guides or arms N, extending from the boxes to the slots in the hangers, substantially as described.

5 5. The combination, with a car-body, of oscillatory wheels for said body, said wheels being made to oscillate along the line of travel of the car in unison and in the same direction, substantially as described.

10 6. The combination, with a car-body, of oscillatory wheels for said body, said wheels made to oscillate along the line of travel of the car, and a brake for restoring the wheels to their starting-point, substantially as described.

7. The combination, with the car-body, the 15 wheels, and oscillatory boxes for said wheels, of curved or angular blocks or plates *a*, interposed between the boxes and the car-body, substantially as described.

In testimony whereof I have hereunto set 20 my hand in the presence of two subscribing witnesses.

HUGH A. KINGSLAND.

Witnesses:

WILLIAM C. HAUFF,  
ERNST F. KASTENHUBER.