

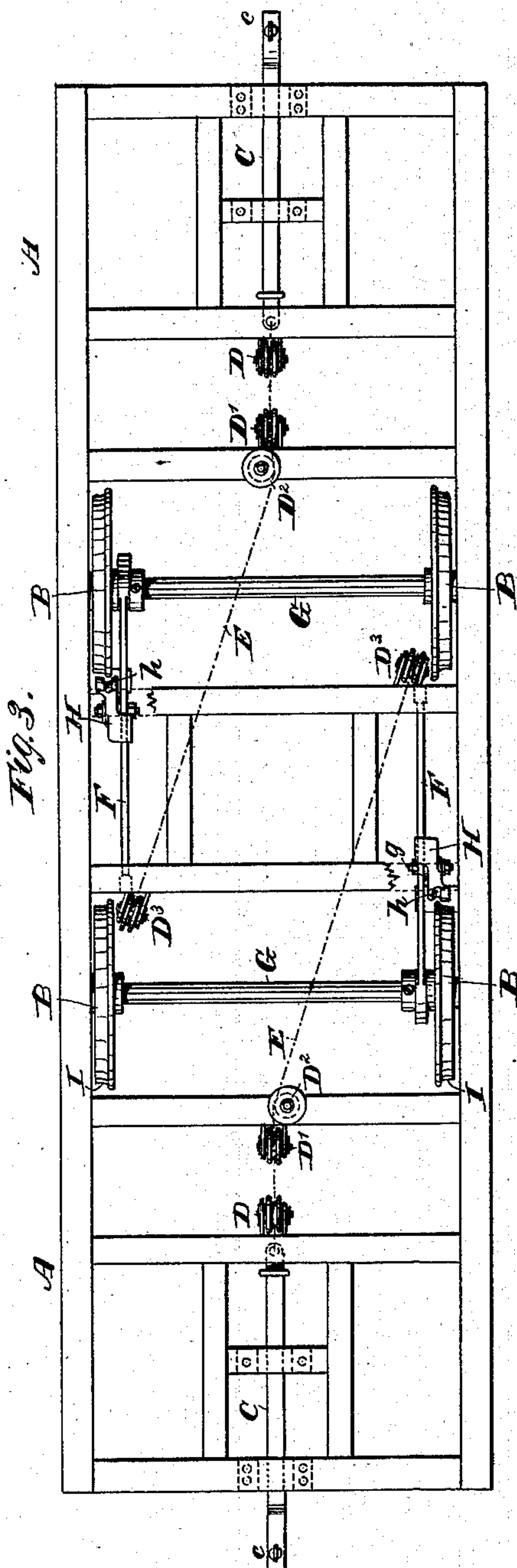
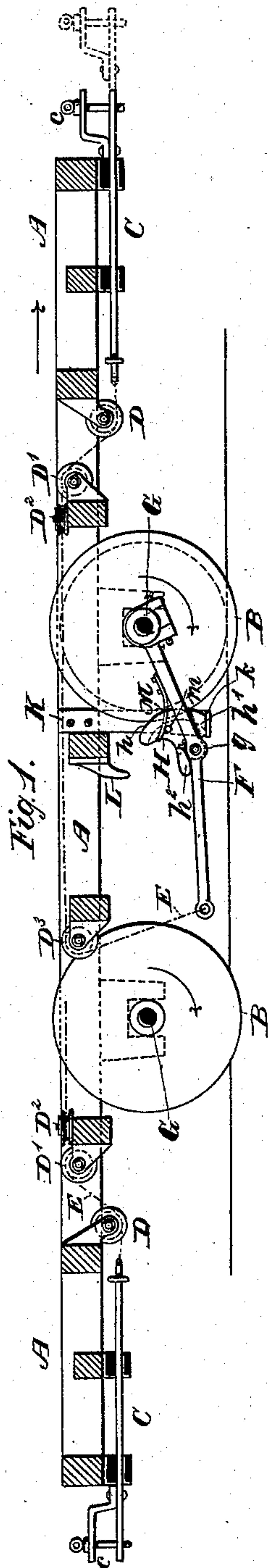
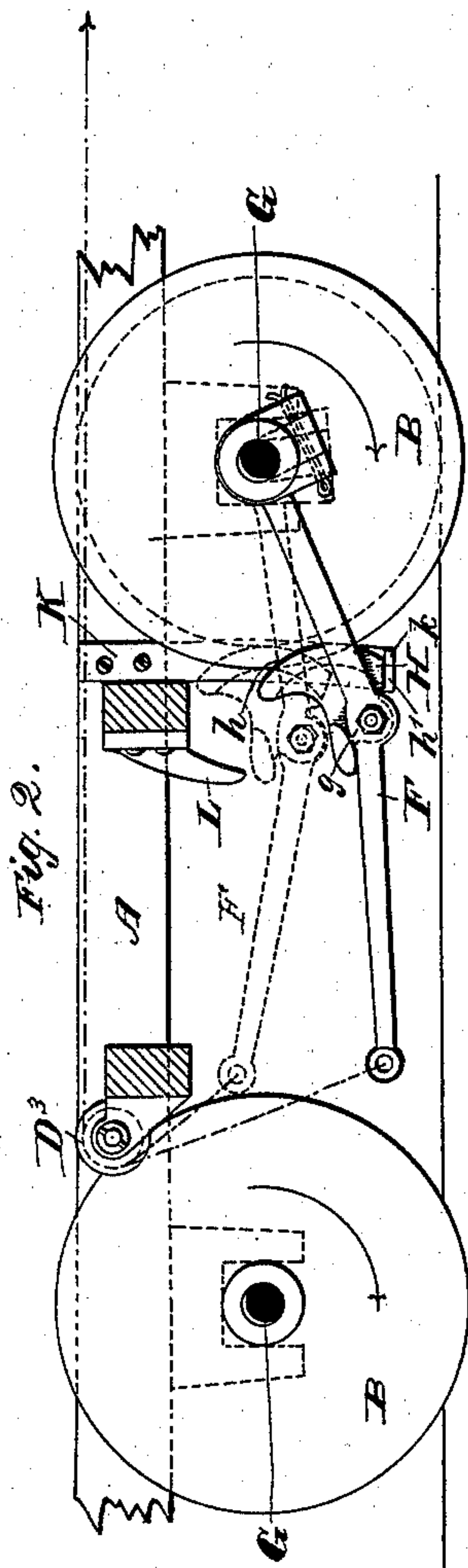
(No Model.)

2 Sheets—Sheet 1.

A. KRÜZNER & F. TENTSCHERT.
CAR STARTER.

No. 326,043.

Patented Sept. 8, 1885.



Attest:
W. E. Gaultier
P. M. Knobloch

Inventors:
Adolf Krüznier
Florian Tentseher,
per Henry M. their atty.

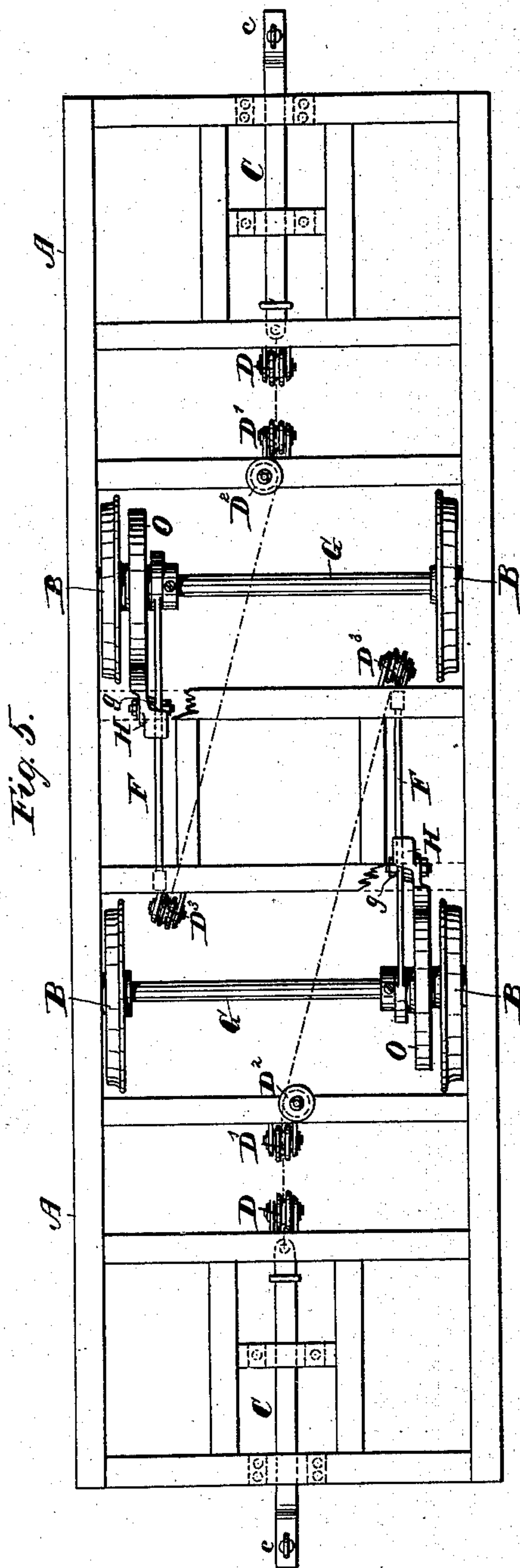
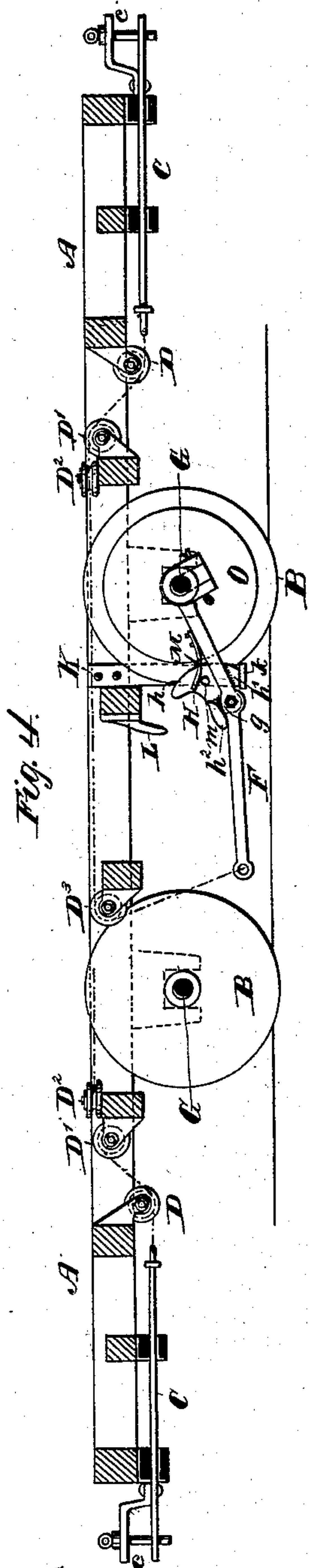
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2 Sheets—Sheet 2.

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CAR STARTER.

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O. J. Gault
P. M. Knobloch

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Florian Tentscher,
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UNITED STATES PATENT OFFICE.

ADOLF KRÜZNER AND FLORIAN TENTSCHERT, OF VIENNA, AUSTRIA-HUNGARY.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 326,043, dated September 8, 1885.

Application filed May 18, 1885. (No model.) Patented in Luxemburg May 1, 1885, No. 525; in England May 4, 1885, No. 5,489; in Austria-Hungary May 23, 1885, and in Italy June 6, 1885, XIX, 18,335; XXXVI, 244.

To all whom it may concern:

Be it known that we, ADOLF KRÜZNER and FLORIAN TENTSCHERT, engineers, subjects of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Car-Starters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a simple and efficient device for application to a street-car as a means for assisting the draft-animal in overcoming the inertia of the car and starting the same.

The invention consists, essentially, in a friction device composed of a segmental block or shoe connected with the draft-bar and acting either on the periphery or rim of one of the car-wheels or upon a disk secured to the wheel-axle, said friction device being arranged in relation to the wheel or disk as to rotate the latter when power is applied thereto by the draft-animal through said draft-bar.

In the accompanying drawings, Figure 1 is a longitudinal section of a car-truck, showing our improved friction-starter. Fig. 2 is a similar view of a portion of the car-truck on a larger scale to illustrate our invention more clearly. Fig. 3 is a top-plan view of Fig. 1, some of the cross-girts of the truck being broken away to better illustrate the starting devices. Figs. 4 and 5 are views similar to Figs. 1 and 3, showing the starter arranged to act on a disk secured to the wheel axle instead of acting on the wheel itself.

Referring to Figs. 1, 2, and 3 of the above drawings, A indicates a car-truck that may be of any usual or preferred construction.

B are the driving-wheels, and C the draft-bars, provided with draft-hooks or clevises c at each end of the truck.

DD'D²D³ are guide-pulleys secured to cross-girts of the truck and in proper position to guide the draft-chains E.

There are provided devices for starting the car whatever may be the direction in which it is to run, and as these devices are alike for both directions of motion it will be sufficient to describe one set of devices, so that the operation of starting may be fully understood.

The draft-chain, after passing over pulleys D D' D² D³, is secured to the outer end of a slightly-bent or angular lever, F, that has its fulcrum upon the car-axle G. At the apex of the angle of the lever is pivoted a block or shoe, H, the curved face h of which is a segment of the circle or rim of the wheel on which said curved face of the block or shoe bears when acting as a starter.

The lower face, h', of the sector H is rectangular or square, and when the car is stationary said lower face rests upon the foot k of an angular bracket, K. The position of this foot is such that when the lever F has fallen to its lowest point, as in Figs. 1 and 2, the square face h' of the segment H rests on the foot of the bracket K and is tilted back thereby, and thus held out of contact with the driving-wheel.

To prevent the segment from being tilted entirely over, and also to hold the lever F at the limit of its downward movement, the segment has a tail-piece, h², that projects laterally therefrom over the lever-arm, as more plainly shown in Figs. 2 and 5.

It is obvious that when the draft-animal pulls upon the chain E to start the car the lever arm is lifted, the segmental block or shoe H is tilted forward by gravity in contact with the wheel, and as the lever is rotated on its pivot the segmental block or shoe rotates the wheel by frictional contact, thus starting the car. As the lever is a comparatively long one, the power required to start the car is considerably reduced, thus assisting the draft-animal very materially.

L is a stop that projects from the truck-frame into the path of the tail-piece h² of the block or shoe H, and when the lever F has reached a certain elevation sufficient to impart the necessary impulse to the car-wheel through the block or shoe the stop L contacts with the tail-piece h² of the block or shoe, and tilts the latter out of contact with the

wheel. Here also the complete tilting of the block by the stop L is effectually prevented by the tail-piece h^2 extending over the lever F, as will be readily understood.

5 In those cars where double brakes are employed, and where it is impracticable to apply the starter to the car-wheels, said starter may be arranged to act upon a disk, O, rigidly secured to the wheel-axle, as shown in
10 Figs. 4 and 5.

To adapt the block or shoe H to take a better hold, either on the rim of the car-wheel or the periphery of the disk, its segmental face may be corrugated or otherwise roughened,
15 and the periphery of the disk may likewise be roughened with the block or shoe is applied to act on a disk to increase the frictional contact. The contacting surface of the segment may also be roughened when applied
20 to the driving-wheel for increasing the frictional surface between said wheel and the segment, as will be readily understood.

If desired, a spring, M, Figs. 1 and 4, may be secured to the lever F, the free end of said
25 spring bearing on a stud or pin, m , projecting from the side of the block or shoe to tilt the latter toward the wheel when carried out of contact with the bracket K, thereby insuring the action of the segment in case it should not
30 be thrown forward by gravity.

It is obvious that the points at which the power is applied to the wheel or disk and to the lever may be varied without thereby varying the result obtained.

35 Having now described our invention, what we claim is—

1. In a street-car, mechanism for starting the same, consisting of the angle-lever F, loosely mounted upon one of the wheel-axes, and
40 the segmental shoe H, pivoted to said lever and having a rectilinear face, h' , in combination with the bracket K, the draft-bar of the car with which the free end of the lever is connected, and one of the driving-wheels or

its specified equivalent, said parts being arranged for operation substantially as described. 45

2. In a street-car, the combination, with one of the wheel-axes and driving-wheels, or the specified equivalent of the latter, the angle-lever F loosely mounted on said wheel-axle, and the draft-bar of the car with which the free end of the lever is connected, of the segmental shoe H, pivoted to lever F and provided with a projection or tail-piece, h^2 , said parts
55 being arranged for operation substantially as and for the purpose specified.

3. In a street-car, the combination, with one of the wheel-axes and driving-wheels, or the specified equivalent of the latter, the angular lever F, loosely mounted on said axle, the draft-bar of the car with which the free end of the lever is connected, and the segmental shoe H, provided with a projection or tail-piece, h^2 , of a tripping device adapted to engage the tail-piece of the shoe and trip the same, substantially as and for the purposes
65 specified.

4. The combination, with the draft-bar of a street-car, one of the driving-wheels or its specified equivalent, and one of the wheel-axes, of a lever loosely mounted on said wheel-axle and connected with the draft-bar, a segmental friction-block or shoe pivoted to the lever and arranged to rotate the wheel-axle by the power exerted on the lever through the draft-bar, and a stop to throw the friction device out of operation when the lever has reached the limit of its movement in either direction, as and for the purposes specified. 80

In testimony whereof we affix our signatures in presence of two witnesses.

ADOLF KRÜZNER.

FLORIAN TENTSCHERT.

Witnesses:

JAMES RILEY WEAVER,

H. C. NELSON.