(No Model.) 2 Sheets—Sheet 1.

B. F. CROW.

CAR BRAKE.

No. 364,706. Patented June 14, 1887.

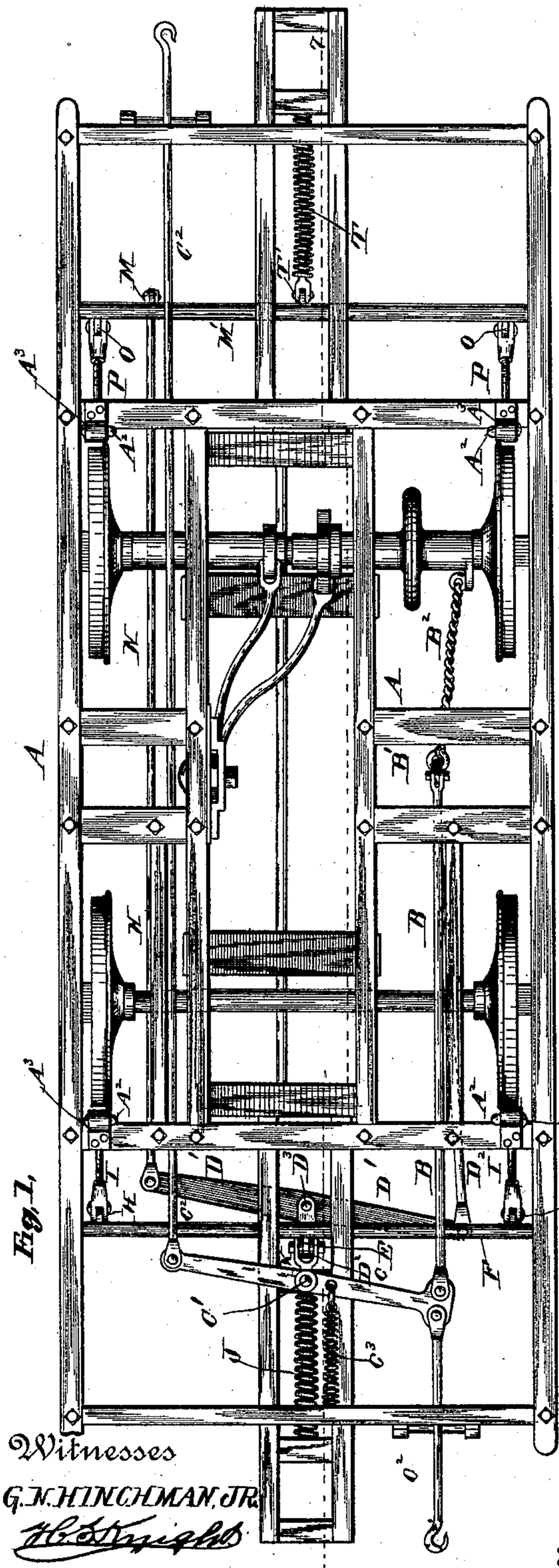

Fig. 1.

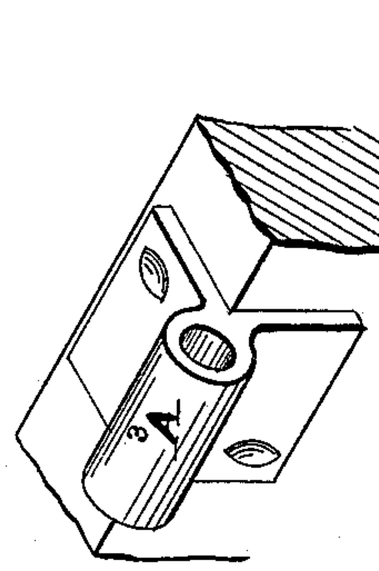

Fig. 6.

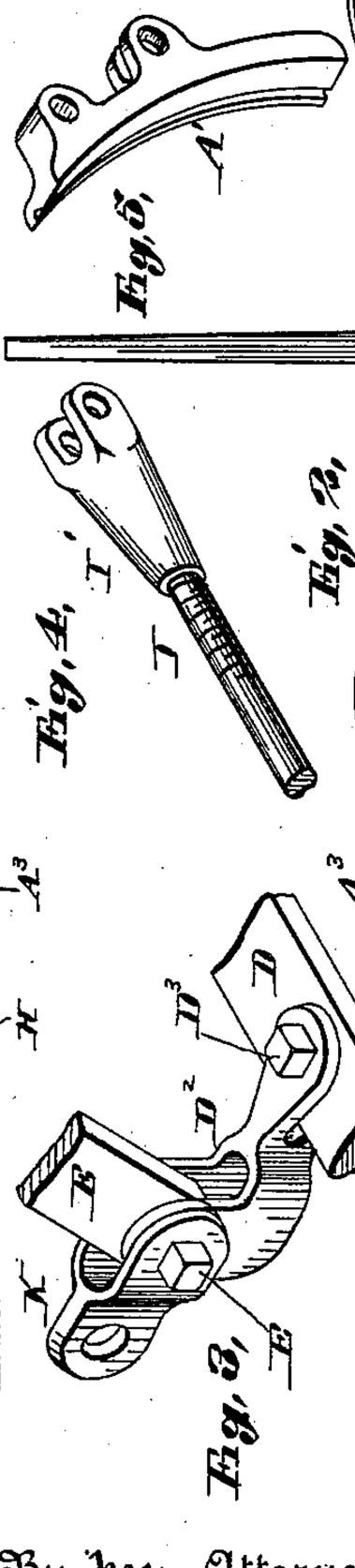

Fig. 5.

Fig. 4.

Fig. 3.

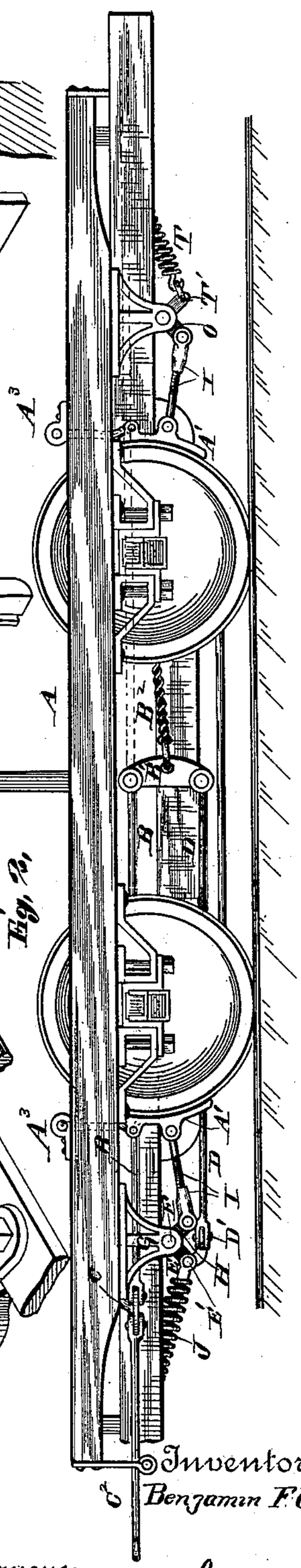

Fig. 2.

Witnesses

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H. C. Knights

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By his Attorneys

Knight Bro

(No Model.)

2 Sheets—Sheet 2.

B. F. CROW.

CAR BRAKE.

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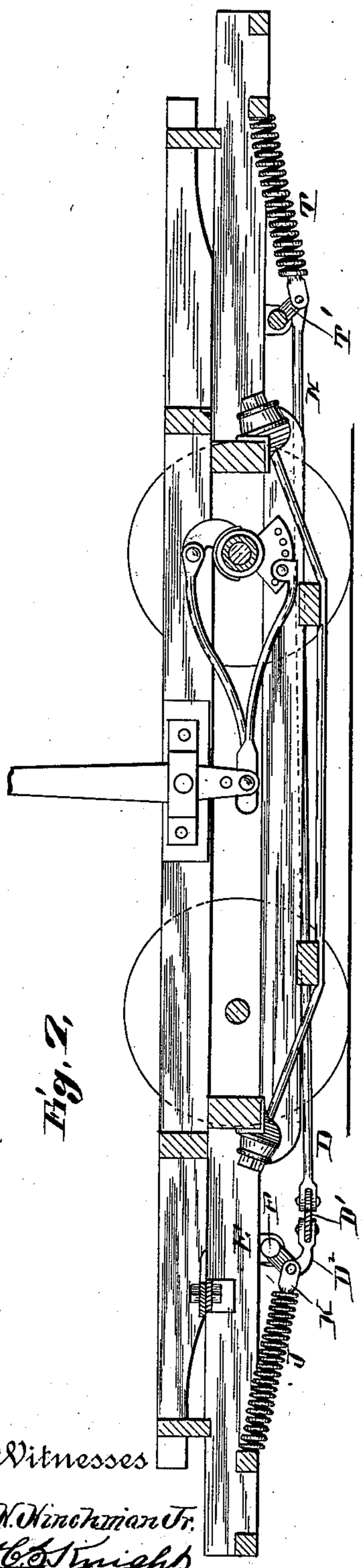

Fig. 7.

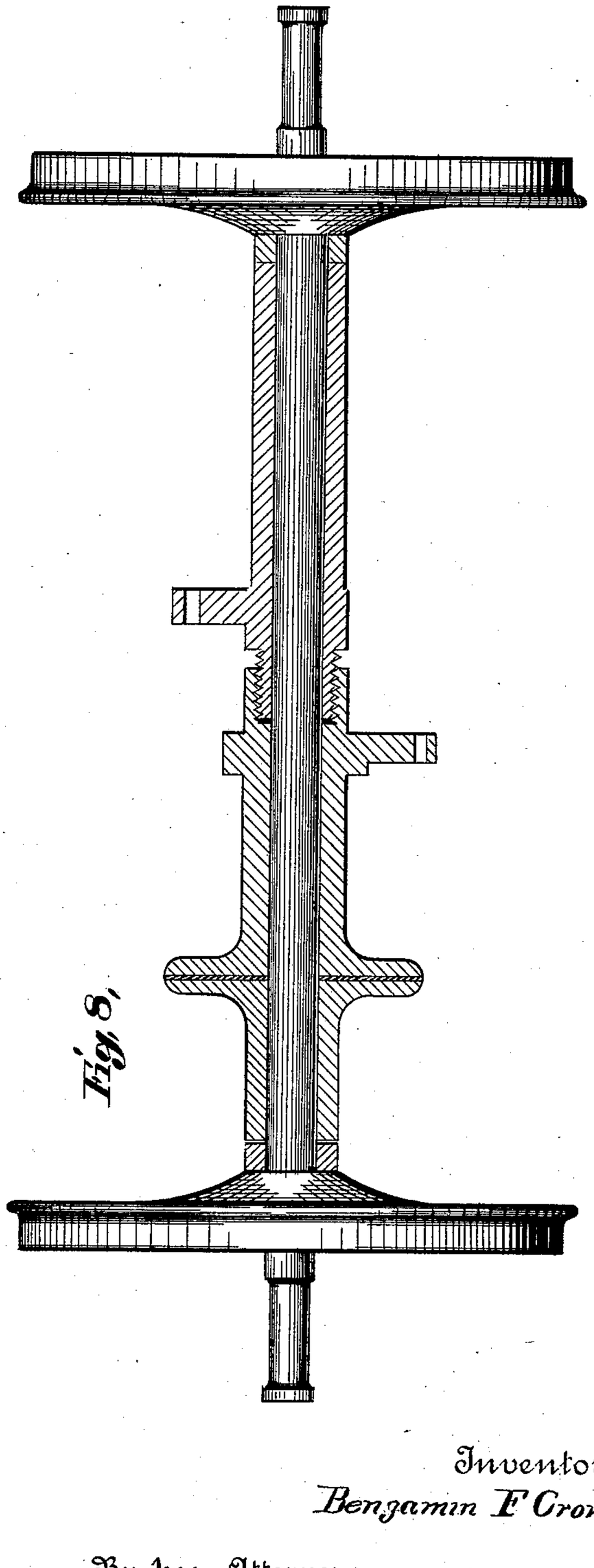

Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN F. CROW, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE BROWNELL & WIGHT CAR COMPANY, OF SAME PLACE.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 364,706, dated June 14, 1887.

Application filed August 25, 1886. Serial No. 211,849. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. CROW, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Car-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a bottom view of the running-gear of a cable-grip car with my improvement applied. Fig. 2 is a side elevation of same. Fig. 3 is an enlarged detail perspective view, showing the connection between one of the brake-levers and its rock-shaft. Fig. 4 is a detail enlarged perspective view of one of the adjustable rods or arms. Fig. 5 is an enlarged perspective view of one of the shoes. Fig. 6 is an enlarged perspective view of one of the brackets for connecting the shoes to the frame of the running-gear. Fig. 7 is a vertical longitudinal section taken on line 7 7, Fig. 1. Fig. 8 is an elevation of two car-wheels, showing the shaft in section.

My invention relates to certain improvements in brakes intended more particularly for street and cable cars, but which may be applied to other cars; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents the running-gear of a grip-car of a cable railway.

A′ represents the shoes formed and suspended by rods A^2 and bracket A^3 in the same manner as shown, described, and claimed in my application filed on same date herewith, and which needs no further description here.

The brakes are applied by power received from one of the car-axles, and this power is transmitted from the axle by means of mechanism shown and described in Letters Patent of the United States No. 263,529, issued to Tom L. Johnson, August 29, 1882. As no invention is herein claimed on this method of transmitting the power from the axle to the shoes, and as this method is described in the patent referred to, no further description is given herein.

B D represent the pull-rods, connected at their inner ends by a bar, B′, which is made fast to the sleeve on the axle by means of a flexible connection, B^2. The outer end of one of the rods B is connected to a lever, C, pivoted at C′ to the frame of the running-gear. The outer end of the other arm is secured to one end of a lever, D′, the lever being connected at D^3 to a clip, D^2, as shown in Figs. 1, 2, and 3. The clip is made fast at E′ to one arm of a bell-crank lever, E, secured to a rock-shaft, F, that is journaled to the frame of the running-gear by brackets G. Secured to the rock-shaft F are also arms H, made fast to the brake-shoes A′, preferably by adjustable rods or arms I, as in my application above referred to. It will thus be seen that when the lever D′ is pulled by the axle, it will rock the shaft F and, through means of the arms H and connecting-rod I, force the brake-shoes against the wheels. When the pressure is released, the brake-shoes are withdrawn from the wheels by means of a spring, J, connected to the frame of the running-gear and to the end of the arm E by means of a clip, K. This applies the brake at one end of the car. At the other end of the car it is applied by the lever D′ and a rod, N, which are connected to an arm, M, on a rock-shaft, M′. The shoes at this end of the car are connected to arms O on the shaft M′ by rods P similar to those I′. When the brake is released, these shoes are removed from the wheels by means of a spring, T, connecting an arm, T′, on the rock-shaft to the frame of the running-gear.

In order that the brakes of other cars may be controlled by the mechanism on this car, the rod B is connected to the lever C, as stated, and the lever is provided with rods C^2 extending toward the respective ends of the car, and provided with hooks on their ends for the attachment of the ordinary brake-rods of other cars. This lever is provided with a spring, C^3, by which the shoes on the other cars are removed from the car-wheels when the brake is released.

I claim as my invention—

1. In a car-brake, the combination, with the shoes, of the pull-rod D, lever D′, to which the rod is secured, clip D^2, arm E, rock-shaft F, and connection between the rock-shaft and brake-shoes, substantially as set forth.

2. In a brake, the combination, with the shoes, of the pull-rod D, lever D′, to which one end of the rod is secured, clips D^2 and K, spring J, arm E, rock-shaft F, and connection between the rock-shaft and shoes, substantially as set forth.

3. In a brake, the combination, with the shoes, of the pull-rod D, lever D′, clip D^2, arm E, rock-shaft to which the arm is secured, connection between the rock-shaft and shoes at one end of the car, and connection between the lever and shoes at the other end of the car, substantially as set forth.

4. In a brake, the combination, with the shoes, of the pull-rod D, lever D′, clip D^2, arm E, rock-shaft F, to which the arm is secured, connection between the rock-shaft and shoes at one end of the car, rod N, arm M, to which the lever D′ is connected by the rod N, rock-shaft M′, connection between the rock-shaft and shoes, and spring T, connecting the rock-shaft to the running-gear, substantially as set forth.

BENJAMIN F. CROW.

In presence of—
GEO. H. KNIGHT,
EDW. S. KNIGHT.