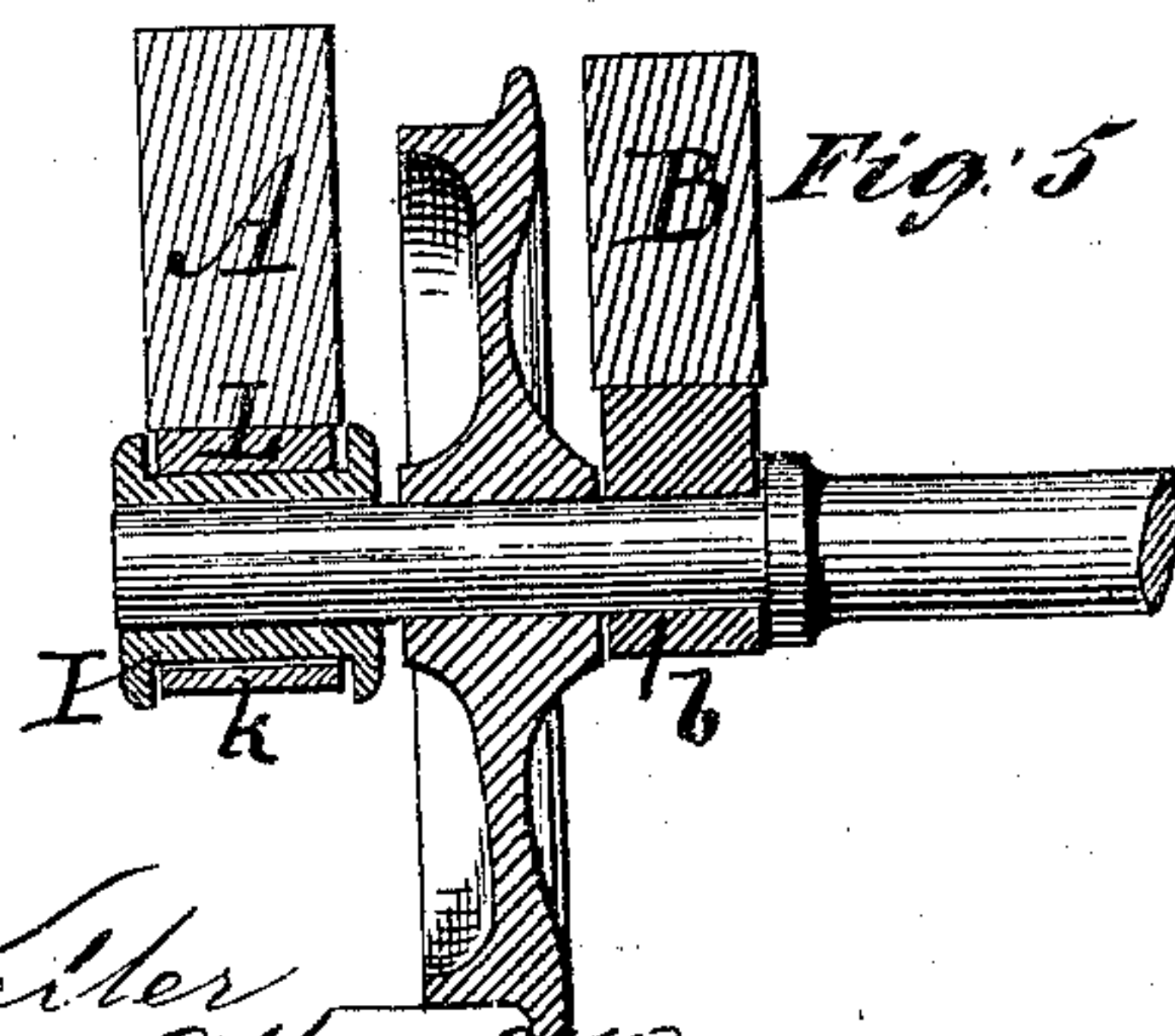
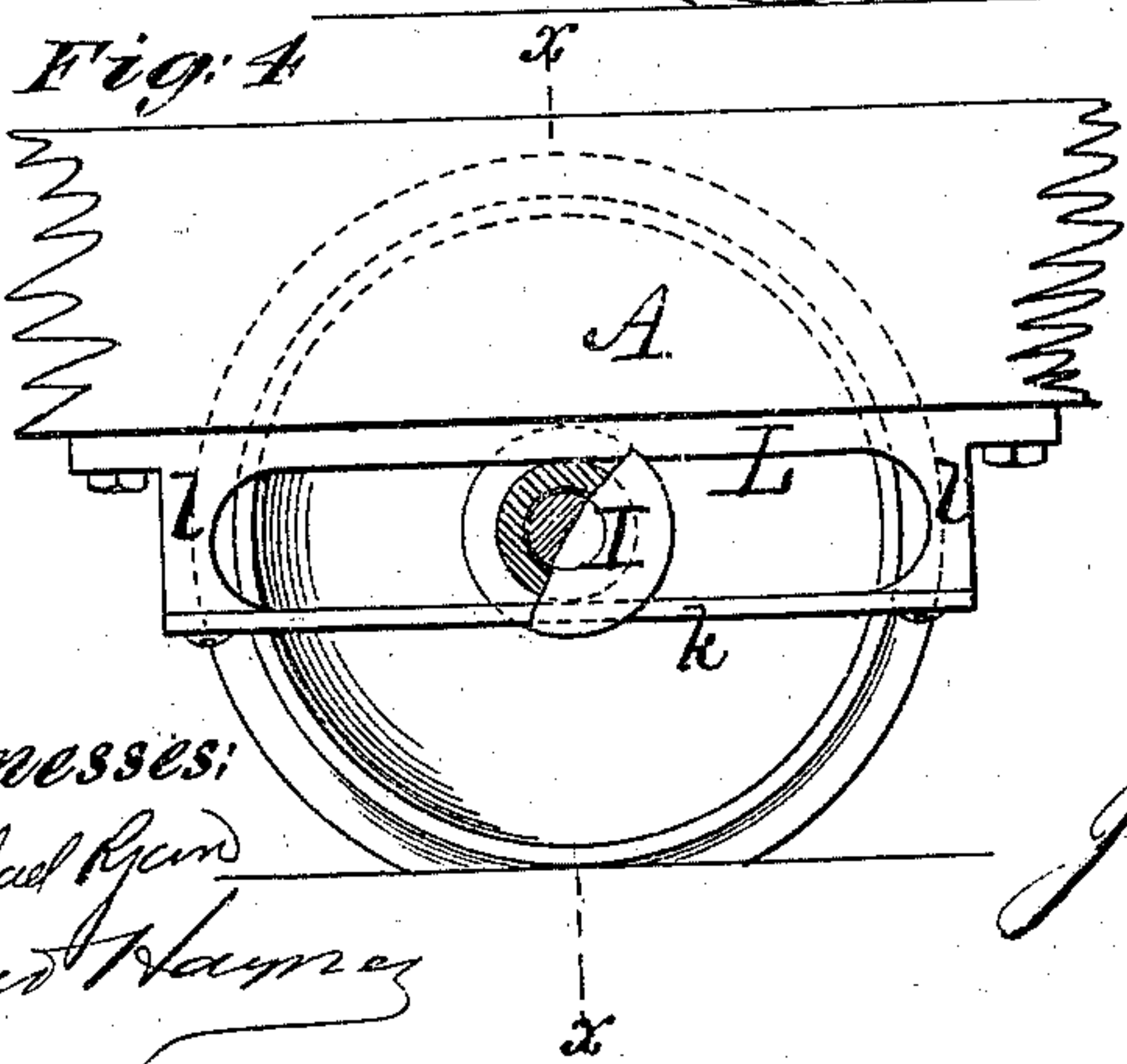
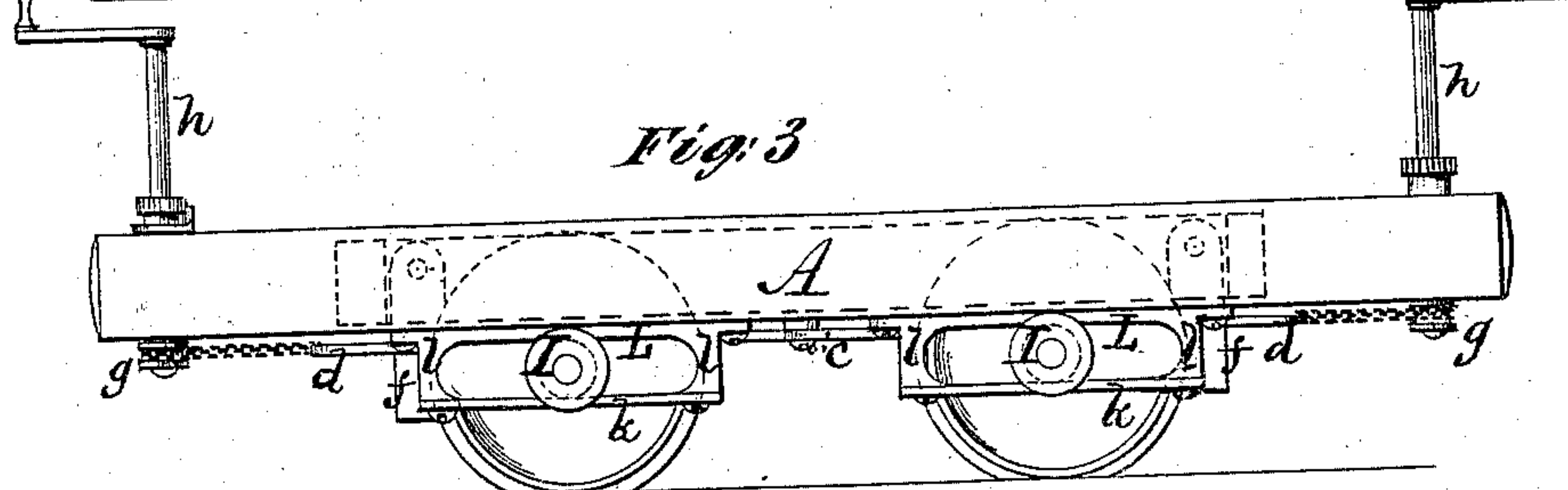
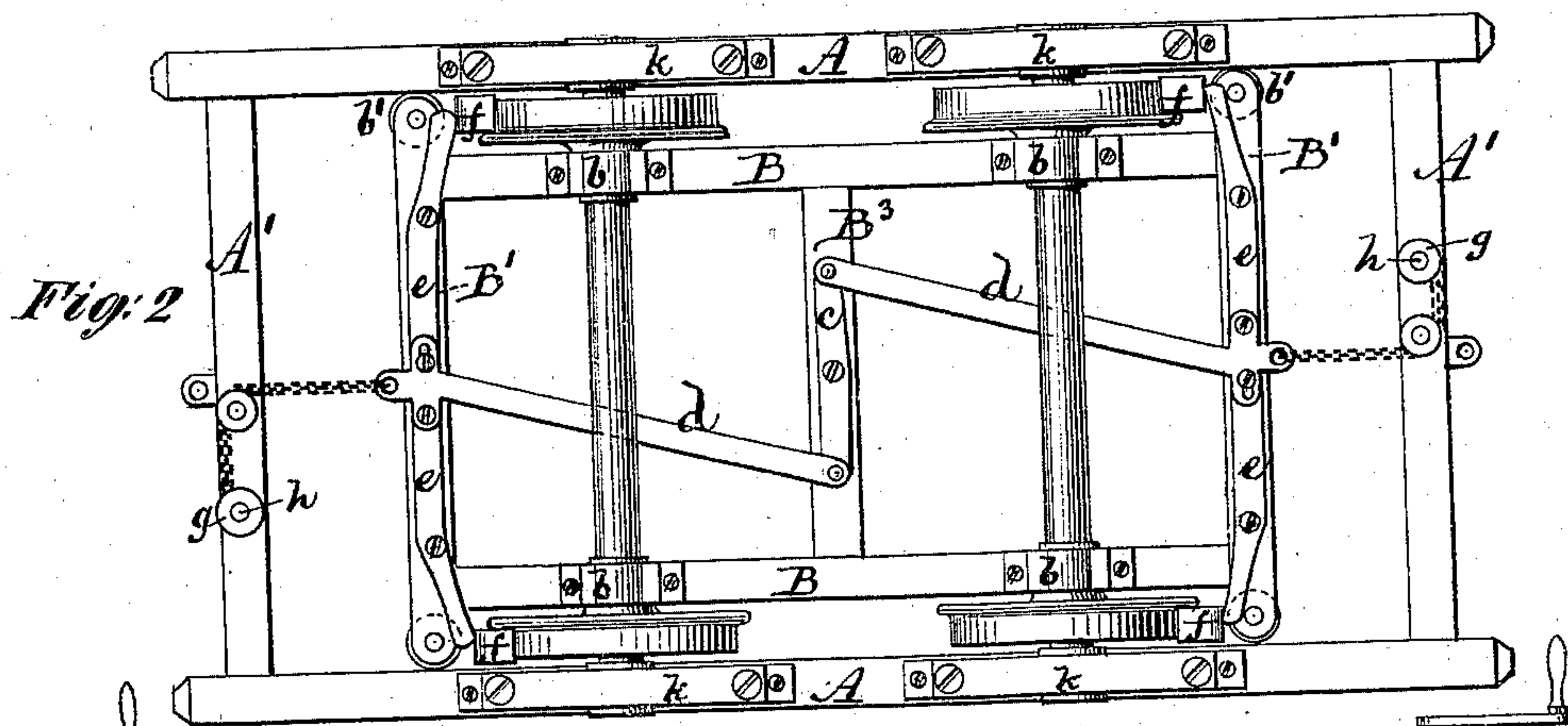
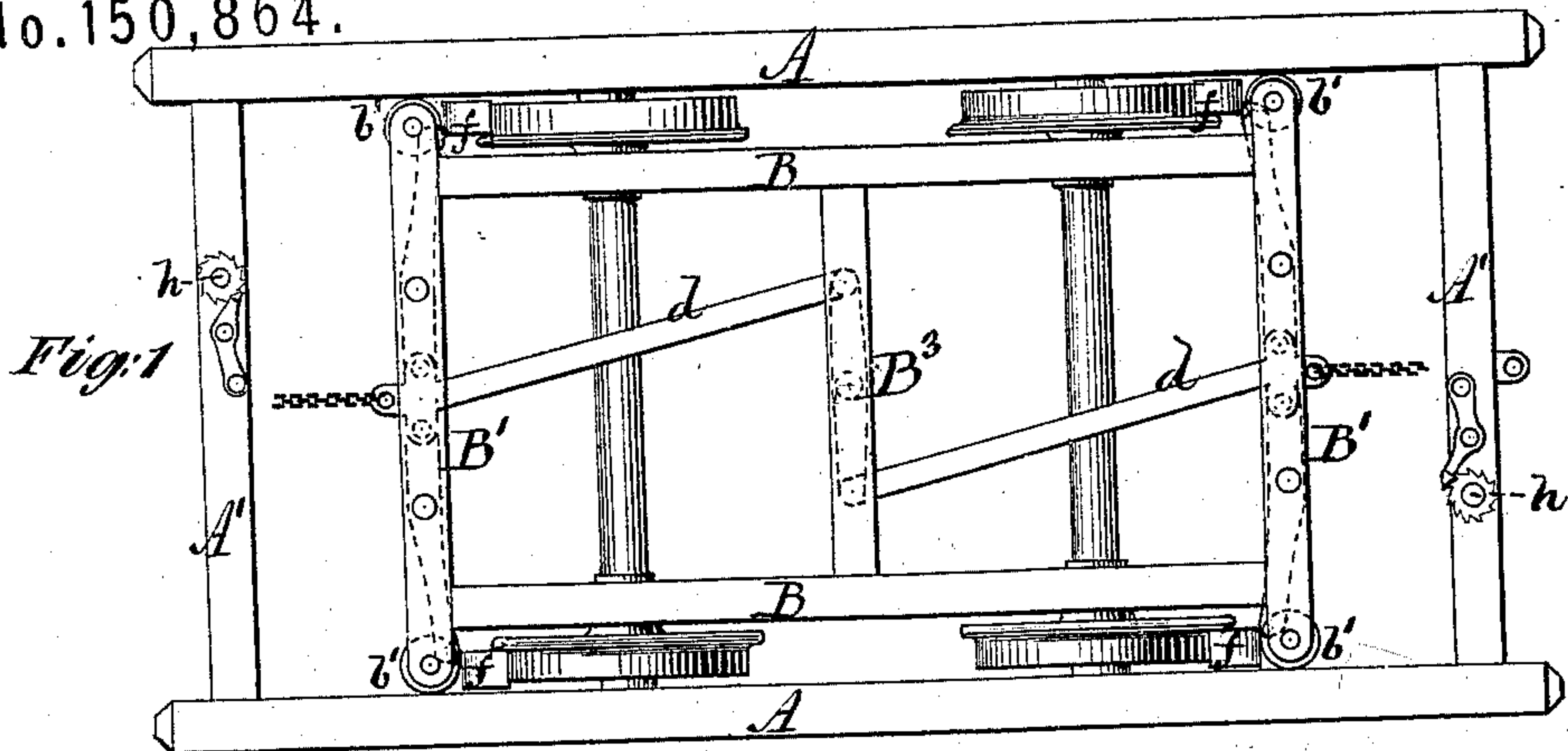


J. J. KELLER.
Car-Starters.

Patented May 12, 1874.

No. 150,864.



Witnesses:
Michael Ryan
Fred Warner

J. J. Keller
By his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

JOHN J. KELLER, OF DERBY, CONNECTICUT, ASSIGNOR TO HIMSELF AND
HENRY T. McCOUN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **150,864**, dated May 12, 1874; application filed
February 7, 1874.

To all whom it may concern:

Be it known that I, JOHN J. KELLER, of Derby, in the county of New Haven and State of Connecticut, have invented certain Improvements in Running-Gear for Railway-Cars, of which the following is a specification:

This invention relates to certain improvements in street-cars, in which a longitudinally-moving truck-frame is combined with the main or floor frame for overcoming the inertia of the car in starting the same. The invention consists of rotating boxes on the ends of the axles, which are arranged in slotted bearings attached to the main or floor frame, and upon which the latter rests, so that when the car first starts the main frame travels a short distance on said rotating boxes independent of the truck-frame, as will hereinafter appear.

In the accompanying drawing, Figure 1 is a top view of my improved running-gear. Fig. 2 is a bottom view of the same. Fig. 3 is a side view. Fig. 4 is also a side view on an enlarged scale and partly in section. Fig. 5 is a vertical section taken in the line *xx* of Fig. 4.

The main or floor frame of the car is composed of two siderails, *A A*, and two end pieces, *A' A'*, upon which the body of the car rests. The independent longitudinally-moving truck-frame is of similar form and construction with side rails *B B* and end pieces *B¹ B¹* and a central cross-bar, *B³*. The under side of the truck-frame is provided with boxes or bearings *b*, which receive the axles at points on the inner sides of or between the wheels, instead of at the ends of the axles, so as to merely hold the axles in their proper relative positions without sustaining the body of the car or any other weight than that of the truck-frame itself. The end pieces *B¹* of the truck-frame project beyond the side rails *B*, and are provided with friction-rollers *b'*, which bear against the inner sides of the side rails *A A* of the main frame as the truck-frame moves longitudinally. On the under side of the truck-frame is arranged the brake mechanism, consisting of a lever, *c*, pivoted to the cross-bar *B³*, and connected, by rods *d*, with the inner ends of levers *e*, pivoted to the end pieces *B¹ B¹*, and bearing with their outer ends against the brake-shoes *f*, which are pivoted

to the truck-frame in any suitable manner. To the outer ends of the rods *d* are attached the brake-chains, which are fastened to drums *g* on the lower ends of the brake-shafts *h*. The outer ends of the axles are journaled in rollers *I*, which serve as journal-boxes, and also as friction-rollers. These rollers engage with bearing-surfaces, consisting of metal plates *L*, attached to the under sides of the side rails *A A* of the main frame, so that said main frame rests upon said rollers, and is allowed to move backward and forward thereon to a certain extent, its motion being limited by means of stops *l*, which project downward from the ends of the plates *L*. Lateral displacement of the rollers is prevented by means of flanges on their ends engaging with the edges of the plates, and downward displacement is prevented by means of keepers *k*.

When the handle is turned to apply the brake, the winding of the chain around the drum operates through the rods *d* upon the levers *e*, so as to cause their outer ends to press the shoes *f* against the faces of the wheels, and at the same time it draws back the main frame and car-body relatively to the truck-frame, or, in other words, it retards the motion of the car-body, and allows the truck-frame to move forward relatively thereto until arrested by the rollers *I* coming in contact with the forward stops *l*.

When the brake is released and the team started, the main frame and car-body move forward a short distance independently of the truck-frame; or, rather, the friction is divided between the rollers *I* and the axle-journals, so that while the car is traveling a distance equal to about half its length the rollers *I* revolve under the plates *L* until arrested by the rear stops *l*, the main frame moving forward relatively to the truck-frame, and at a greater speed, until said rollers bring up against said stops.

By this construction and arrangement of parts the difficulty of overcoming the inertia at starting the car is lessened and the strain upon the team is reduced.

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

1. The rotating boxes *I* on the ends of the

axles of the truck-frame, placed in the slotted bearing-plates L attached to the main frame A, all combined to operate substantially as shown and described.

2. The stops *l* and keepers *k*, in combination with the roller journal-boxes and bearing-surfaces L, substantially as shown and described.

3. In combination with the longitudinally-

moving truck-frame and main frame, the pivoted lever *c*, rods *d*, brake chains and levers *e*, bearing against the brake-shoes *f*, substantially as shown and described.

JOHN J. KELLER.

Witnesses:

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HENRY T. BROWN.