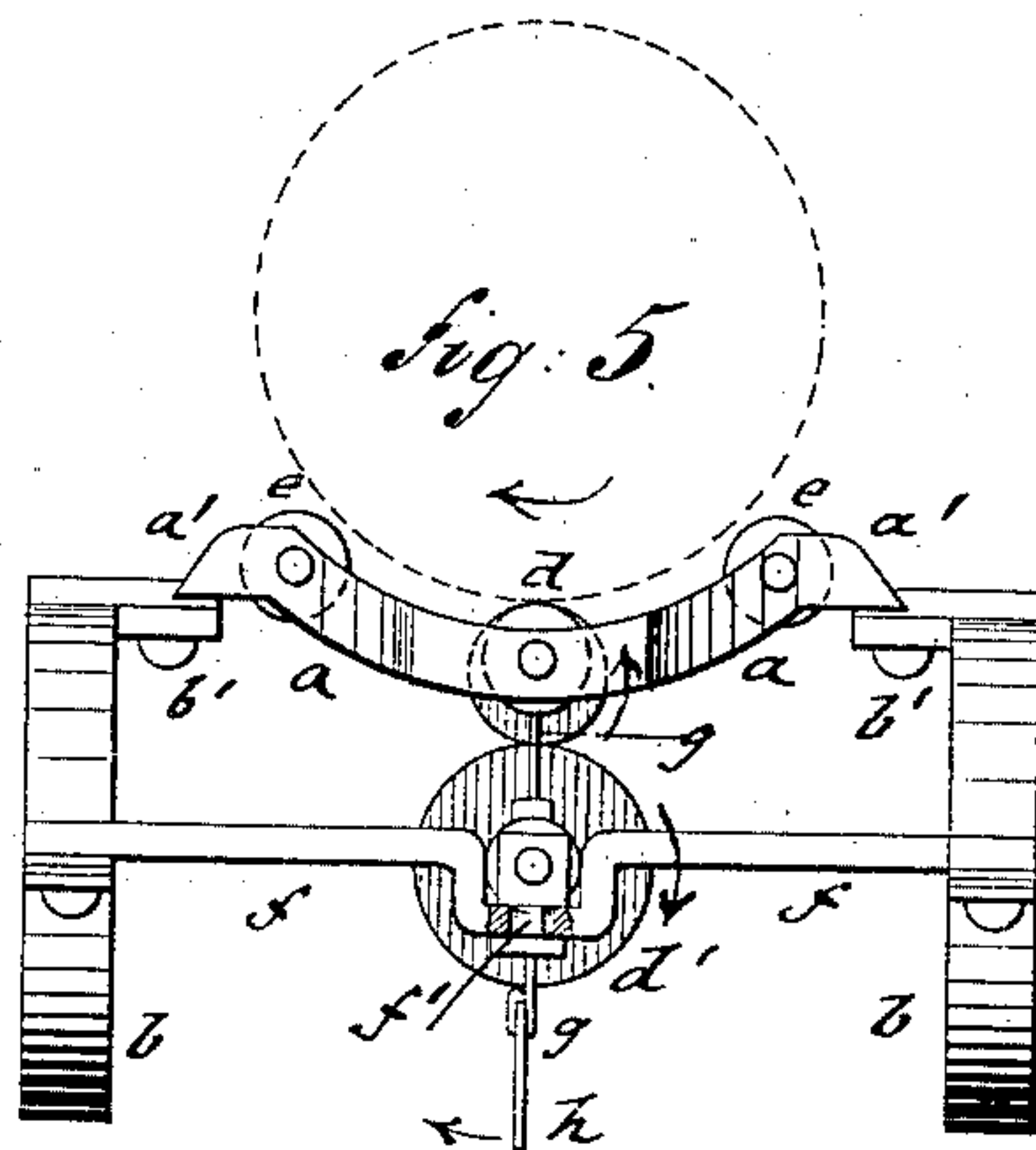
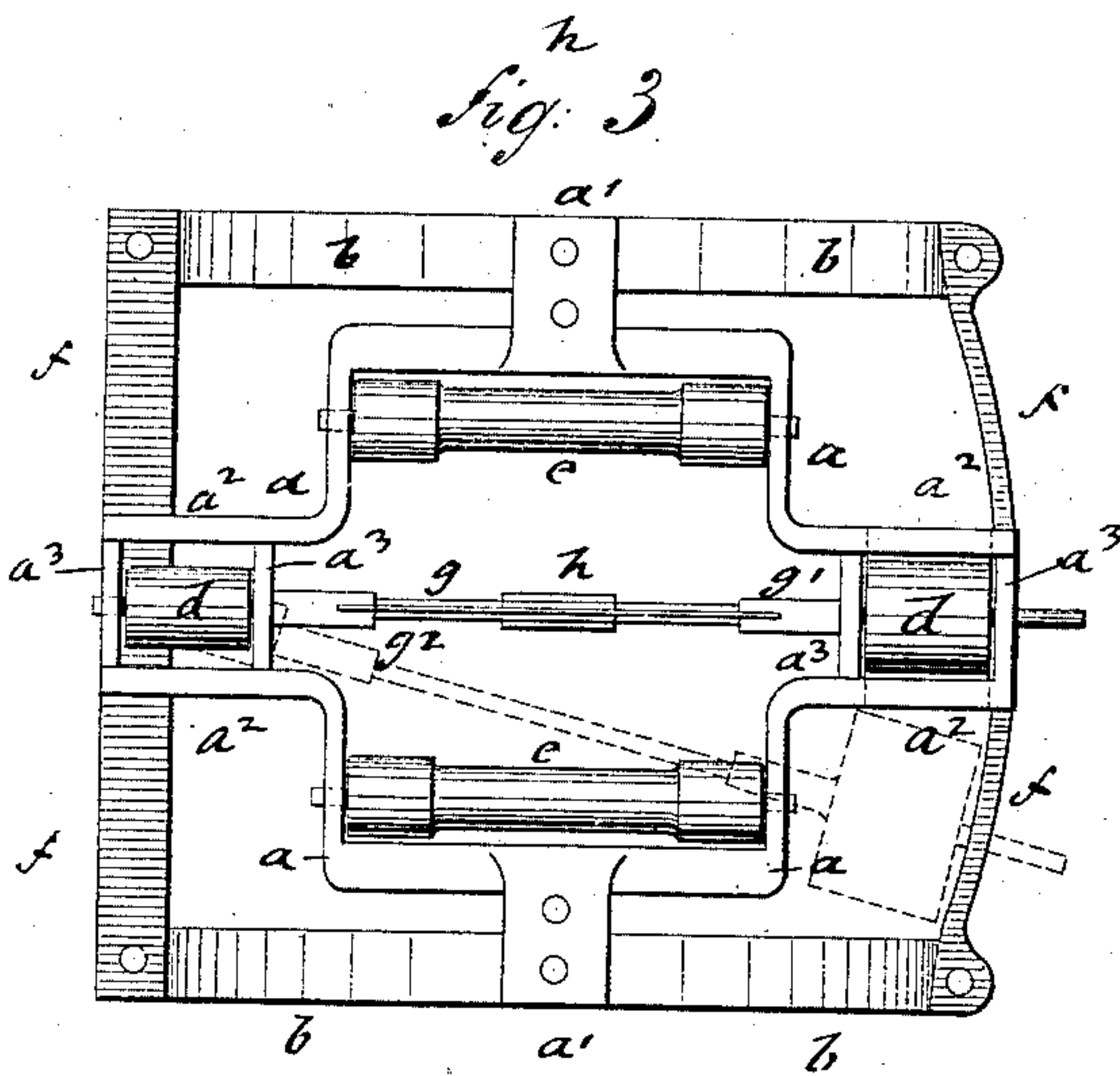
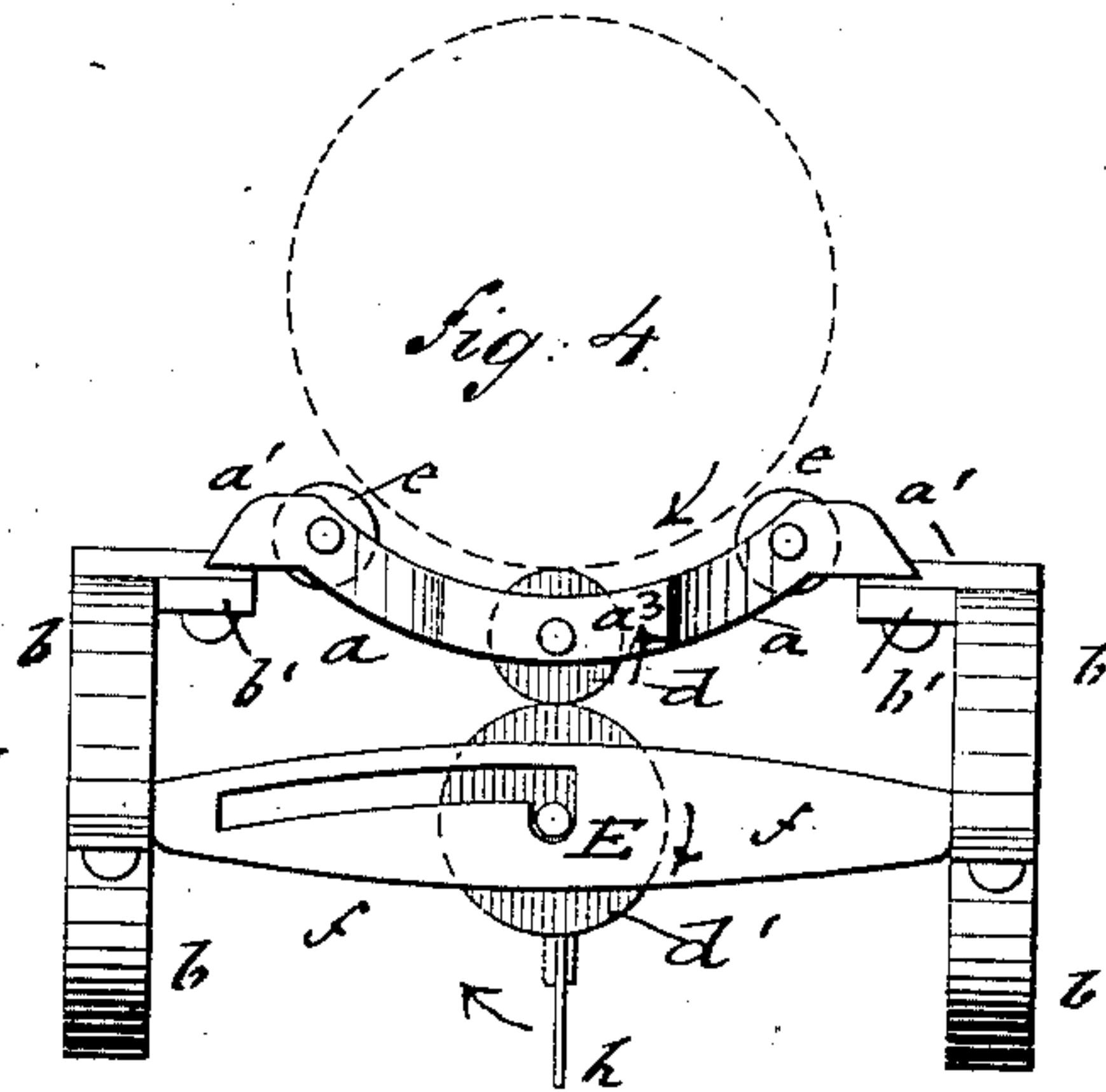
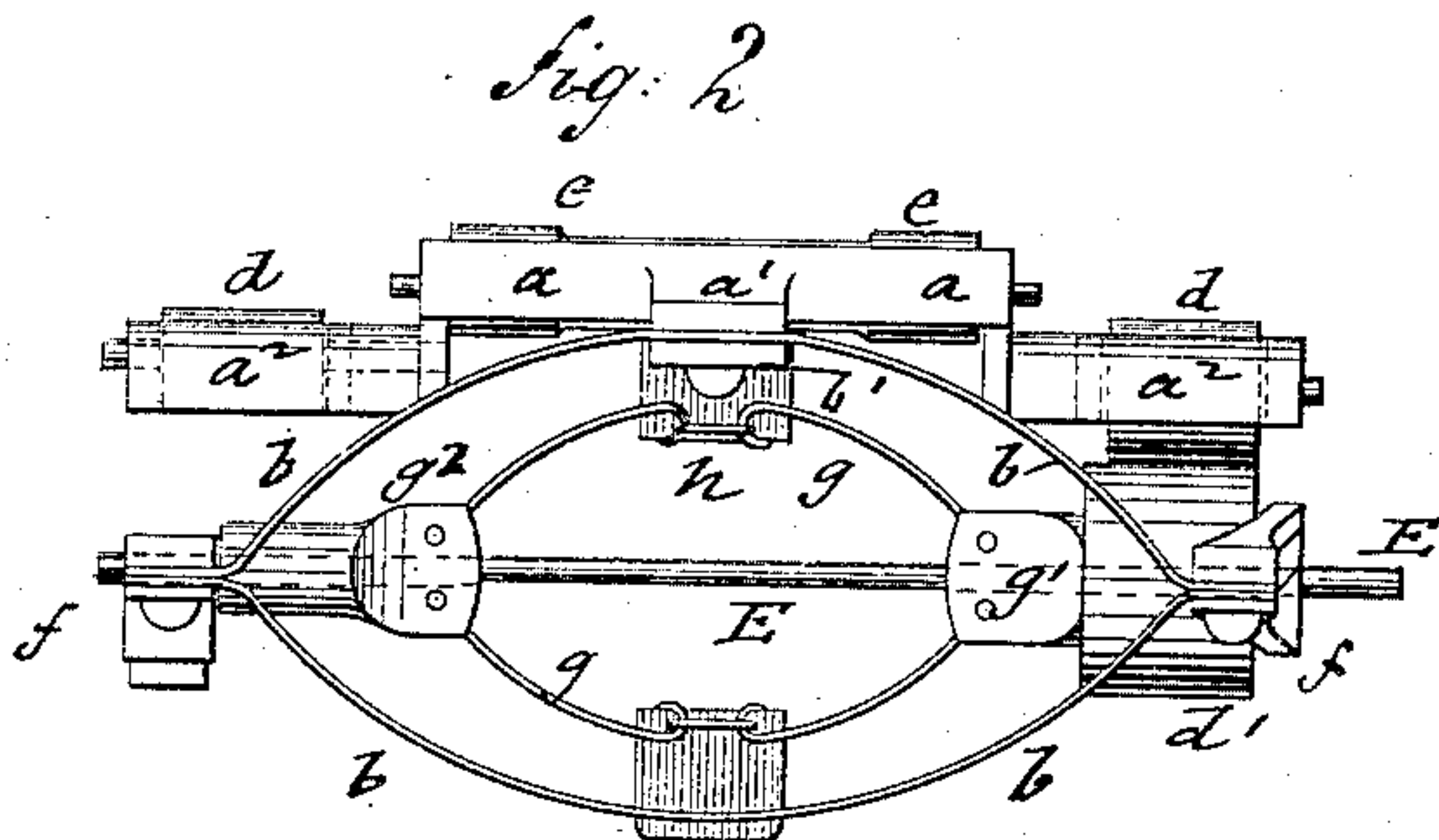
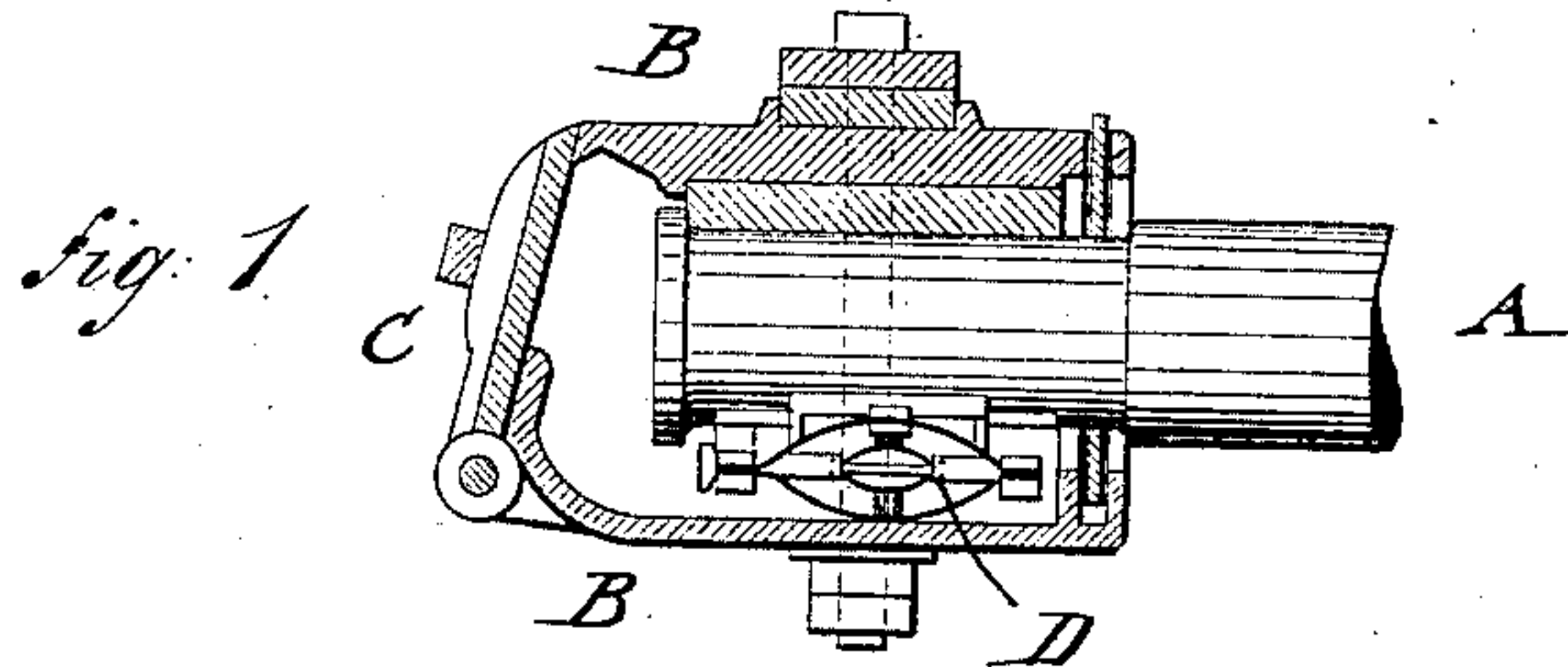


(No Model.)

F. J. LEIBMAN.
CAR AXLE LUBRICATOR.

No. 315,042.

Patented Apr. 7, 1885.



WITNESSES:

A. Schehl.
Otto Risch.

INVENTOR
Frank J. Leibman
BY
Joseph R. Reger
ATTORNEY S.

UNITED STATES PATENT OFFICE.

FRANK J. LEIBMAN, OF NEW YORK, N. Y.

CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 315,042, dated April 7, 1885.

Application filed July 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. LEIBMAN, of the city, county, and State of New York, have invented certain new and useful Improvements in Lubricating Attachments to Car-Axle Boxes, of which the following is a specification.

This invention has reference to an improved lubricating attachment to car-axle boxes, in which a uniform quantity of lubricating-oil is supplied to the car-axle journal whenever the car is in motion; and the invention consists of a lubricating attachment to car-axle boxes the frame of which is supported on elliptical side springs and provided with central rollers in line with and side rollers parallel to the axis of the axle, one of the central rollers being in frictional contact with a second roller whose spindle is supported in bearings below the roller-frame. The spindle carries on adjustable spring-wires the wipers that take up the oil from the axle-box and transmit it to the journal, said wipers being rotated with the spindle in opposite direction to the axle, as will be more fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a car-axle box with my improved lubricating attachment. Fig. 2 is a side elevation of the lubricating attachment drawn on a larger scale. Fig. 3 is a plan, and Figs. 4 and 5 are respectively a front and rear view of the same.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a car-axle; B, a car-axle box, and C the lid of the same. Below the journal of the car-axle A is located a spring-cushioned lubricating attachment, D, which consists of a metallic frame, *a*, of square or oblong shape, that is riveted by laterally-extending side lugs, *a'* *a'*, to bracket-plates *b'* *b'* at the center of two elliptical side springs, *b b*. The frame *a* has central extensions, *a² a²*, with transverse stays *a³ a³*, the latter forming the bearings for two central rollers, *d d*, that are located in a vertical plane passing through the axis of the axle A. In bearings at the sides of frame *a* are supported the rollers *e e*, which generally do not form contact with the axle A, but serve to hold the attachment in its proper relative position on the axle and in

contact with the center rollers, *d d*. The ends of the elliptical springs *b b* are riveted to transverse braces *f f*, which are provided at their centers with bearings for the spindle E, to the front end of which is keyed a roller, *d'*, that is of larger diameter than the front roller, *d*, and in frictional contact with the same, as shown in Fig. 2 and 4. The spindle E is longer than the distance between the transverse braces *f f*, so that the front brace *f* is adapted to shift on the spindle, according to the greater or smaller compression of the elliptic springs *b b*. The opposite end of the spindle E is loosely guided in a swiveled sleeve, *f'*, of the rear brace *f*, as shown in Fig. 5. To the roller *d'* is attached a plate, *g'*, to which and the flattened end of a sleeve, *g²*, sliding on the spindle E, are attached the ends of curved spring-wires *g g*, as shown in Fig. 2. These spring-wires *g g* carry at their centers, equidistantly from the spindle, the flexible wipers *h h*, which are made of oil-skin or other suitable material, and which are arranged to dip into the lubricant at the lower part of the car-axle box, so as to convey the oil from the same to the lower part of the axle. When the car is in motion, the spindle E is rotated by the frictional rollers *d d'*, together with the wipers, which are brought successively in contact with the axle-journal, so as to deliver the lubricating material to the same. Owing to the flexible material from which the wipers are made they pass readily below the journal, and serve thus to lubricate the journal in a uniform and reliable manner. As the sleeve *g²* at one of the spring-wires *g g* slides on the spindle E, the spring-wires *g g* of the wipers follow the compression or expansion of the supporting-springs *b b* by the action of the transverse brace-pieces *f f* on the roller *d'* and the sliding sleeve *g²*. When the braces *f f* recede by the compression of the supporting-springs *b b*, the spring-wires *g g* seek to regain their natural shape. By these means the relative distance of the wipers from the journal remains the same whatever be the degree of compression of the supporting-springs *b b*.

To facilitate the insertion of the lubricating attachment D below the axle, the front end of the spindle E has to be shifted to one side, as shown in dotted lines in Fig. 3, which is accomplished by moving it along an inclined

slot, f^2 , of the transverse front brace, f . (Shown in Fig. 4.) In this side position of the spindle E the motion-transmitting roller d is out of the way, and the attachment D may be compressed without being interfered with by the roller, so that it can be readily introduced on opening the lid and placed in position in the box below the journal, as shown in Fig. 1. When the lubricating attachment is in position, the spindle E and its roller d' are moved laterally, so that they assume their normal position at the center of the attachment vertically below the axis of the axle, as shown in Figs. 4 and 5. As long as the car is in motion the wipers are also kept in motion; but, owing to the intermediate roller, d' , they move in opposite direction to the axle. The lubricating-oil is located in the lower part of the axle-box, below the journal, and carried up by the wipers according to the speed of rotation of the axle. The greater the number of rotations of the axle per minute the greater will be the quantity of oil supplied to the journal, the supply of oil being in direct proportion to the speed of the axle.

The advantages of my improved lubricating attachment are: a uniform and economical supply of oil to the axle in proportion to the speed of the same; secondly, there is very little spilling of the oil from the boxes; lastly, the nice and accurate adjustment of the attachment to the journal.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A lubricating attachment for car-axle boxes consisting of a spring-supported frame, contact-rollers supported by said frame, a transmitting-roller below one of said contact-rollers, a spindle keyed to said transmitting-roller and supported vertically below the center of the axle, and flexible wipers applied by spring-wires to said spindle and adapted to rotate in opposite direction to the journal and form contact therewith, substantially as set forth.

2. The combination of a supporting-frame, a , elliptical springs $b b$ for cushioning said

frame, central rollers, $d d$, side rollers, $e e$, a longitudinal spindle, E, parallel to the axis of the axle, a friction-roller, d' , on said spindle forming contact with one of the center rollers, and wipers $h h$, applied by spring-wires $g g$ to said spindle, substantially as set forth.

3. The combination of cushioning-springs, transverse brace-pieces connecting the ends of the springs, transverse frames supported on said springs, central and side rollers supported in bearings of said frame, a transmitting-roller below one of the central rollers, a spindle turning in bearings of the transverse brace-pieces, spring-wires attached to the said spindle, and flexible wipers attached to the spring-wires, substantially as set forth.

4. The combination, with the supporting-frame, elliptical cushioning-springs, central rollers on said frame, side guide-rollers, a longitudinal spindle supported in bearings of transverse brace-pieces, a friction-roller in contact with one of the central rollers, and wipers attached by spring-wires to the spindle, said spindle being swiveled at one end to the transverse rear brace-piece and guided in a slot of the transverse front brace, so as to be moved sidewise when the springs are compressed for inserting or removing the attachment, substantially as set forth.

5. The combination of supporting-springs having transverse end braces, a spindle supported in bearings of said braces, friction-rollers for imparting rotary motion to the spindle, spring-wires attached at one end to a fixed sleeve and at the other end to a sliding sleeve of the spindle, and wipers attached to said spring-wires, said wipers following the motion of the supporting-springs, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FRANK J. LEIBMAN.

Witnesses:

PAUL GOEPEL,
SIDNEY MANN.