

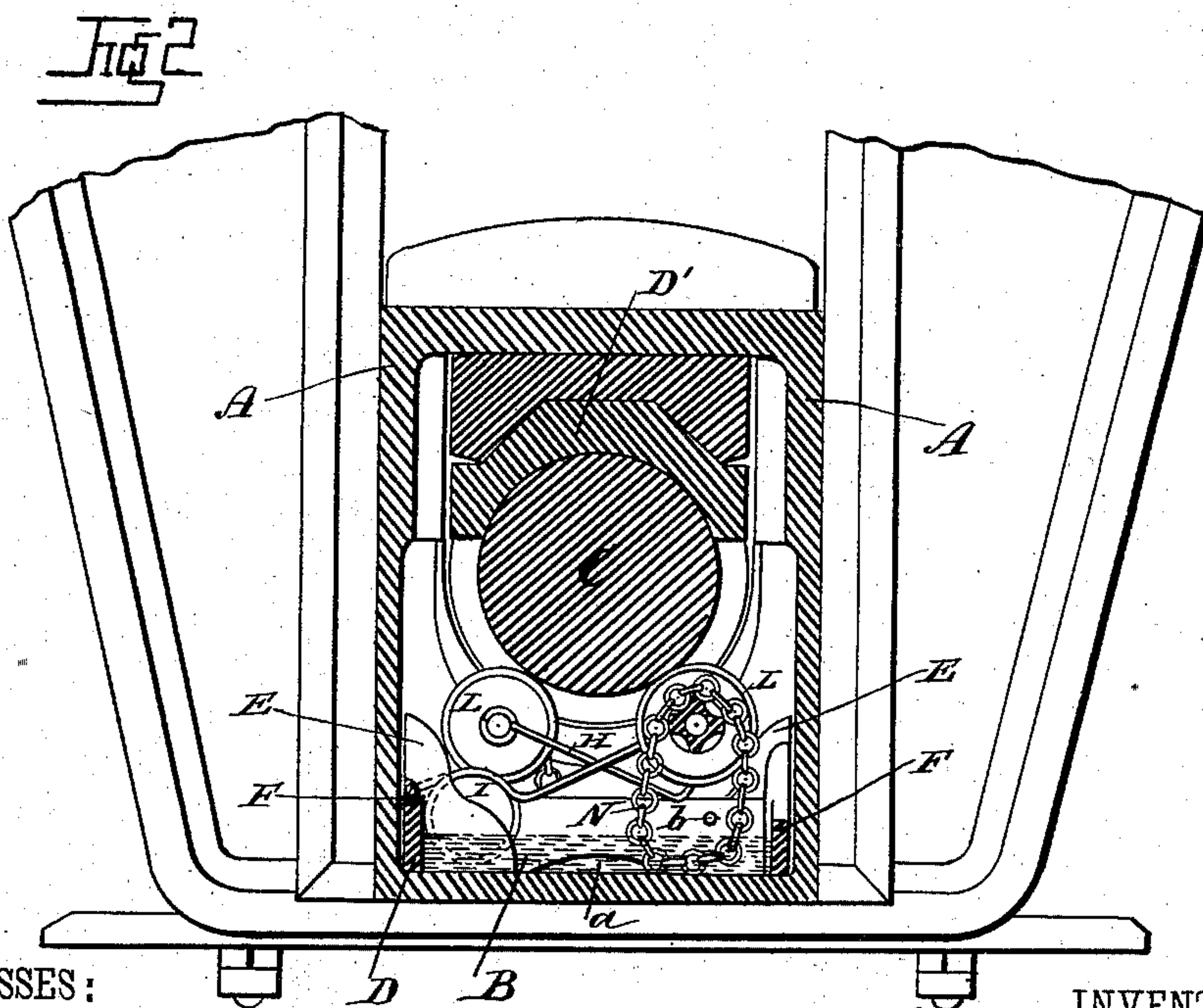
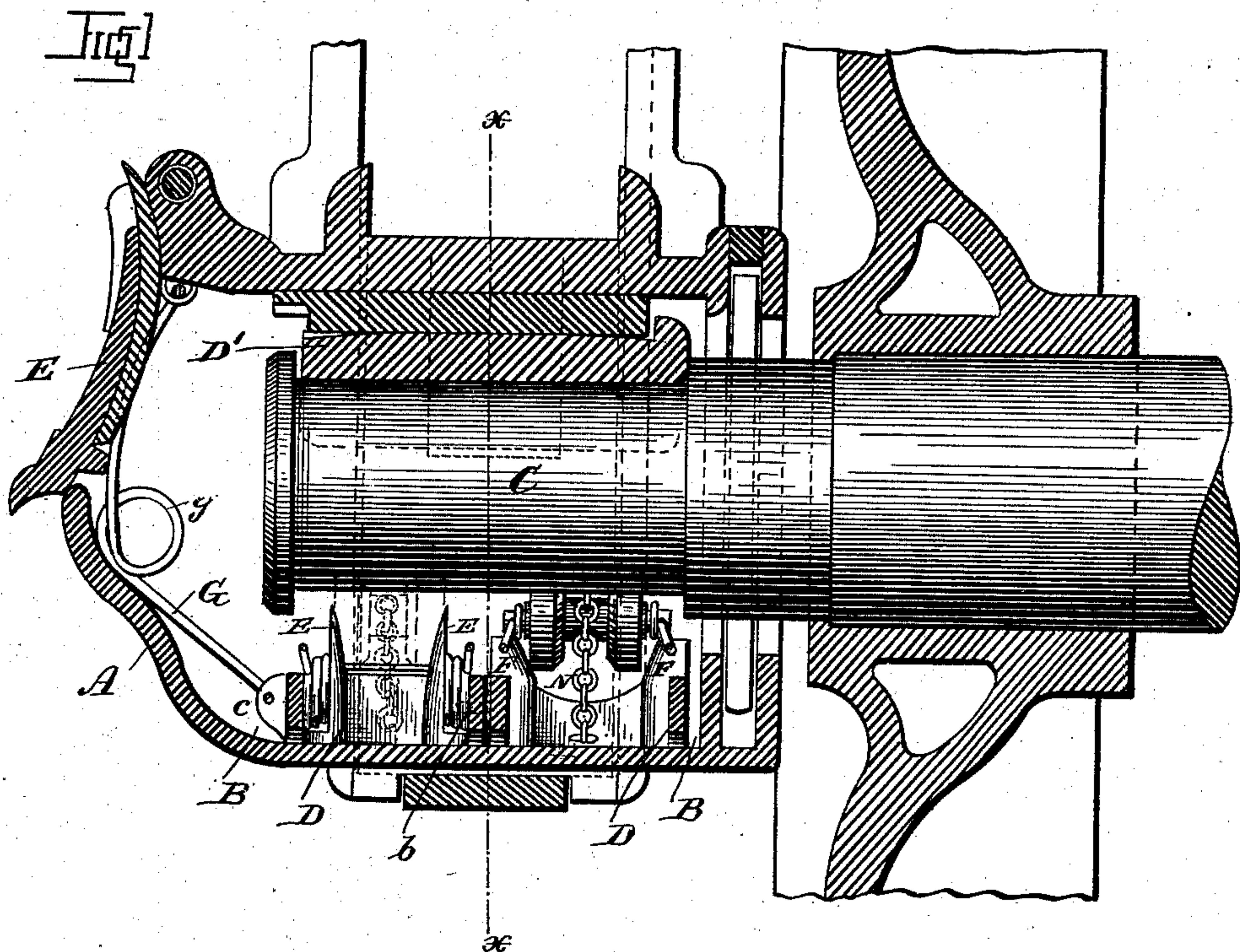
(No. Model.)

2 Sheets—Sheet 1.

C. P. HOLMES.
CAR AXLE LUBRICATOR.

No. 273,991.

Patented Mar. 13, 1883.



WITNESSES:

Wm. S. Dietrich
Arthur L. Morsell

INVENTOR.

Charles P. Holmes
By Louis Bagger & Co.
ATTORNEYS

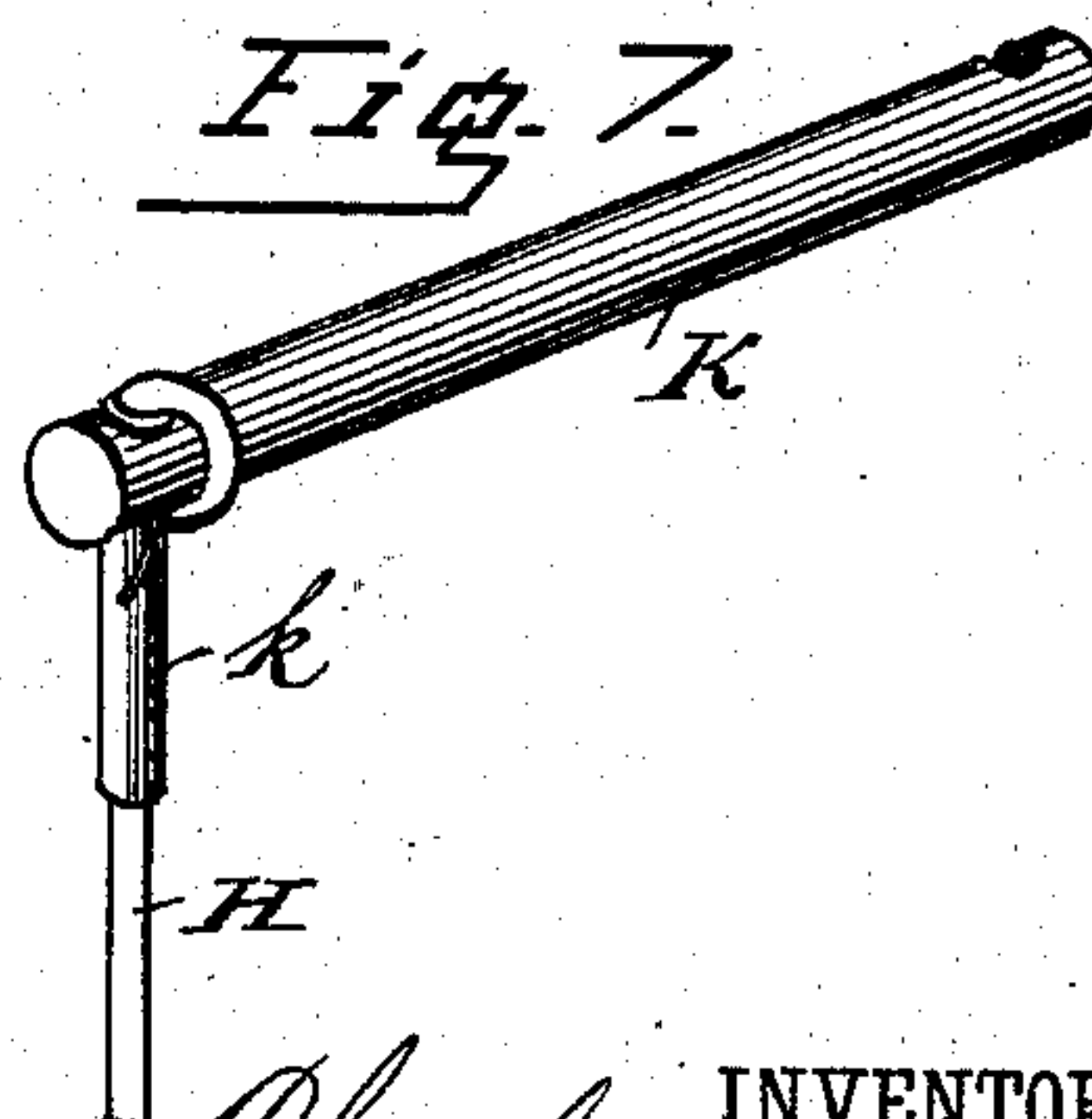
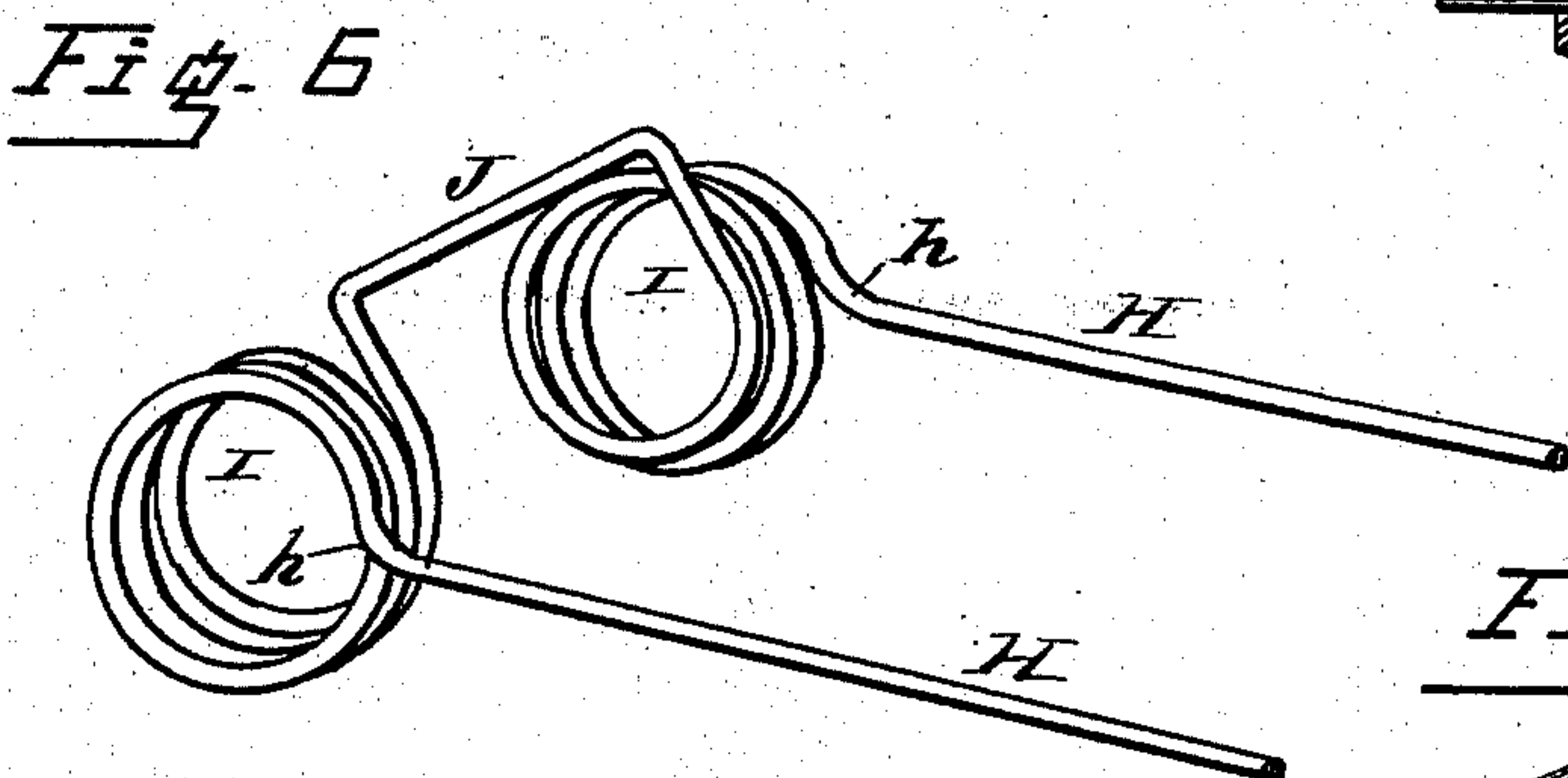
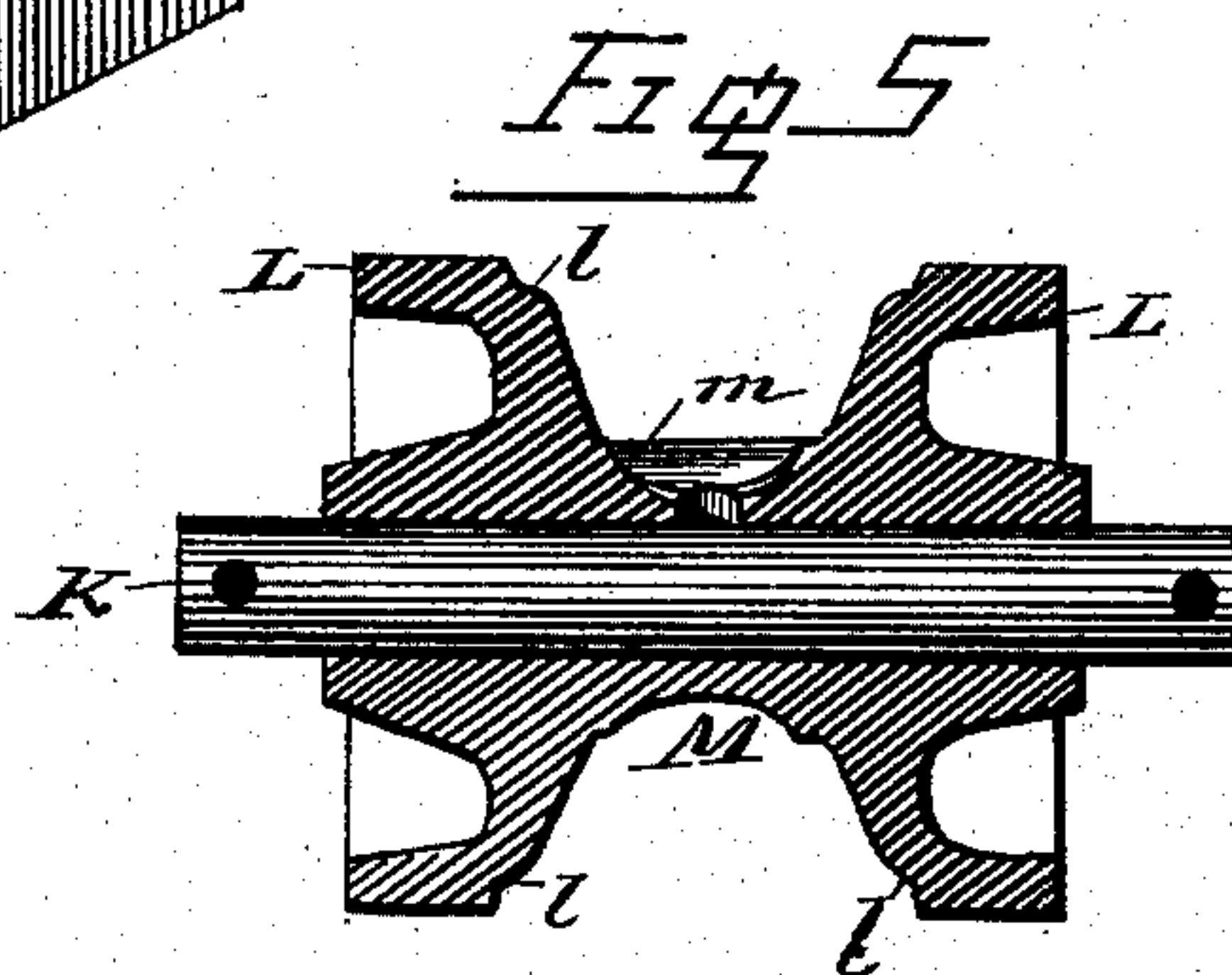
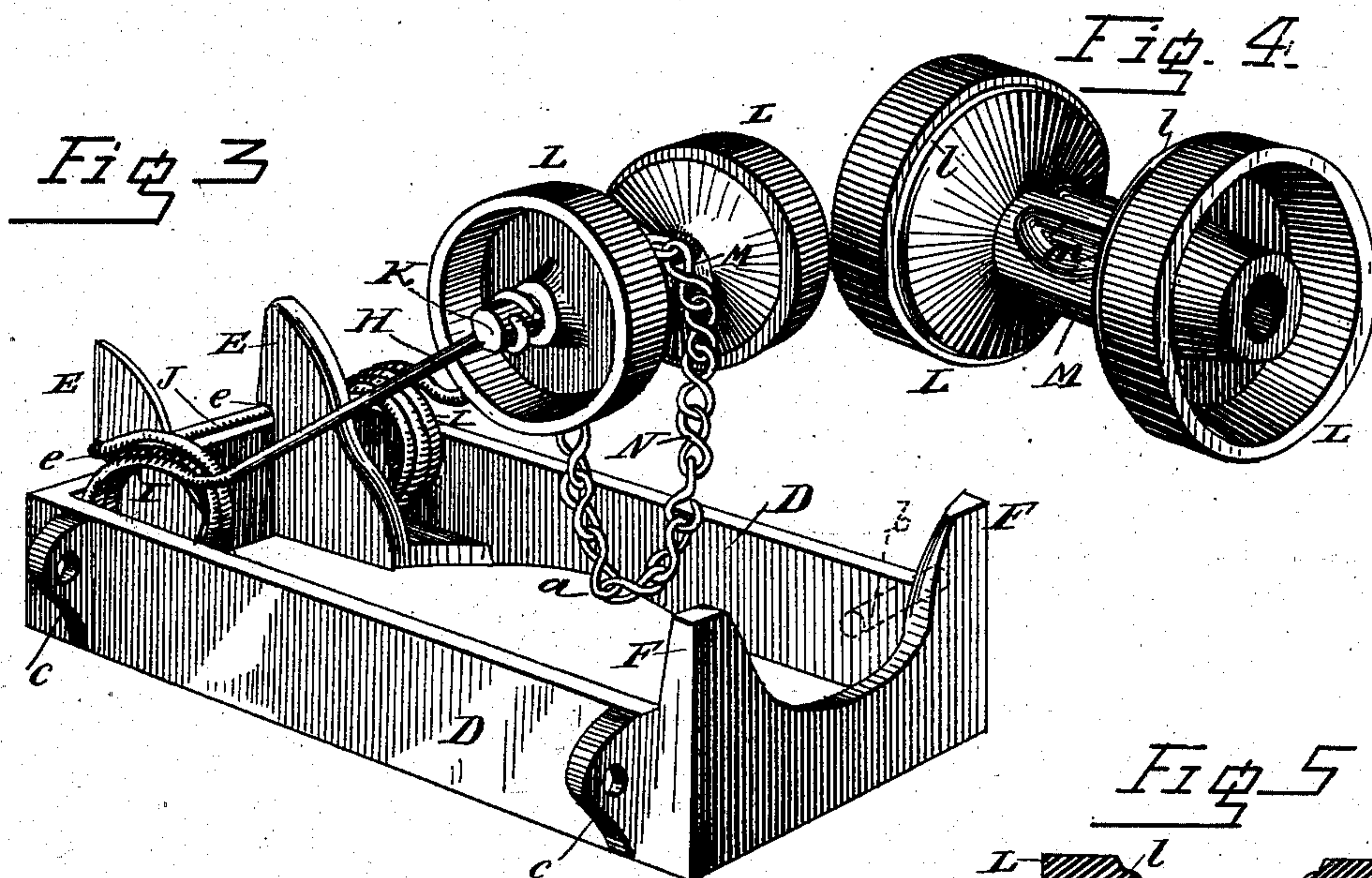
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UNITED STATES PATENT OFFICE.

CHARLES P. HOLMES, OF GOUVERNEUR, NEW YORK.

CAR-AXLE LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 273,991, dated March 13, 1883.

Application filed February 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. HOLMES, of Gouverneur, in the county of St. Lawrence and State of New York, have invented certain new and useful Improvements in Railway-Car-Axle Lubricators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section of my device, showing the car-axle in elevation. Fig. 2 is a vertical cross-section of the same through line *xx* in Fig. 1. Fig. 3 is a perspective view of one of the chairs, with its spring-rollers and pick-up chain removed from the axle-box. Fig. 4 is a perspective view of a pair of the rollers with the chain removed. Fig. 5 is a longitudinal sectional view through the rollers. Fig. 6 is a perspective view of one of the roller-supporting springs or spring-bearings detached from the chair; and Fig. 7 is a detail view of the upper end of the spring-bearings, showing the manner of fastening them to the roller journal-shafts.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to that class of devices for lubricating the axles of railway-cars in which the oil or other lubricant is fed to the axle by rollers journaled in spring-bearings, so as to cause them to bear against the under side of the axle within the axle-box, in conjunction with an endless pick-up chain, which is carried round by the roller-shaft and dips with its free end in an oil cup or reservoir located in the bottom of the axle-box; and my improvements consist in the novel construction and arrangement of operative parts, as hereinafter more fully described and claimed, whereby I prevent "jumping" of the pick-up or feeding chains in running the cars over rough roads, and provide for the satisfactory working of the device under all conditions and circumstances.

In the accompanying two sheets of drawings, A denotes the journal-box, which may be of any approved construction. In practice, I prefer to construct my improved lubri-

cating device so that it will fit the journal-boxes adopted by the "Master Car-Builders' Association," so that it can be readily fitted into these boxes; but it is obvious that it may be made to fit boxes of any special pattern or construction. In the bottom of the box is the oil-reservoir B.

C denotes the journal; D', the journal brass or bearing, and E is the journal-box cover. When adapted for use on street-cars or elevated-railway cars, my device is of course constructed of such size and shape as to fit the boxes used on that particular class of cars.

In the bottom of the journal-box are placed two chairs (shown at D D) of identical size, shape, and construction, arranged, side by side, crosswise in the bottom of the box, but in reversed position—that is, with their spring-seats at opposite sides. Each chair is in the form of a rectangular box of a length corresponding to the inside width of the journal-box and cut away on its under side, as shown at *a*, to form arched ducts for the free passage of the oil from one end of the box to the other. The chair is cast with the spring-seat E at one end and two vertical lugs or projections, F, in the opposite corners, which, by bearing against the sides of the box, as shown in Fig. 2 of the drawings, prevent tilting of the chairs by the rapid revolutions of the axle or jumping of the cars. The two chairs are united on their sides facing each other by pins *b*, and are held in place inside of the box besides by the end lugs or projections, F, by means of a spring-bail, G, having coils *g*, the lower end of which is fastened in ears *c* in one of the chairs, while its free upper end bears against the top of the box, just back of the hinged cover E. Thus it will be seen that no screws or bolts are used to hold the device in place within the journal-box, but that it can be inserted and again readily removed, when desired, without in the least disturbing or altering the construction of the box.

The roller-bearings are formed by bending a wire into the shape shown more clearly in Fig. 6 of the drawings, so as to form the parallel arms H, a pair of coiled springs, I, at the lower end of the arms, and a yoke, J, between the springs. This yoke is slipped over the chair-seats E E, which are notched, as shown

at *e e*, to hold the yoke in place. In the free end of arms *H H* is fixed a short shaft or journal, *K*, on which rollers *L L*, united by the short tubular shaft *M*, are journaled. The sides of the rollers facing each other are rounded to form an ogee curve or rim, *l*, and the short shaft *M* between them is recessed to form ribs or raised parts *m*, which engage the links of the endless feed-chain *N*, the lower free end of which dips in the oil in the bottom of the box. By this construction I prevent slipping of the chain, and by the peculiar curve or rounding of the inner faces of the rollers the chain is prevented from being carried over or jumping the rim of the roller by the jolting of the car, but will always drop back into its proper position between the rollers, as the links cannot catch on the ogee-curved rim *l*.

The chairs *D* are of such a width that the rollers journaled in the free ends of the spring-arms *H* may be depressed down between the sides of the chairs without interfering with or striking against the chairs, and by the arrangement of the wire bearing with its shoulders *h h* the arms are brought so low that their free ends can never come in contact with the axle. Again, by constructing a separate chair for each pair of oiling-rollers, the rollers of one chair cannot come in conflict with those of the other; nor can the feed-chains become entangled, as where both sets of rollers with their respective chains are mounted in the same chair. This construction of the chairs and rollers, with their appurtenances also, (as has been already stated,) permits of the easy insertion of the chairs into the journal-box without disturbing any of its parts.

To prevent the upper ends of the wire arms *H H*, where these are fastened in the roller-journal *K*, from being broken by the knocking against them of the rollers or sudden jerks of the cars, I insert that part of each arm through a tube or sleeve, *k*, by which the wire is reinforced and its strength and durability greatly increased. This also prevents contact between the rollers and arms between which they are hung, which is apt, by the rapid revolutions of the rollers, to cut the wire arms, and thus render them useless.

Another important advantage which results from my improved arrangement of the oiling-rollers in separate chairs is, that the axle-journal is oiled in four different places, instead of only two, thus throwing up a much thicker film of oil against the journal, over which it is distributed evenly by the bearing-brass which bears against the top of the journal. This construction and arrangement of the chairs also effectually prevents splashing or slopping of the oil by forming flanged boxes or reservoirs in the bottom of the journal-box which intercept the flow of oil, forming, so to speak, separate compartments or breaks in the oil-reservoir.

It is obvious that this device may be applied to shafting and the journals of machinery generally as well as to the journals of locomotives and railway-cars.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the journal *C* and journal-box *A*, of the two chairs *D D*, placed, side by side, crosswise in the bottom of the box, and connected on the sides facing or impinging upon each other, each chair having spring-bearings *H I J* and rollers *L M L*, carrying the endless feed-chains *N*, substantially as and for the purpose shown and set forth.

2. The combination, with the journal *C*, of two pairs of spring-supported yielding oiling-rollers mounted in separate chairs *D D*, each pair of rollers provided with a feed-chain, *N*, dipping with its free end into the oil-receptacle formed by the chair in which the rollers are respectively mounted, substantially as and for the purpose shown and set forth.

3. The chairs *D*, of rectangular shape, constructed with the spring-seats *E*, having notches *e*, corner lugs or projections *F*, and arched oil-ducts *a*, substantially as and for the purpose shown and set forth.

4. The yielding roller-bearings constructed with the parallel arms *H H*, spring-coils *I*, and yoke *J*, in one piece, and having shoulders *h h* where arms *H* leave the spring-coils, substantially as and for the purpose shown and set forth.

5. The combination of the chairs *D*, having seats *E*, notched at *e*, and yielding roller-bearings consisting of the parallel arms *H*, spring-coils *I*, shouldered at *h*, and yoke *J*, all in one piece, and adapted to fit the notched seat of the chair, substantially as and for the purpose shown and set forth.

6. The combination of the yielding roller-bearings *H*, re-enforcing sleeves *k*, roller-shafts *K*, and rollers *L M L*, substantially as and for the purpose shown and set forth.

7. The oiling-rollers *L*, having an ogee annular curve or bevel, *l*, on the sides facing the feed-chain *N*, substantially as and for the purpose shown and set forth.

8. The combination of the journal-box *A*, chairs *D*, provided with the spring-supported rollers *L M L*, having feed-chains *N*, and bail-fastening *G*, bent to form the spring coils or loops *g*, and bearing with its upper free end against the roof of the journal-box, substantially as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

CHARLES P. HOLMES.

Witnesses:

— LOUIS BAGGER,
JAMES F. REILY.