

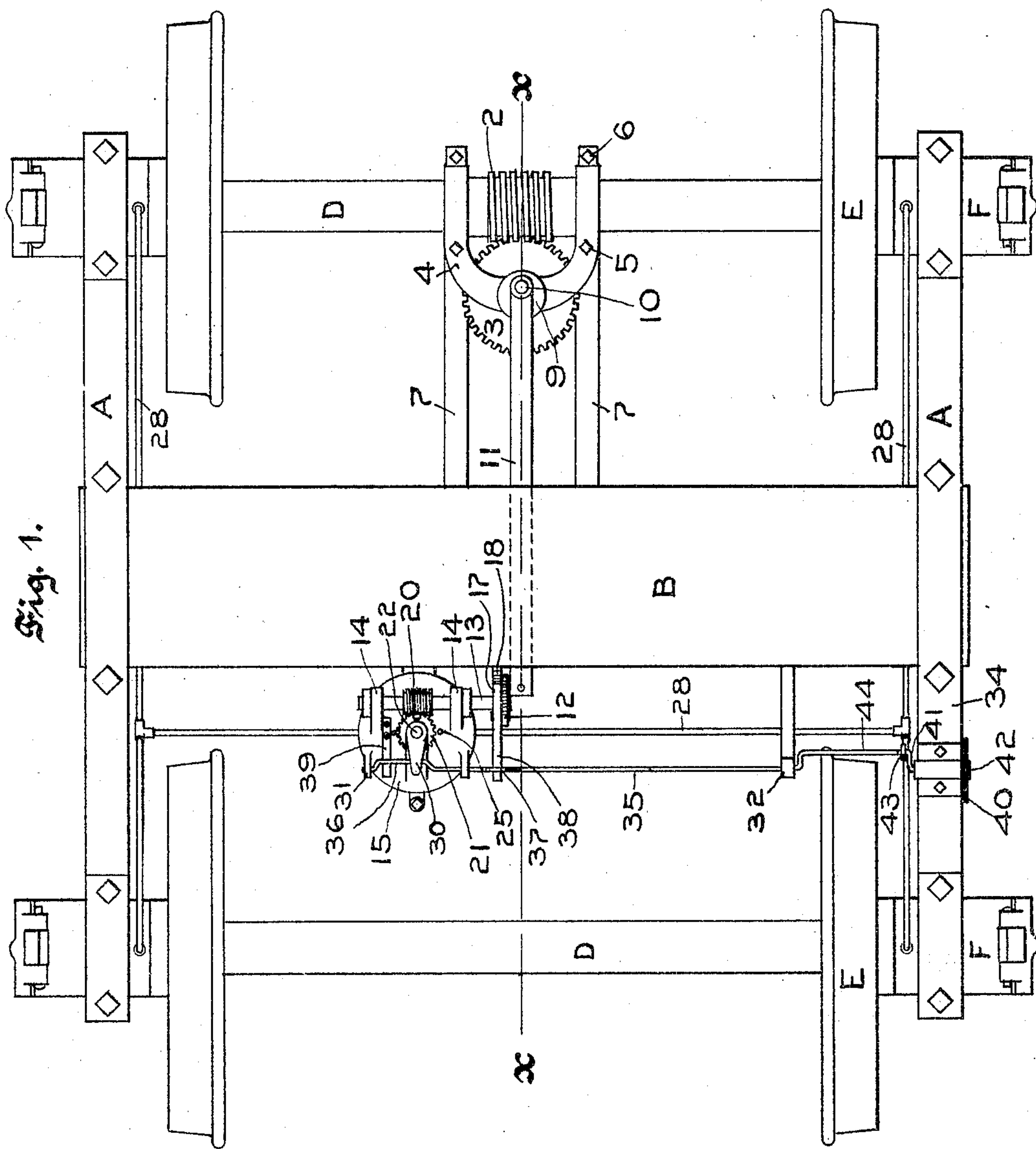
No. 776,308.

PATENTED NOV. 29, 1904.

M. P. ELGEN.
AUTOMATIC LUBRICATOR.
APPLICATION FILED JUNE 11, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses,
W. H. Palmer.
Emily F. Otis

Inventor,
Manning P. Elgen.
by Rothrop & Johnson
his Attorneys.

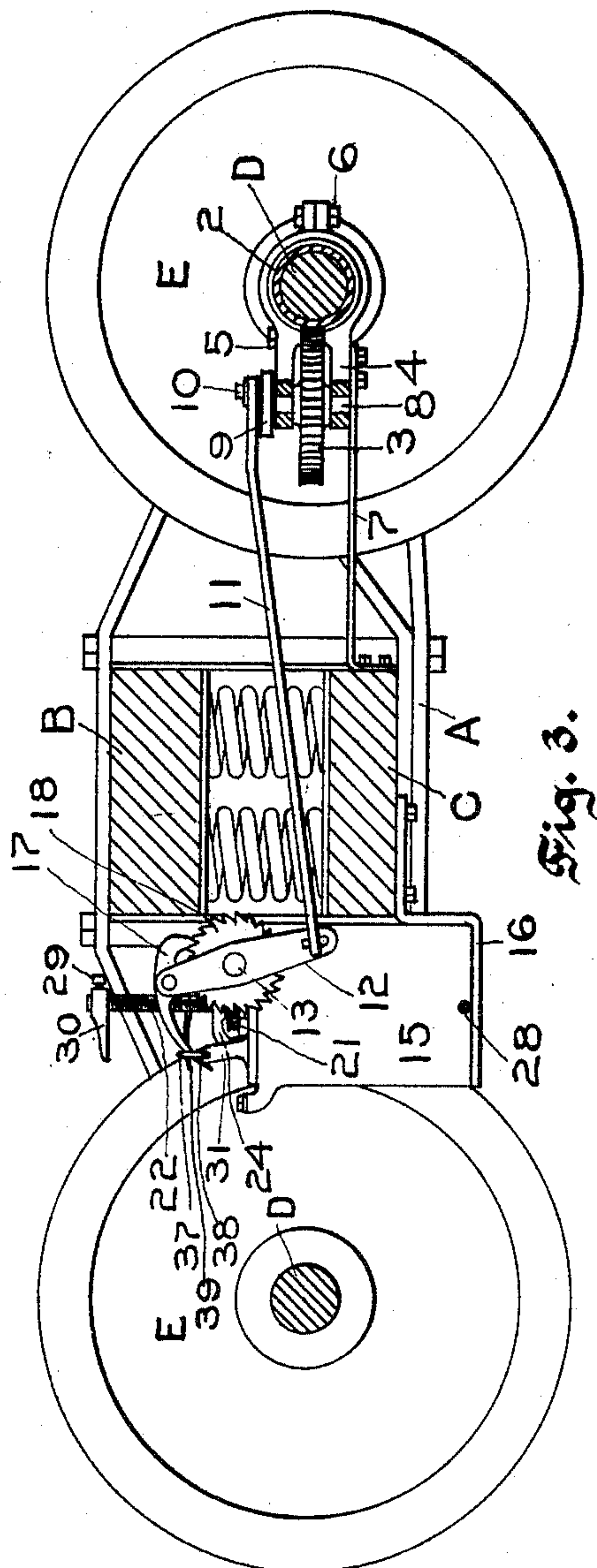
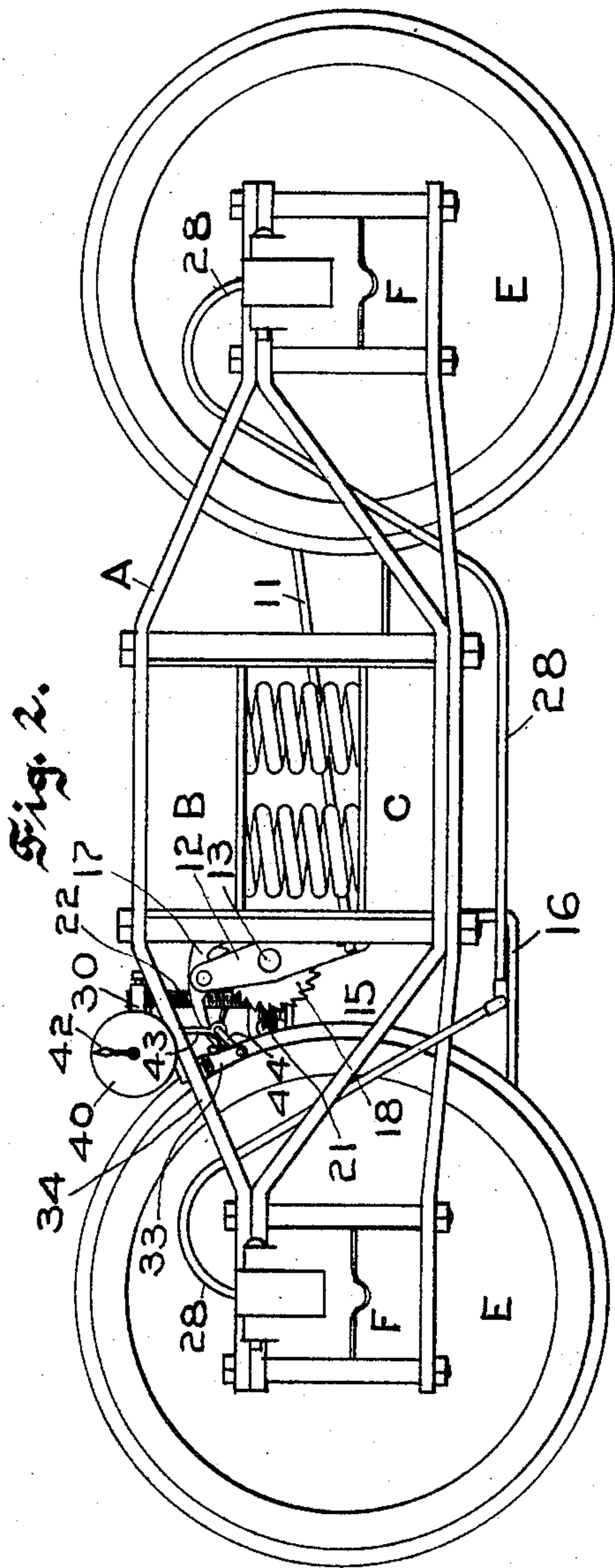
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3 SHEETS—SHEET 2.



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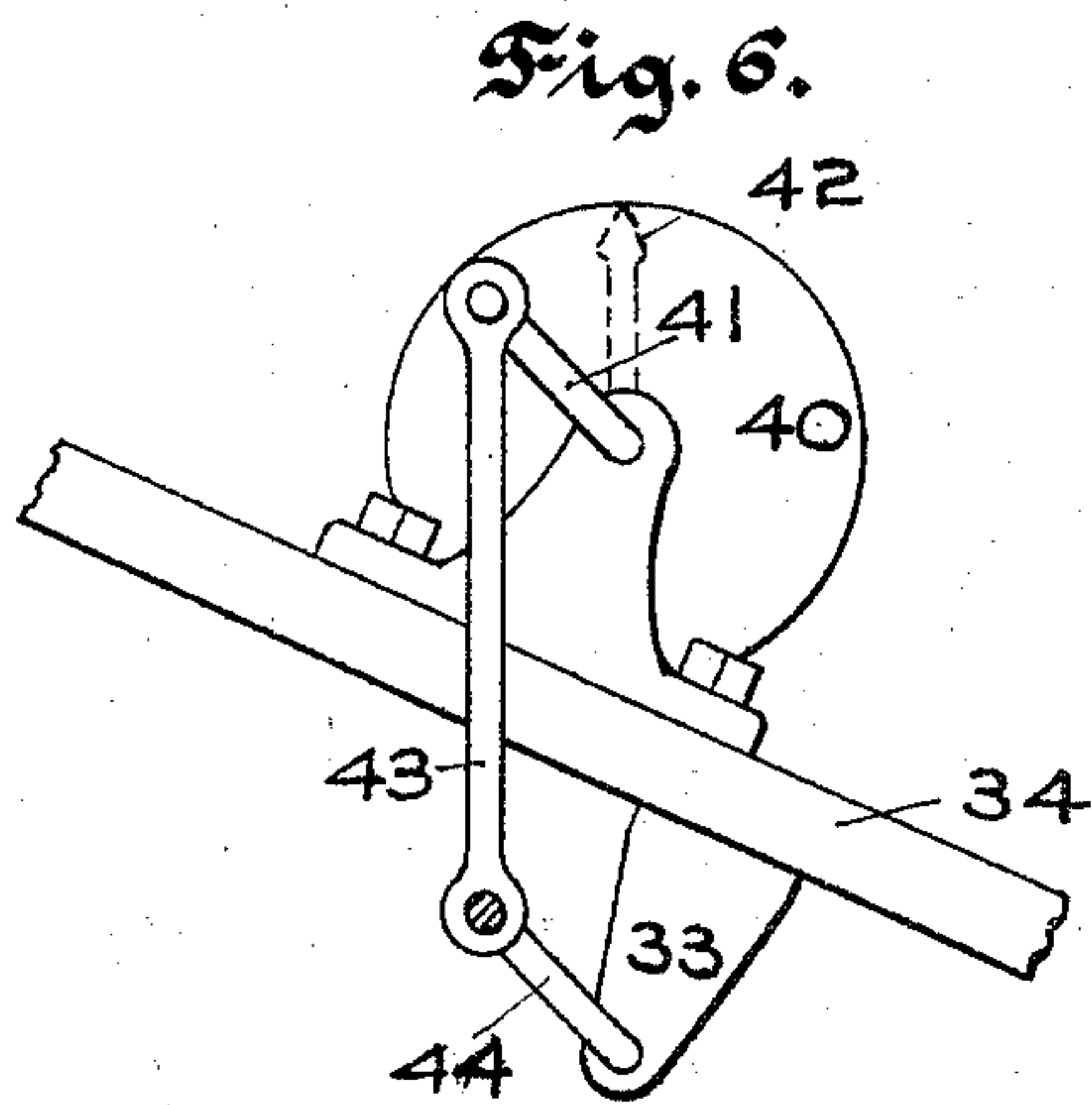
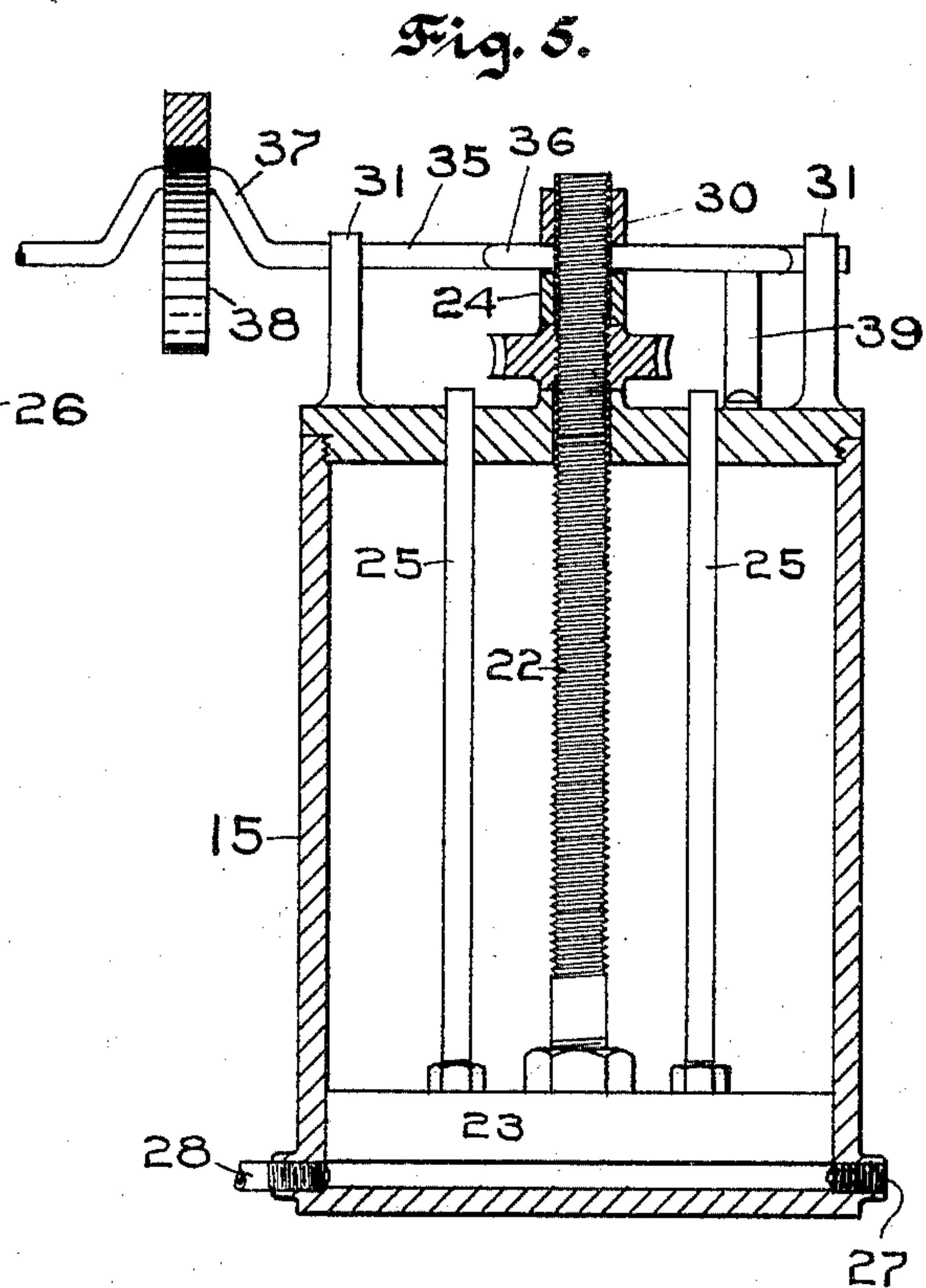
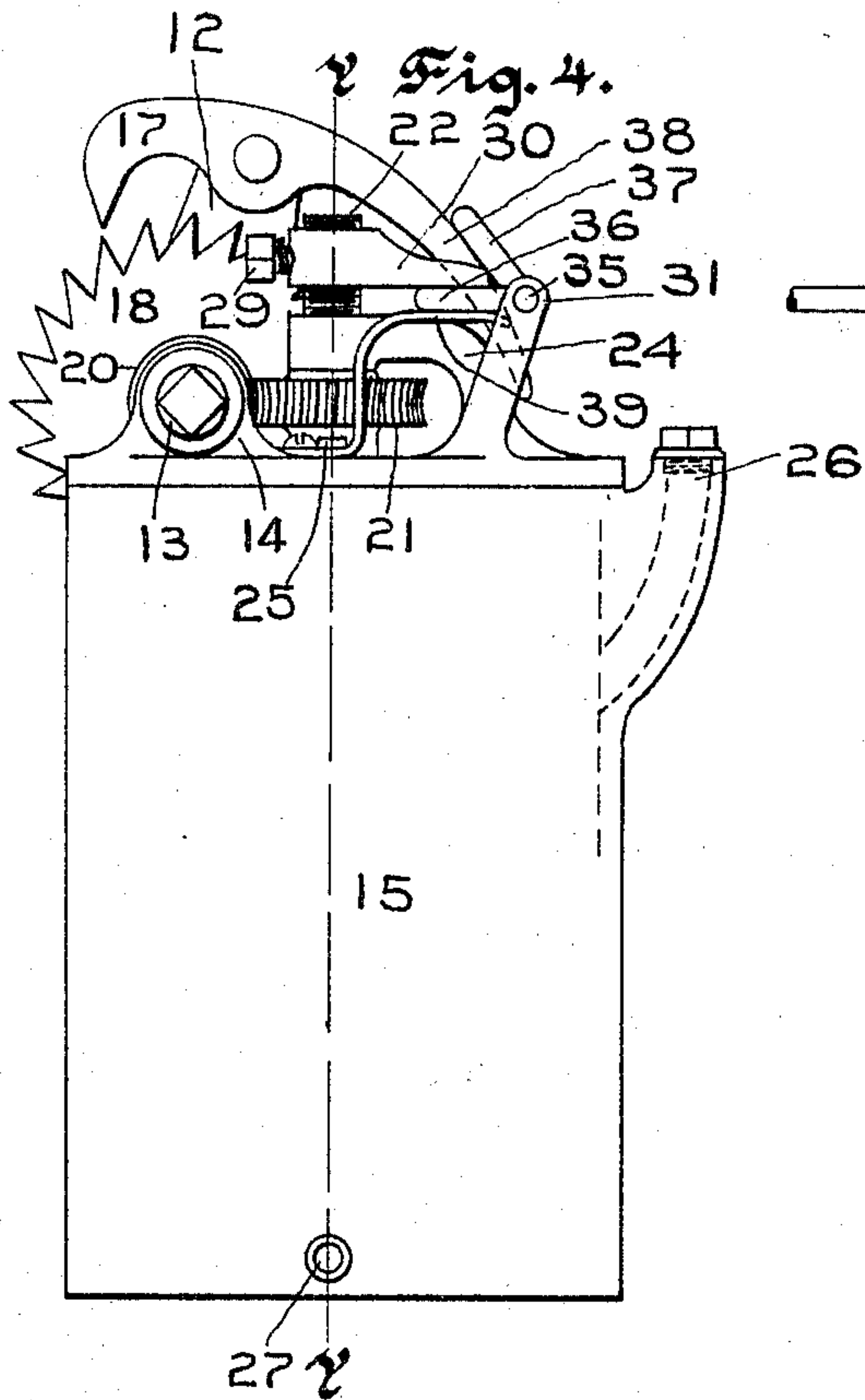
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NO MODEL.

3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

MAGNUS P. ELGEN, OF WRENSHALL, MINNESOTA, ASSIGNOR OF PART TO AUGUST JOHNSON AND JULIUS H. STRAND, OF DULUTH, MINNESOTA, AND LOUIS FERGUSON, OF ST. PAUL, MINNESOTA.

AUTOMATIC LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 776,308, dated November 29, 1904.

Application filed June 11, 1904. Serial No. 212,073. (No model.)

To all whom it may concern:

Be it known that I, MAGNUS P. ELGEN, a citizen of the United States, residing at Wrenshall, in the county of Carlton and State of Minnesota, have invented certain new and useful Improvements in Automatic Lubricators, of which the following is a specification.

My invention relates to improvements in automatic lubricators designed more particularly for lubricating axle-journals of railway-cars, and has for its object to provide improved mechanism actuated by the axle in its rotation for supplying the lubricant.

To this end my invention consists in the features of construction, combination, and arrangement of parts hereinafter particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a top view of a car-truck, showing my invention applied thereto. Fig. 2 is a side view of the same. Fig. 3 is a longitudinal section through the truck, taken on line *x x* of Fig. 1. Fig. 4 is a side view of the oil-receptacle and connected mechanism. Fig. 5 is a vertical section on line *y y* of Fig. 4, and Fig. 6 is a detail of the indicator and connected mechanism.

In the drawings is shown a railway-car truck of usual construction comprising frame A, bolster B, spring-plank C, axles D, wheels E, and journal-boxes F.

Secured to one of the axles is a worm 2, intermeshing with a worm-wheel 3, journaled in the upper and lower members of a double yoke 4. The upper and lower yoke members are clamped together about the axle by bolts 5 and 6, so that the axle is rotatable therein, and the inner end of the yoke is supported upon straps 7, secured to the spring-plank. Upon the upright shaft 8 of the worm-wheel is a disk 9, carrying an eccentrically-arranged crank-pin 10, to which is pivotally secured a pitman 11, pivotally connected at its other end with a lever 12, fulcrumed upon a shaft 13, journaled in suitable bearings 14 upon the top of an oil-receptacle 15. The oil-receptacle is supported upon a bracket 16, secured to the spring-plank. Pivottally connected with

the upper end of the lever 12 is a detent 17 in position to engage the teeth of a ratchet-wheel 18, carried by the shaft 13. Also secured to the shaft 13 is a worm 20 in position to intermesh with a worm-wheel 21. This worm-wheel is threaded upon the rod 22 of a piston 23, working within the oil-receptacle, the piston-rod passing through the bracket 24 above the worm-wheel and being also guided in its movement by rods 25, secured to the piston and arranged to slide through holes in the top of the cylinder. The oil is supplied to the cylinder through the inlet-port 26 and is discharged through outlet-ports 27 near the bottom of the receptacle. Pipes 28 lead from these ports to the journal-boxes of the axles.

When the piston is in raised position and the oil-receptacle is filled with oil, the worm-wheel 21 will be actuated by the turning of the axle through the medium of the worm 2 and worm-wheel 3, disk and pitman 9 and 11, detent and ratchet 17 and 18, and worm 20 to screw the piston-rod 22 down intermittently toward the bottom of the oil-receptacle, thus forcing the oil out through the outlet-ports 27 and pipes 28 to the journal-box F. When the piston has reached the bottom of the receptacle, it may be raised by any convenient means and the oil-tank refilled.

In order to throw the operating mechanism out of action after the piston has reached the bottom of the receptacle, as well as to indicate when the piston has reached this position, the following mechanism is employed: Adjustably secured upon the upper end of the piston by means of a set-screw 29 is a laterally-extending arm 30. Journaled in brackets 31 upon the oil-receptacle and also having journal support in a bracket 32, secured to the bolster, and in the ear 33, depending from the arch-bar 34, is a crank-shaft 35, having an offset 36 in position to be engaged by the arm 30 upon the piston-rod when the piston is near the bottom of its stroke and another offset, 37, extending up over the tail 38 of the detent 17. The offsets 36 and 37 lie in planes transverse to each other, and the offset 36 is held normally in upwardly-projecting position by

means of a spring 39, secured to the oil-receptacle. When the piston-rod has been screwed down so that the piston has nearly reached the bottom of the oil-receptacle, the arm 30 upon the piston-rod will engage and depress the offset 36 into the position shown in Fig. 4 of the drawings, thereby turning the crank-shaft and throwing the offset 37 down upon the tail 38 of the detent 17, thus throwing the detent out of engagement with the ratchet. Further turning of the axle will thereupon cease to operate the ratchet and connected piston-driving mechanism.

Secured upon one of the arch-bars 34, near the end of the crank-shaft 35, is an indicator-plate 40, in which is journaled a crank 41, carrying upon the outside of the indicator a pointer 42. At its inner end the crank is pivotally connected by a link 43 with the offset portion 44 of the crank-shaft 35. When the piston has reached the end of its downward travel, the turning of the crank-shaft 35 by means of the arm 30, as already described, will cause the offset portion 44 to turn, thereby, through the medium of the link 43 and crank 41, turning the pointer 42 upon the indicator, thus indicating that the supply of oil in the oil-receptacle has been exhausted.

Various modifications may be made in the details of the device without departing from the principle of the invention, the scope of which is defined in the claims.

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

1. The combination, with an axle and journal-boxes, of a lubricant-receptacle, a pipe leading from the receptacle to the journal-boxes, a piston working within the receptacle, a worm secured to the axle, a worm-wheel intermeshing therewith and having an upright shaft, a disk mounted upon the shaft and having an eccentrically-arranged pin, a pitman pivotally connected with the crank, and means actuated by the pitman for depressing the piston within the lubricant-receptacle.

2. The combination, with an axle and journal-boxes, of a lubricant-receptacle, a pipe leading from the receptacle to the journal-boxes, a piston working within the lubricant-receptacle and having a screw-threaded piston-rod, a worm-wheel having screw engagement with the piston-rod, a worm-shaft rotatably mounted upon the receptacle, a worm carried thereby in position to intermesh with the worm-wheel, a ratchet mounted upon said shaft, a pivotally-mounted detent in position to engage the ratchet, and means actuated by the axle in its rotation to oscillate the detent.

3. The combination, with an axle and journal-boxes, of a lubricant-receptacle, a pipe leading from the receptacle to the journal-boxes, a piston working within the receptacle and having a screw-threaded piston-rod, a worm-wheel having screw engagement with the piston-rod, a worm-shaft rotatably mounted upon the receptacle, a worm carried thereby in position to intermesh with the worm-wheel, a ratchet mounted upon the shaft, a pivotally-mounted detent in position to engage the ratchet, said ratchet having a rearwardly-extending tail, means actuated by the axle to oscillate the detent, an arm secured upon the upper end of the piston-rod, a crank-shaft journaled upon the receptacle and having two offsets in planes transverse to each other, one of the offsets extending over the tail of the detent, and the other offset being in position to be engaged by the arm in its descent, whereby the crank-shaft is turned to depress the tail of the detent, for the purpose set forth.

4. The combination, with an axle and journal-boxes, of a lubricant-receptacle communicating with the journal-boxes, a piston working within the lubricant-receptacle and having a screw-threaded piston-rod, means actuated by the axle in its rotation for depressing the piston and piston-rod within the receptacle, an arm carried by the piston-rod at its upper end, an indicating-pointer rotatably mounted upon the car-truck, and means operated by said arm in its descent for turning the indicating-pointer when the piston has been depressed to the bottom of the receptacle, for the purpose set forth.

5. The combination, with an axle and journal-boxes, of a lubricant-receptacle communicating with the journal-boxes, a piston working within the receptacle and having a screw-threaded piston-rod, a worm-wheel having screw engagement with the piston-rod, a worm-shaft, a worm carried thereby in position to intermesh with the worm-wheel, a ratchet mounted upon the shaft, a pivotally-supported detent in position to engage the ratchet, the ratchet having a rearwardly-extending tail, means actuated by the axle to oscillate the detent, and means operated by the piston-rod in its descent for depressing the tail of the detent and thereby throwing the detent out of engagement with the ratchet.

In testimony whereof I affix my signature in presence of two witnesses.

MAGNUS P. ELGEN.

Witnesses:

JOHN HEILMANN,
ETHEL DOUGLAS.