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D. L. GENSBIGLER.
LUBRICATING DEVICE FOR JOURNAL BOXES.
APPLICATION FILED SEPT. 1, 1903.

Fig. 1.

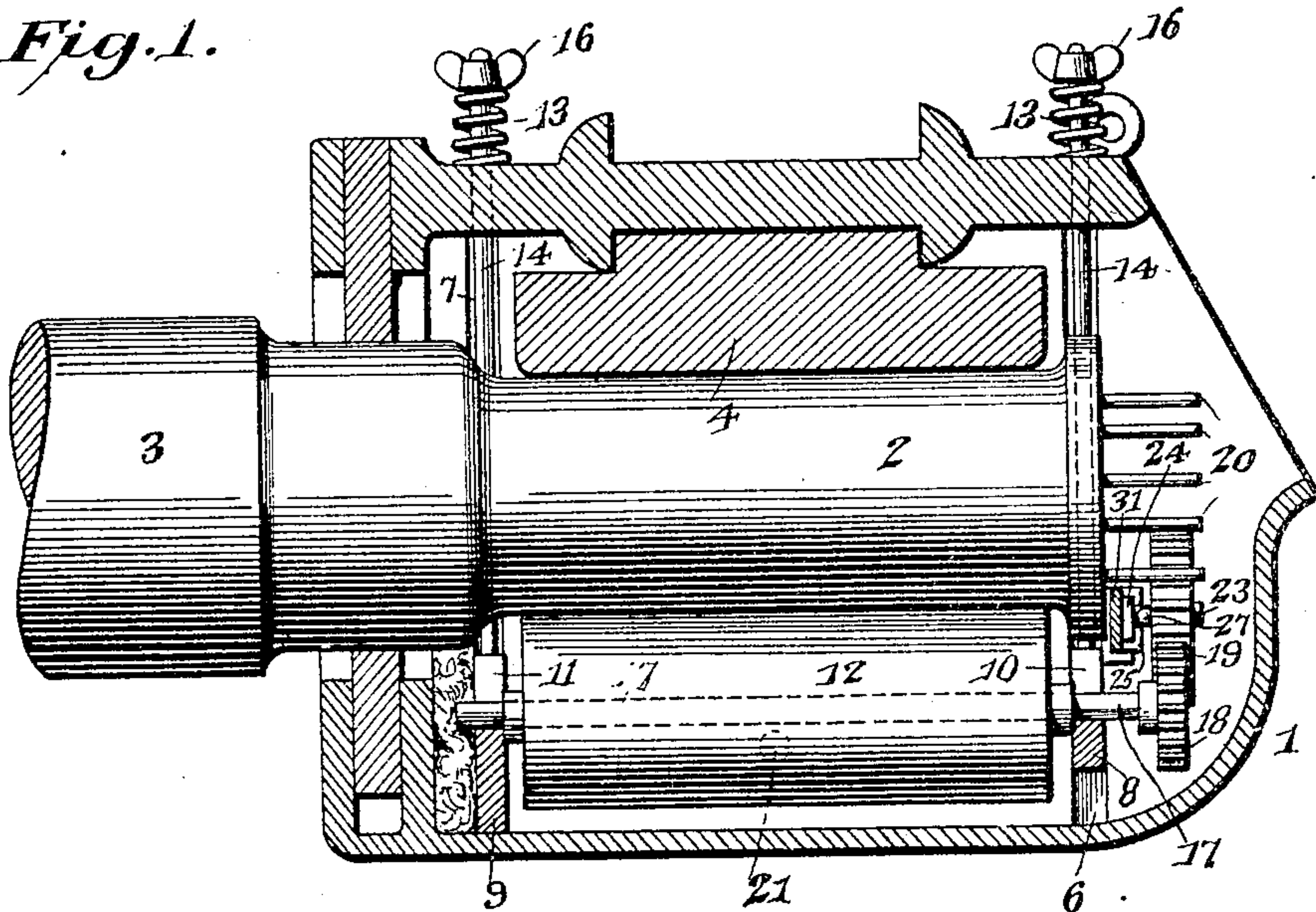


Fig. 2.

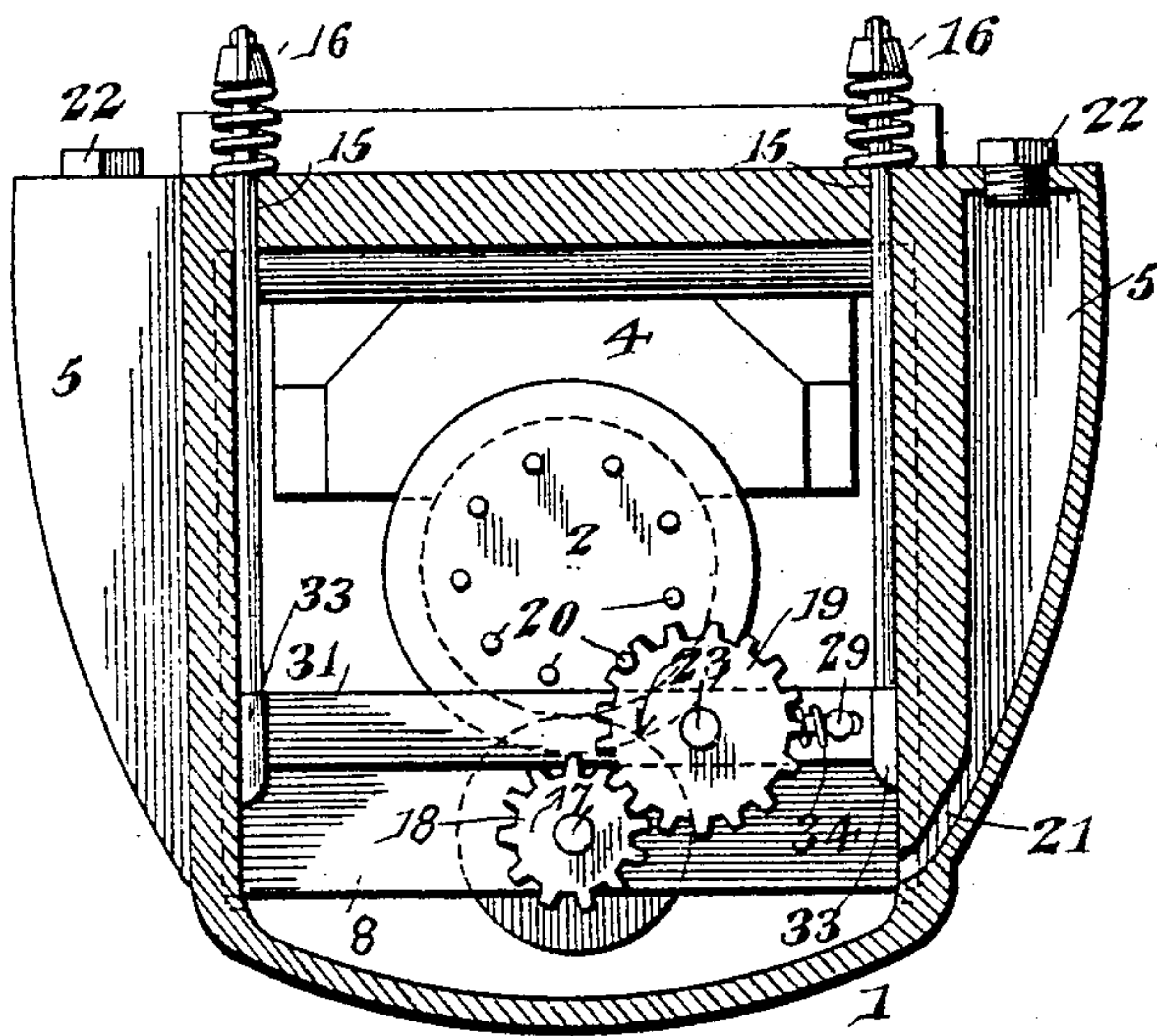
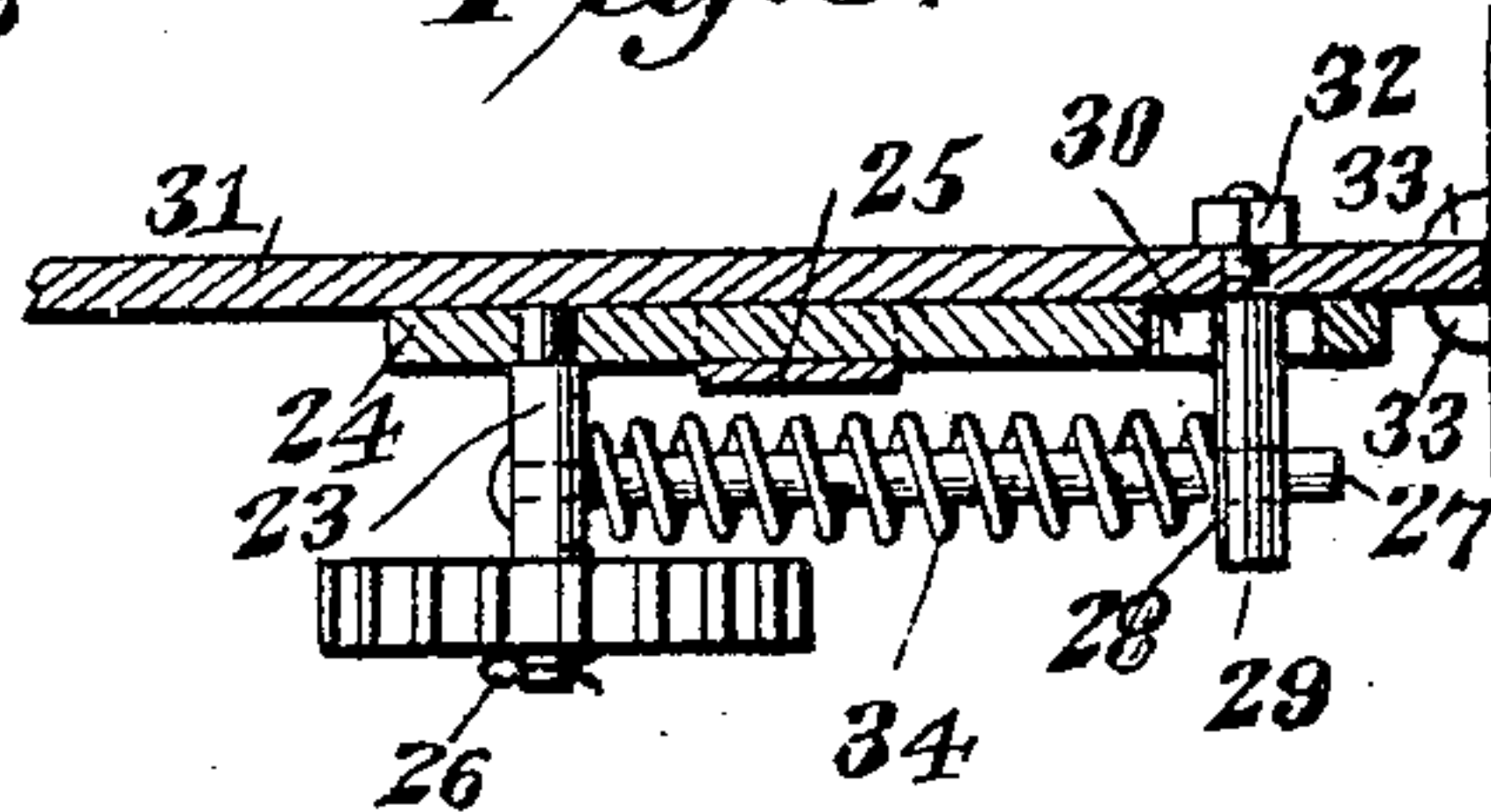


Fig. 3.



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LUBRICATING DEVICE FOR JOURNAL-BOXES.

No. 795,277.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed September 1, 1903. Serial No. 171,573.

To all whom it may concern:

Be it known that I, DAVID LUDWICK GENSBIGLER, a citizen of the United States, residing at Youngwood, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Lubricating Device for Journal-Boxes, of which the following is a specification.

The invention relates to improvements in devices for lubricating journals of freight and other cars.

The object of the present invention is to improve the construction of devices for lubricating car-journals and to provide a simple, inexpensive, and efficient device designed particularly for use on freight-cars and the like and capable of yieldably engaging a car-journal and of automatically taking up the wear, and adapted to convey a lubricant to the journal and also to polish the latter, whereby wear on the journal and brass is reduced to a minimum and hot boxes prevented.

A further object of the invention is to provide a device of this character in which the combined feeding and polishing means will be positively operated by the journal and rotated in a reverse or backward direction, whereby it is enabled to effectively polish a journal and feed a lubricant to the same.

Another object of the invention is to enable the lubricant within a journal-box to be maintained at a predetermined level with relation to the journal and to provide means for carrying a sufficient quantity of oil to maintain such level for a considerable length of time.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a vertical longitudinal sectional view of the journal-box and lubricating device constructed in accordance with this invention, the journal being shown in side elevation. Fig. 2 is a transverse sectional view, the axle and the lubricating device being shown in elevation. Fig. 3 is a detail sectional view illustrating the

manner of yieldably mounting the intermediate gear for communicating motion from the journal to the combined lubricating and polishing roll.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a journal-box, receiving the journal 2 of a car-axle 3 in the usual manner and provided with the usual journal-brass 4, as clearly illustrated in Figs. 1 and 2 of the drawings. The journal-box is constructed substantially the same as the ordinary journal-box, with the exception of the side tanks or compartments 5 for the reception of the lubricant; but these can be omitted, if desired. The said journal-box is provided at opposite sides with front and rear vertical ways 6 and 7, consisting of grooves and receiving front and rear hangers or supports 8 and 9, which are provided with bearing-slots 10 and 11 for the reception of the journals of a combined lubricating and polishing roll 12. The combined lubricating and polishing roll, which is located directly beneath the journal of the car-axle, is yieldably held in contact with the same by means of coiled springs 13, disposed on the upper portions of rods 14 of the front and rear hangers or supports 8 and 9. The supports consist of transverse bottom plates, arranged at vertical planes and provided at their terminals with the rods 14, which extend upward through perforations 15 of the top of the journal-box, and the upper ends of the rods 14 are provided with threads for the reception of thumb-nuts 16, which are adapted to be adjusted to vary the tension of the coiled springs 13. These coiled springs 13 are interposed between the adjusting-nuts 16 and the top of the journal-box and are adapted to hold the combined lubricating and polishing roll yieldably in engagement with the journal 2. As the combined lubricating and polishing roll becomes worn the springs operate automatically to operate the said roll and take up the wear, whereby a proper contact is maintained at all times between the roll and the journal.

The front or outer end of the shaft 17, upon which the roll is mounted, is extended beyond the front hanger and carries a gear-wheel 18, which is keyed or otherwise secured to the said shaft and which meshes with an intermediate gear 19 of greater diameter than the

gear 18. The gear 19, which is yieldably mounted, as hereinafter described, is operated by a gear carried by the outer end of the journal 2 and consisting of an annular series of pins 20, projecting from the end of the journal 2 and arranged horizontally, as clearly shown in Fig. 1. The pins 20, which may be seated in sockets or be otherwise secured to the journal 2, are adapted to successively engage the intermediate gear, and they are adapted also to rotate the same, as will be readily understood. The intermediate gear communicates motion to the gear 18 of the combined lubricating and polishing roll, which is thereby rotated backward or in a direction reverse of the rotation of the journal 2 of the car-axle, whereby the lubricant will be carried upward to the journal 2 and will be wiped off the combined polishing and lubricating roll by the journal. The combined polishing and lubricating roll also polishes the journal and removes any grit therefrom, so that the oil or other lubricant is delivered to a perfectly smooth and polished surface of the journal 2. In this manner the friction between the journal 2 and the journal-brass 4 and the consequent wear are reduced to a minimum and hot boxes are prevented while there is sufficient lubricant in the journal-box.

The roll, which may be constructed of any suitable material, is preferably composed of stone, such as granite, and it is adapted to effectively polish the journal 2 and at the same time is a poor conductor of heat and will not be rapidly heated. The tanks or compartments 5 at opposite sides of the journal-box communicate with the interior of the latter by apertures 21, formed in the side walls of the said journal-box and located at the level of the lubricant within the journal-box, and when the said tanks or compartments are supplied with a lubricant they will automatically maintain the lubricant within the journal-box at the level of the apertures 21, and as the lubricant is consumed and sinks below the tops of the apertures 21 the lubricant within the tanks or compartments 5 will be permitted to flow into the journal-box and maintain the said level. The tanks are provided at their tops with filling-apertures, which are normally closed by plugs 22, and the latter form air-tight closures for the apertures of the tanks. The plugs are adapted to be readily removed for supplying the tanks or compartments with a lubricant and may be quickly replaced for closing such apertures. The apertures 21 may, if desired, be temporarily closed while the tanks are being supplied with oil; but the said apertures 21 may be sufficiently small to prevent a too rapid flow of the lubricant into the journal-box while the tanks or compartments 5 are being supplied with oil.

The intermediate gear 19 is mounted on a

stub-shaft 23, which is carried by a slide 24, and the latter is arranged horizontally at the front hanger or support 8 in a suitable guide 25. The inner end of the stub-shaft is suitably secured to the slide, and its outer end is reduced to form a shoulder and is perforated to receive a split key 26 or other suitable fastening device for securing the gear 19 on the stub-shaft. The shoulder at the outer end of the stub-shaft prevents the gear from moving inward on the same. The stub-shaft is connected between its ends to one end of a slidable rod 27, which has its other end supported in an aperture 28 of a guide-pin 29, and the latter extends through a slot 30 of the slide 24 and is secured at its inner end to a plate or support 31, upon which the said guide 25 is mounted. The inner end of the pin 29 is reduced and threaded to form a shoulder and to receive a nut 32, the shoulder being fitted against the outer face of the support or plate 31 and the nut being arranged at the inner or rear face of the same. The plate 31 is arranged in suitable recesses or seats 33, consisting of vertical grooves formed in lugs or enlargements of the side walls of the journal-box. These grooves extend downward from the upper ends of the lugs and terminate short of the lower ends thereof, and they enable the plate or support 31 to be readily detached when desired. A coiled spring 34 is disposed on the slidable rod 27 and is interposed between the pin 29 and the stub-shaft 23, whereby the intermediate gear is yieldably maintained in mesh with the gear 18 and with the gear formed by the pins 20. The yieldable intermediate gear is adapted to automatically accommodate itself to any movement or change of position of the roll incident to the springs 13 taking up the wear. The combined lubricating and polishing roll presents a grinding polishing surface to the journal 2, and as it becomes worn through contact with the journal it will be maintained in proper engagement with the same by the coiled springs 13. The grinding and polishing face of the roll is capable of positively removing all grit from the journal and enables the same to present a smooth polished lubricated surface to the journal-brass.

In order to exclude dust at the bottom of the journal-box at the back thereof and also to prevent the lubricant from splashing out at that point, the space at the rear of the hanger or support 9 is filled with waste 35, as clearly shown in Fig. 1 of the drawings. The waste fills the space back of the rear hanger or support, extending upward from the bottom of the journal-box to the journal, as shown.

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

1. In a lubricating device for journal-boxes, the combination with a journal, of a combined

lubricating and polishing roll presenting a grinding and polishing face to the journal and adapted also to feed a lubricant to the same, substantially as described.

2. In a lubricating device for journal-boxes, the combination with a journal, of means for polishing the same and also for feeding a lubricant to the journal, substantially as described.

3. In a lubricating device for journal-boxes, the combination with a journal, of means for polishing the same and also for feeding a lubricant to the polished surface of the journal, substantially as described.

4. In a lubricating device for journal-boxes, the combination with a journal, of polishing and lubricating means presenting a grinding and polishing surface to the journal and adapted to feed a lubricant to the polished surface of the journal, substantially as described.

5. In a lubricating device for journal-boxes, the combination with a journal, of a polishing and lubricating roll presenting a grinding and polishing surface to the journal and adapted to feed a lubricant to the same, and means for positively rotating the roll, substantially as described.

6. In a lubricating device for journal-boxes, the combination with a journal, of a polishing and lubricating roll engaging the journal, and means for rotating the roll in a direction the reverse of that of the journal, whereby the lubricant will be delivered to a smooth polished surface, substantially as described.

7. In a lubricating device for journal-boxes, the combination with a journal, of a roll engaging the same and presenting a grinding and polishing surface to the journal, and gearing for communicating motion from the journal to the said roll, substantially as described.

8. In a lubricating device for journal-boxes, the combination with a journal, of a combined polishing and lubricating roll presenting a grinding-surface to the journal, means for yieldably holding the roll in engagement with the journal, and gearing for communicating motion from the journal to the roll, one of the gears being yieldable to permit the wear on the roll to be taken up, substantially as described.

9. In a lubricating device for journal-boxes, the combination of a lubricating and polishing roll, means for yieldably holding the same in engagement with the journal of an axle, and gearing for communicating motion from an axle to the roll, one of the gears being yieldable to permit the wear on the roll to be taken up, substantially as described.

10. In a lubricating device for journal-boxes, the combination with a journal-box, of inner and outer vertically-adjustable yieldably-supported hangers guided on the journal-box, a combined polishing and lubricat-

ing roll carried by the hangers, and gearing for rotating the roll reversely of that of the journal, said gearing being yieldable to permit the wear of the roll to be taken up, substantially as described.

11. In a lubricating device for journal-boxes, the combination with a journal-box provided at opposite sides with guides, front and rear vertically-movable hangers operating in the guides, means for yieldably supporting the hangers, a roll carried by the hangers for engaging a journal, and means for positively rotating the roll reversely of that of the journal, substantially as described.

12. In a lubricating device for journal-boxes, the combination of a journal provided with a gear, a yieldably-supported roll engaging the journal, a gear connected with the roll, and a yieldably-mounted intermediate gear meshing with the said gears for rotating the roll reversely of that of the journal, substantially as described.

13. In a device of the class described, the combination with a journal having a gear, and a journal-box, of a yieldably-supported roll engaging the journal and provided with a gear, a slide arranged for movement toward and from the said gears, an intermediate gear carried by the slide and meshing with the said gears, and means for yieldably holding the intermediate gear in such engagement, substantially as described.

14. In a device of the class described, the combination of a journal provided with a series of projections forming a gear, a roll engaging the journal and provided with a gear and capable of adjustment to take up the wear, and an automatically-adjustable intermediate gear meshing with the gear of the roll and arranged to be actuated by the said projections, substantially as described.

15. In a device of the class described, the combination of a journal having a gear, a roll engaging the journal and also provided with a gear, a slide, a gear carried by the slide and meshing with the said gears, a slidable rod movable with the said slide, and a spring disposed on the rod for actuating the said slide, substantially as described.

16. In a device of the class described, the combination of a journal provided with a gear, a roll engaging the journal, a gear connected with the roll, a support detachably mounted in the journal-box and provided with a guide, a slide operating in the guide, a stub-shaft carried by the slide, a gear mounted on the stub-shaft and meshing with the said gears, a guide-pin having an aperture, a slidable rod connected with the stub-shaft and guided in the said aperture, and a coiled spring disposed on the rod and engaging the stub-shaft and the pin, substantially as described.

17. In a device of the class described, the combination of a journal-box provided at op-

posite sides with seats, a support fitted in the seats, a slide mounted on the support, a guide-pin also mounted on the support and having an aperture, a stub-shaft carried by the slide, a rod fixed to the stub-shaft and guided in the aperture of the said pin, a spring disposed on the rod and interposed between the stub-shaft and the pin, a gear mounted on the stub-shaft, a journal having a gear meshing with the said gear, and a roll engaging the journal and having a gear meshing with the gear of a stub-shaft, substantially as described.

18. In a device of the class described, the combination of a journal having a gear, a roll engaging the journal and also provided with a gear, a support having a guide, a slide mounted in the guide and having a slot, a pin extending through the slot and mounted on the support, a gear-wheel carried by the slide and meshing with the said gears, and a spring

engaging the pin and actuating the slide, substantially as described.

19. In a device of the class described, the combination with a journal, a lubricating and polishing roll constructed of abrading material and arranged to engage the journals, means for adjusting the roll toward and from the journal, and gearing for communicating motion from the journal to the roll, said gearing being yieldable to permit the operation of the adjusting means, substantially as described.

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

DAVID LUDWICK GENSBIGLER.

Witnesses:

DANIEL FRANK UPDEGRAFF,
FLOYD C. MILLER.