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LUBRICATOR FOR CAR AXLE JOURNALS.  
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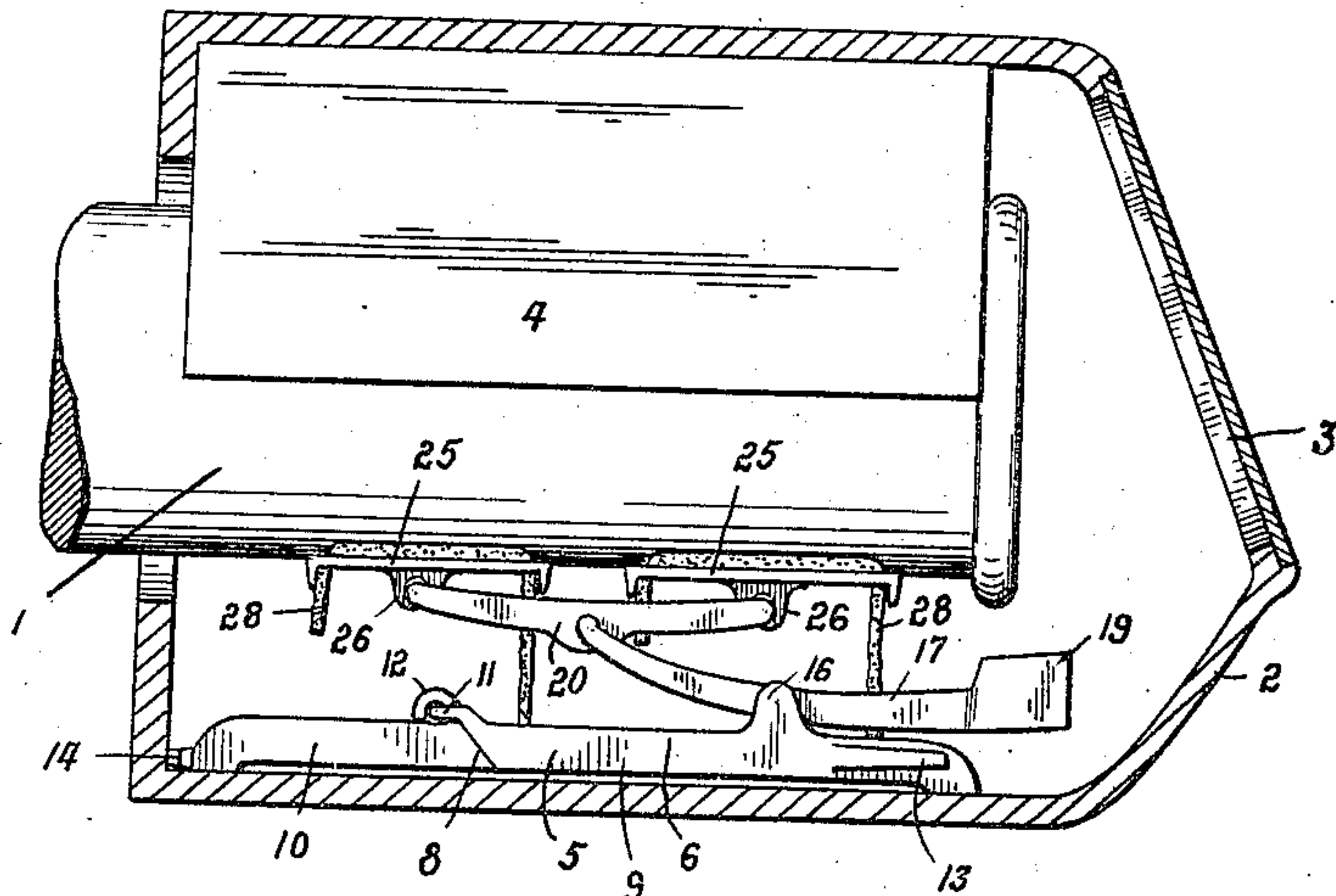


Fig. 1.

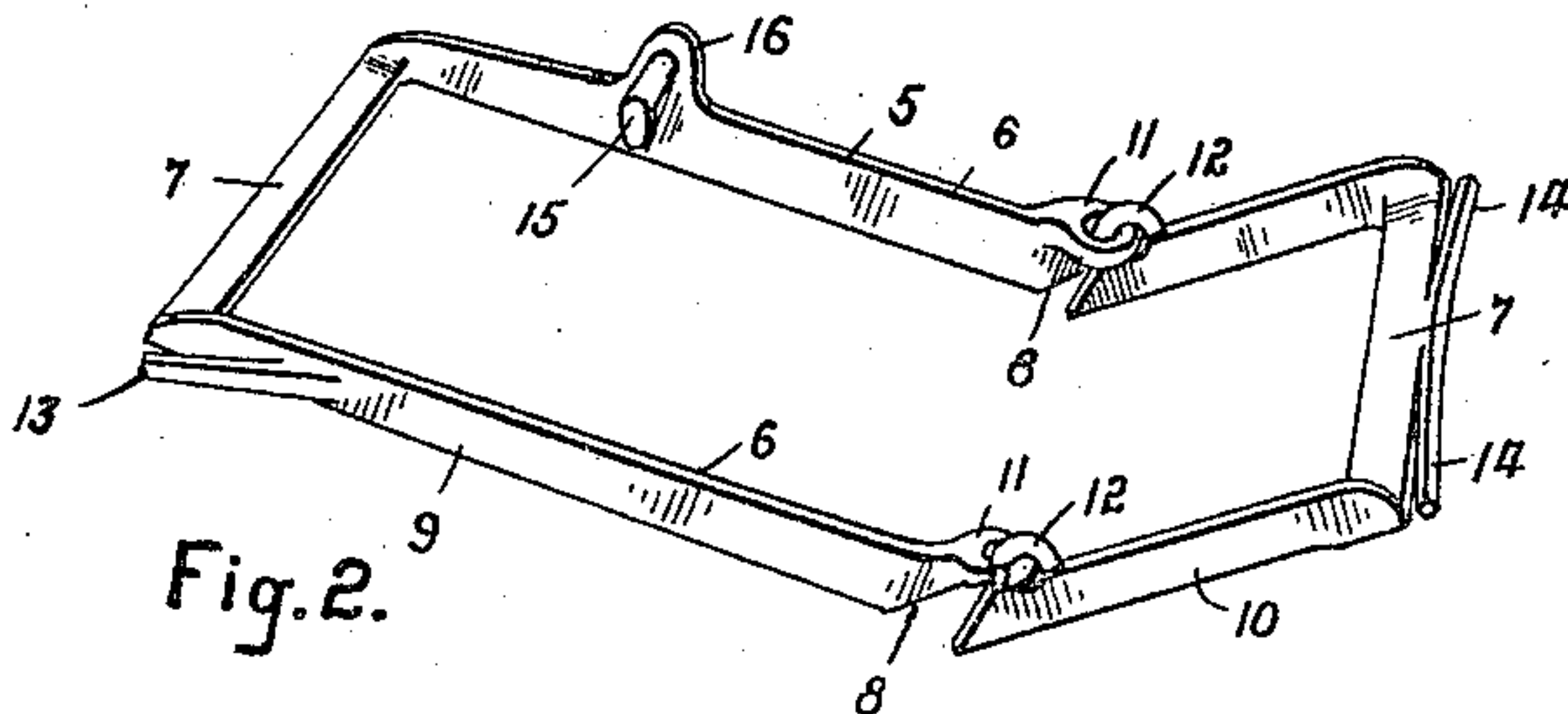


Fig. 2.

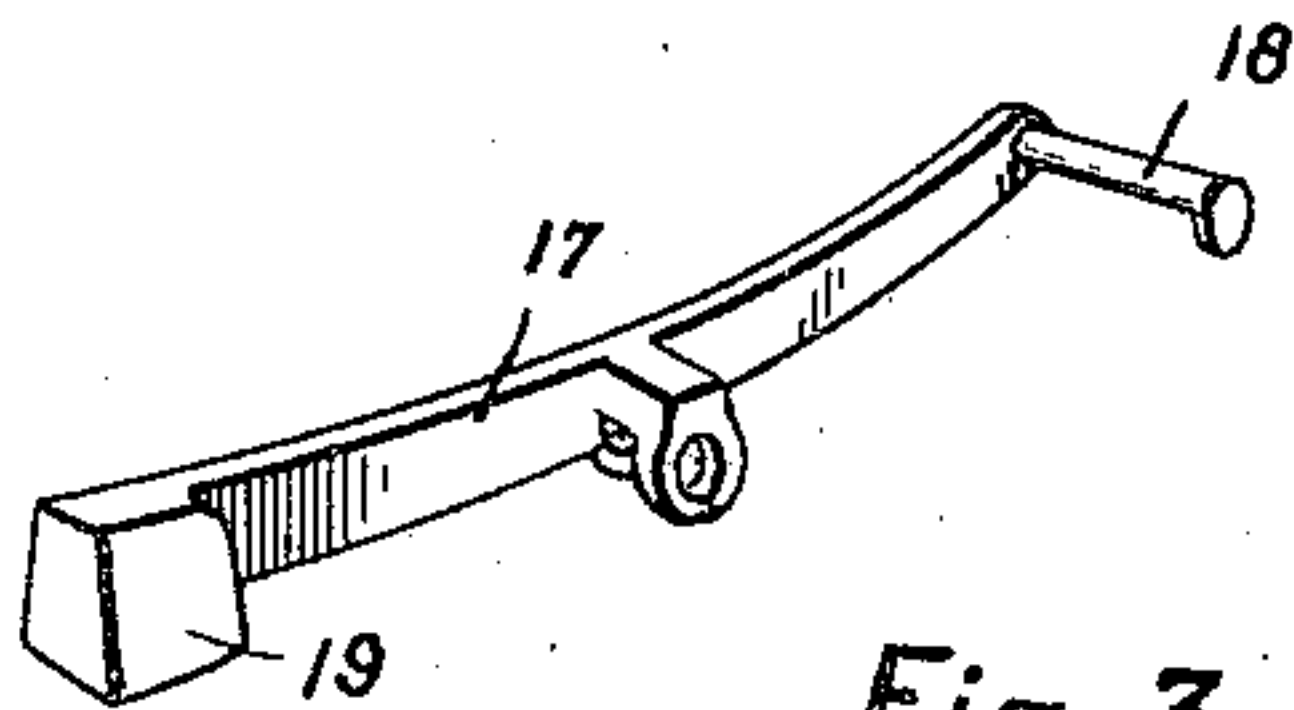


Fig. 3.

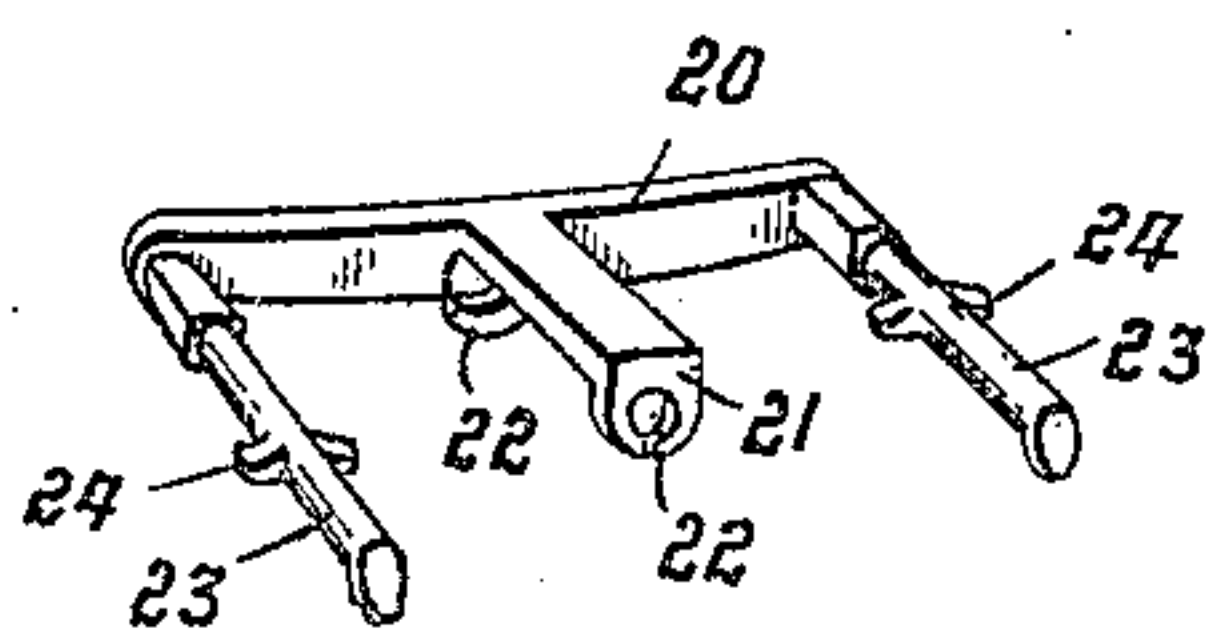


Fig. 4.

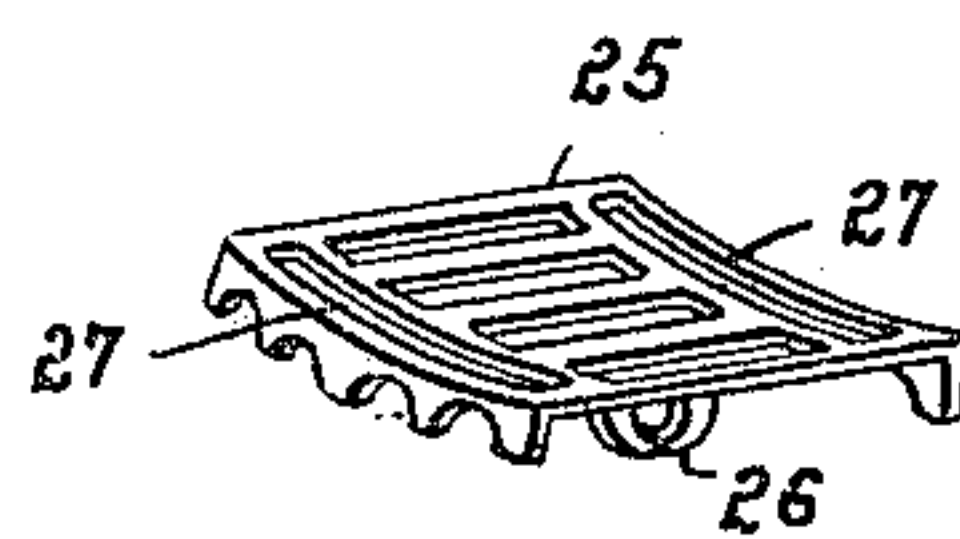


Fig. 5.

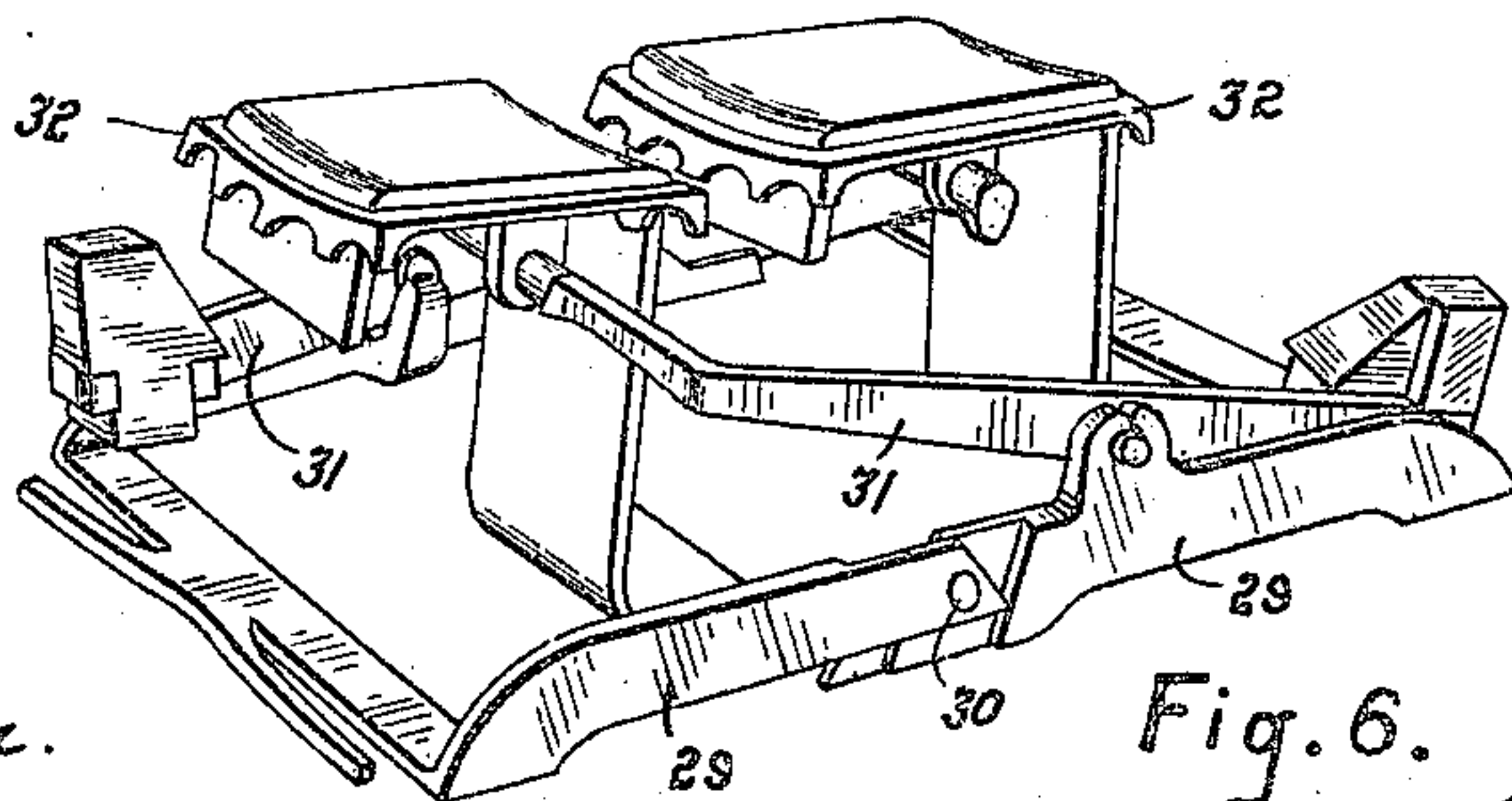


Fig. 6.

Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN CHRISTOPHER NICHOL, OF OTTAWA, ONTARIO, CANADA.

## LUBRICATOR FOR CAR-AXLE JOURNALS.

944,375.

Specification of Letters Patent. Patented Dec. 28, 1909.

Application filed March 12, 1909. Serial No. 483,005.

*To all whom it may concern:*

Be it known that I, JOHN CHRISTOPHER NICHOL, a subject of the King of Great Britain, residing at No. 353 McLaren street, in the city of Ottawa, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Lubricators for Car-Axle Journals, of which the following is a specification.

The invention relates to improvements in car axle journals, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially in the novel arrangement and construction of parts whereby a jointed frame is readily adapted for insertion within the journal box of a railway car axle and pivotally supports a weighted arm whereby a lubricating means is yieldingly held in contact with the journal.

The objects of the invention are to provide a lubricating means particularly adapted for use in the journals of railway car axles whereby the device can be readily placed in working position without in any way interfering with the present equipment or may be readily removed for examination, and to provide a device which will be simple in operation and inexpensive in construction and will always insure the perfect lubrication of the journal.

The above objects will be more fully understood on reference to my former patent No. 917,477, issued to me on April 6th, 1909.

In the drawings, Figure 1 is a longitudinal sectional view through the journal box of a railway car axle showing the invention applied thereto. Fig. 2 is a perspective detail view of the jointed frame. Fig. 3 is a perspective detail view of the weighted arm. Fig. 4 is a perspective detail view of the yoke for supporting the lubricating means. Fig. 5 is a perspective detail view of the grid carrying the lubricating absorbent material. Fig. 6 is a perspective view of a modified form of lubricator having a jointed frame.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is the journal of a car axle, and 2 is the journal box having the open front 3 and the brass 4 as customary in car axle journals.

5 is the frame of the lubricator preferably rectangular in shape to substantially conform with the shape of the bottom of the box 2.

The frame 5 has the upright side bars 6 and the flat cross pieces 7 extending between said side bars at the ends, said side bars being diagonally split at 8 into the sections 9 and 10, the section 9 having the eyes 11, and the section 10 having the hooks 12 extending through said eyes forming a hinge joint between the sections 9 and 10, the said hook and eye being on the upper side of the vertical side bars 6, whereby either section is free to rise upwardly when the frame is being inserted in the journal box, but on being placed in position the sections drop into alinement one with the other and make a practically rigid frame, as the hook and eye forming a hinge joint is on the top of the vertical side bars 6, as hereinbefore explained, and consequently any end pressure on either of the cross pieces 7 will not tend to open the hinge joint. A substantially rigid frame is thereby secured when in position in the journal box, although one section is readily raised as illustrated in Fig. 2 in order that said frame may readily pass between the end of the car axle 1 and the journal box when being inserted or withdrawn from said journal box.

13 are spurs extending from the sides 6 of the section 9 and adapted to be bent outwardly and engage the side walls of the journal box 2 and hold said frame from lateral displacement in the event of the journal box being of slightly larger dimensions than the frame.

14 are spurs secured to the cross piece 7 of the section 10 and adapted to be bent outwardly from said cross piece and limit the extent of the end play of the frame 5 when placed in position in said box.

15 is a trunnion extending laterally from an upwardly extending part 16 of one of the side bars 6 of the section 9.

17 is an arm pivotally secured intermediate of its length on the trunnion 15 and having the trunnion 18 extending laterally from one end thereof and the weight 19 securely attached to the other end of said arm whereby the end of the arm having the trunnion extending laterally therefrom is held in a raised position. It must be understood however, that the weight 19 may be cast integral with the said arm at the lower end



thereof to effectually raise the end of the arm from which the trunnion 18 extends.

20 is a yoke having the centrally arranged arm 21 extending laterally therefrom, said arm being provided at the inner and outer ends thereof with the downwardly extending fingers 22 clasped around the trunnion 18 and pivotally supporting said yoke at the extremity of the arm 17.

23 are laterally extending trunnions formed at the ends of the yoke 20 and having the cross pieces 24.

25 are grids having the downwardly extending fingers 26 bent around the trunnions 23, whereby said grids are pivotally secured on said trunnions and are limited in their movement therearound by the cross pieces 24. The grids 25 are preferably concave on the upper side thereof to conform with the contour of the under side of the axle 1, and are in grid form for the purpose of lightness in construction, so that the grids and the yoke supported from one end of the arm 17 are more than counter balanced by the weight 19.

27 are slots arranged in the grids 25 and extending transversely of the axle 1.

28 are felt strips forming a pad or lining on the concave side of the grids 25 and having the ends thereof extending downwardly through the slots 27, one end of said strips terminating adjacent to the grid and the other end extending downwardly to the bottom of the journal box, though it must be understood that both ends of the felt strips 28 may extend downwardly to the bottom of the box into the oil contained therein, and the strips 28 need not necessarily be felt as any absorbent material will answer the purpose to convey the oil from the bottom of the box to the journal.

In the operation of the invention a very important feature is the construction of the frame 5 as herein explained, whereby said frame may be readily inserted into the journal box of a car axle between the outer end of said box and the outer end of the car axle. This space is usually very limited, and it is impossible to insert a rigid frame without jacking up the car. With the frame arranged with jointed sections it is an easy matter however to first insert one section under the end of the axle, and the last section will readily follow and the frame eventually assume a flat position in the bottom of the journal box.

The weighted arm 17 and the pivotal arrangement of the yoke 20 and grids 25 enable them to readily pass around the end of the axle, and by this means it is no trouble at all to insert the entire lubricating device.

It will be readily understood that the weight 19 will have a constant tendency to raise the yoke 20 carrying the grids 25, and as the said grids are lined with the felt

strips 28, the said felt will be continuously held in contact with the under side of the axle journal, but it will not be held firmly enough to cause appreciable friction.

The ends of the felt strips which extend downwardly to the bottom of the box will convey oil from the bottom of said box upwardly by capillary attraction, and said oil will be very evenly and regularly distributed over the bearing of the axle.

The modified form shown in Fig. 6 does not require a detailed explanation, as the parts are similar in operation to the form already described, the only difference in the construction being the manner in which the sections 29 of the frame are secured one to the other by hinge joints, these sections being identical in shape and hinged one to the other by the rivets 30. Each section of the frame supports a weighted arm 31, which in turn supports the grids 32 instead of supporting a yoke carrying the grids. This form however is not so convenient to place in position as the forms having a single arm.

It is obvious that many mechanical changes may be made in the construction of parts and the manner of assembling the same, and furthermore it may be found sufficient to have a single grid, which would probably be pivotally supported from the trunnion 18, the essential feature of the invention being the manner in which the entire device may be partly folded in order to be readily inserted in the journal box.

What I claim as my invention is:

1. The combination with a car axle journal and journal box, a jointed frame, a lateral trunnion extending from said frame, an arm pivotally mounted on said trunnion and having a weight at one end thereof, a trunnion projecting laterally from the light end of said arm, a yoke pivotally mounted on said arm trunnion, trunnions extending laterally from said yoke and lubricating means pivotally mounted on said yoke trunnions and contacting with said journal.

2. The combination with a car axle journal and journal box, a jointed frame, a lateral trunnion extending from said frame, an arm pivotally mounted on said trunnion and having a weight at one end thereof, a trunnion projecting laterally from the light end of said arm, a yoke pivotally mounted on said arm trunnion, trunnions extending laterally from said yoke, grids pivotally mounted on said yoke trunnions and an absorbent material lining said grids and extending downwardly to the bottom of said journal box.

3. The combination with a car axle journal and journal box a frame comprising two sections secured one to the other by a suitable hinge joint, a trunnion extending laterally from one of said sections, an arm



pivotaly mounted on said trunnion and having a weight at one end thereof, a trunnion extending laterally from the light end of said arm, a yoke pivotaly mounted on said arm trunnion, trunnions extending laterally from said yoke, grids having concave upper faces pivotaly mounted on said yoke trunnions and an absorbent material lining said grids and extending downwardly to the bottom of said journal box.

4. The combination with a car axle journal and journal box a skeleton frame of substantially rectangular formation and comprising two sections having both meeting faces jointed one with the other, spurs projecting from the sides of said frame, a trunnion projecting laterally from said frame, an arm pivotaly mounted on said trunnion and having a weight at one end thereof, a trunnion projecting from the light end of said frame, a yoke pivotaly mounted on said arm trunnion, trunnions projecting laterally from said yoke and having cross pieces intermediate of the length thereof, grids having concave upper surfaces and pivotaly mounted on said yoke trunnions and having lateral slots therethrough and a strip of absorbent material lining said grids and extending through said slots toward the bottom of said journal box.

5. The combination with a car axle journal and journal box, a skeleton frame of substantially rectangular formation split laterally into major and minor sections and having beveled meeting faces, said major section having an upwardly extending portion on one side thereof, eyes extending from

the beveled meeting faces of said major section at the top thereof, hooks extending from the top of said minor section adjacent to the beveled meeting face thereof and inserted through said eyes to form a hinged joint between said sections, spurs extending laterally from the sides of said frame, a trunnion extending inwardly and laterally from the upwardly extending portion of said major section, an arm having downwardly extending fingers intermediate of the length thereof encircling said trunnion, a weight secured at one end of said arm, a trunnion extending laterally from the other end of said arm, a yoke, an arm extending laterally and centrally from said yoke, fingers extending downwardly from said yoke arm and encircling said arm trunnion, trunnions extending laterally from the extremities of said yoke and parallelly arranged one with the other, cross pieces secured to said yoke trunnions intermediate of the length thereof, grids having concave upper faces and lateral slots adjacent to the edge thereof, fingers extending downwardly from said grids and encircling said yoke trunnions and felt strips covering the concave upper face of said grids and extending downwardly through said slots to the bottom of said journal box.

Signed at the city of Ottawa, in the Province of Ontario, in the Dominion of Canada, this 4th day of March, 1909.

JOHN CHRISTOPHER NICHOL.

Witnesses:

LLOYD BLACKMORE,  
K. F. MACGIBBON.