

J. C. NICHOL.  
LUBRICATOR FOR CAR AXLE JOURNALS.  
APPLICATION FILED MAY 12, 1909. RENEWED FEB. 17, 1911.

989,995.

Patented Apr. 18, 1911.

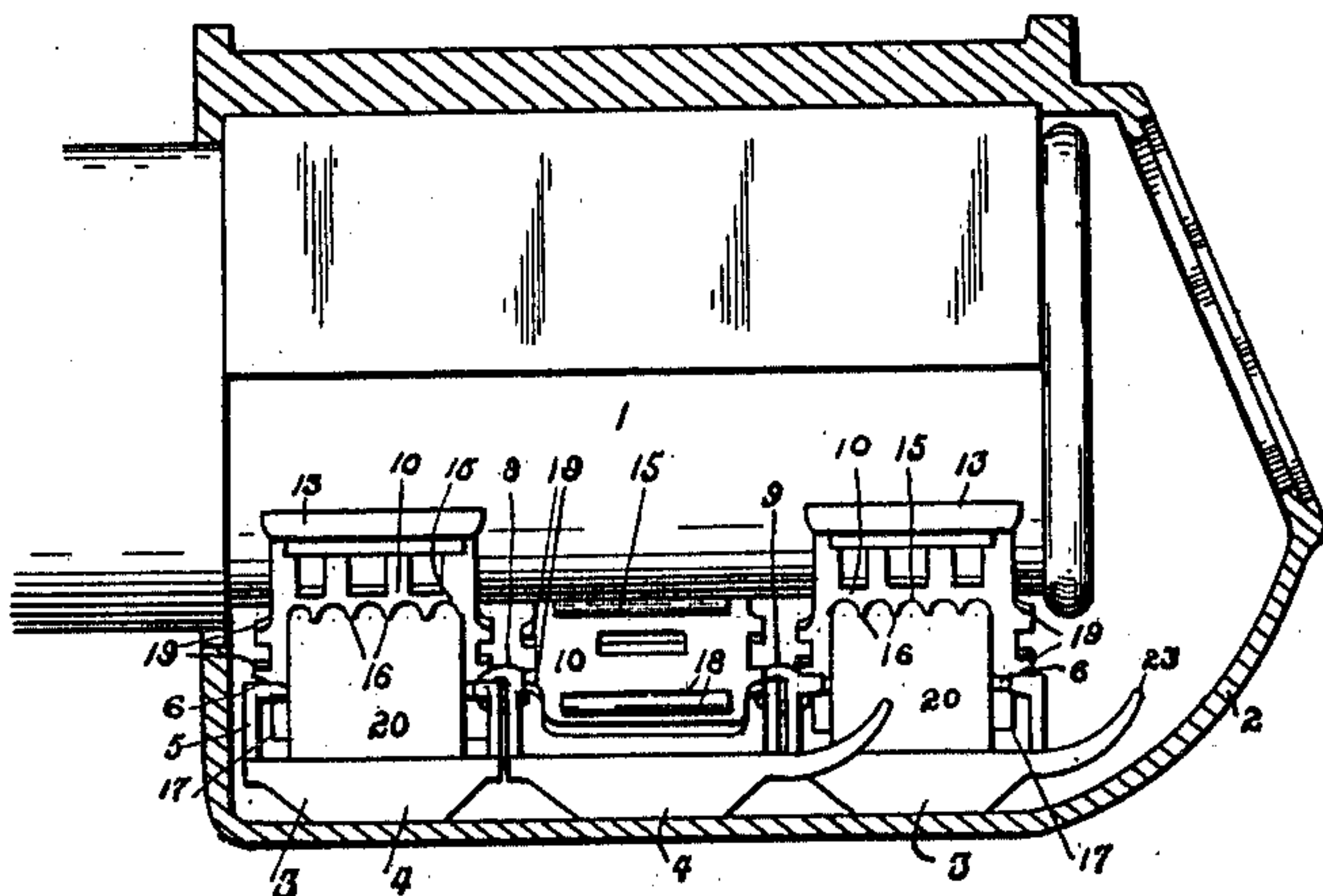


Fig. 1.

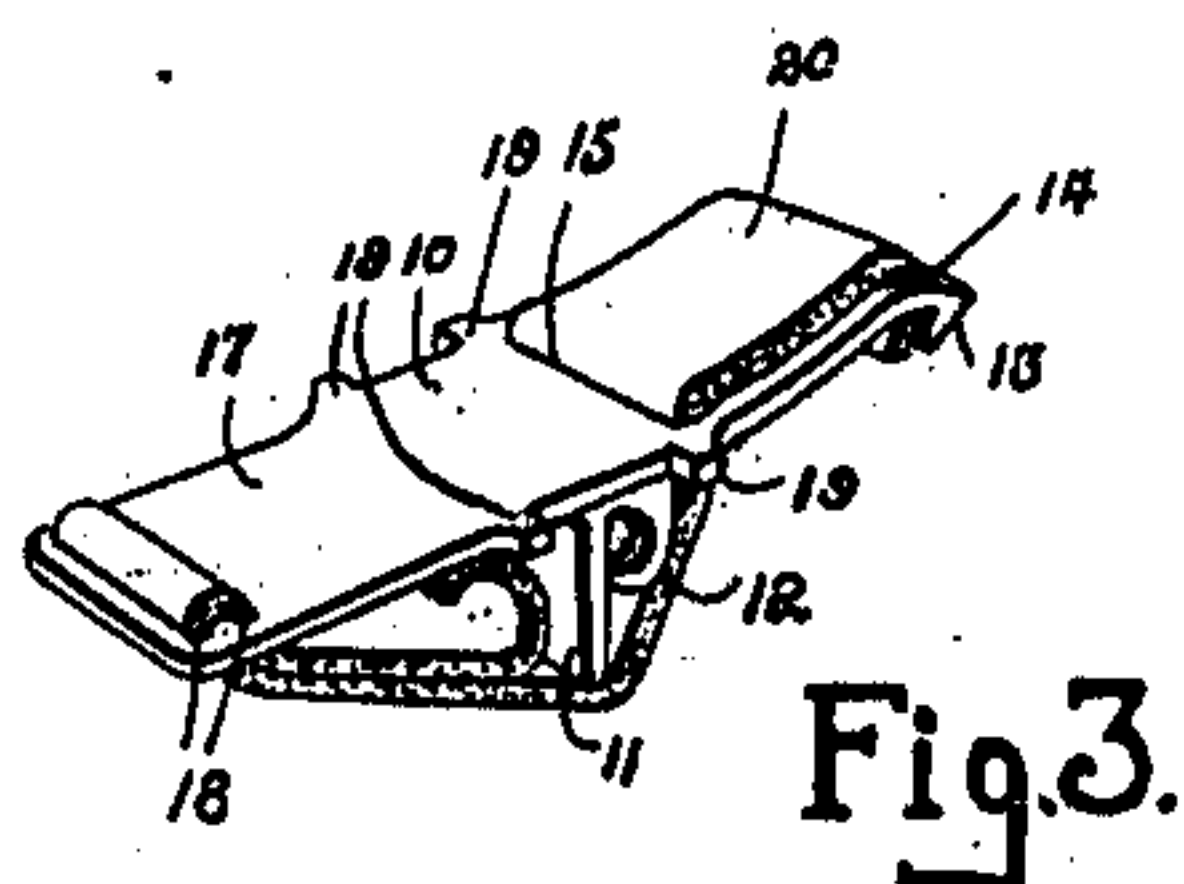


Fig. 3.

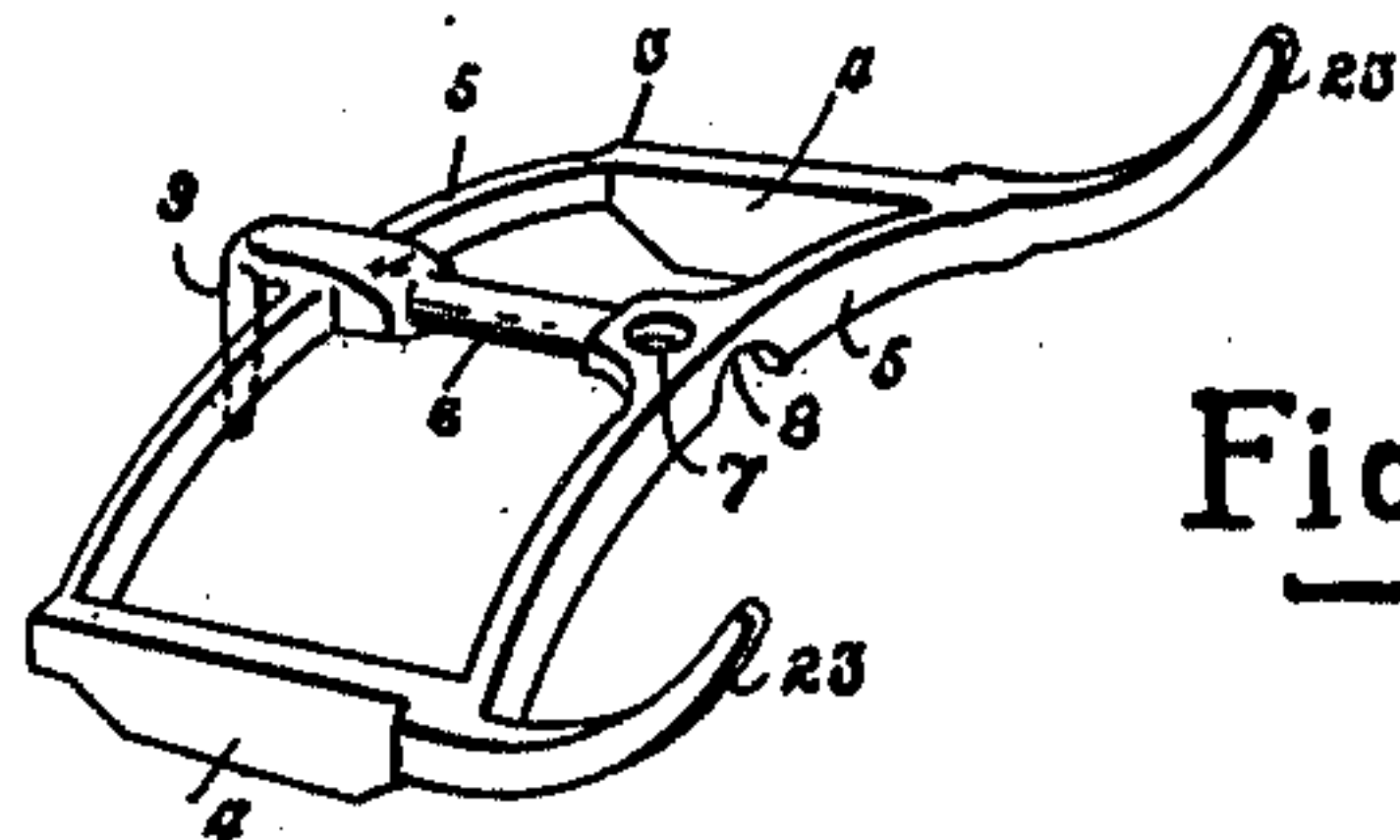


Fig. 2.

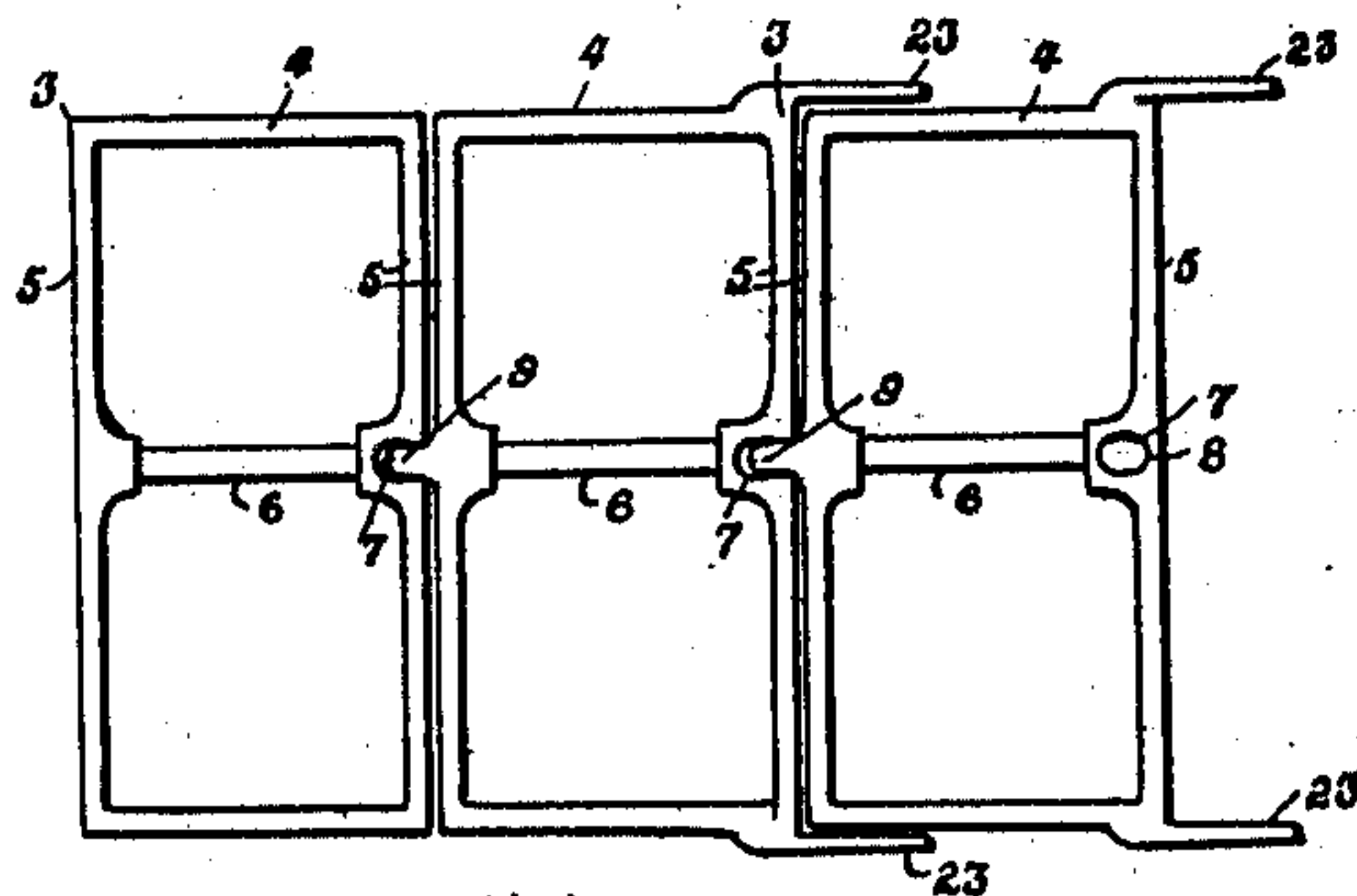


Fig. 4.

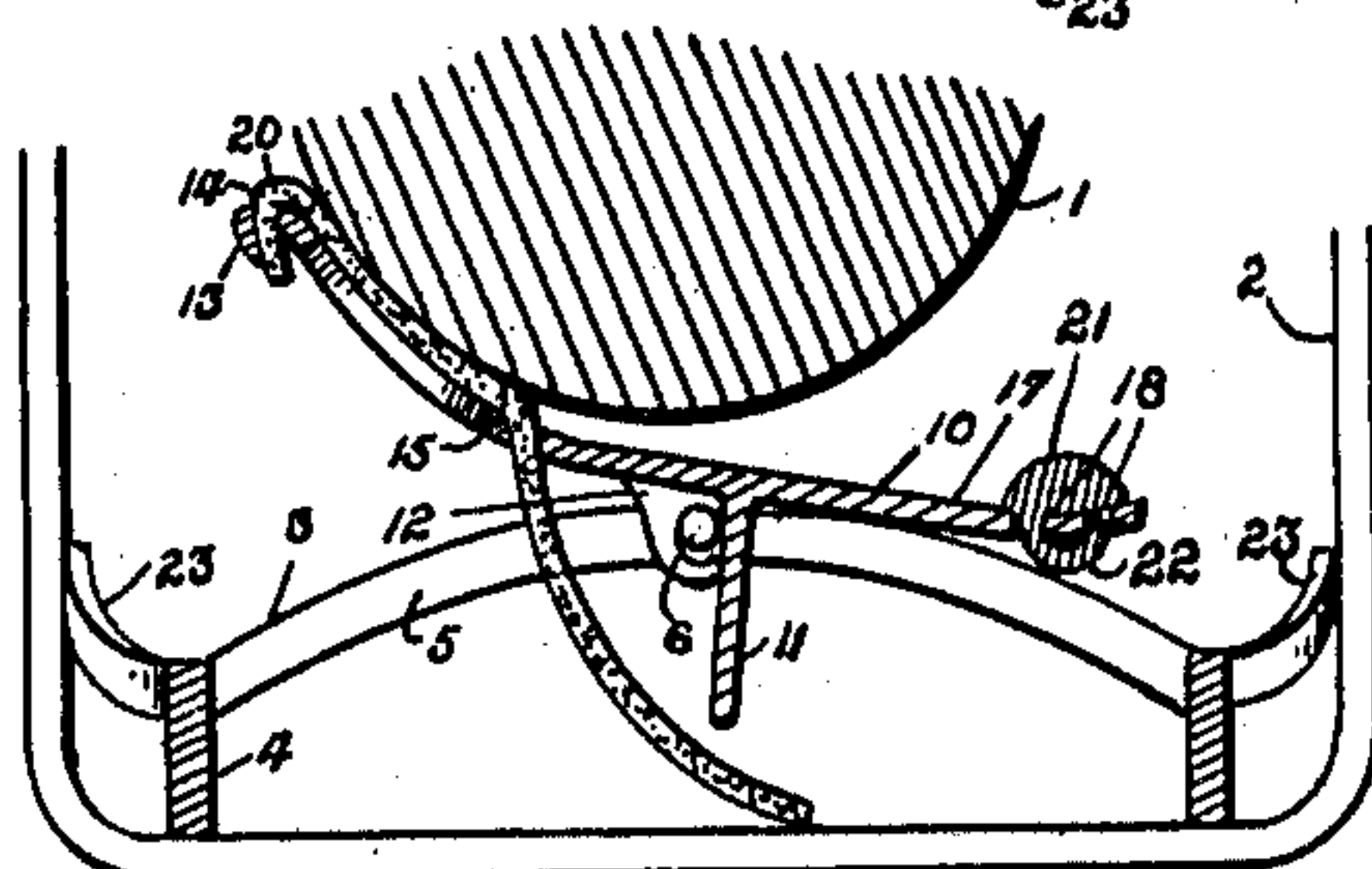


Fig. 5.

Witnesses.

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*Att'y.*



# UNITED STATES PATENT OFFICE.

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## LUBRICATOR FOR CAR-AXLE JOURNALS.

989,995.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed May 12, 1909, Serial No. 495,522. Renewed February 17, 1911. Serial No. 609,214.

*To all whom it may concern:*

Be it known that I, JOHN CHRISTOPHER NICHOL, of 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; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to improvements in lubricators for car axle journals and the like, 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 plurality of independent frame sections are linked one to the other and support lubricating means in contact with the journal.

The objects of the invention are to devise a lubricator which may be readily inserted in the journal box of a railway car axle, which will have few parts readily assembled, and which may be easily adjusted to fit any size journal box.

In the drawings, Figure 1 is a sectional view through a journal box showing the car axle journal and the lubricating device in position for supplying oil thereto. Fig. 2 is a perspective detail view of one of the frame sections. Fig. 3 is a perspective detail view of a rocker plate with the lubricating pad secured thereto. Fig. 4 is a plan view of three frame sections showing the manner in which they are linked together. Fig. 5 is a cross sectional view through the lower part of a journal box and the lubricating device having a modified form of rocker plate.

In the construction of lubricating devices for car axle journals, it is most important to have the parts few in number and simple in construction, so that the entire lubricator can be readily assembled without machine work, and thus cheapen the construction to enable a device of this kind to be used extensively. Furthermore it is essential that all springs be eliminated and that the parts be adjustable, so that the lubricator may be readily placed in journal boxes of different sizes.

The present invention seeks to perfect a device of this kind and eliminate all unnecessary parts or work in the construction thereof.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a railway car axle journal, and 2 the journal box, which may be of any standard shape or type.

3 are the frame sections of the lubricator comprising the side pieces 4 and the bridge pieces 5.

6 is a cross bar extending between the bridge pieces 5 of each frame section midway of the length thereof and round for the greater portion of its length to form a bearing for the rocker plate as hereinafter explained. The bar 6 at one end thereof has the orifices 7 therethrough and the bridge pieces 5 are recessed on the under side thereof opposite the orifice 7 to form the neck 8. 9 are fingers projecting downwardly from the other end of the cross bar 6, said fingers being inserted through the orifice 7 of an adjoining frame section and being bent around the neck 8 to form a hinge knuckle, and thus link the frame sections one to the other.

23 are fingers extending laterally from the side pieces 4 preferably turned upwardly, said fingers being bent laterally to contact with the side of a journal box and hold the frame sections in central position therein. In the lubricator shown in the accompanying drawings, three frame sections are used, though it must be understood that any number of sections may be used according to the length of the journal, and in each case they will be linked together as above explained.

10 are rocker plates having the apron 11 extending downwardly from the under side thereof intermediate of their length and the fingers 12 projecting downwardly from the underside thereof adjacent to the apron 11. The rocker plates 10 are supported on the cross bars 6 and have the fingers 12 thereof bent around the said cross bars, so that the rocker plates are free to teeter on the said bars. The rocker plates at one end thereof are in grid form for the purpose of light-



ness and terminate in the downwardly-extending flange 13.

14 is a cross slot in the grid end of the rocker plate 10 immediately adjacent to the flange 13, and 15 is a cross slot in the rocker plates 10 adjacent to the center thereof, the slot 15 being serrated on one side thereof to form the teeth 16.

17 is the tail-piece of the rocker plates having parallel cross slots 18 therethrough adjacent to the extremity.

19 are side lugs extending laterally from the rocker plates 10 and projecting over the bridge pieces 5 of each frame section, so that the rocker is limited in its teetering movement and cannot turn completely around the cross bar 6.

20 is the lubricating pad preferably formed of a felt strip having one end thereof extending through the slot 14, and being retained securely in said slot by the flange 13, which gives the felt strip a sharp bend where it extends through the slot 14. The other end of the strip forming the pad 20 is inserted through the slot 15 and is held securely therein by the teeth 16 along one side of said slot. The end of the strip which is inserted through the slot 15 extends under the apron 11 and up through the outer of the slots 18 and back through the inner of said slots 18, whereby a sharp bend is made in the strip at the extremity of the tail-piece of the rocker, the extremity of the felt strip being curled around between the tail-piece 17 and the part of the strip extending from the apron 11 to the outer slot 18. In this way there is quite a weight of felt strip immediately under the tail-piece of the rocker, whereas there is only the one thickness forming a pad over the grid end of the rocker plates. This extra length of strip on the tail end of the rocker plate adds materially to the weight at that end and tends to raise the grid end upwardly, so that the pad 20 will bear against the journal, and this extra weight on the tail-piece is increased when the felt strip absorbs the oil from the bottom of the journal box, and it will be understood that the oil will be carried upwardly by capillary attraction to the pad 20 and be distributed onto the journal of the car axle as it rotates.

The manner in which the rocker is weighted at the tail-piece by the felt strip is a very simple way of pressing the pad on the grid end against the journal and eliminates the necessity of any extra weight, though it must be understood, as shown in Fig. 5 that the felt strip, after it passes through the slot 15, may be left free to extend downwardly to the bottom of the journal box, and the tail-piece of the rocker plate may be weighted by a suitable weight 21 having

the lug 22 projecting therefrom through one of the slots 18, and bent over the under side of the tail-piece to hold the said weight 21 firmly in position, or the weight 21 may be cast integral with the tail piece.

In the form of rocker illustrated in Fig. 5, it will be seen that the apron 11 will effectually keep the end of the strip adjacent to the bottom of the journal box where it will be constantly submerged in the oil.

The use of the fingers 23 is also clearly shown in Fig. 5 where they are separated apart some distance in order to contact with the sides of the journal box and retain the frame sections of the lubricator in proper position under the journal, so that the pads on the rockers will be in proper contact with said journal.

The advantage of having the frame of the lubricator made in sections, which are linked one to the other, will be readily understood, as there is quite sufficient space for any one section to pass between the end of the journal and the outer end of the journal box when inserting or removing the lubricator, and as the several sections are hingedly linked the first section may be inserted onto the bottom of the journal box while the second section is still turned upwardly in passing between the end of the journal and the end of the box, and the second section when it is inserted in the journal will rest on the bottom, and the same with the third section.

In withdrawing the lubricator the section thereof at the front of the box may be raised to the opening, and will readily pass the end of the journal, the remaining sections following similar to the links of a chain. A great deal of time and work is thus saved in the several sections being connected one to the other, and furthermore the several sections being closely linked together the entire lubricator is securely held in proper position in the journal box. It will be readily seen that it would be impossible to have the lubricator rigid throughout its entire length, as there would not be room for it to pass between the outer end of the box and the end of the journal. Furthermore it is necessary that the frame sections should be as low set as possible.

Adjustment of the lubricating pads in relation to the journal is automatically regulated by the rocker plates as above explained, but further adjustment is made possible by the bridge-pieces 5, which are made light in construction and of a suitable material such as malleable iron, whereby they may be raised or compressed to the correct position for holding the lubricating pads in the most desirable position against the journal.

I am aware that lubricators have been



known to have built-up spring frames directly supporting the lubricating pad against the journal, but it is impossible to retain such frames in positive position within the journal box, and furthermore it is almost impossible to insert them or withdraw them from the journal box while the journal is in place therein, and it was with the object of overcoming these difficulties that a perfectly rigid low-set frame was used by me in combination with the lubricating means, which is so arranged and supported by the base frames that considerable vertical movement of the lubricating pad is obtained, whereby the pad is held in perfect lubricating position against the under side of the journal when it is in the journal box, and at any time that it is desired to remove the lubricator, the pad may be lowered away from the journal to the low-set base frame, and readily withdrawn with the base frame from the journal box.

A further feature of the invention is the absence of springs of any kind, so that a strong and durable construction is secured with a regular and sure action of the parts, which constantly hold the lubricating means in proper position against the journal.

What I claim as my invention is:

1. The combination with a car axle journal and journal box, of a plurality of rigid frames resting on the bottom of said journal box and linked one to the other and having a plurality of fingers extending angularly therefrom and contacting with the sides of said journal box and lubricating means supported by each of said base frames and having an automatically regulated vertical movement in said journal box.

2. The combination with a car axle journal and journal box, of a plurality of rigid frame sections comprising side pieces, bridge pieces spanning said side pieces, fingers extending angularly from said side pieces and engaging with the walls of said journal box, a bar extending between said bridge pieces, a finger extending from one of said bridge pieces and linked over the bridge piece of an adjoining frame section, a plate having downwardly-extending fingers encircling said bar and a lubricating pad supported on said plate.

3. The combination with a car axle journal and journal box, of a plurality of independent frame sections each comprising side pieces resting on the bottom of said journal box and a pair of bridge-pieces spanning said side pieces at each end thereof, one of said bridge-pieces being recessed on the under side thereof intermediate of its length and a cross bar extending between said pair of bridge-pieces and rounded throughout the mid portion of its length and having an ori-

fice through one end thereof adjacent to the recessed under side of one of said bridge-pieces and a finger projecting from the other end thereof and inserted through the orifice in the cross bar of an adjoining frame section and encircling said bridge-piece at the under recessed portion thereof to form a link connection between said frame sections, a plurality of fingers secured to said side pieces and extending angularly therefrom, an angularly-bent rocker plate having an apron extending downwardly from the under side thereof on one side of said cross bar and fingers extending downwardly from the under side thereof on the other side of said cross bar and bent inwardly against said apron and a plurality of laterally projecting lugs extending over said bridge-pieces and slots arranged in grid form at one end of said plate and a cross slot at each end of the grid portion of said plate and a pair of cross slots at the end of said plate opposite said grid end, and a felt strip extending downwardly through the cross slot at the extremity of said grid end and downwardly through the cross slot at the inner end of said grid end and under said apron and through the pair of slots in said plate at the opposite end of said grid end and curled under said plate to form a counterweight whereby the portion of said strip extending over the grid end of said plate is yieldingly held in contact with said journal.

4. The combination with a car axle journal and journal box, of a plurality of independent frame sections each comprising side-pieces resting on the bottom of said journal box and a pair of bridge-pieces spanning said side-pieces at each end thereof, one of said bridge-pieces being recessed on the under side thereof intermediate of its length and a cross bar extending between said pair of bridge-pieces and rounded throughout the mid portion of its length and having an orifice through one end thereof adjacent to the recessed under side of one of said bridge-pieces and a finger projecting from the other end thereof and inserted through the orifice in the cross bar of an adjoining frame section and encircling said bridge-piece at the under recessed portion thereof to form a link connection between said frame sections, a plurality of fingers secured to said side-pieces and extending angularly therefrom, an angularly-bent rocker plate having an apron extending downwardly from the under side thereof on one side of said cross bar and fingers extending downwardly from the under side thereof on the other side of said cross bar and bent inwardly against said apron and a plurality of laterally-projecting lugs extending over said bridge-pieces and slots ar-



ranged in grid form at one end of said plate  
and a cross slot at each end of the grid por-  
tion of said plate, said plate being suitably  
weighted at the extremity thereof opposite  
5 said grid end and a felt strip forming a pad  
over said grid end and extending down-  
wardly through said cross slots and under  
said apron.

Signed at the city of Ottawa, in the  
Province of Ontario, in the Dominion of 10  
Canada, this 15th day of April, 1909.

JOHN CHRISTOPHER NICHOL.

Witnesses:

LLOYD BLACKMORE,  
K. F. MACGIBBON.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

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