

PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in Railway Grease-boxes with Mechanical Greasing.

I, CHARLES HANOCQ, of 52, Boulevard Emile de Laveleye, Liège, Belgium, of Belgian Nationality, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

It has previously been proposed to fit a reversible pump in the cover of railway carriage grease-boxes in order to ensure a constant feed of lubricant to the bushing of each axle-journal proportionate to the travelling speed of the vehicle in both directions of travel.

Because of the pump supplying lubricant oil in sufficient quantity, the formation of a film of oil is assured irrespective of the speed and the direction of rotation of the axle-journal, and due to this the bearing area of the axle-journal, or if preferred the ratio l/d of its length to its diameter, can be substantially reduced.

The present invention is based upon this fact, ascertained both by theoretical considerations and experimental researches, and it allows the head provided on the end of the axle-journal to be dispensed with in grease-boxes of the type specified.

In fact, once the idea is accepted that the ratio l/d , generally equal to 2 and over, can be reduced to 1.5, the necessary space to fit an annular oil-cup on the rear part of the axle-journal itself becomes available; this annular cup is indispensable for maintaining the mechanical box tightly sealed against any oil leakage, but, being fitted beyond the curved connecting portion of the axle-journal with the axle properly so-called, it cannot act as an abutment.

By making this annular cup of a sufficiently large diameter and the bushing of 180° , one obtains an area easily four times that which can be obtained normally without a mounted head.

While it is true that by using the added

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head, the same area could be obtained, but all the mechanical devices hitherto proposed for this purpose are expensive and cumbersome and make the user uneasy when he dismantles and subsequently reassembles it.

The dispensing with the forged head, in addition to providing ample space for fitting a pump to existing boxes previously provided with a greasing plug, renders the dismantling extremely simple since, by removing the usual key wedge, the bushing can be taken out of its recess by a simple axial displacement, even in the case of an arc of 180° .

The utilisation of the rear shoulder thus transformed to replace the front shoulder formed by the head, is altogether advantageous, since the concentric area forming an abutment is all the more maintained in a vertical plane, the deformation of the axle-journal at this point being slight.

The employment of bushes covering 180° , which is easily possible with this arrangement, enables the axle-journal to be held in its axis, and consequently prevents vertical displacements. Another result is that the buffer which is required with non-enclosing bushings can be dispensed with and the supporting area ceases to be subject to variable orientation as is the case when the buffer-plates are not located in the vertical plane of symmetry of the bushing.

In the accompanying drawing, illustrating by way of example, in Fig. 1 the axial section of a grease-box according to the invention, and in Fig. 2 a part section of a modification, 1 is the axle-journal, 2 the grease-box, 3 its cover, 4 the grease pump fixed to the cover 3 and discharging into the conduit 5, 6 the wedge, 7 the bushing and 8 or 8' the annular oil-cup in its characteristic position on the rear of the journal-axle 1.

As the drawing shows, the annular cup 8 or 8' has a sufficiently large diameter to offer a considerable abutting surface which permits of the mounted head to be dispensed

with. In the case of Fig. 1, the cup 8 is provided externally of a circular piece, while in the case of Fig. 2 the ring 8' is provided by forging of the axle-journal.

5 The ring 8 in Fig. 1, mounted while hot, has external lateral notches 9 which prevent rotary displacement without reducing in any way the resistance of the axle. As regards the ring 8' in Fig. 2, the same is so
10 provided that the efficacy of the union between the axle-journal and the body of the axle is in no way adversely affected, provided the curved corner 10 is very small.

It is understood that the invention is not
15 limited to its application to grease-boxes comprising a grease pump fitted in their covers; in fact, it can be generally employed with any grease-box operating mechanically.

What I claim is:—

20 1. Improvement in railway grease-boxes with mechanical greasing, consisting in the employment of an annular oil-cup suitably fixed on the periphery of the axle-journal directly in front of the curved connecting
25 corner, in such a manner as to perform the double function of ensuring the tight sealing

of the box as regards oil leakage and of supplying an abutting surface amply sufficient, especially if a bushing covering the axle-journal over 180° is adopted, the presence of 30 which permits of the mounted head being dispensed with.

2. An annular oil-cup according to Claim 1, characterised by the feature that it is mounted while heated and includes external 35 lateral notches, in order to prevent rotary displacement, without in any way reducing the resistance of the axle.

3. An annular oil-cup according to Claim 1, characterised by the feature that it receives 40 its profile by forging, which is such that the efficacy of the curved union between the axle-journal and the body of the axle is not thereby reduced, even when the said union is very small. 45

4. The improvement in railway grease-boxes with mechanical greasing consisting of an annular oil-cup, substantially as described with reference to the accompanying 50 drawing.

MARKS & CLERK.

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1 SHEET

This drawing is a reproduction of the Original on a reduced scale.

Fig. 1

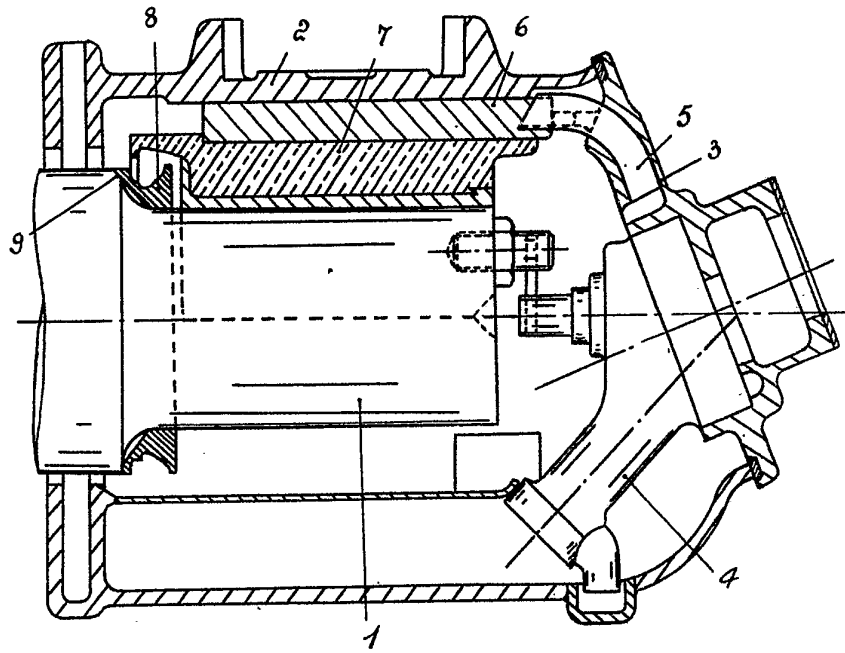


Fig. 2

