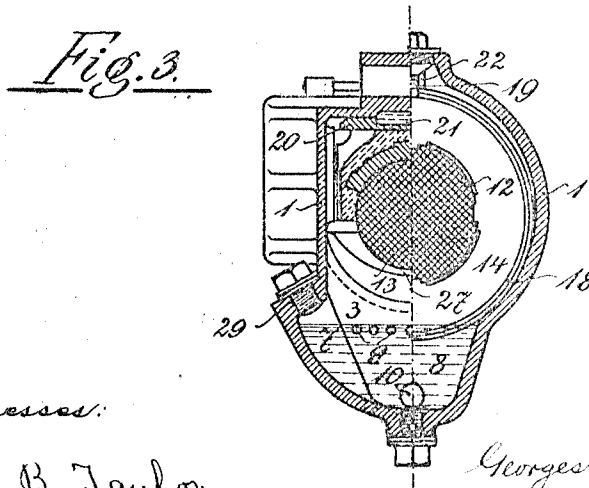
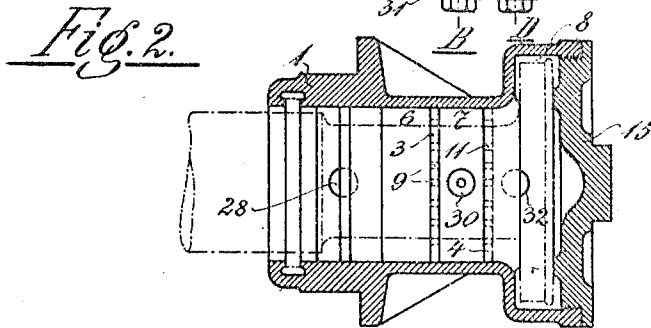
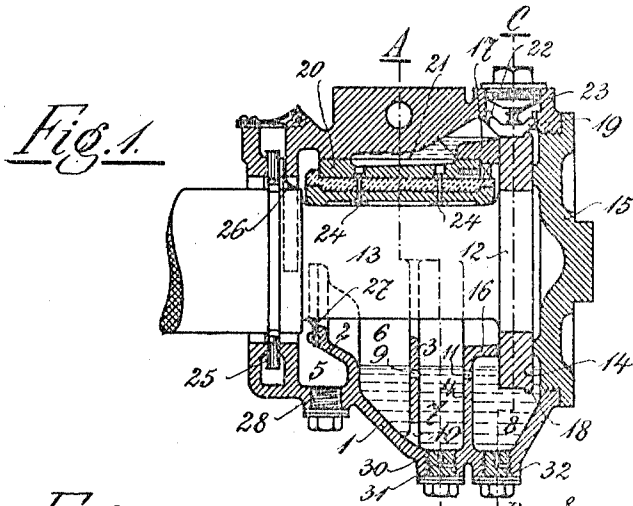


G. C. COSMOVICI.
 AXLE BOX FOR RAILROAD CARS.
 APPLICATION FILED AUG. 12, 1908.

1,040,638.

Patented Oct. 8, 1912.

2 SHEETS-SHEET 1.



Witnesses:

M. B. Taylor.
 T. D. Crist

Inventor:

Georges C. Cosmovici
 by George V. Massie
 his Attorney

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2 SHEETS-SHEET 2.

Fig. 4

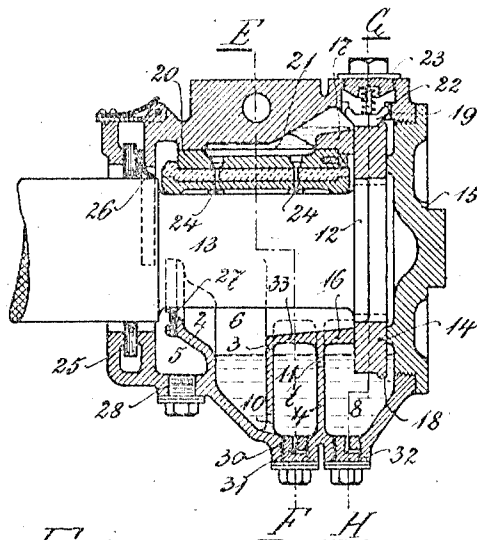
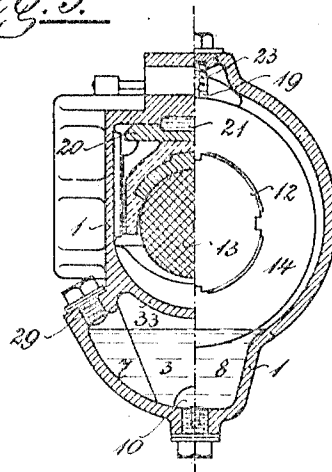


Fig. 5



Witnesses:

M. B. Taylor.
 T. S. Smith

Inventor:

Georges C. Cosmovici
 by George V. Varnier
 his attorney.

UNITED STATES PATENT OFFICE.

GEORGES C. COSMOVICI, OF BUCHAREST, ROUMANIA.

AXLE-BOX FOR RAILROAD-CARS.

1,040,638.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed August 12, 1908. Serial No. 448,145.

To all whom it may concern:

Be it known that I, GEORGES C. COSMOVICI, residing at Bucharest, Roumania, have invented new and useful Improvements in Axle-Boxes for Railroad-Cars, of which the following is a specification.

This invention relates to an axle box for railroad cars and is intended to enable always pure oil to be fed to the journal running in the axle box at each revolution and to maintain the oil when once poured into the box in a condition for use for a long period. This is attained by a collecting chamber for the clean oil shut off from the axle journal being arranged in the lower part of the box in addition to several drain chambers receiving the drip oil, while between the lid and the partitions of the bearing box a lubricating ring which is secured against axial displacement is mounted on the journal. This ring takes the oil from the collecting chamber, which oil is scraped off the highest point of the lubricating ring by means of a scraper bearing strongly against the ring, and reconveyed to the upper oil chamber.

Two forms of construction of the object of the invention are shown in the accompanying drawings, in which:—
Figure 1 is a vertical; and Fig. 2, a horizontal longitudinal section of the first form of construction of the axle box; Fig. 3 shows sections on the lines A—B and C—D of Fig. 1; Fig. 4 is a vertical longitudinal section of the second form of construction; and Fig. 5 shows cross sections of the same on the lines E—F and G—H of Fig. 4.

The bearing box 1, which is made in one piece, is divided in its lower part by partitions 2, 3 and 4, into chambers 5, 6, 7 and 8. The partitions 3 and 4 are provided with apertures 9, 10 and 11 through which the oil may be conveyed to the chambers 7 and 8. A lubricating ring 14 is mounted on the shoulder 12 of the axle journal 13, which lubricating ring is revolved by means of catches on the axle, but it is not displaceable longitudinally to the axle. The lubricating ring projects into the chamber 8 and revolves between the cover 15 and the side walls 16 and 17 of the bearing box, whereby a lateral joint is formed and simultaneously lateral movement is prevented. By the use of the ring any churning of the oil is also avoided. The oil lifted by the lubricating

ring 14 is removed by the scraper 19 and conveyed into the chamber 21 inclosed by the bearing box and the bearing plate 20. The scraper 19 is guided between ribs 22 and pressed by a spiral spring 23 onto the lubricating ring. A shoulder or tread 18 provided on the lubricating ring prevents the oil running off toward the cover 15. Lubricating passages 24 lead to the journal from the chamber 21.

As will be observed from the drawing, the lubricating ring 14 fits tightly between the side cover 15 of the axle box and the side wall 16 forming a part of the cover of the chamber 8, so as to form with the same a completely closed cover for said chamber.

In order to prevent losses of the lubricant and penetration of dust into the axle box, a packing or washer ring 25 and leather disks 26 and 27 are arranged on the axle box so as to bear on the journal, as shown in Figs. 1 and 3. Dust particles which may have reached the axle box over the packing ring arranged between the axle and its journal, as shown, are prevented by the leather disks 26 and 27 from penetrating into the oil chambers and are deposited in the chamber 5, from which they may be easily removed through an opening 28. The axle box is filled through the aperture 29 (Fig. 3).

The action of the arrangement hereinbefore described is as follows:—The lubricating ring 14 on the rotation of the axle lifts the oil from the chamber 8 upward into the chamber 21, from whence it is supplied to the journal through the lubricating passages 24. The oil again dripping off the journal is first collected in the chambers 6 and 7. The impurities and particles of metal which are mixed with the oil by the wearing away of the bearing cups, accumulate on the bottom of the chamber 7 and may be drawn off through the plug 30 which for this object is provided with a perforation 31. The clean clarified oil flows through the apertures 11 into the chamber 8 which is tightly closed opposite the journal 13, and is from here conveyed afresh to the journal. The plug 32 which is also provided with a perforation serves for removing the oil from the chamber 8 when the axle box is cleaned.

The object of the modification shown in the second form of construction, is to enable the purifying of the oil to be more

completely carried out than in the first form of construction. In the first in fact the oil dripping off the journals can drop also into the chamber which is interpolated immediately before the container inclosing the lubricating ring, and thereby again convey foreign matters to the partially purified oil, which has passed over from the rear settling chamber. This becomes the more deleteriously apparent as the overflow aperture leading to the front oil container is located in proximity to the surface of the oil and thus allows the dirty oil dripping from the journal to have immediate access to the front chamber. In order to avoid this, in the second form of construction of the axle box shown in Figs. 4 and 5 the modification is adopted of continuing the cross wall 16, projecting from the partition 4 against the lubricating ring 14, backward by means of the cross wall 33 so as to close in from above the chamber 7, this wall 33 being connected to the partition 3. The partition 3 is merely provided with an aperture 10 of sufficient width at the point where it joins the bearing box 1 which is at the bottom of the settling chambers 6 and 7. The aperture 11 in the partition 4 leading the oil to the taking up chamber 8 on the other hand is located similarly to what was the case in the first form of construction, namely in proximity to the upper end of the wall 4. With this form of construction of the axle box the oil dripping off the axle journal can only drop into the settling chamber 6 from which it must pass through the aperture 10 into the settling chamber 7. As it can only pass from here through the aperture 11 located at the upper end of the partition into the oil taking up chamber, impurities remain behind on the bottom of the sink chamber 7 in the upward movement of the oil in said chamber. Also in consequence of the arrangement described of the apertures 10 and 11 the oil in its passage from the entrance into the settling chamber 6 to the oil taking up chamber 8 must follow a zigzag course the length of which is considerably greater than the distance between these two chambers, the oil has full opportunity to deposit the impurities contained in it, so that only entirely purified oil can enter the taking up chamber 8.

I declare that what I claim is:—

1. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber being completely shut off above from the journal, and means to feed the clarified oil from the sup-

ply chamber to the journal, said means forming the closure between the supply chamber and the journal.

2. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber being completely shut off above from the journal, means to feed the clarified oil from the supply chamber to a point above the journal, said means forming the closure between the supply chamber and the journal, and a distributor to conduct the oil to the journal.

3. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber being completely shut off above from the journal, and a collector ring secured against axial movement and arranged to seal the supply chamber, carried by the journal and dipping into the sealed supply chamber to feed the clarified oil therefrom to the journal, said collector ring forming the closure between the supply chamber and the journal.

4. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber immediately prior thereto being shut off above from the journal, and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal.

5. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber immediately prior thereto being shut off above from the journal, means to feed the clarified oil from the supply chamber to a point above the journal, said means forming the closure between the supply chamber and the journal, and a distributor to conduct the same to the journal.

6. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber immediately prior thereto being shut off above from the journal, and a collector ring carried by the journal and dipping into the sealed supply chamber and forming the closure between the supply chamber and the journal and serving to feed the clarified oil therefrom to the journal.

7. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber immediately prior thereto being shut off above from the journal, a collector ring revolving with the journal and dipping into and sealing the supply chamber and serving to feed the clarified oil therefrom to a point above the journal, and a scraper bearing on the ring to distribute the oil therefrom to the journal.

8. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber being shut off above from the journal, and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal, the settling chambers being in communication near their bottom and the last settling chamber and supply chamber in their upper portion.

9. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber immediately prior thereto being shut off above from the journal, and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal, the settling chambers being in communication near their bottom and the last settling

chamber and supply chamber in their upper portion.

10. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber immediately prior thereto being shut off above from the journal, a collector ring revolving with the journal arranged to seal the supply chamber and dipping into the sealed supply chamber to feed the clarified oil therefrom to a point above the journal, and a scraper bearing on the ring to distribute the oil therefrom to the journal, the settling chambers being in communication near their bottom and the last settling chamber and supply chamber in their upper portion.

11. In an axle-box for railway cars and the like, the combination with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber adjacent to the same being both closed off from the journal by a cover and a distributor ring carried by the journal, arranged to seal and dipping into the supply chamber, forming a part of the cover of the same and of the cover of the journal, being thereby secured against axial movement and delivering the oil on its periphery.

12. In an axle-box for railway cars and the like, the combination with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber and the settling chamber adjacent to the same being both closed off from the journal by a cover, and a distributor ring carried by the journal, arranged to seal and dipping into the supply chamber, forming a part of the cover of the same and of the cover of the journal, being thereby secured against axial movement and delivering the oil on its periphery, the settling chambers being in communication substantially at their bottom and the last settling chamber and supply chamber communicating by an overflow opening at their upper portion.

13. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicat-

ing oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber being shut off above from the journal, and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal, the open settling chambers and their opening which receives the oil dripping from the journal being entirely inclosed by the journal box.

14. In an axle box for railway cars and the like, the combination, with the journal, of a box surrounding the same and divided beneath the journal into intercommunicating oil settling and supply chambers, the settling chambers arranged to receive the surplus oil from the journal after use and deliver it after clarification to the supply chamber, the supply chamber being shut off above from the journal, and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal, the settling chambers, the supply chamber, and the opening receiving the drip from the journal being entirely inclosed by the journal box.

15. In an axle-box for railway cars and the like, a journal and a box surrounding the same and divided beneath the journal into intercommunicating oil-settling and supply-chambers, the settling-chambers arranged to receive the surplus oil from the journal and to deliver it, after clarification, to the supply-chamber, the supply chamber being shut off above from the journal, in combination with a packing ring arranged between the journal and its axle, and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal.

16. In an axle-box for railway cars and the like, a journal and a box surrounding the same and divided beneath the journal into intercommunicating oil settling and

supply-chambers, the settling-chambers arranged to receive the surplus oil from the journal and to deliver it, after clarification, to the supply-chamber, the supply-chamber being shut off above from the journal, in combination with a packing ring arranged between the journal and its axle, a packing ring arranged to bear on the journal and means to feed the clarified oil from the supply chamber to the journal, said means forming the closure between the supply chamber and the journal.

17. In an axle box for railway cars and the like, the combination, with a journal and a box surrounding the same and divided beneath the journal into intercommunicating oil-settling and supply-chambers, the settling chambers arranged to receive the oil dripping from the journal after use and deliver it to the supply chamber after clarification, in combination with a partial top cover for the supply chamber, a side cover for the axle-box and a collector ring carried by the journal and dipping into the supply chamber, and arranged between the side cover and the partial top cover to form a seal for the top of the supply chamber.

18. In an axle box for railway cars and the like, the combination, with a journal and a box surrounding the same and divided beneath the journal into intercommunicating oil-settling and supply-chambers, the settling chambers arranged to receive the oil dripping from the journal after use and deliver it to the supply chamber after clarification, in combination with a partial top cover for the supply chamber, a side cover for the axle box and a collector ring formed with an outer tread carried by the journal and dipping into the supply chamber and arranged between the side cover and the partial top cover to form a seal for the top of the supply chamber.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEORGES C. COSMOVICI.

Witnesses:

TERD. DONETE,
RUDOLPH JANSEN.