

H. RICE.
Car-Axle Box.

No. 27,738.

Patented Apr. 3, 1860.

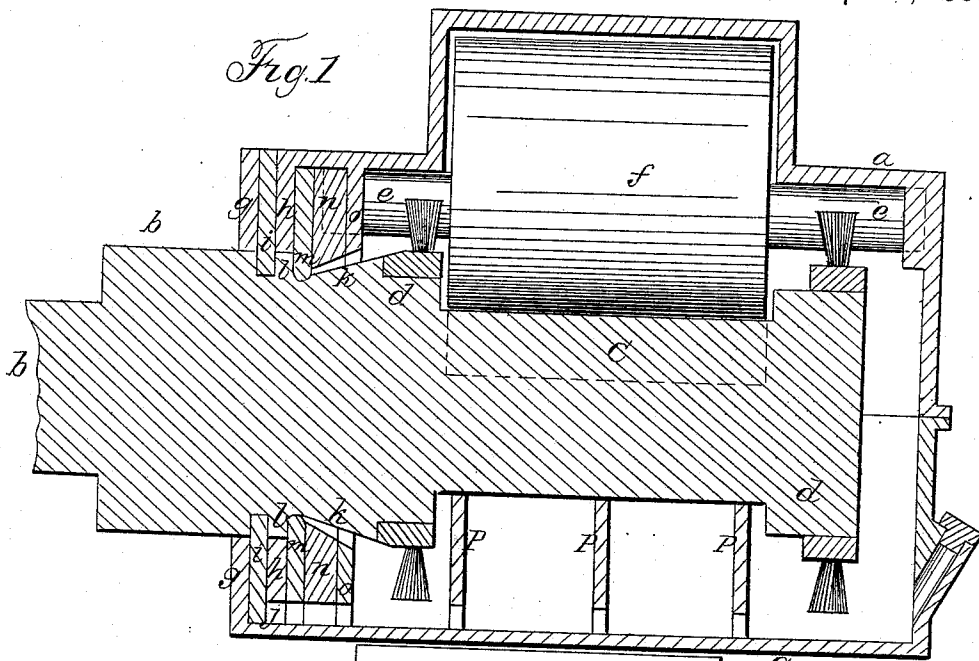
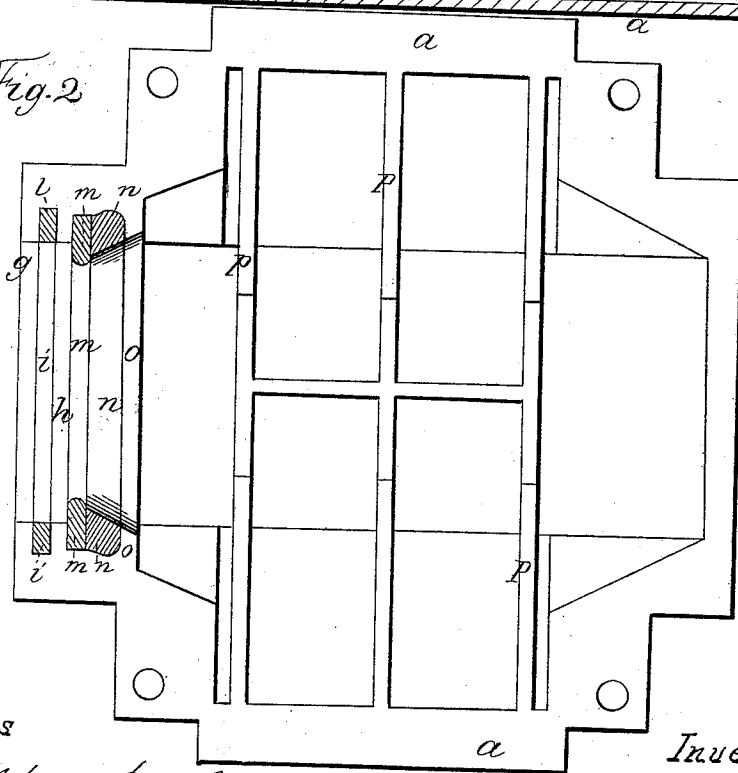


Fig. 2



Witnesses

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HARVEY RICE, OF CONCORD, NEW HAMPSHIRE.

RAILROAD AXLE-BOX.

Specification of Letters Patent No. 27,738, dated April 3, 1860.

To all whom it may concern:

Be it known that I, HARVEY RICE, of Concord, in the county of Merrimack and State of New Hampshire, have invented a new and useful Improvement in Railroad Axle-Boxes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a vertical section taken in the plane of the axis of the journal; and Fig. 2, a plan of the lower half of the box without the axle.

The same letters indicate like parts in all the figures.

My said invention relates to an improvement on a railroad axle box patented to Leon J. Pomme de Mirimonde of Paris, in the Empire of France, and bearing date the 23rd day of August, 1856, as the same has been improved by Humphrey Jackman, by combining therewith a cone on the axle and within the box to prevent the escape of oil from the box. The box so patented by the said Leon J. Pomme de Mirimonde presents certain important features, but in practice it is found to be wasteful of oil for the reason that the oil has to be carried up by the rotation of the axle to lubricate the journals of the anti-friction rollers in the upper part of the box, and in doing this, particularly at high velocities, the oil is scattered about and thrown onto the axle and passes out between the surface of the axle and the leather packing which surrounds it. This defect has been remedied in a great measure by the said improvement of the said Humphrey Jackman for which improvement I am informed he has made application for Letters Patent. But I have found in practice that even with this valuable improvement all the oil is not prevented from escaping, and for the reason that it is agitated so violently at high velocities, that some of it is thrown onto that part of the axle which lies between the cone and the groove that receives the usual leather packing, and nearly all the oil which is so thrown on that part of the axles works out between the axle and the packing.

The object of my said invention is to prevent this waste which I effect by combining with the box and the axle so coned, a second packing of leather, or equivalent sub-

stance applied to the smallest part of the cone so as to be interposed between the conical surface and the groove which receives the usual packing, whereby the oil is prevented from reaching that part of the surface of the axle which lies between the cone and the usual packing, and instead such oil is thrown against the inner face of the additional packing and falls back into the box, and only so much passes as is necessary to lubricate the packing without waste.

In the accompanying drawings (*a*) represents the box made in two parts bolted together in the usual manner, and (*b*) the axle with its journal (*c*) and collars or projecting wings (*d, d*) at each end and projecting bristles or equivalents for dipping into the oil in the lower part of the box to carry it up to lubricate the journals (*e, e*) of the anti-friction rollers (*f, f*) (only one of which is shown in the drawings) mounted in the upper part of the box. The inner end of the box is made of two thicknesses (*g, h*) with a space between to receive the usual leather packing (*i*) which fits in a groove in the body of the axle. There is a hole (*j*) in the lower part of the plate (*h*) to allow any oil which may run down in the space that contains the leather packing (*i*) to flow back into the lower part of the box.

The axle is made of a conical form at (*k*) between the groove for the packing (*i*) and the collar (*d*) on that end of the journal, the said collar being the base or larger end of the cone, and as the smaller part of this cone is of less diameter than the body of the axle where the groove is formed for the outer packing (*i*) it presents a shoulder (*v*). Against this shoulder and at its junction with the small part of the cone (*k*) I place an additional close fitting packing (*m*) which I prefer to make of leather. This packing is made in two parts one half secured in the lower part, and the other in the upper part of the box and against the inner face of the inner plate (*h*), and secure it in place by blocks of wood (*n*) driven in between the inner face of the packing and an inner partition (*o*) and the edges of the wood and of this inner partition are beveled inward that the oil which is thrown against them may readily run down into the box. And I make a hole in the lower part of the partition (*o*) to allow any oil to run back into the box which may by accident leak through.

The lower part of the box is provided with a series of partitions (*p*) to prevent the agitation of the contained oil by the motion of the car, there being holes through the lower part of the partitions for the oil to flow freely between the several compartments.

By means of this improvement it will be seen that however the oil may be agitated, or thrown about in the box, it cannot be thrown upon any portion of the surface of the axle beyond the conical surface, and all that is thrown, or in any manner gets onto the conical surface is sure to be retained in the box by the centrifugal action which tends constantly to make it travel toward the base of the cone; and the oil which is thrown against the inner edge of the inner or additional packing ring is found to be sufficient

for the lubrication of the packing without waste.

What I claim as my invention of an improvement on the said prior inventions of L. J. Pomme de Mirimonde, and of Humphrey Jackman, and desire to secure by Letters Patent is—

The combination of the inner packing applied to the axle at the smallest part of the conical surface, substantially as herein described, in combination with the axle having the said conical surface, and the box with its outer packing substantially as and for the purpose specified.

HARVEY RICE. [L. s.]

Witnesses:

ANDREW DE LACY,
HORACE ANDREWS.