

J. DOUGALL.

Car-Axle Box.

No. 42,714.

Patented May 10, 1864.

Fig. 2.

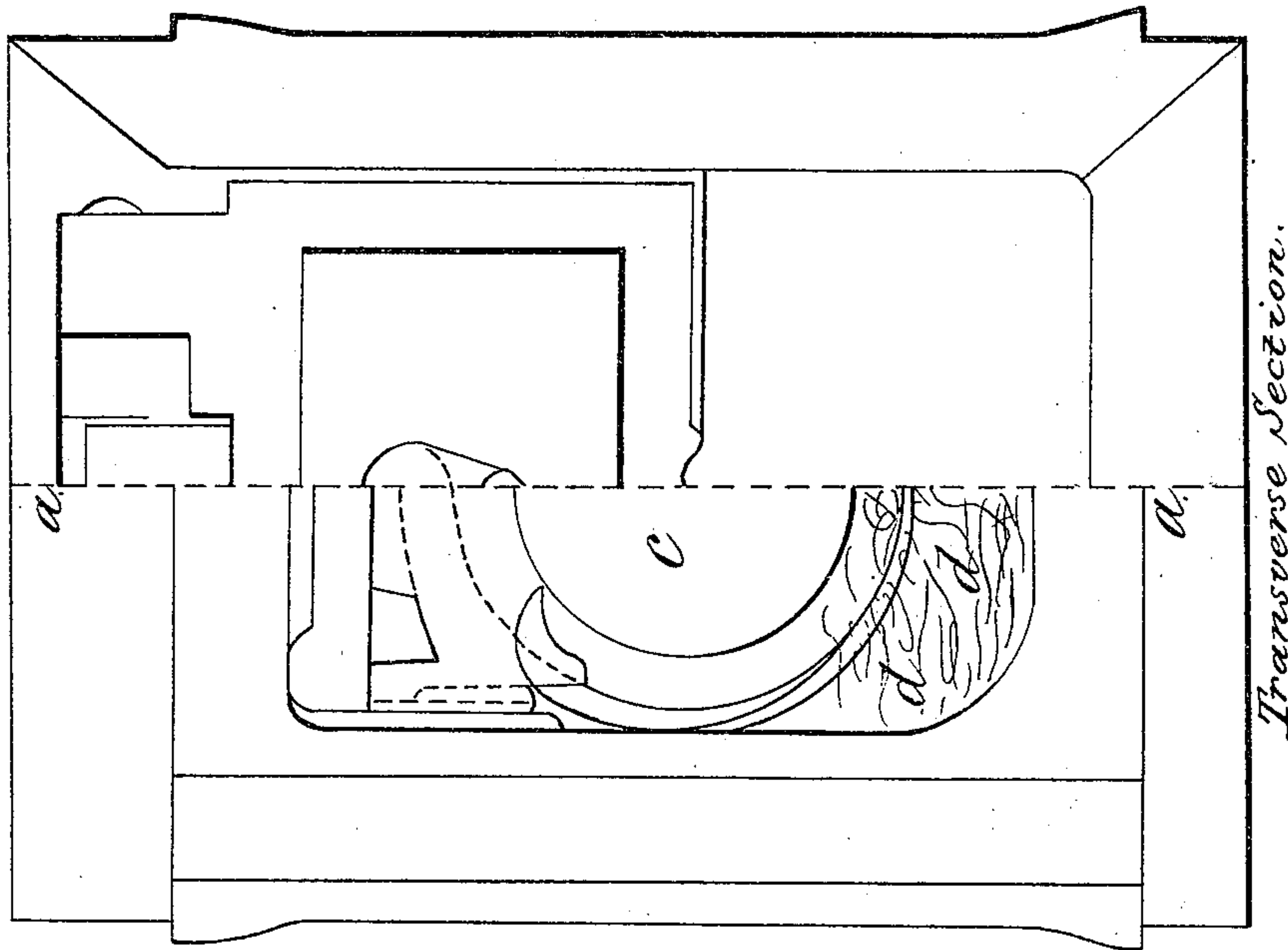
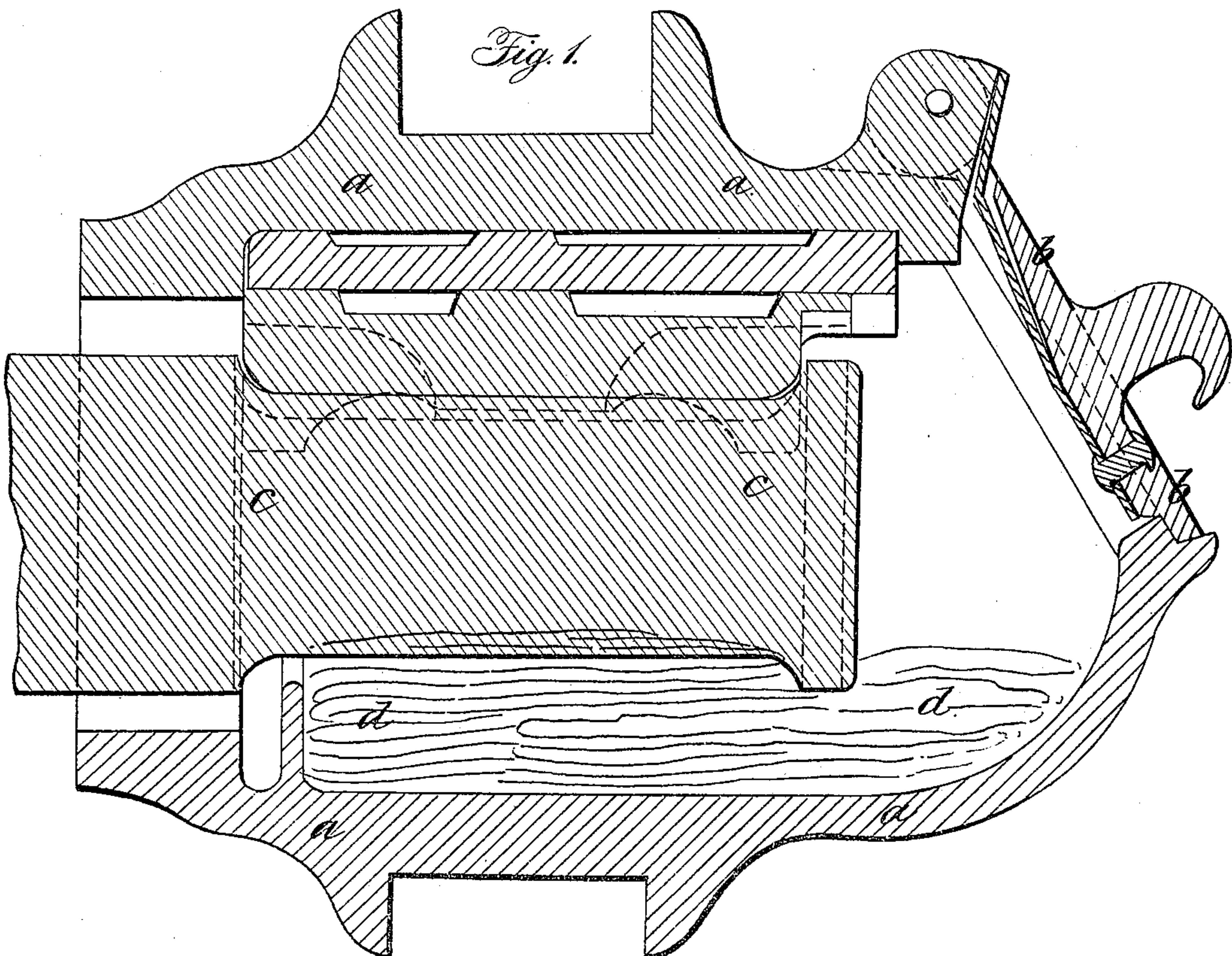


Fig. 1.



UNITED STATES PATENT OFFICE.

JAMES DOUGALL, OF STERLINGSHIRE, SCOTLAND.

IMPROVEMENT IN MODE OF APPYLING LUBRICATING SUBSTANCES.

Specification forming part of Letters Patent No. 42,714, dated May 10, 1864; antedated May 3, 1864.

To all whom it may concern:

Be it known that I, JAMES DOUGALL, of Sterlingshire, Scotland, but at present temporarily residing in Montreal, Canada, and a subject of the Queen of Great Britain, have invented certain new and useful Improvements in the Method of Applying Lubricating Substances; and I do hereby declare that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, whereby my invention may be distinguished from all others of a similar class, together with what I claim and desire to have secured to me by Letters Patent.

The method heretofore employed of conveying lubricating-matter to the axles of railway-carriages, &c., has usually consisted in employing cotton waste or sponge in the oil-boxes, the cotton waste or sponge absorbing and retaining the oil and bearing against the axle; but it has been found that the use of these materials is attended with many serious disadvantages, as, being of too dense a nature, they absorb and retain all the dirt and sediment that fall from the bearings, which cause in a short time grinds out the bearings and heats them to a dangerous extent. Moreover, cotton waste and sponge are not of a sufficiently elastic nature to keep well up to the axle, neither are they good conductors of lubricating materials.

In seeking for a substitute for the ordinary method of applying lubricators it has been my object, first, to obtain a much cheaper and better conductor of oils than those heretofore used; second, a more elastic and spongy material; third, a substance sufficiently loose in its bulk to permit the free passage through it of such dirt and sediment as necessarily collect in journal-boxes. After experimenting with many different substances I have found that hay or straw or hay and straw mixed, and other similar substances, applied in the oil-boxes of axles, &c., combine all the advantages desired.

It will be observed that hay or straw, on

account of its enameled surfaces and its porous nature, when packed together forms an excellent conductor of lubricating-matters, and consequently does not absorb and retain the sediments formed, but allows them to fall through to the bottom of the journal-box, leaving the conducting material clean and free from dirt. Hay or straw, also, when in a body possesses an elasticity which keeps its surface always in immediate contact with the axle, whereas cotton waste or sponge soon becomes densely packed by the pressure upon, and thus leaves a space between it and the journal. I have found, then, that hay or straw, employed as above described, requires only about three-fifths of the quantity of lubricant used for cotton waste or sponge.

The accompanying drawings represent my improvements as applied to the axle-box of a railway-car.

Figure 1 is a central longitudinal vertical section of the axle-box. Fig. 2 is a transverse section of the same.

a a in the drawings represent the oil-box, the opening to which is at *b b*. *cc* is the axle, under which is packed hay or straw *d d*, or both combined, as shown in the drawings, in the place of the ordinary waste or sponge.

The lubricating material is applied in the usual manner, so as to keep the hay or straw saturated.

The operation of the parts, being well known, need not be herein more particularly described.

The above-described combination of the axle, axle-box, the lubricating materials, and the new packing employed, produces the novel results hereinabove fully set forth.

Having thus described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

The method hereinabove described of applying lubricating-matters, the same consisting in using in axle-boxes for railway-carriages, &c., hay or straw, or both combined, substantially as hereinabove described.

JAMES DOUGALL.

Witnesses:

JOSEPH GAVETT,
ALBERT W. BROWN.