(No Model.) 2 Sheets—Sheet 1.

J. McCULLOCH & W. COOK.

RAILWAY WAGON.

No. 272,967. Patented Feb. 27, 1883.

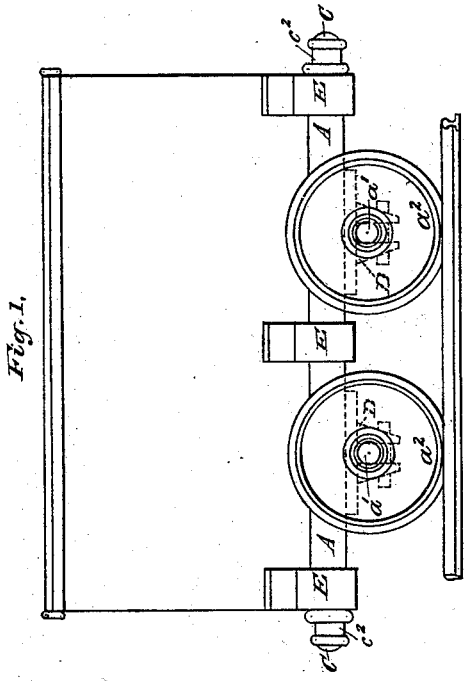


Fig. 1.

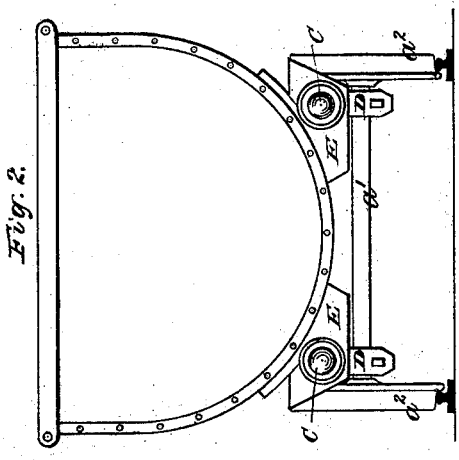


Fig. 2.

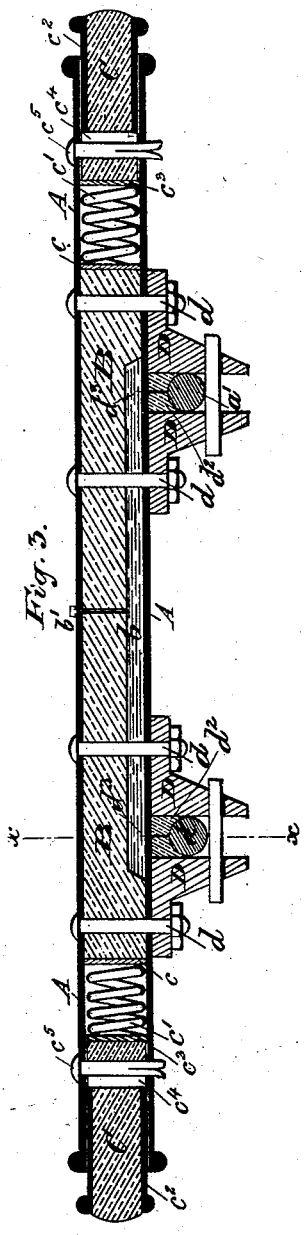


Fig. 3.

WITNESSES:

Ewell & Orell
Walter Blandford

INVENTOR.

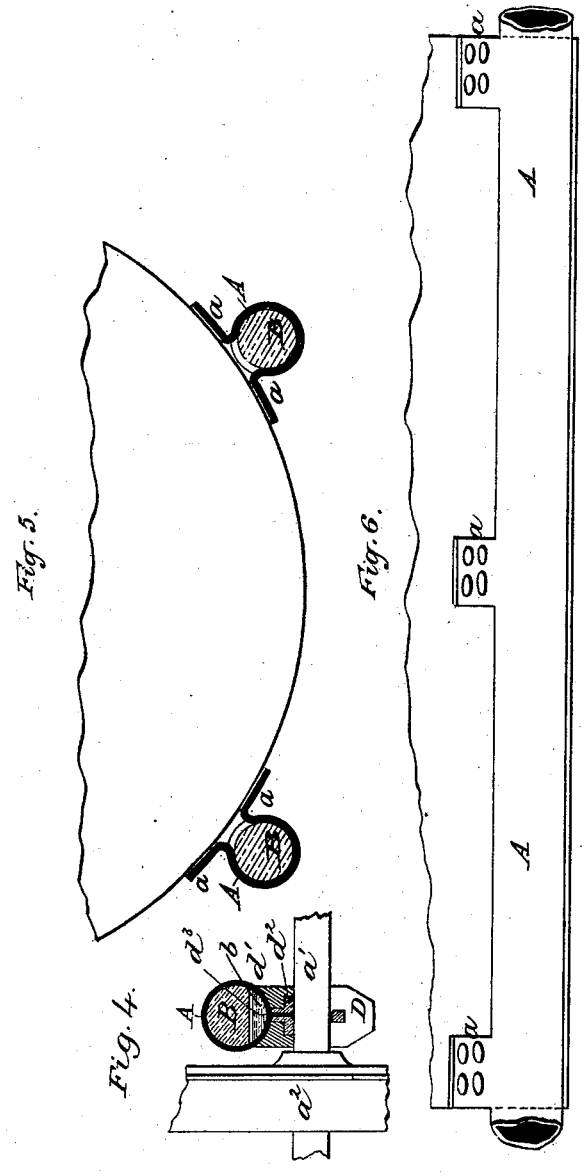
John McCulloch & William Cook
by Munn & Co
their attorneys

(No Model.) 2 Sheets—Sheet 2.

J. McCULLOCH & W. COOK.

RAILWAY WAGON.

No. 272,967. Patented Feb. 27, 1883.



WITNESSES:

Ewell A. Cole

J. Walter Blandford

INVENTOR.

John McCulloch & William Cook

by Marcellus Bailey

their attorney.

UNITED STATES PATENT OFFICE.

JOHN McCULLOCH AND WILLIAM COOK, OF GLASGOW, COUNTY OF LANARK, SCOTLAND, ASSIGNORS TO WILLIAM COOK & SONS, OF SAME PLACE.

RAILWAY-WAGON.

SPECIFICATION forming part of Letters Patent No. 272,967, dated February 27, 1883.

Application filed December 21, 1882. (No model.) Patented in England April 24, 1882, No. 1,936.

To all whom it may concern:

Be it known that we, JOHN McCULLOCH and WILLIAM COOK, both of Glasgow, in the county of Lanark, North Britain, have invented Improvements in the Construction of Hutches or Wagons, for which we have received Letters Patent of the United Kingdom of Great Britain and Ireland, No. 1,936, dated April 24, 1882, and for which we are also about to apply for Letters Patent in the Republic of France, Empire of Germany, and Kingdom of Belgium. The following is a specification of our invention.

This invention, which relates to improvements in the construction of hutches or wagons, consists in the construction of what is known as the "framing," and sometimes called the "trams," on which the body of the hutch or wagon rests and to which the axle-boxes are attached. In the improved framing or trams a pair of iron or steel tubes are used. The central part of each of the tubes is, for the sake of stiffening the tube, filled up with a piece or pieces of wood or other cheap material. At either end of the central piece of wood or other material a flat plate is inserted, bearing on the ends thereof, and forms the seats of the buffer-springs. A similar flat plate is placed at the outer ends of the buffer-springs. The buffers themselves consist each of a hard-wood core, the outer part or ends of which are covered with a piece of iron or steel tube, and the inner ends of the hard-wood portions bear upon or against the outer plates situated between them and the buffer-springs. In order to keep the said buffers in their due positions in the ends of the tubes, a slot is formed therein, through which a bolt or pin, held in corresponding holes of each end of the tube, passes, the slotted or elongated form of the holes permitting of the requisite motions of the buffers. The axle-boxes are fixed to the under sides of the tubes, and are by preference fitted with white-metal bearings, which communicate with an oil-reservoir formed in the central parts of the tubes, and a needle is by preference placed in the oil-holes to keep them clean. These improved frames or trams are attached to the bodies of the hutches or wagons in any convenient manner; but by preference hinged or bolted covering-pieces are attached to the bodies of the hutches or wagons, which close round and grip the tubular framing or trams, or separate bolted flanges may be dispensed with by opening out portions of the tube.

In the drawings, Figure 1 of the accompanying sheets of drawings represents a side elevation of a hutch or wagon constructed according to our said invention. Fig. 2 is an end elevation of the same. Fig. 3 represents in longitudinal section the construction of the framing or trams which forms the essential feature of our said invention, and Fig. 4 is a transverse sectional elevation of the same, as upon the line *x x*, Fig. 3. Figs. 5 and 6 are details hereinafter referred to.

The framing or trams, upon which the body of the hutch or wagon is supported and to which the axle-boxes are attached, consists of two iron or steel tubes, A, running parallel the length of the hutch and taking the place of the ordinary beams. The central or main parts of each of the tubes, Figs. 3 and 4, is fitted up with a piece or pieces of wood or other cheap material, B, which thus renders the tubes of greater strength. At either end of the central piece of wood or other material, B, a flat circular plate, C, is inserted, bearing against the ends thereof, the said plates forming the seats of the buffer-springs c'. The buffers themselves consist each of a hard-wood core, C, the outer part or ends of which are covered with a piece of iron or steel tube, c^2, and the inner ends of the said portion C bear upon or against the outer circular plates, c^3, situate between the said part C and the buffer-spring c'. In order to keep the buffers in their due position within the ends of the tubes A, slotted holes c^4 are formed through the cores C, through which bolts or pins c^5, held in corresponding holes of each end of the tubes A, pass, the slotted or elongated form of the holes permitting of the requisite motion of the buffers. The axle-boxes D are fitted to the under sides of the tubes by bolts or equivalent fastenings, *d*, which are passed diametrically through the tubes A and the wooden or other filling B. We prefer to form the said axle-boxes with a curved upper surface, as at d', Fig. 4, to correspond with the curvature of the tubes; but it is obvious that the method of attaching the axle-boxes to the framing or trams is capable of various modifications. The axle-boxes are preferably fitted

upon the axles a' of the wheels a^2, with white-metal bearings d^2, which communicate with oil-reservoirs b, formed in the under part of the wooden or other filling B, as shown. The said reservoirs are preferably extended within the tubes A from the distance of one axle-box to the other, as shown in Fig. 3, and a needle, d^3, is by preference placed in each of the oil-holes of the axle-boxes to keep the said holes clean. In order to charge the reservoirs with the oil, a feeding-aperture is provided in a central position within the tubes A, the said apertures being fitted with pins b' to keep the apertures clean. The tubes A are attached to the body of the hutch or wagon by hinged or bolted covering-pieces E, Fig. 1, which close round and grip the tubular framing or trams. It is obvious that the said holders E may be of various forms, and that they may be attached to the hutch, also in various ways. For instance, the said holders or grippers, brackets or portions E, which surround the tubes, may be formed in two halves or portions, so as to enable the said parts to be adjustably fixed to the tubes by screw-bolts.

In Figs. 5 and 6 we have shown an arrangement for dispensing with the brackets or holders E for attaching the body of the hutch to the framing or trams. This is effected by opening out the part of the tubes where the brackets E in Fig. 1 are located. Fig. 5 is an end elevation of a portion of the hutch or wagon with the tubular trams in section, and Fig. 6 is a side elevation of the same.

The part a of the tube A is a strip cut out from the portion of the tube nearest to the body of the hutch, and is preferably of a width, as shown in Fig. 6, corresponding to the width of the brackets E, shown more particularly in Fig. 1; or the tube may be opened out the greater part of its length. In order to allow a sufficient amount of metal to form an attachment to the hutch, the part of the tube opened out may have welded to it an extra length or portion of metal.

We claim—

1. The tubes A, carrying the body of the hutch or wagon and provided with filling-pieces, in combination with the buffers C, supported and longitudinally movable in the ends of said tubes, and interposed springs c', substantially as and for the purposes set forth.

2. The wagon-body carrying-tubes A and oil-reservoirs b, contained therein, in combination with the axle-bearings communicating through said tubes with said oil-reservoirs, substantially as and for the purposes hereinbefore set forth.

3. The buffers C, oil-reservoirs b, and bearings d^2, in combination with the tubes A, substantially as hereinbefore described and illustrated.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN McCULLOCH.
WILLIAM COOK.

Witnesses:
ROBERT ADAM GUNN,
WILLIAM SMITH,
Both of 115 *St. Vincent Street, Glasgow.*