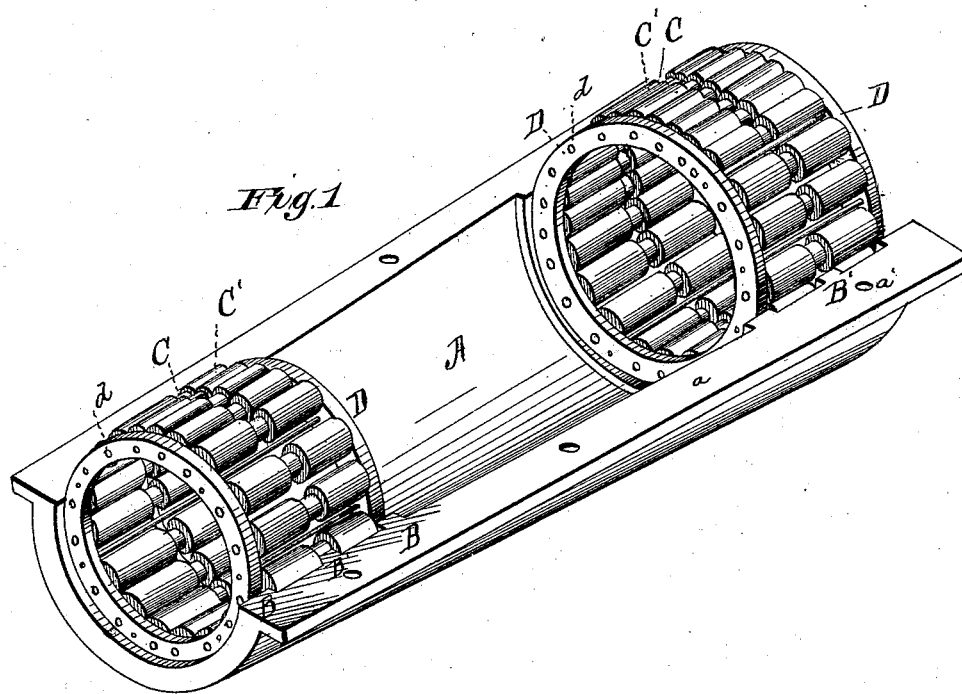


B. CROWTHER.
Vehicle-Axle Box.

No. 218,939.

Patented Aug. 26, 1879.



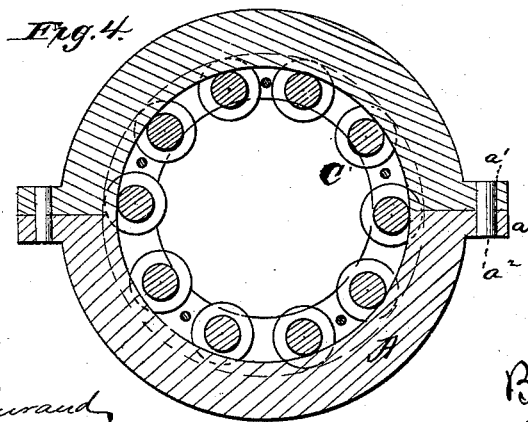
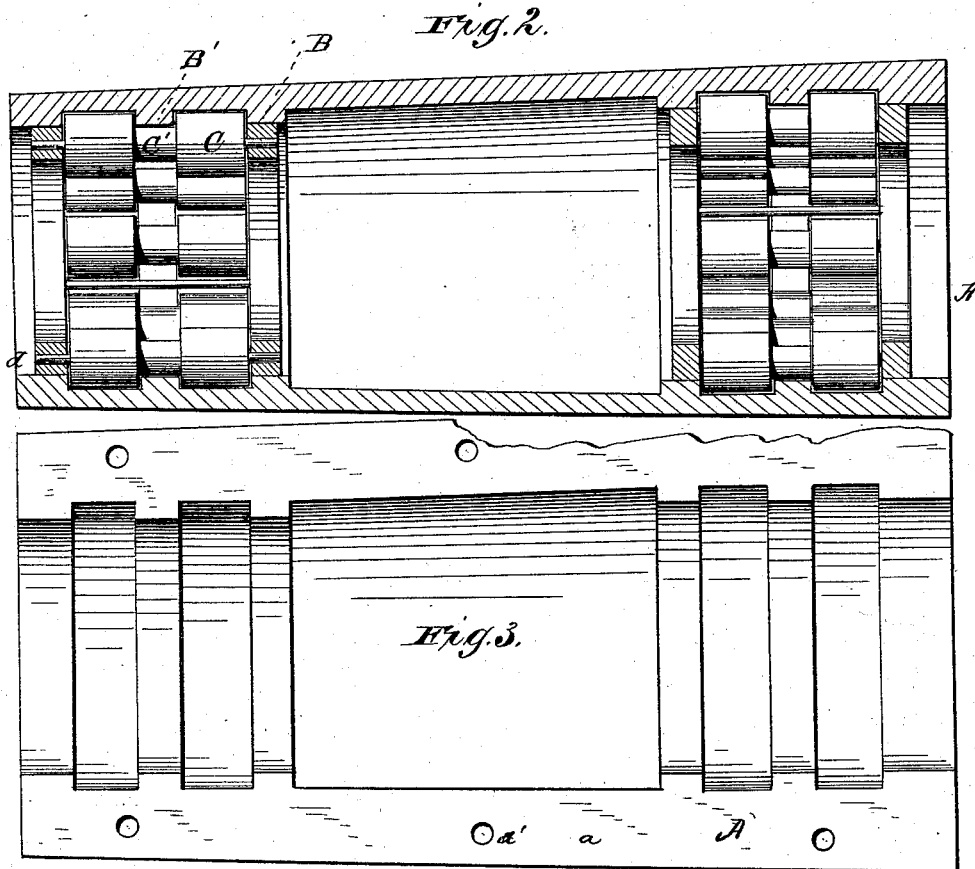
Witnesses,
Frank L. Curand
St. Clair Smith

Inventor,
B. Crowther
By H. J. Eunis
Attorney

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WITNESSES
James L. Curran,
A. Clay Smith

INVENTOR
B. Crowther
By H. E. Eunis
ATTORNEY

UNITED STATES PATENT OFFICE.

BENEDICT CROWTHER, OF HEATHSVILLE, VIRGINIA.

IMPROVEMENT IN VEHICLE-AXLE BOXES.

Specification forming part of Letters Patent No. **218,939**, dated August 26, 1879; application filed May 27, 1879.

To all whom it may concern:

Be it known that I, BENEDICT CROWTHER, of Heathsville, in the county of Northumberland and State of Virginia, have invented certain new and useful Improvements in Anti-Friction Axle-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a perspective view of my improvement; Fig. 2, a section with the rollers in place; Fig. 3, a plan view of one section of the box with the rollers removed, and Fig. 4 an end section.

My invention relates to an improved axle-box for vehicles, cars, or the like.

In carrying out my invention I employ in the formation or construction of the axle-box two semi-cylindrical sections having the proper taper for the desired purpose, each section being provided with longitudinal flanges, perforated as shown, to receive bolts or other securing devices. These half-cylinders exactly correspond with each other in size and form, and each is provided with transverse flanges or guides, which, when the half-cylinders are in position together, form circumferential flanges on the inside of the box. These flanges are arranged in groups of three, preferably at or near each end of the box, the center one of each group being adapted to ride within circumferential grooves in rollers journaled in properly-braced rings, as shown. This groove makes the rollers in two rigid sections, and these sections bear upon the inner surface of the box between the flanges, one upon each side of the center flange. This construction prevents any endwise movement, play, or displacement of the rolls, and the rolls being the only surface which bears between box and axle, it follows that a minimum of friction is attained, and, in practice, the box turning with the wheel constantly changes the contact-point of bearing.

The box and rollers travel in reverse directions, the rollers and frame traversing as shown. The rollers may be made of larger or smaller diameter, to accommodate desired speed or weight. The box may be stationary, to receive shafting, if desired.

Referring to the drawings, A represents the semi-cylindrical sections forming the axle-box, each having longitudinal flanges *a*, perforated at *a'* to receive the securing-bolts *a''*. Transverse flanges B upon the inner surface of these half-cylinders A are arranged in groups of three and are semicircular, corresponding with the shape of the half-cylinders, so that the bearing upon the end of the rollers shall be continuous, thereby preventing any longitudinal displacement or binding, the center flange, B', being adapted to ride in circumferential grooves C in the rollers C', journaled in rings D at *d*, as shown. These rings are properly braced to form box-frames, the whole forming a compact and efficient box. The rollers traverse the inner surface of the box between the flanges, which serve as guides therefor.

The operation and advantages of the invention are fully obvious from the foregoing description and the accompanying drawings.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

The improved anti-friction box consisting of the two semi-cylindrical flanged sections A A, bolted together at *a'*, and having at each end the inner continuous flanges, B B', the rings D, provided with a series of journaled rollers, C', having the reduced portions C, in which the flange B' fits, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of May, 1879.

BENEDICT CROWTHER.

Witnesses:

H. CLAY SMITH,
H. J. ENNIS.