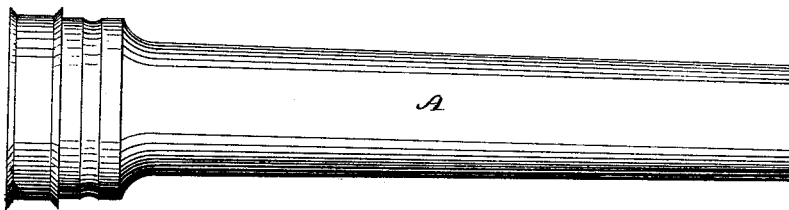


D. DALZELL.
MANUFACTURE OF AXLE-BOXES.

No. 195,805.

Patented Oct. 2, 1877.



WITNESSES

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DAVID DALZELL, OF SOUTH EGREMONT, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF AXLE-BOXES.

Specification forming part of Letters Patent No. **195,805**, dated October 2, 1877; application filed January 17, 1877.

To all whom it may concern:

Be it known that I, DAVID DALZELL, of South Egremont, in the county of Berkshire and State of Massachusetts, have invented a new and valuable Improvement in Method of Manufacturing Axle-Boxes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

The drawing is a representation of a side elevation of my invention.

This invention has relation to axle-boxes; and its object is to produce a wrought-iron case-hardened box, of whatever form, without any welds, thereby forming a box that will be more durable and less liable to break or separate.

My invention therefore consists in forming the entire box out of a solid piece of suitable metal by swaging, and then boring a hole through lengthwise, and afterward case-hardening.

My improved axle-box, as shown at A in the drawing, I make in the following manner: A solid piece of suitable metal is first taken and swaged into form in swages under a trip or other suitable hammer, and may, if desired, be pressed endwise into a suitable former, to make it the proper size in diameter, length, and finish. A hole is then bored through length-

wise, and reamed out with suitable reamers to bring the box to the size and shape required, and then, by the process of grinding and polishing, bring it to a perfect state, after which it is case-hardened.

A box constructed according to my invention, as above described, is adapted to run a vehicle in a most perfect manner, and for an indefinite period, there being no welds, as the entire box is made from a solid piece of metal, thereby removing all possibility of the box becoming broken at the point of welding.

The box thus constructed may be made with or without ears, as found desirable; and I do not wish to be understood as confining the process of manufacture to any particular form of box.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

As an improvement in the art of manufacturing axle-boxes, making the same of a solid piece of wrought-iron by boring, reaming, and case-hardening the same, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID DALZELL.

Witnesses:

JUSTIN DEWEY,
GEORGE K. HOLMES.