

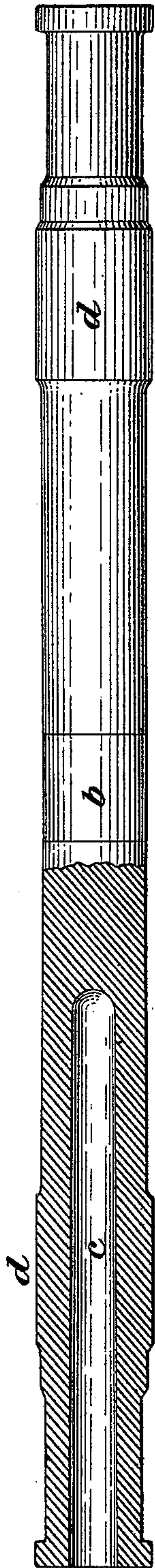
No. 641,600.

C. MERCADER.
AXLE

Patented Jan. 16, 1900.

(No Model.)

(Application filed Oct. 18, 1899.)



WITNESSES

L. A. Conner
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INVENTOR

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by Ransdell & Ransdell
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UNITED STATES PATENT OFFICE.

CAMILLE MERCÂDER, OF BRADDOCK, PENNSYLVANIA.

AXLE.

SPECIFICATION forming part of Letters Patent No. 641,600, dated January 16, 1900.

Original application filed April 28, 1899, Serial No. 714,746. Divided and this application filed October 18, 1899. Serial No. 733,966. (No model.)

To all whom it may concern:

Be it known that I, CAMILLE MERCÂDER, of Braddock, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Axles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, in which the figure shows in plan view, partly in section, an axle constructed in accordance with my invention.

My improved axle, as shown in the drawing, consists of a solid middle body portion *b* and end portions, which latter are hollow, being formed with perforations *c*, which extend into them to and beyond the inner ends of the wheel-seats and are constituted by forcing a punch endwise into the axle in the course of its manufacture. These perforations extending to and beyond the wheel-seat are distinctive features of my invention and are of great advantage, because the forging action which is produced by the entrance of the punches greatly compacts and strengthens the metal and renders the axle less apt to break. This will be understood when it is considered that heretofore in the finishing of an axle it has been greatly weakened by cut-

ting away the outer skin which has been compacted by the forging operation; but in the use of my dies a tough dense skin is produced on the interior of the axle by the forging action of the entering punches, and this skin is not cut away, but remains as a permanent element of strength.

My improved axle possesses the above advantages and others, which will be appreciated by those skilled in the art.

In another application, Serial No. 714,746, filed April 28, 1899, of which this present application is a division, I show and describe a machine adapted for the manufacture of my improved axle.

I claim—

As a new article of manufacture, a car-axle, having a solid middle portion, and hollow end portions with internally-compacted skins extending inwardly at least to the inner ends of the wheel-seats of the axle; substantially as described.

In testimony whereof I have hereunto set my hand.

CAMILLE MERCÂDER.

Witnesses:

H. M. CORWIN,
G. B. BLEMMING.