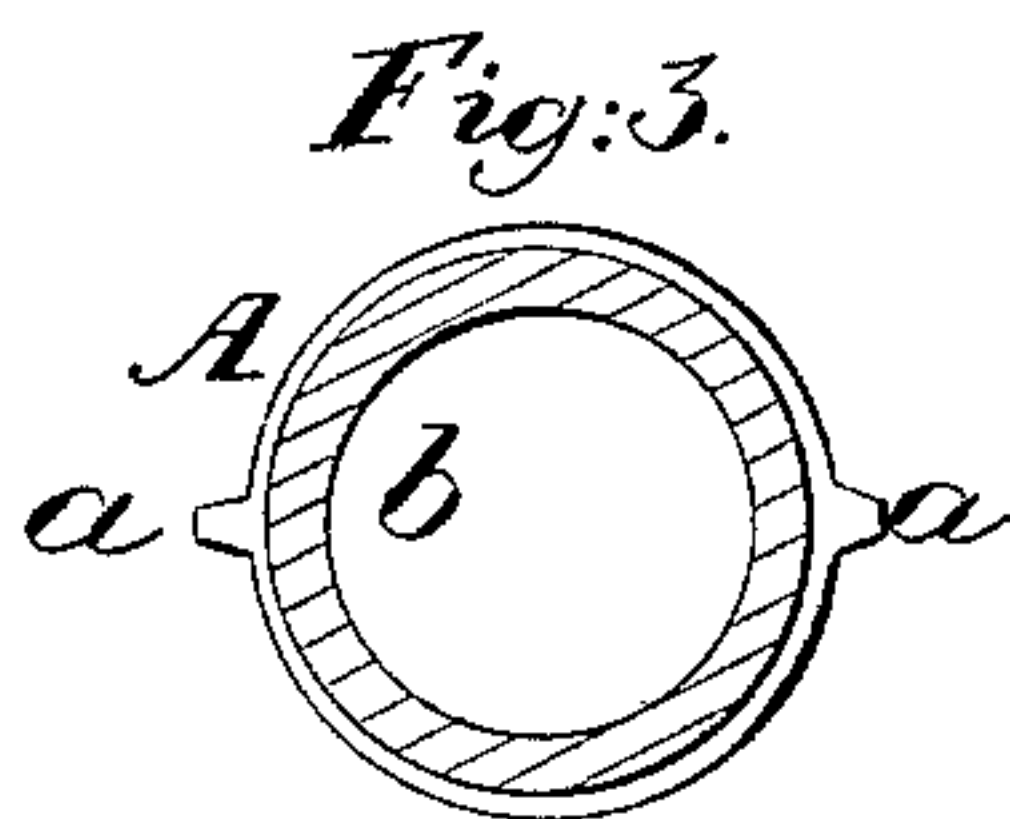
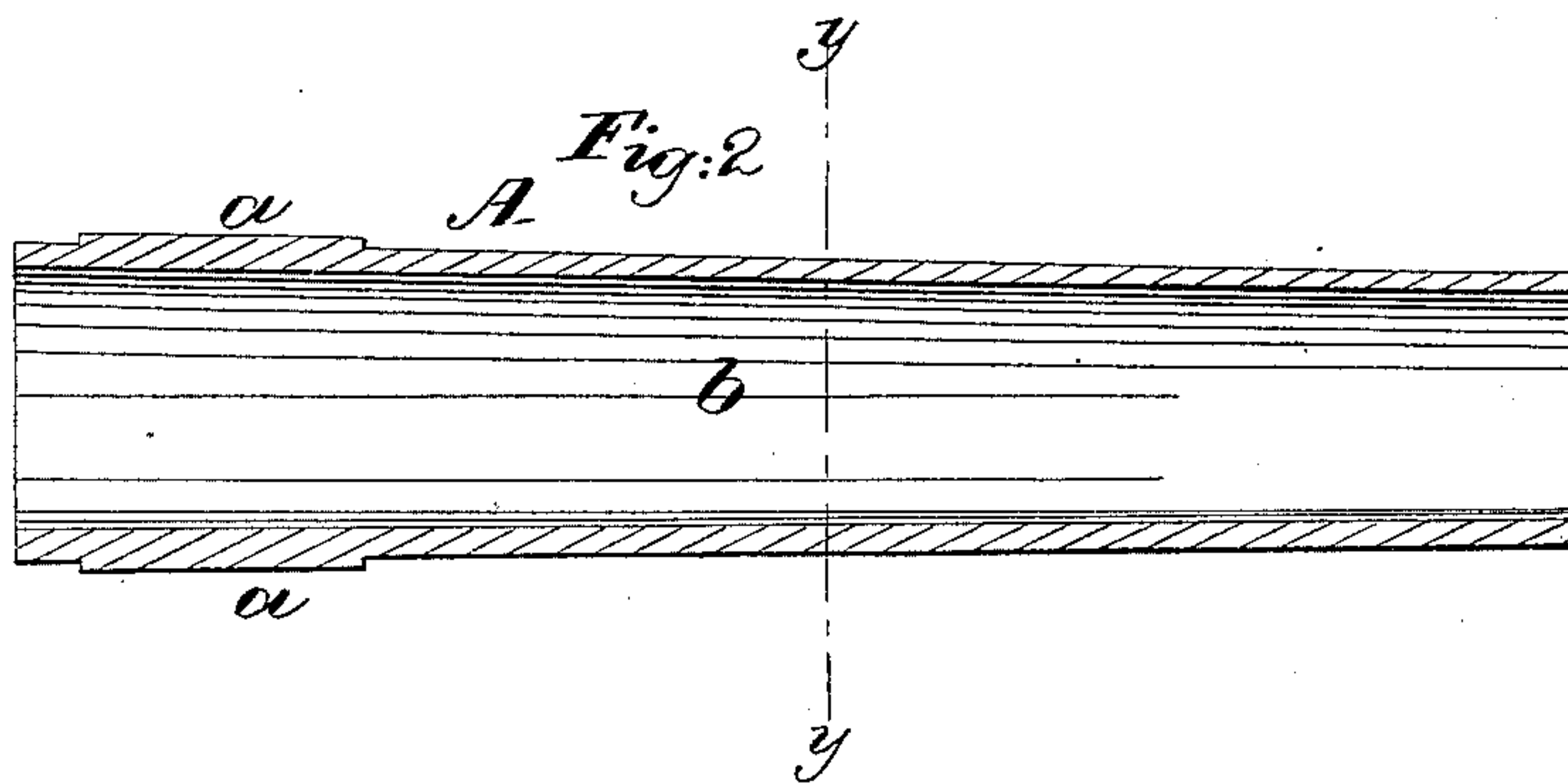
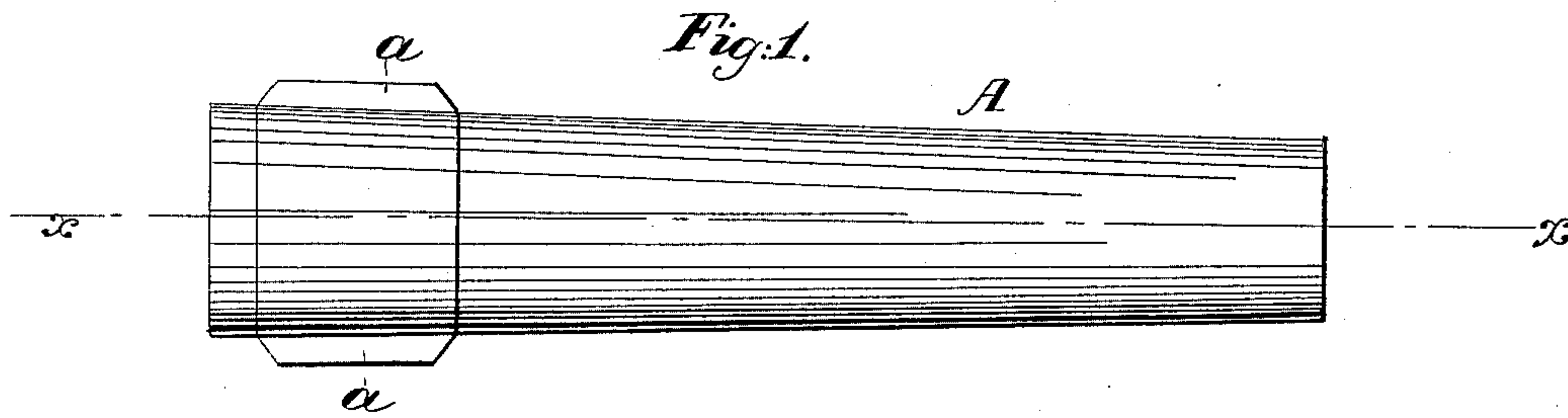


C. COOK.  
Car-Axle Box.

No. 49,726.

Patented Sept. 5, 1865.



*Witnesses*  
*Geo. Ousd*  
*Wm. Brown*

*Inventor*  
*Chas Cook*  
*By Munn & Co*  
*Attys*

# UNITED STATES PATENT OFFICE.

CHARLES COOK, OF WINSTED, CONNECTICUT.

## AXLE-BOX.

Specification forming part of Letters Patent No. 49,726, dated September 5, 1865.

*To all whom it may concern:*

Be it known that I, CHARLES COOK, of Winsted, in the county of Litchfield and State of Connecticut, have invented a new and useful Improvement in Axle-Boxes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an external view of my invention; Fig. 2, a longitudinal central section of the same, taken in the line *x x*, Fig. 1; Fig. 3, a transverse section of the same, taken in the line *y y*, Fig. 2.

Similar letters of reference indicate like parts.

The metallic boxes for the wheels of vehicles are at present made of cast-iron and as soft as possible, in order to admit of the interior of the box being bored out and polished or finished perfectly true, in order to run well on the axle and avoid unnecessary friction and consequent wear and tear. Hard boxes would be far more durable than the soft ones, if they could be worked after being cast. Chilled cast-iron, for instance, would answer an admirable purpose; but the difficulty alluded to precludes its use.

The object of my invention is to obtain a box which will be hard and durable and still admit of being bored out and polished so as to run perfectly true on the axle.

To this end the invention consists in constructing the box of wrought-iron, and, after boring and polishing its interior surface perfectly true, rendering the same hard by the ordinary process of case-hardening or of steel-converting.

The box A may be constructed in various ways; but probably as good a plan as any would be to take a piece of wrought-iron plate of suitable thickness, bend it over a mandrel, and weld it at its edges, in order to form a tube of the requisite dimensions. The interior of the tube is then bored out and polished or finished perfectly true, which may be readily done in consequence of the material being wrought-iron. The exterior of the tube does not require any material finish. It is, of course, provided with the ordinary flanges, *a a*, in order to prevent it from turning in the hub, and the exterior of a number of boxes of a given size should be of a uniform diameter. After the box is thus constructed and its interior surface, *b*, bored out and polished or finished perfectly true, I case-harden the box by any of the modern modes, patented or otherwise; or I convert its interior surface into steel by the well-known process termed "steel-converting," the box being placed in an iron retort, with bone-dust and other substances, and subjected to high heat a certain period of time. Thus by this means I obtain a hard and durable box and one which will have a perfectly true and polished interior surface.

I claim as new and desire to secure by Letters Patent—

As an improved article of manufacture, a box for the axles of vehicles, constructed of wrought-iron, with a true or finished interior surface, and hardened by the usual case-hardening or steel-converting processes, substantially as set forth.

CHARLES COOK.

Witnesses:

OSCAR F. PERKINS,  
MILAN H. MEAD.