(No Model.)

A. E. SMITH.

CARRIAGE AXLE.

No. 258,680. Patented May 30, 1882.

FIG. 1.

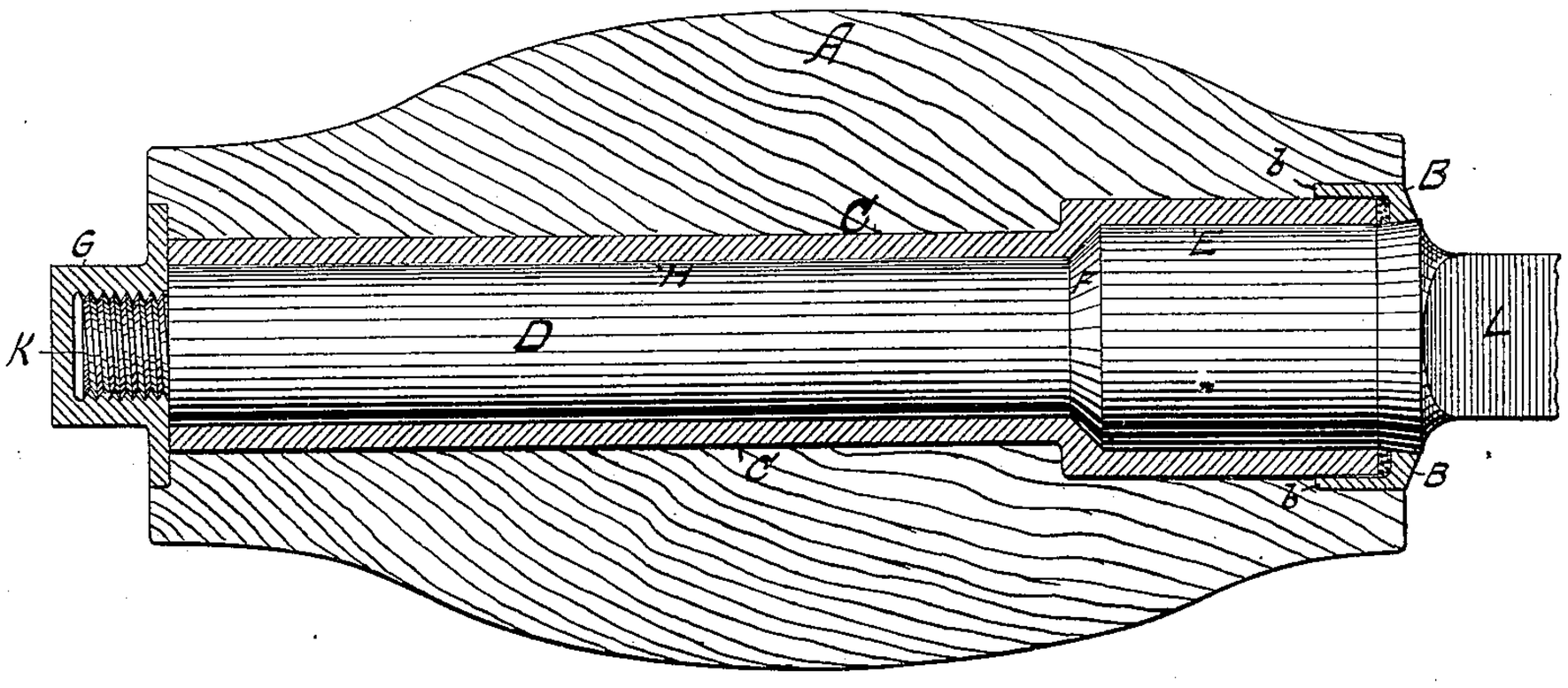
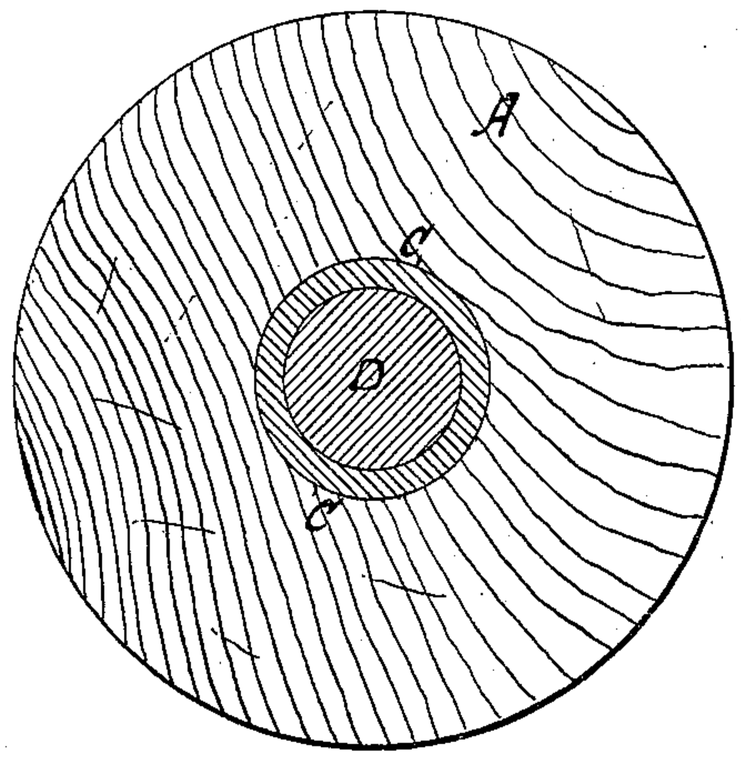


FIG. 2.



WITNESSES.

George L. Cumings.

Thos A Connery

Alfred E. Smith

INVENTOR.

UNITED STATES PATENT OFFICE.

ALFRED E. SMITH, OF BRONXVILLE, NEW YORK.

CARRIAGE-AXLE.

SPECIFICATION forming part of Letters Patent No. 258,680, dated May 30, 1882.

Application filed October 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALFRED E. SMITH, a citizen of the United States, residing at Bronxville, in the county of Westchester and State of New York, have invented new and useful Improvements in Carriage-Axles, of which the following is a specification, taken in connection with the accompanying drawings, in which—

Figure 1 represents a view in elevation of an axle, an axle-box, a sand-band, and a hub. Fig. 2 represents an end view of hub-box and sand-band or collar.

These improvements relate to certain improvements in axles for vehicles; and they consist in the combination of an axle having bearings that are tapering, or tapering and parallel, with a pipe-box or bushing conforming thereto, and with a sand-band having a flange projecting toward the front end of the axle or box, or a collar adjusted at its inner end, and which is passed over the front end of the spindle or axle until it passes beyond the inner end of the axle-box, where it is firmly held by being driven up on the enlarged tapering part of the axle, which taper serves the purpose of resisting the further movement of the sand-band or collar toward the inner end of the axle, and which allows the axle-box to be better fitted to its bearings by grinding it with suitable material to its proper place of bearing before the sand-band or collar is adjusted, and making the axle stronger at its root than it would be if it were straight, the sand-band being held in place by its pressure around the axle, and by the front edge of its projecting flange abutting against a recessed bearing in the inner end of the hub and forming a cup in which the inner end of the box revolves, the axle-box being held upon its spindle, with its inner surface abutting against the inclined bearings of the spindle, by a screw-nut screwed upon the screw-threaded end of the spindle or axle, as more fully hereinafter set forth.

In the accompanying drawings, letter A indicates the hub; letter C, an axle-box. Letter L indicates the shank of an axle, and letter D the spindle thereof, having an enlarged tapering bearing, E, an incline, F, and a diminished spindle, H. Letter K shows the screw-threaded end of the spindle. G shows the nut. Letter B indicates the sand-band, and *b* its projecting flange.

The sand-band or collar is made of a separate piece of metal. It may be cast or wrought, and is driven up or secured upon the axle at or near the inner end of the axle-box. It may be located beyond the inner end of the axle-box for the purpose of holding a washer or packing to prevent the flow of oil, or to deaden the concussion caused by the thrust of the box against the shoulder of the axle.

I am aware that sand-bands have been used when they have been applied to hubs with their flanges projecting from the hubs and over the collars of the axles, and also when the collar has been made solid to the axle and a recess cut into it, to receive the inner end of the box; but the first way is defective and gives only partial protection, and the second way is expensive and prohibits the box from being perfectly fitted to its bearings on account of the material used in grinding the box to the axle packing and clogging between the end of the box and the collar, thereby preventing a perfect bearing to be made, whereas my way, being detachable and adjustable, can be applied after the box has been properly ground or fitted to its bearings, making a cheaper and stronger axle. Therefore

I claim—

1. An axle with an enlarged tapering journal-bearing at its rear end, up which a detachable and adjustable flanged sand-band or collar is pressed or driven until it is placed beyond the inner end of the axle-box.

2. A detachable flanged sand-band or collar which is driven up on the taper of the enlarged bearing at the rear end of the axle until it is beyond the rear end of the axle-box when said box is properly fitted to its axle, and its inner end revolves within the cup formed by the flange projecting toward the front end of the axle-box or against the collar which it may abut.

In witness whereof I have hereunto subscribed my name and affixed my seal in the presence of two subscribing witnesses.

ALFRED E. SMITH. [L. S.]

Witnesses:

EUGENE N. ELIOT,

JOHN F. CLARKSON.