

C. HOTZ.
Axles for Vehicles.

No. 149,223.

Patented March 31, 1874.

Fig 1.

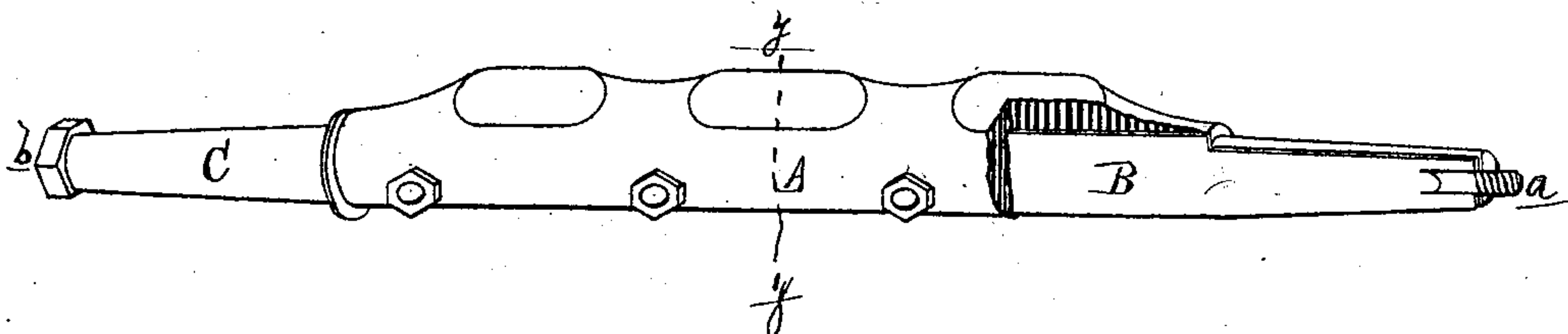


Fig 2.

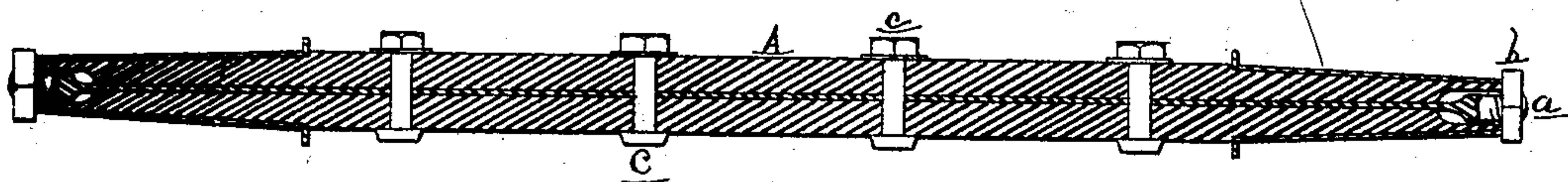


Fig 3.

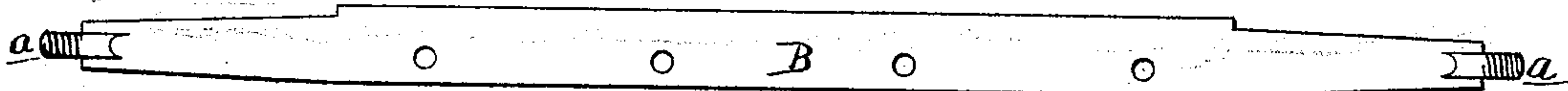
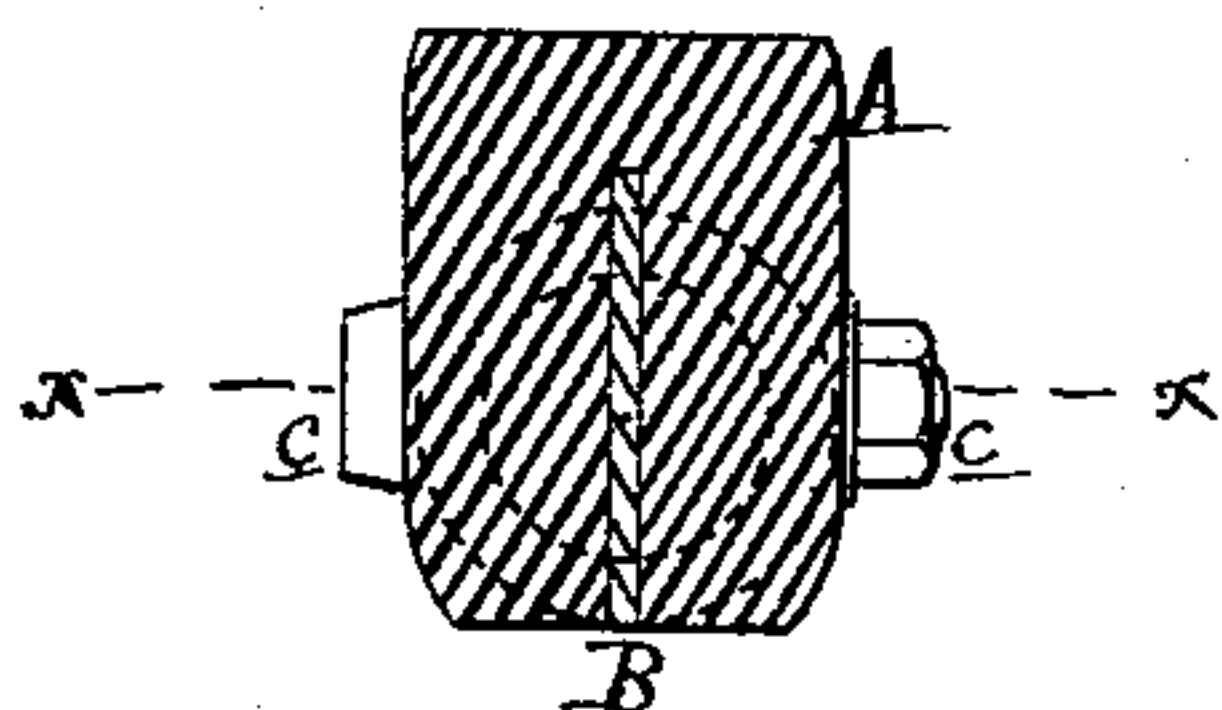


Fig 4.



ATTEST:

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UNITED STATES PATENT OFFICE.

CHRISTOPH HOTZ, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN AXLES FOR VEHICLES.

Specification forming part of Letters Patent No. **149,223**, dated March 31, 1874; application filed January 7, 1874.

To all whom it may concern:

Be it known that I, CHRISTOPH HOTZ, of Chicago, in the county of Cook and State of Illinois, have invented an Improvement in Wagon-Axles, of which the following is a specification:

The nature of this invention relates to an improvement in wooden axles, its object being to enable the wagon-maker to use lighter or inferior grades of wood, and yet have the required strength.

The invention consists in sawing a longitudinal groove in the bottom of the axle, and inserting therein a thin flat iron bar, extending through the skeins, with a screw forged on the end, to receive the nut, which secures skein on the axle.

Figure 1 is a perspective view of the axle, a part of one arm being broken away and the skein removed. Fig. 2 is a horizontal longitudinal section in the plane of the cross-bolts at *x x*, in Fig. 4. Fig. 3 is an elevation of the tension-bar. Fig. 4 is a cross-section of the axle at *y y*, in Fig. 1.

In the drawing, A represents a wooden axle, which may be of less sectional area, and of inferior wood, than standard axles. In the bottom, a groove is longitudinally cut, by means of a circular saw, in which is inserted a strap, B, of thin iron, with a round piece, *a*, forged on each end, which is screw-threaded to receive the nut *b*, the strap B extending through the thimble-skeins C, which are held on the

axle-arms by the nuts *b*. *c* are transverse bolts passing through the body of the axle and the straps B, but these may be dispensed with, if clips or axle-bands are used, which will bind the whole together.

As the best qualities of timber suitable for wooden axles are scarce and expensive, the employment of this tension-strap enables poorer qualities of timber to be used, and gives the required resistance to flexure under a load, which is sustained by the strap through its depth. The lateral flexure of the strap is prevented by the sides of the groove in which it is inserted.

The threaded ends may be dispensed with, and some other fastening for holding the skein may be substituted.

I disclaim entirely the invention of a truss-rod under the axle, with its ends passing through the skeins. I also disclaim the invention, broadly, of combined wooden and metallic axles; but—

What I do claim as my invention, and desire to secure by Letters Patent, is—

The thin iron strap B, provided with the threaded ends *a a*, and inserted in a groove or saw-cut in the bottom of the axle A, substantially as and for the purpose set forth.

CHRISTOPH HOTZ.

Witnesses:

PETER SHUTTLE, WM. H. LOTZ.