(No Model.)

J. G. BRENNER.

VEHICLE AXLE.

No. 424,169. Patented Mar. 25, 1890.

Fig. 1.

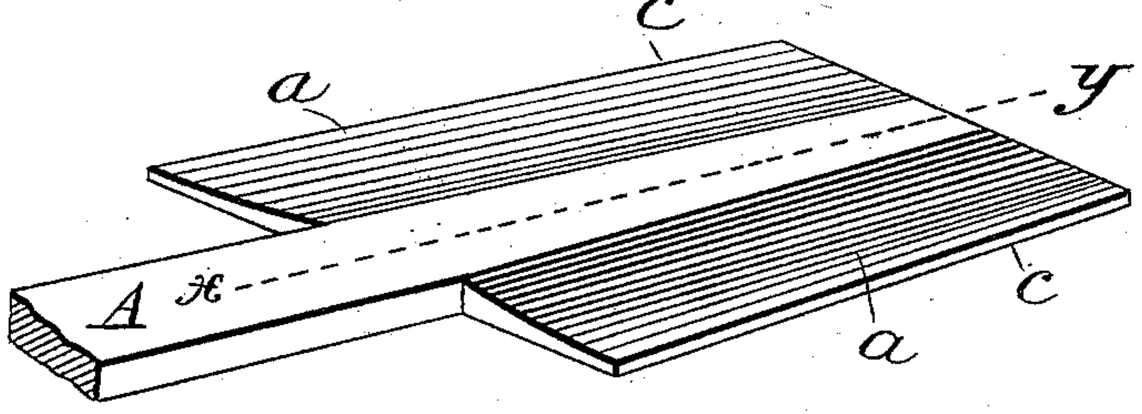


Fig. 2.

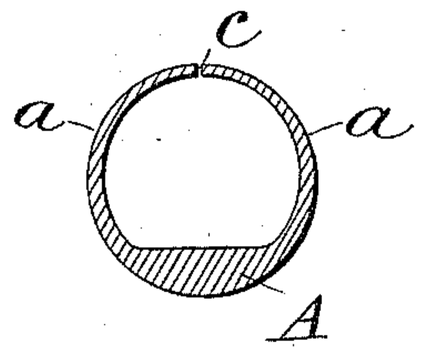


Fig. 3.

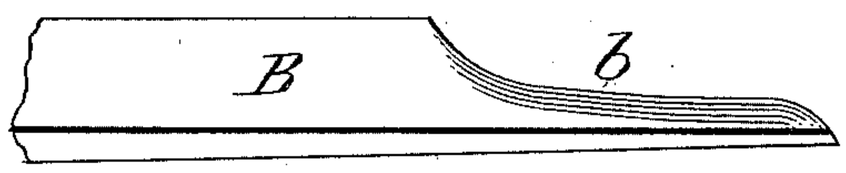
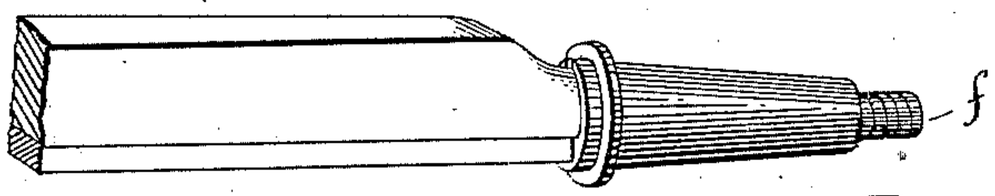


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN G. BRENNER, OF FOND DU LAC, WISCONSIN.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 424,169, dated March 25, 1890.

Application filed November 29, 1889. Serial No. 332,039. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. BRENNER, a citizen of the United States, residing at Fond du Lac, in the county of Fond du Lac and State of Wisconsin, have invented a new and useful Axle-Tree, of which the following is a specification.

My invention relates to improvements in wagon-axle constructed of wood and steel with steel skeins; and the objects of my improvements are the saving of time, work, and material in the manufacture of axle-trees. I obtain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of the steel blank formed as described; Fig. 2, a cross-section of the skein as formed. Fig. 3 is a view of the wood-work of the axle, and Fig. 4 one end of the axle-tree complete.

Similar letters refer to similar parts throughout the several views.

The steel bar A, of the size and weight required for the different gages and styles of axles, respectively, and the hard-wood piece B *b*, corresponding and fitting to the steel formed, as shown, comprise the materials and parts of my invention. That section of the steel bar A which will form the skein of the length of the nave to be used is drawn out on either edge, by a hammer, rolls, or other means, into thin leaves *a a*, leaving the full (or nearly so) thickness and strength of the bar through its center on the line *x y*, Fig. 1, and rounded on the proper gage from this center line each way to the edges. The blanks thus formed may be made upon and by forms and formulas prepared and adapted to the various sizes, gages, and contours of the axles and skeins desired. Taking the blank, Fig. 1, as showing the under side of the axle and skein, I in reverse direction bend round the leaves *a a*, join and weld together their respective edges *c c*, making a round tapering thimble-skein of the inside and outside (cross) shape shown in Fig. 2, leaving the bottom, where the bearing on the nave occurs, of the full thickness and strength of the steel bar A, and the sides and top formed of and by the thinned leaves *a a* with welded edges *c c*. This forms a solid steel axle and skein from the single bar A, as shown in Fig. 4.

The wood-work B *b*, Fig. 3, is cut and formed to supplement the steel-bar axle A and to fill and support the skein *a*. (Shown in Figs. 3 and 4.) The wood-work and steel bar are fitted and bolted together at *d*, making the axle-tree complete.

A shoulder or washer may be provided by slipping over and affixing at the inner end of the skein a collar *e*, of proper size and form, while a plug *f*, Fig. 4, may be inserted into the outer end of the skein and threaded or pierced for linchpin or nut.

In applying the axle A to the stock B, I may employ a number of means. I may hammer or draw the leaves at each end of the bar, place the stock thereon, and bend the leaves around each end of the stock and thus form the skeins; or I may form the stock in pieces and fix them properly in place, or I may bend the steel bar and spring the skeins thereon on the ends of the stock.

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

1. The method of producing axles, which consists in first producing a flat bar of steel or other metal, and then drawing, rolling, or hammering the edges of the opposite ends of the bar into leaves of less thickness than the body of the bar, and finally bending or curving said leaves to form complete skeins.

2. An axle consisting of a flat bar having the opposite ends at their edges formed with leaves of less thickness than the body of said bar, which leaves form skeins for the axle.

JOHN G. BRENNER.

Witnesses:
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J. C. BRENNER.