(No Model.)

L. P. FRIESTEDT.

WAGON AXLE.

No. 444,591. Patented Jan. 13, 1891.

Fig. 1.

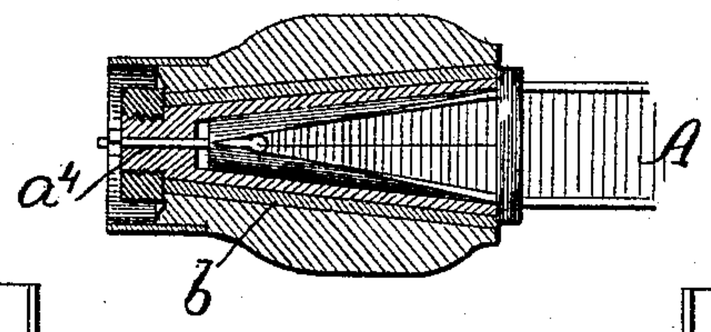


Fig. 2.

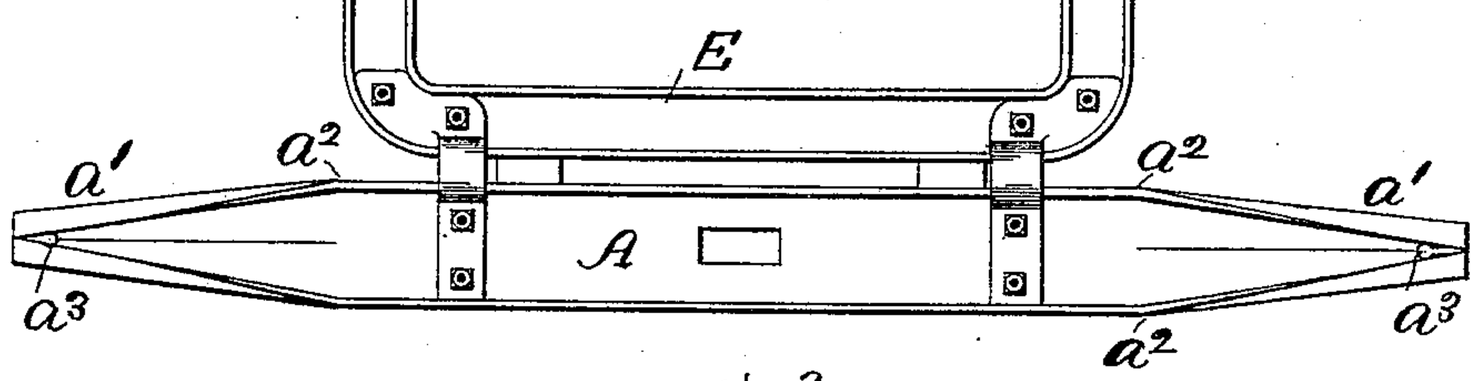


Fig. 3.

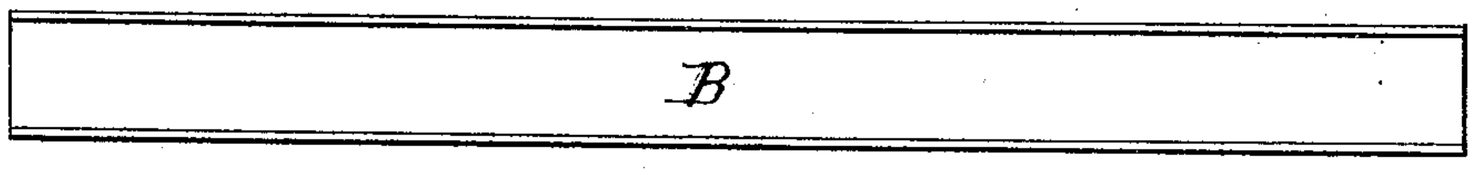


Fig. 4.

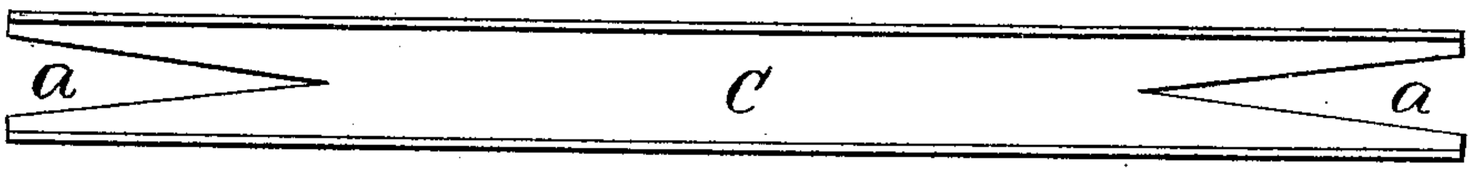


Fig. 5.

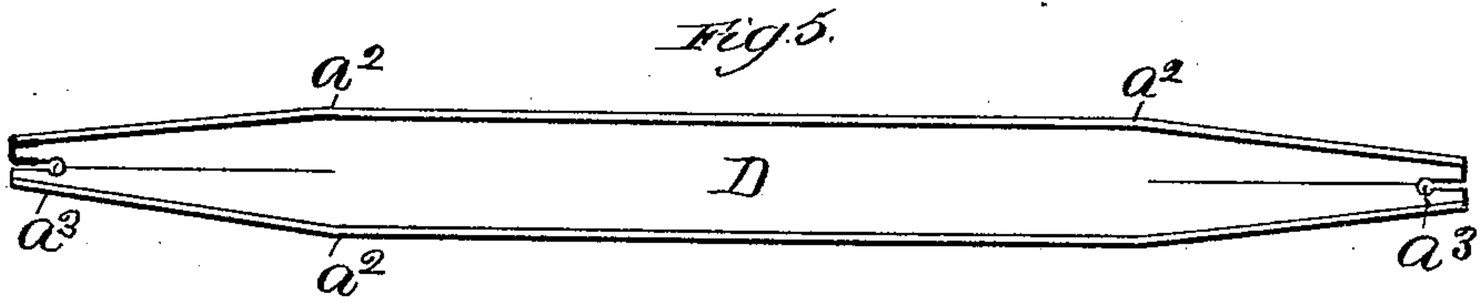
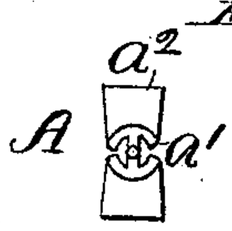


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

LUTHER P. FRIESTEDT, OF CHICAGO, ILLINOIS.

WAGON-AXLE.

SPECIFICATION forming part of Letters Patent No. 444,591, dated January 13, 1891.

Application filed October 22, 1890. Serial No. 368,930. (No model.)

To all whom it may concern:

Be it known that I, LUTHER P. FRIESTEDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Axles, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this invention.

The object of this invention is to provide an axle-bar for wagons or other vehicles which possesses unusual strength and durability, together with lightness of structure, in heavy traffic wagons.

Figure 1 is a longitudinal section of the usual wheel parts in position on the axle-spindle, the axle-bar being broken away. Fig. 2 is a side elevation of a completed axle formed from a metal I-beam, a bolster being shown in position and attached thereto; Fig. 3, a side elevation of a metal I-beam from which the axle is formed. Fig. 4 is a similar view with the ends notched. Fig. 5 shows the notched ends pressed together to form the required tapering spindles or arms; Fig. 6, a transverse section showing the hollow sides filled or rounded out with wood, and Fig. 7 an end elevation of the finished axle shown in Fig. 2.

Referring to the drawings, A represents the completed axle-bar; B, a metal I-beam from which the axle is formed; C, the beam having its respective ends notched, and D shows the notched or bifurcated ends pressed or drawn together.

The first step in the method or process of forming the axle consists in taking an I-beam of the required length and cutting the V-shaped notches *a*, Fig. 4, in the respective ends, then pressing or drawing the bifurcated ends together, Fig. 5, closing the notches, and curling, Fig. 2, the flanged edges to form the rounded tapering spindle ends *a'*. The rounded surface is the greatest at the extreme ends and gradually grows less backwardly until it vanishes at the shoulder a^2. The apertures a^3 in the ends of the spindle part of the axle receive the head of the bolt a^4, the outer end of which is screw-threaded and serves to secure the thimble-skein *b* or other part in place on the spindle, as shown in Fig. 1. The ends of the I-beam may be drawn out to form the conical tapering spindles, instead of notching the ends; but the latter method is preferred.

The hard usage to which heavy traffic wagons are subjected requires an axle of great strength, and especially so on account of the rough pavements and severe strain in turning out of or crossing street-car tracks. The channels or hollow sides of the axle may be rounded out with the wood filling *d*, Fig. 6, for the purpose of adding a finish to the structure.

A metal bolster E is shown attached to the axle; but this combination feature is set forth in another application.

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

1. The method herein described of forming vehicle-axle bars, which consists in notching the web of an I-beam at its ends and then pressing or forcing the said notched portions together to form the required spindle, substantially as set forth.

2. The method hereinbefore described of forming axle-bars, which consists in notching the web of an I-beam at its ends, then pressing or forcing the said notched portions together, and finally rounding or curling the flanged edges to form the required spindles, substantially as set forth.

3. As an article of manufacture, an axle-bar consisting of a metal I-beam of the required length, having V-shaped notches in its web at the ends, whereby said notched parts may be pressed or forced together to form the tapering spindles, substantially as described.

4. The combination, with an axle-bar having apertures in the spindle ends, and thimble-skeins fitting over the said spindles, of bolts having headed ends lodged in said apertures and from thence extending outwardly parallel with and through the spindle ends, and clamping-nuts on said bolts for retaining the thimble-skeins in position, substantially as described.

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Witnesses:

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