H. A. DORN.

CARRIAGE AXLE.

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1,196,436.

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Fig. 1.

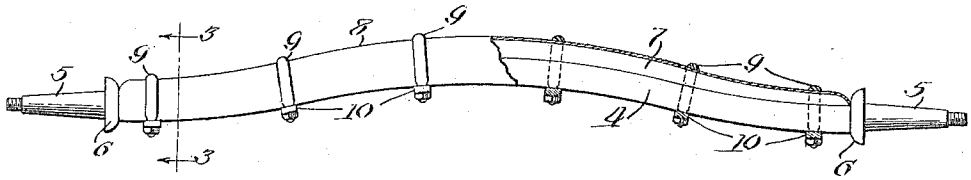


Fig. 3.

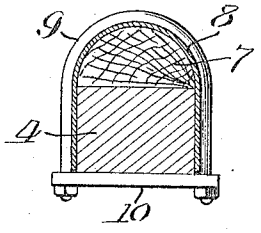
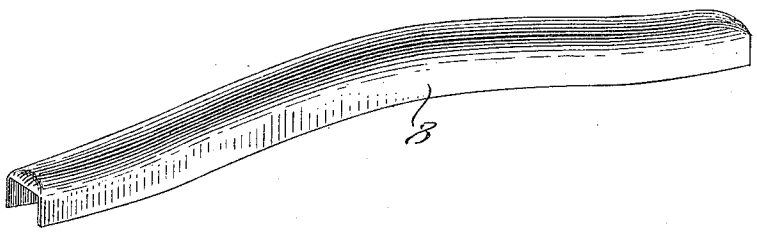


Fig. 2.



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UNITED STATES PATENT OFFICE.

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CARRIAGE-AXLE.

1,196,436. Specification of Letters Patent. Patented Aug. 29, 1916.

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To all whom it may concern:

Be it known that I, HARRY A. DORN, a citizen of the United States, residing at Freeport, in the county of Stevenson and State of Illinois, have invented certain new and useful Improvements in Carriage-Axles, of which the following is a specification.

This invention relates to carriage axles, and has more particular reference to the construction of the axle-tree portion thereof.

In the construction of axles for carriages and light vehicles a heavy axle is not required, and with the provision of a light axle it is desirous to shape the same either as an arch or drop axle and to proportion the same to obtain a design pleasing to the eye and in harmony with the carriage structure. To obtain this object it has been the practice to mount on the top of the axle-tree of a metallic axle, a wood cap or filling strip to increase the thickness of the axle and to give better proportions thereto. It is necessary that the cap be fixedly attached to the axle-tree, and it is a common practice and desire to enamel or otherwise paint or finish the axle in such manner that it will not appear that the axle is built up of two sections. To do this the top of the axle-tree must be ground, the wood cap fitted thereto, and then glued fixed therewith. After the glue has dried a series of operations must be performed to finish the joint between the cap and axle-tree and to prepare the wood cap for final painting and finishing. This requires operations such as sanding, lead priming, lead putty-glazing, and a second sanding, which takes from five to eight days; it being necessary to allow the axle to stand certain lengths of time after certain operations. Metallic clips are then applied to hold the cap from being displaced from the axle-tree, and the axle is then ready to be painted and finished. It is evident that such construction of an axle requires much labor and expense; and invariably, sooner or later, a crack will appear at the joint of the cap and axle-tree; moreover, it is difficult to obtain an even finish in the painting because of the different qualities of the wood and metal which together form the axle-tree. Furthermore, if the axle is sprung, which frequently occurs by reason of accidents or collisions, it is necessary to remove the wood cap from the axle-tree in order that the axle may be heated and its damaged portion brought back to position and tempered. Evidently, in removing the cap the finish of the axle is spoiled, and, as is often the case, the cap is damaged by detaching it.

One of the primary objects of my invention is to provide an axle of the above described character which will embody the desirable requisites in design and appearance, but which will avoid the objectionable features relating to both manufacture and usage as above described and which are found in the ordinary carriage axles.

I also aim to provide a carriage axle of improved construction, whereby the axle may be manufactured easily and at a low cost.

Another object of my invention is to provide a metallic carriage axle of such construction that the weight and size of the axle proper may be less than that of the ordinarily constructed axle used for the same purpose, without detracting from the strength of the axle.

With these considerations in view I provide an axle, the axle-tree of which may be arched or dropped, or shaped to any preferred design, and position upon the top of the axle-tree a cap or filler strip preferably of wood. The cap need not be glued to the axle-tree, and the cap and axle-tree are not finished by working or painting, as is done in the above described practice. The finish is obtained and the cap is held in connection with the axle-tree by a hood, preferably formed of sheet metal bent U-shaped, the hood being mounted on the axle so as to cover the cap and the sides of the axle-tree. Clips are used to embrace the hood and hold the same fixed in connection with the axle-tree. By this means the hood, the painting of which is a simple matter, may be quickly and easily mounted on the cap and axle-tree, giving the appearance of a full one-piece axle. It is manifest that the hood may be readily detached without marring its finish, by loosening the clip fastening means. The U-shaped hood also lends rigidity and strength to the axle and permits a larger wood cap and a lighter weight axle-tree to be used.

On the accompanying drawings I have illustrated a practical embodiment of my invention; wherein—

Figure 1 shows an arch axle embodying my invention, a portion of the hood being broken away. Fig. 2 is a perspective view of the hood; and Fig. 3 is a transverse sec-

tional view taken on the line 3—3 of Fig. 1.

Referring to the drawings, the axle shown is of a common arch type used with carriages and light vehicles, and comprises the axle-tree which is rectangular in cross section and is designated by the reference character 4, and the spindles 5 upon which the wheels rotate. Suitable collars 6 are mounted on the spindles at the inner ends thereof.

A cap or filling strip designated by the reference character 7 and being preferably formed of wood, is shaped to conform to and mounted on the top of the axle-tree 4, extending the entire length thereof. The said cap may be of suitable thickness and design to give desirable proportions to the axle-tree, the cap in the present instance being shown thickest at its middle portion and tapering toward its ends and having its upper face curved.

A hood 8, preferably of sheet metal construction is formed U-shaped cross sectionally and is shaped longitudinally to conform to the desired shape of the axle-tree, which in the present case is that of an arch. The hood is mounted on the axle-tree with its closed and curved top resting upon the curved top of the cap, and with its side members opposite the sides of the axle-tree 4. The hood extends throughout the length of the axle-tree, and the ends of the hood are closed or tapered downwardly to inclose the ends of the cap 7. The hood is held fixed in connection with the axle-tree by fastening-means, preferably in the form of a plurality of U-shaped clips 9 which embrace the hood, the ends of the arms of the clips being threaded and extended below the bottom of the axle-tree to receive clip-plates 10 and being provided with nuts for drawing the clips and hood tightly upon the axle-tree.

It is believed that from the foregoing a clear understanding of my invention may be had, and it is manifest that by constructing a carriage axle according to the above disclosure, the objects of my invention as hereinbefore stated may be accomplished.

It is obvious that in the construction of axles for wagons wherein the axle and wood cap or strip are considerably heavier and of larger proportions than are the same members in carriage axles, the same construction may be followed as was above described relative to carriage axles. In such case the filler strip could be of comparatively inexpensive wood and the hood fastening means might be made of as heavy stock as necessary.

I claim:

The combination of a metallic axle-tree of substantially uniform cross-sectional dimension throughout its length and provided at its ends with spindles, a cap or filler strip shaped to conform to and positioned on the top of the axle-tree to give proportion and design to the axle, a hood of sheet material shaped to fit over and cover the top and sides of the filler strip and axle-tree and finished on its exterior surface to present a smooth, unbroken and integral appearance to the axle structure, and means for securing the hood to the axle tree, the axle-tree because of its cross-sectional dimension serving to carry the burden of the load and the filler strip and hood serving to effect desirous proportions in design and finish and enable low cost of production.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."