May 27, 1930. D. W. VOORHEES, JR 1,760,613

AXLE ASSEMBLY

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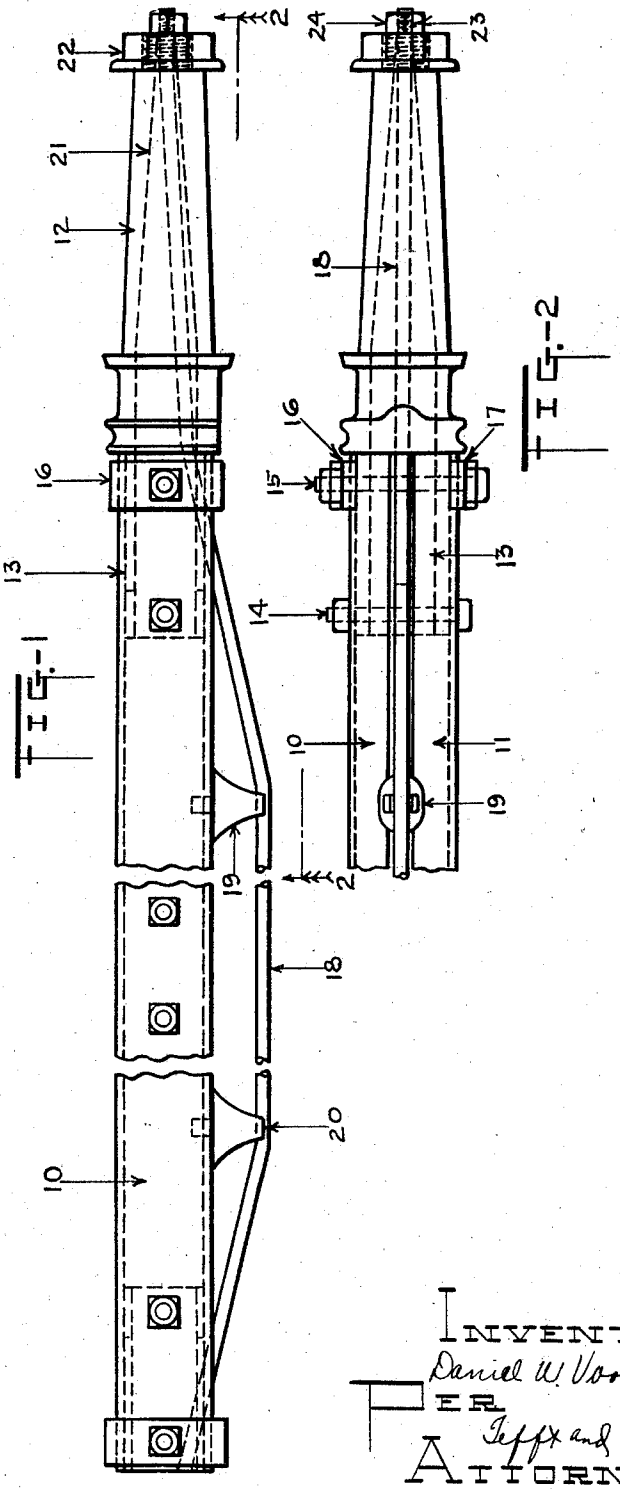


FIG. 1

FIG. 2

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UNITED STATES PATENT OFFICE

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AXLE ASSEMBLY

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This invention relates to axles and more particularly to a combined axle structure including an arrangement of parts that increases greatly the strength thereof.

One of the objects of the invention is the provision of a split axle member and means for attaching the skein thereto, as well as the strengthening of the combined axle parts by the use of a truss rod.

Another object lies in the provision of a split axle and mechanism for securely attaching the skeins thereto and the manner of tying the skeins and axle together by means of a rod member.

Other objects will appear in the following specification taken in connection with the annexed drawings, in which—

Fig. 1 is an elevational view of my combined axle structure and strengthening means; and

Fig. 2 is a plan view taken on the line 2—2 of Fig. 1.

Before referring to the drawings, it might be stated that skein members have previously been secured by various means to axle portions, such arrangements, however, resulting in the loosening of the cast skein with respect to the steel axle, due to the extremely hard usage to which the axle is subjected. Such old means for securing the skein to the axle do not result in a unit structure which absolutely prevents lateral or other movement of the skein with respect to the axle, nor do they provide any means for taking up the play that results from continuous hard usage.

In the present instance, the inventor has devised a combined axle structure which results in a substantially unitary axle structure securely tied together by means of a specially formed truss rod, and further an adjustment means permitting further tightening of the skein with respect to the axle upon their becoming loosened due to the hard usage to which such axles are subjected.

Referring to the drawings, there is shown a split axle comprising two steel channel bars 10 and 11. These channel members are arranged in horizontal parallel relation, but are spaced apart a slight distance. The channels of the members are turned inwardly so that there is produced in effect a long rectangular member with slots in the top and bottom. At either end of the channel members are skein members 12. For simplicity only one of these is shown, it being understood that the skein at the other end is exactly similar. The skeins 12 are preferably formed of cast iron.

The inner end of the skein is formed as a stub end 13. This stub end is formed so as to fit between the channel members and to lie within the channels. This stub end also serves to space the channel members apart. The skein is held in place by bolts 14 and 15 passing through the channel members and the stub end 13. Additional clamps 16 and 17 are disposed between the heads and nuts of the bolts 15 and lie against the outer surfaces of the channel members.

This particular manner of associating the skeins with the split steel axle in itself forms a secure attachment of the skeins to the axle. However, in order to further strengthen the skeins and to prevent displacement in any direction, applicant provides a truss rod 18 depended throughout its intermediate portion by means of the plural members 19 and 20 secured to the axle and extending below it. The ends of the truss rod project slightly upwardly between the split portions of the steel axle and through a slot in the bottom side of the stub portion and thereafter laterally within the hollow interior of the cast skeins 12, the ends of the truss rods projecting beyond the skein, as may be readily seen in the drawings.

The skeins have an opening 21 through their center for allowing the truss rod 18 to pass therethrough, and are threaded on the outer reduced end to receive nut 22 provided to keep the wheel in place on same. The truss rod is threaded on its outer end as at 23 to receive nut 24, the adjustment of same obviously resulting in the tightening of rod 18 with respect to the skeins, and therefore a general tying together of the cast skeins and the split steel axle, as well as preventing any loosening of the skeins.

It may be seen from the above that in the first place such tying together of the various

elements of the axle structure acts to prevent any loosening of the various elements and therefore obviates, to a large extent, the possibility of breakage. Further, the particular manner of assembly of the truss rod with respect to the steel axle and the cast skeins permits not only a tying together of these two elements, but also due to the adjustable feature, the taking up of any play that may arise in usage of the axle.

In view of the above description of the arrangement of parts and the simplicity thereof, no further discussion of the operation thereof or method of assembly is thought necessary.

What I claim is:—

An axle comprising a pair of parallel spaced oppositely disposed channel members having their channel portions turned inwardly, skeins at either end of the axle having stub ends fitting between said channel members, means for securing said stub ends in position between said channel members, said skeins serving to hold said channel members in spaced relation, a truss rod extending at its ends through said skeins, means on the ends of said rod bearing against said skeins, said rod passing in its central portion between said channel members to a point below said axle, and means for spacing the central portion of said truss rod from said axle.

In testimony whereof I have hereunto affixed my signature.

DANIEL. W. VOORHEES, JR.