No. 836,131. PATENTED NOV. 20, 1906.

W. W. McGREW.

AXLE.

APPLICATION FILED OCT. 12, 1905.

Fig. 1.

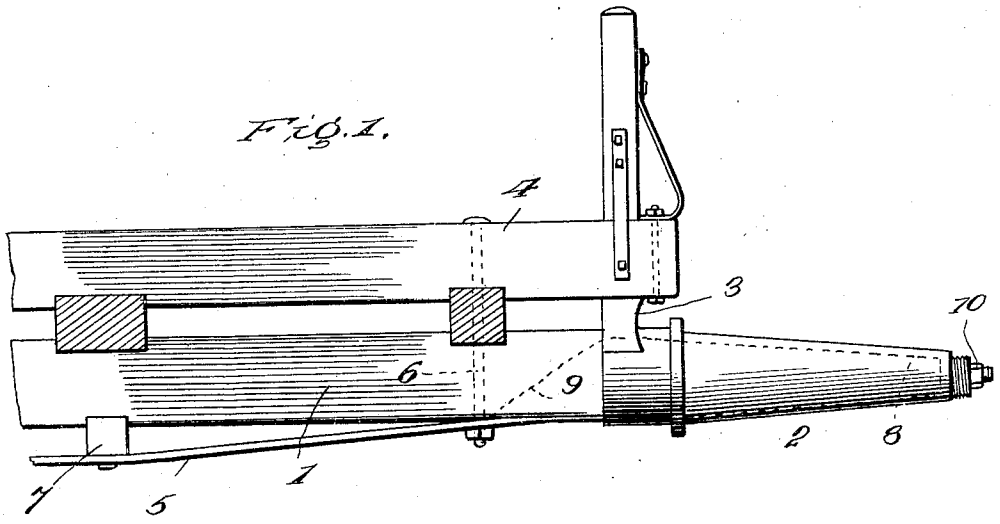



Fig. 2.

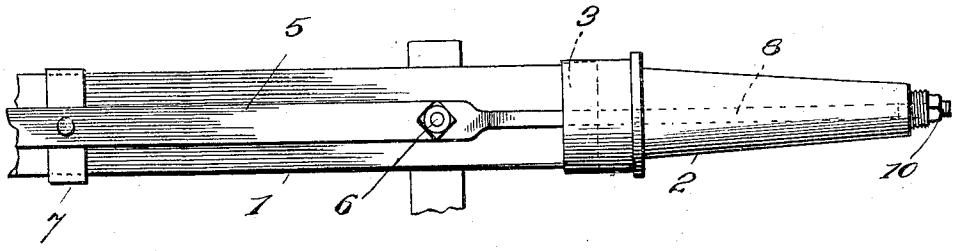
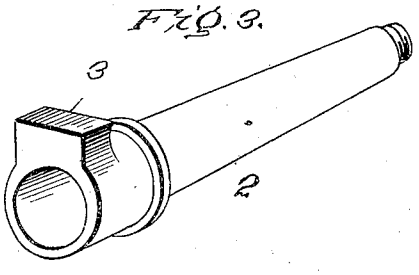



Fig. 3.




Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

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## AXLE.

No. 836,131. Specification of Letters Patent. Patented Nov. 20, 1906.

Application filed October 12, 1905. Serial No. 282,504.

*To all whom it may concern:*

Be it known that I, WILLIAM W. McGREW, a citizen of the United States, residing at Phoenix, in the county of Burleigh and State of North Dakota, have invented certain new and useful Improvements in Axles, of which the following is a specification.

This invention relates to an improved wagon-axle which is peculiarly designed and constructed so that the various parts mutually reinforce each other and tend to prevent the spindle from being bent upwardly. To this end the axle-skeins are provided with integral blocks and are also in direct engagement with reinforcing-plates which are embedded in the spindles. The lower portions of the reinforcing-plates are connected by a tie-rod, which is spaced from the axle and gives the axle a trussed construction.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the accompanying drawings, in which—

Figure 1 is a front view of a portion of an axle constructed in accordance with the present invention. Fig. 2 is a bottom plan view of the same. Fig. 3 is a detail perspective view of one of the axle-skeins.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The numeral 1 designates the axletree, which is of the usual construction and which is provided at its ends with the customary spindles. These spindles are formed with vertical and longitudinal slots which extend inwardly from the ends thereof and terminate in downwardly-inclined shoulders. Reinforcing-plates 8, which may be formed of metal or other suitable material, fit within these longitudinal slots and have their outer ends reduced and threaded at 10 for the reception of nuts, while their inner ends are inclined downwardly at 9, so as to fit against the before-mentioned shoulders at the inner ends of the slots. The axle-skeins 2 fit accurately over the spindles in the usual manner and are provided at their inner ends with integral projections 3, which serve as bolster-blocks. It will be observed that these projections 3 bear directly against and serve as supports for the bolster 4 and in this manner tend to prevent the spindles from being bent upwardly. These axle-skeins 2 are also closely engaged by the reinforcing-plates 8, which form vertical webs and coöperate with the bolster-blocks 3 in overcoming any tendency of the spindle to bend upwardly. The lower portions of the plates 8 are connected to a tie-rod 5, which extends along the lower side of the axletree 1 and is held spaced therefrom by means of the blocks 7, one of which is preferably placed near each end of the tie-rod. The extremities of the tie-rod 5 are secured to the axletree 1 by means of bolts 6, which also pass through the bolster and hound and serve to hold these members tightly in position.

An important feature of the invention resides in the fact that the inclined ends 9 of the plates 8 bear against the inclined shoulders at the inner ends of the slots in the spindles, and thus tend to prevent any bending of the latter. By giving the shoulders an inclination a broad bearing-surface is provided, which distributes the pressure over a large area and tends to prevent the crushing of the wood. It will thus be apparent that the axle is so constructed that the tie-rod, reinforcing-plates, and bolster-blocks mutually coöperate to reinforce the spindles and prevent any upward bending thereof.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of an axletree having a spindle at each end thereof, said spindles being formed with longitudinal slots which extend inwardly from the ends thereof, axle-skeins fitting over the spindles, reinforcing-plates located in the before-mentioned slots in the spindles, the inner ends of the plates forming shoulders which bear against the inner ends of the slots to prevent the spindles from being bent upwardly, and a tie-rod secured to the lower side of the axle and having its ends connected to the before-mentioned plates.

2. The combination of an axletree having a spindle at each end thereof, said spindles being formed with longitudinal slots which extend inwardly from the ends thereof, axle-skeins fitting over the spindles, plates fitting within the before-mentioned longitudinal slots and engaging with the axle-skeins, the inner ends of the plates being inclined downwardly to form shoulders which engage with the inner inclined ends of the slots to prevent the spindle from being bent upwardly, and a tie-rod secured to the lower side of the axle-

tree and having its ends connected to the plates.

3. The combination of an axletree having a spindle at each end thereof, said spindles being formed with longitudinal slots which extend inwardly from the ends thereof, axle-skeins fitting over the spindles, plates fitting within the before-mentioned longitudinal slots and engaging with the axle-skeins, the inner ends of said plates forming shoulders which engage with the inner ends of the slots to prevent the spindles from being bent upwardly, a tie-rod located on the lower side of the axletree and having its ends connected to the plates, and means for holding the intermediate portion of the tie-rod in a spaced position with relation to the axletree.

4. The combination of an axletree having a spindle at each end thereof, said spindles being formed with longitudinal slots which extend inwardly from the ends thereof, axle-skeins fitting over the spindles, plates fitting within the before-mentioned longitudinal slots and engaging with the axle-skeins, the inner ends of the plates being inclined downwardly to form shoulders which engage with the correspondingly-inclined ends of the longitudinal slots to prevent the spindle from being bent upwardly, a tie-rod extending along the lower side of the axletree, a bolster, and fastening members passing through the bolster, axletree, and tie-rod to hold the members in position.

5. The combination of an axletree having a spindle at each end thereof, said spindle being formed with longitudinal slots which extend inwardly from the ends thereof, axle-skeins fitting over the spindles, plates fitting within the before-mentioned longitudinal slots and engaging with the axle-skeins, the inner ends of the plates being inclined downwardly to form shoulders which engage with the correspondingly-inclined ends of the longitudinal slots to prevent the spindle from being bent upwardly, a tie-rod extending along the lower side of the axletree, a bolster-block made integral with the axle-skeins and coöperating with the bolster to prevent any bending of the spindle, bolts passing through the bolster, axletree and tie-rod to hold the members together, and blocks interposed between the middle portion of the tie-rod and the axletree to hold the tie-rod in a spaced position with relation to the axletree.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM W. McGREW. [L. S.]

Witnesses:

GEORGE L. GUNDER,

MILT COX.