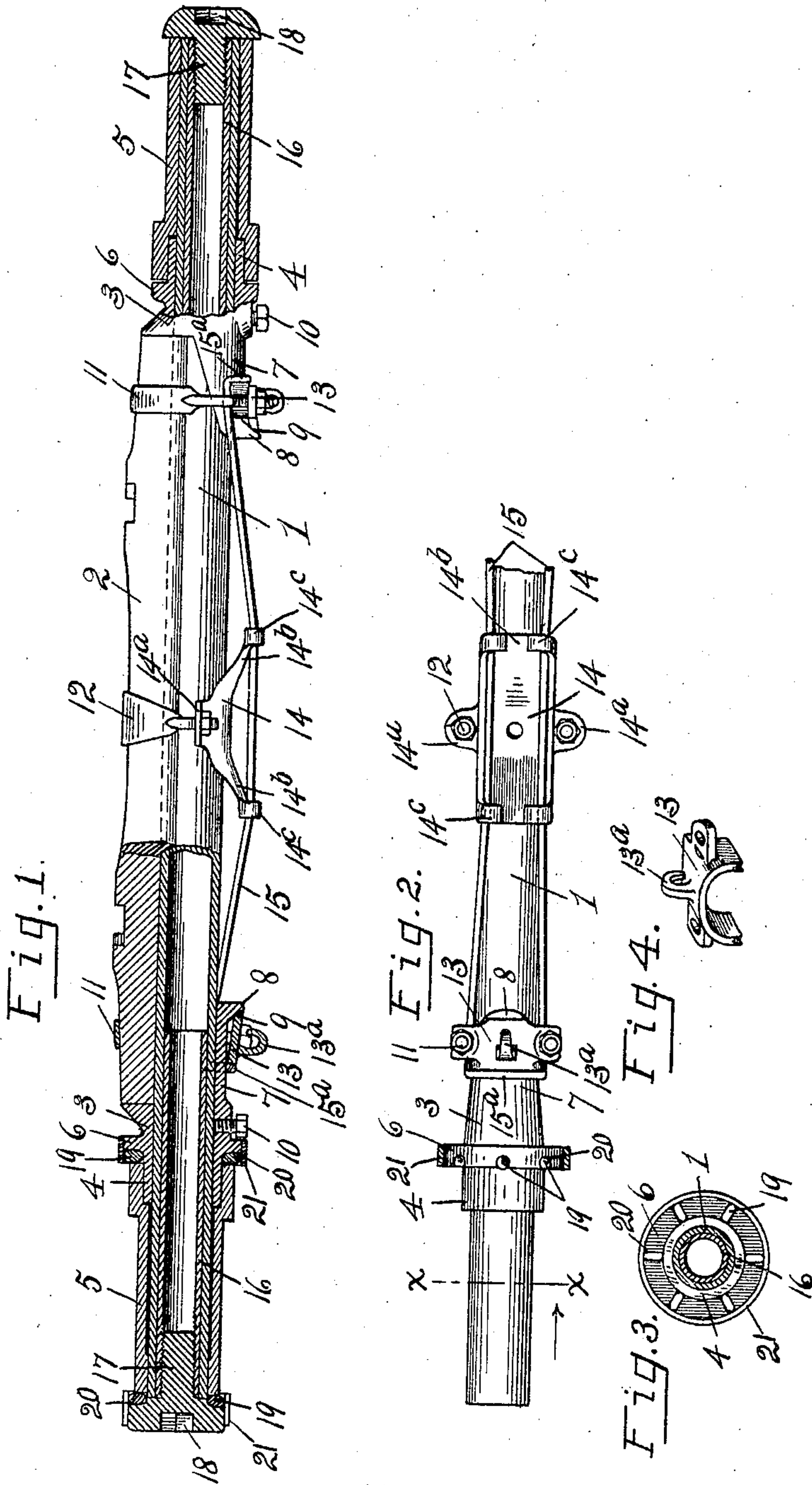


No. 844,029.

PATENTED FEB. 12, 1907.

J. A. LEASE.  
AXLETREE.

APPLICATION FILED MAY 14, 1906.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JESSE A. LEASE, OF TOLEDO, OHIO.

## AXLETREE.

No. 844,029.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed May 14, 1906. Serial No. 316,857.

*To all whom it may concern:*

Be it known that I, JESSE A. LEASE, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Axletrees; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to wagon construction, and particularly to axletrees therefor; and it has for its primary object to improve upon and strengthen the construction of hollow pipe axletrees by the provision of a simple reinforcing means at the points of greatest strain thereon.

A further object of my invention is the provision of an improved form of truss for the axletree which has connection with and is tightened by a tightening of the stay-chain-hook clip.

Further objects of my invention, as well as the arrangement and construction of the parts thereof, will be apparent by reference to the following description and accompanying drawings, in which—

Figure 1 is a side elevation of my improved axletree with the end portions thereof shown in central longitudinal section. Fig. 2 is a bottom view of a portion thereof. Fig. 3 is a cross-section taken on the dotted line *xx* in Fig. 2, and Fig. 4 is a perspective view of the lower member of the stay-chain-hook clip.

Referring to the drawings, 1 designates the axletree proper, which consists of a length of metal tubing of suitable strength and size, as shown. The usual axle-bar 2 is mounted on the top of the tubing 1 and has its ends abutting against the skeins or thimbles 3, which are mounted over the ends of the axle in proper position for their outer bearing-surfaces 4 to receive the bearing-thrust of the inner end portions of the hub-boxes 5. These skeins or thimbles are formed intermediate their ends with annular ledges or shoulders 6, which abut against the inner ends of the hub-boxes 5, and each has its lower portion formed with an inward extension 7, which hugs the under side of the axletree 1 and terminates in an outwardly-projecting lug or spur 8, having its inner face tapered, as at 9,

for the purpose hereinafter described. The skeins or thimbles 3 may be shrunk on the axletree 1 or secured thereto by set-screws 10 or in any other suitable manner.

The axle-bar 2 is secured to the axle 1 by the usual end clips 11 and center clip 12, the former of which connect with the lower clamping bars or members 13, which carry the stay-chain hooks 13<sup>a</sup> and engage the under side of the extensions 7 of the skeins or thimbles 3 in flush position with the tapered surfaces 9 thereof, while the latter connects with the center truss-block 14. This truss-block is shaped to fit closely against the under side of the axle 1 and is formed centrally with the perforated ears 14<sup>a</sup>, with which the terminals of the clip 12 connect, as shown, and has its ends terminating in downwardly and outwardly extending arms 14<sup>b</sup>. These arms are each provided at their ends with the two laterally-disposed inwardly-bent fingers 14<sup>c</sup>, which form hooks for engaging the two truss-rods 15 and preventing a relative spreading thereof at their center.

The two truss-rods 15 each have their corresponding ends extending on opposite sides of the extensions 7 of the skeins or thimbles 3 and are connected together at the outer side of the associated clamping member 13 by the integral bowed portions 15<sup>a</sup> of said rods, thus uniting the two rods together at their ends. The clamps 13, which are interposed between the tapered faces of the lugs or spurs 8 and the bowed portions 15<sup>a</sup> of the truss-rods, are intended to act as tightening means for such rods by reason of said clamps being forced laterally when the nuts on the clips 11 are tightened, the outward movement being occasioned by the contact of the inner edge of the clamp with the taper of the lugs or spurs 8, as shown in Fig. 1. The clamps 13 have their body portions shaped to conform to the bowed ends of the truss-rods, as shown in Fig. 4, so that a direct pull will be communicated to the rods at their points of connection with the bowed portions 15<sup>a</sup> thereof. In positioning the truss-rods their centers are first compressed together to enable them to be engaged with the hooks 14<sup>c</sup> on the truss-block 14, the bowed ends thereof then placed over the extensions 7 of the skeins or thimbles 3, and the clips 11 and their clamps 13 then secured together and tightened, whereby to tighten the truss-rods and lock their ends to the axletree.

Inserted in each end of the tubing 1, form



ing the axletree, is a tubular reinforcing-lining 16, which has its outer end flush with the end of the tubing 1 and its inner end extending sufficiently far therein to pass the point  
5 of strain on the spindle, as shown in Fig. 1. These linings are secured within the tubing 1 either by shrinking the same thereon or in any other suitable manner. The outer ends of the linings 16 are threaded internally to  
10 receive the threaded plugs 17, which are headed or flanged at their outer ends to adapt them to act as the usual wheel-retaining burs. A socket 18 is provided in the head of each plug for the reception of a  
15 tightening key or wrench. One advantage incident to the internal threading of the axle ends is to obviate the use of washers, as it is thereby possible to cut off an amount of stock from the ends of the axle necessary to  
20 compensate for the longitudinal play of the hub-boxes thereon.

A further feature of my invention is the provision, in combination with the ledges 6 of the skeins or thimbles 3 and the heads of  
25 the plugs 17, of elongated or elliptical anti-friction-balls 19, which are positioned to receive the end thrusts of the hub-boxes 5 when the axletree is disposed on an incline. These balls are mounted in pockets 20, drilled  
30 radially in the peripheries of the ledges 6 of the skeins 3 and the heads of the plugs 17, and have their inner sides partially exposed to permit of a slight projecting of the bearing-surfaces of the balls. Bands 21 are shrunk  
35 upon the ledges 6 and the heads of the plugs 17 to retain the balls within their pockets. By making the balls elliptical in shape a broader bearing-surface is provided for contact with the ends of the hub-boxes.

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

1. The combination with a hollow axletree, of tubular reinforcing-linings secured in  
45 its ends and extending inwardly beyond the point of strain of the axletree and internally

threaded at their outer ends, and headed plugs threaded to said linings, substantially as described.

2. The combination with an axletree, of a 50 center truss-block secured thereto and having its ends projecting outwardly and downwardly and each formed with a pair of hooked fingers, double truss-rods locking with said fingers, and means for tightening 55 said rods at their ends.

3. The combination with an axletree, of skeins mounted thereon and having tapered-faced lugs formed on the under sides thereof, a center truss-block, double truss-rods hav- 60 ing their central portions in engagement with the center block and their ends connected and looped over the skeins, and means disposed between said looped ends and the tapered faces of said lugs adapted when 65 drawn toward the axletree to cause a tightening of the truss-rods.

4. The combination with an axletree, of skeins mounted thereon and each provided on its under surface with tapered lugs, stay- 70 chain-hook clips clamped to the axletree with their cross-bars shaped to seat against the skeins and their inner edges coacting with the tapered faces of the lugs, a center truss-block, having hooked fingers, and a 75 pair of truss-rods having their central portions in sliding engagement with the fingers of the center block and their contiguous ends connected and bowed around the under sides of the skeins and in contact with the outer 80 edges of said cross-bar, whereby as the clip is tightened the cross-bar is forced inwardly and laterally to effect a tightening of the truss-rods.

In testimony whereof I have hereunto 85 signed my name to this specification in the presence of two subscribing witnesses.

JESSE A. LEASE.

Witnesses

C. W. OWEN,  
HAZEL B. HIETT.