No. 687,768. Patented Dec. 3, 1901.

W. N. MECKLAN.

AXLE FOR VEHICLES.

(Application filed July 2, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

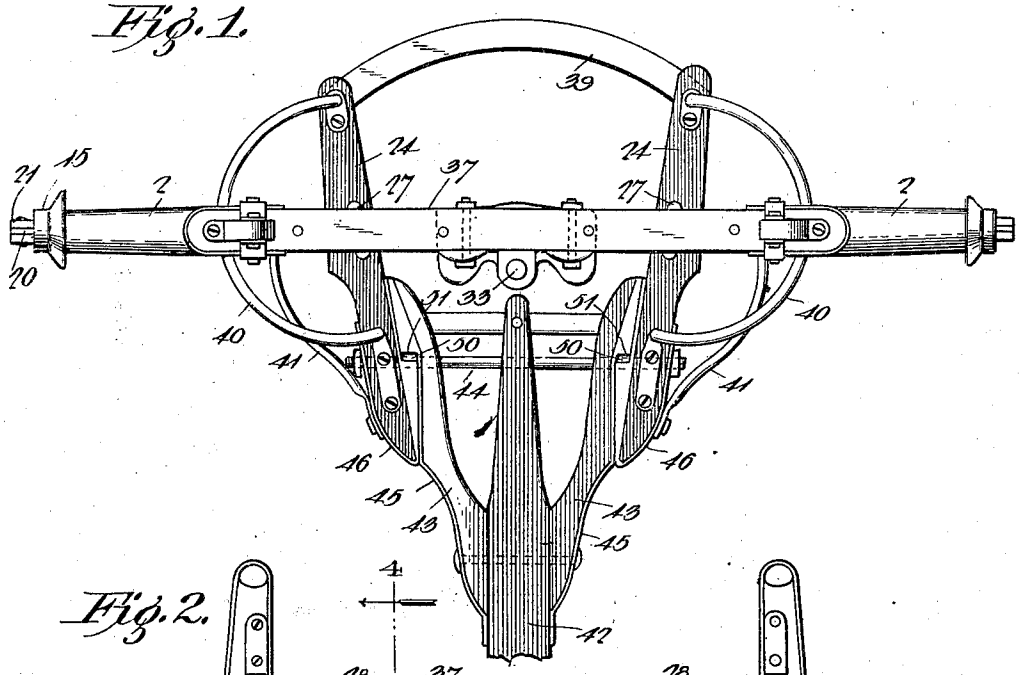


Fig. 2.

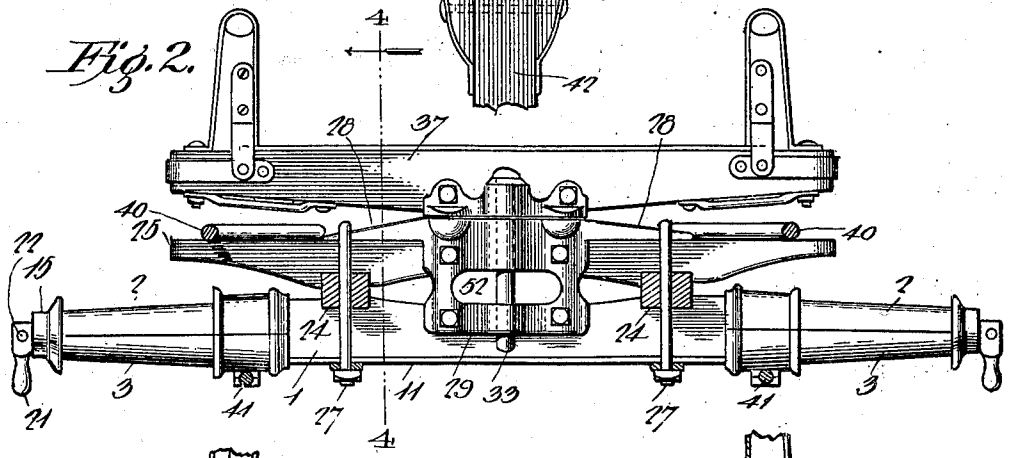
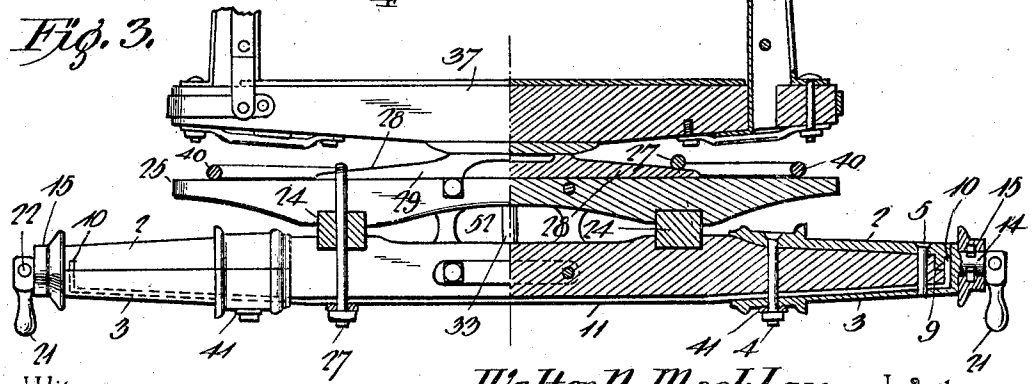


Fig. 3.



Witnesses

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Fig. 5.

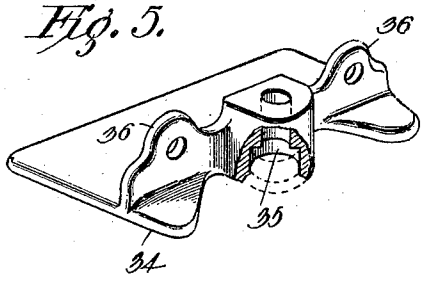


Fig. 4.

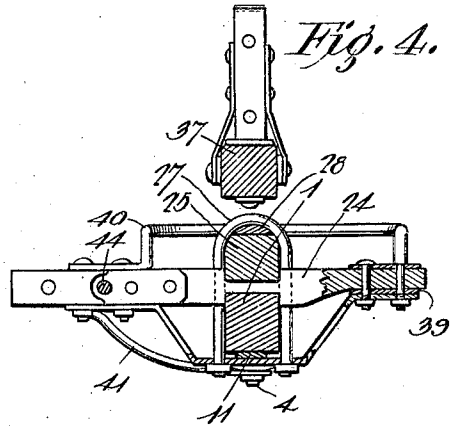
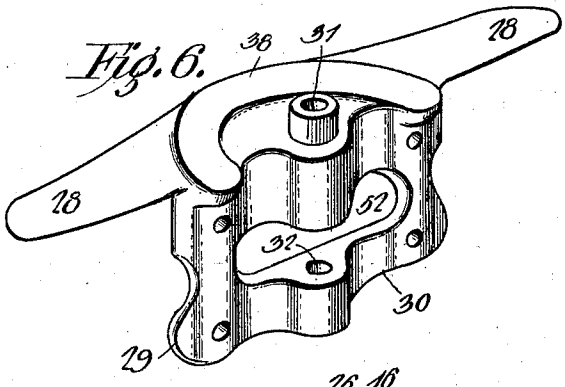


Fig. 6.



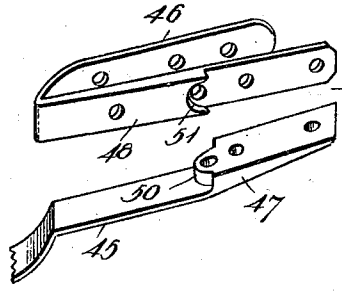


Fig. 7.

Fig. 9.

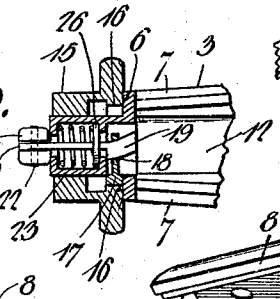
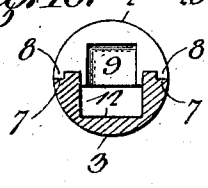


Fig. 10.



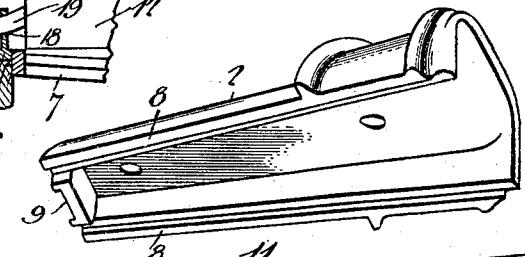




Fig. 8.

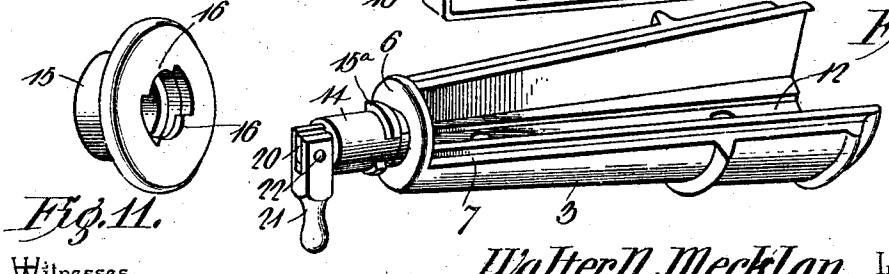


Fig. 11.

Witnesses

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UNITED STATES PATENT OFFICE.

WALTER N. MECKLAN, OF OLEAN, NEW YORK.

AXLE FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 687,768, dated December 3, 1901.

Application filed July 2, 1901. Serial No. 66,881. (No model.)

To all whom it may concern:

Be it known that I, WALTER N. MECKLAN, a citizen of the United States, residing at Olean, in the county of Cattaraugus and State of New York, have invented a new and useful Axle, of which the following is a specification.

The invention relates to improvements in axles for vehicles.

The object of the present invention is to improve the construction of axles for wagons and to provide a simple and comparatively inexpensive one adapted to increase the strength of the front portion of the running-gear.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a portion of a running-gear provided with an axle constructed in accordance with this invention. Fig. 2 is a front elevation, partly in section. Fig. 3 is a transverse sectional view, partly in elevation. Fig. 4 is a vertical sectional view on the line 4 4 of Fig. 2. Figs. 5 and 6 are detail views of the upper and lower members of the fifth-wheel. Fig. 7 is a detail view of the means for relieving the pivot of the tongue of strain, the straps or bars being separated to illustrate the construction more clearly. Fig. 8 is a detail view illustrating the construction of the spindles, the parts being separated. Fig. 9 is a sectional view illustrating the construction of the locking device for engaging the axle-nut. Fig. 10 is a transverse sectional view of the spindle. Fig. 11 is a detail view of the axle-nut.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a front axle provided at its ends with axle-skeins composed of upper and lower sections 2 and 3, connected by inner and outer vertical fastening devices 4 and 5 and adapted to receive wheels of the ordinary construction. The lower section of the axle-skein is provided with a circular outer end 6, and its side edges are provided with grooves 7, which receive correspondingly-grooved edges 8 of the upper section of the skein, whereby the two sections are interlocked and held against lateral displacement. The outer end of the upper section of the axle-skein abuts against the circular end 6 of the lower skein, and it is provided with a recess 9, adapted to receive a lug 10 of a reinforcing or tie bar 11, which extends longitudinally of the front axle, at the lower face of the same, the entire length thereof, as clearly illustrated in Fig. 3 of the accompanying drawings. The longitudinal reinforcing or tie bar, which has its terminals bent upward to form the lugs 10, is received in longitudinal grooves 12 of the bottoms of the lower sections of the axle-skein. When the parts of the skein are assembled, the lug 10 of the reinforcing or tie bar is arranged in the recess 9 and is interposed between the end walls of the sections, whereby the tie-bar is securely interlocked with the axle-skein.

The lower section 3 of the axle-skein is provided with a tubular arm or extension 14, adapted to receive an axle-nut 15 and provided with curved flanges 15^a, spaced apart to permit the passage of corresponding flanges 16 of the axle-nut, and the latter is adapted to be partially rotated to carry the flanges 16 back of the flanges 15^a, whereby the axle-nut will be held against outward movement on the tubular arm or extension. The axle-nut is placed on the tubular arm or extension with the curved flanges 16 in alinement with the spaces between the curved flanges 15^a, and it is moved inward on the tubular arm until the said curved flanges 16 are carried in rear of the flanges 15^a. The nut is then partially rotated for the purpose before set forth, and it is held against accidental rotation by means of a transversely-movable catch 17, operating through a slot of the tubular arm and provided with a slot or opening 18, receiving a reciprocating wedge 19, having a shank 20. The shank 20 extends outward longitudinally of the axle-skein through an opening of the outer end of the tubular arm 14, and it is pivoted in a slot or bifurcation of a lever 21 by means of a pin 22 or other suitable fastening device. The lever is pivoted between its ends, and it is adapted to be swung outward longitudinally of the axle-skein to cause its shorter arm to be interposed between the pivot and the outer end of the said tubular arm. This draws the wedge

outward against the action of a spiral spring 23, which is compressed by such operation. The outward movement of the wedge withdraws the transversely-movable catch from the space between the curved flanges 16 of the axle-nut, and the latter may then be partially rotated to carry the lug 16 in alinement with the open spaces between the flanges 15^a. After the flanges 16 have been carried by the partial rotation of the nut to points opposite the spaces between the flanges 15^a the said nut may be readily detached by moving it outward. The axle-nut is adapted to be readily placed on and removed from the tubular extension of the axle-skein, and a wheel may be removed and replaced without the use of a wrench or other tool.

The front axle has mounted upon it front hounds 24, which are interposed between the front axle and a sand-board or bolster 25. The coiled spring 23 is interposed between the outer end of the tubular extension and a suitable stop 26, which is mounted on the shank of the wedge and which is suitably connected to the same. The wedge consists of an arm arranged at an angle to the shank and adapted to slide the laterally-movable catch when the shank is reciprocated. When the shank is drawn outward by the lever, the catch is moved inward, and when the spring forces the shank inward the catch will be moved outward.

The sand-board or bolster is secured to the front axle by means of clips 27, which are approximately U-shaped, as illustrated in Fig. 4, and which pass through the front hounds. The clips also engage arms 28 of a lower member 29 of the fifth-wheel, and the said lower member is provided with a depending front portion 30, extending downward to the front axle and provided with upper and lower perforations, receiving upper and lower fastening devices, which secure the depending front portion of the lower member of the fifth-wheel to the sand-board or bolster and to the front axle. The lower member of the fifth-wheel is provided with upper and lower eyes 31 and 32, arranged in alinement and located in advance of the front axle and adapted to receive a king-bolt 33, which connects and pivots the upper member 34 of the fifth-wheel to the lower member. The lower member is provided at its upper eye with a tubular extension surrounding the king-bolt and extending into a corresponding recess of an eye 35 of the upper member, which consists of an approximately horizontal plate provided with upwardly-extending flanges 36. The flanges 36 are perforated for the reception of bolts or other suitable fastening devices, which pass through the bolster 37, as clearly illustrated in dotted lines in Fig. 1 of the accompanying drawings. The lower member of the fifth-wheel is provided at its upper face with a curved bearing-surface 38 to receive the upper member, and the arms 28 extend laterally from the top of the lower member, as clearly shown in Fig. 6.

The hounds 24 are connected at their rear ends by a curved bar 39, and they are supported by curved bracing-bars 40, located at opposite sides of the front portion of the running-gear and extending from the front portions of the hounds to the rear ends thereof and supported between their ends by the sand-board or bolster. The front portions of the hounds are also supported by short curved braces 41, extending forwardly from the front axle and secured to the same by the inner vertical fastening devices 4. The front ends of the short curved braces 41 are secured by suitable fastening devices to the side faces of the front portions of the front hounds.

The tongue 42, which is provided with side pieces or blocks 43, is arranged between and pivoted to the front portions of the front hounds by a transverse rod 44, passing through the said parts, as clearly shown in Fig. 1. In order to relieve the transverse rod of strain, the blocks 43 and the front portions of the hounds are provided with metal bars and straps 45 and 46, secured to the adjacent side edges of the parts and provided with opposite enlargements 47 and 48. The metal straps or bars 45 and 46 conform to the configuration of the blocks or pieces and the front portions of the front hounds and are suitably secured to the same, and the straps or bars of the front hounds are extended rearward on the outer edges of the same, as well as on the inner edges. The enlargement 47 of the strap or bar 45 is provided with a perforated rounded knuckle portion 50, and the enlargement 48 of the strap or bar 46 is provided with a curved bearing-recess 51, which receives the rounded knuckle portion of the enlargement 47, and by this construction the straps or bars are interlocked and the pivot-rod is relieved of strain and the blocks or pieces of the tongue and the front portions of the hounds are reinforced.

The transversely-disposed connecting-bar 39 is adapted to support a reach of the ordinary construction, and the said reach extends forward through the opening 52 of the depending portion of the lower member of the fifth-wheel, and it is connected to the front portion of the running-gear by the king-bolt, which connects the bolster 37 with the axle.

It will be seen that the axle possesses great strength, durability, and efficiency, that it is adapted for all kinds of wagons, and that the skeins are securely held on the ends of the axle.

What is claimed is—

1. The combination of an axle, skeins composed of sections provided with adjacent upright outer end walls, and the continuous tie-bar provided with lugs interposed between the said upright end walls, substantially as described.

2. The combination of an axle, skeins composed of upper and lower sections, the lower section having an outer end or wall and the upper section being provided with an outer end or wall having a recess, and the continuous tie-bar extending into the skeins and provided with lugs arranged in the said recesses, substantially as described.

3. The combination of an axle, the skeins composed of upper and lower sections having grooved interlocked edges and provided with adjacent outer ends, means for connecting the sections and the continuous tie-bar provided with lugs interposed between the ends of the sections, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALTER N. MECKLAN.

Witnesses:

CLIFFORD L. BEARE,

HIRAM P. GALLOWAY.