P. D. GRISWOLD.

AXLE FOR WAGONS.

APPLICATION FILED JAN. 25, 1917.

1,286,294.

Patented Dec. 3, 1918.

Fig. 1.

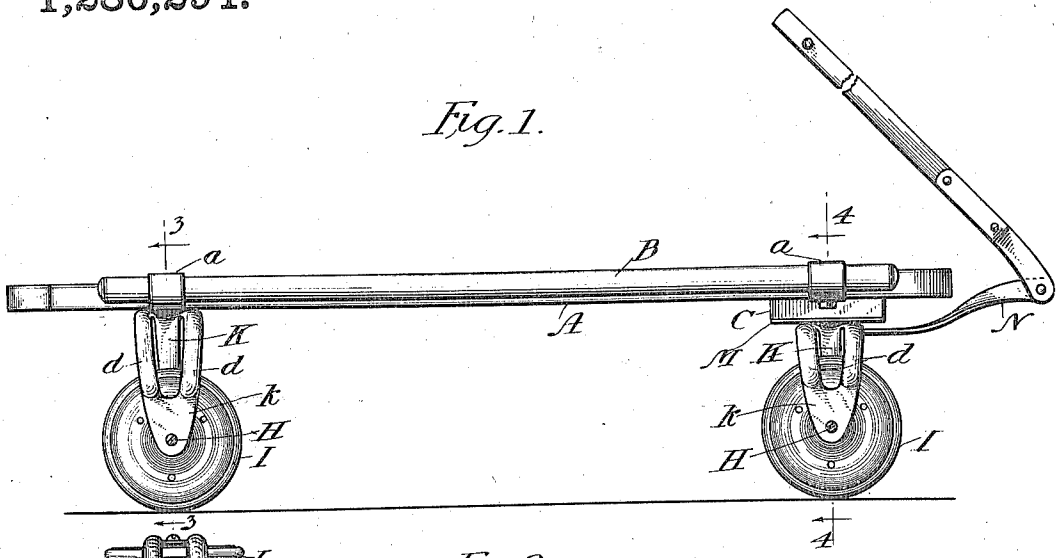


Fig. 2.

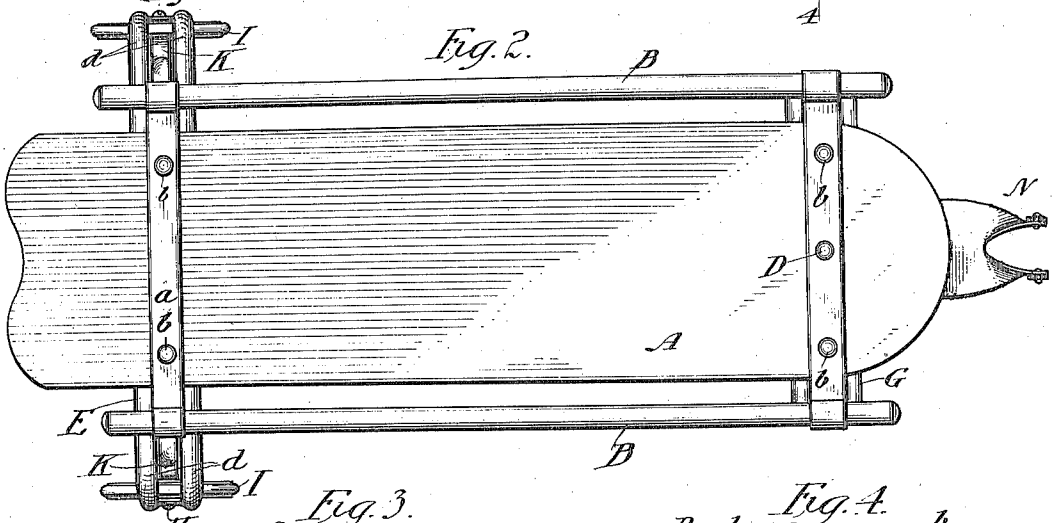


Fig. 3.

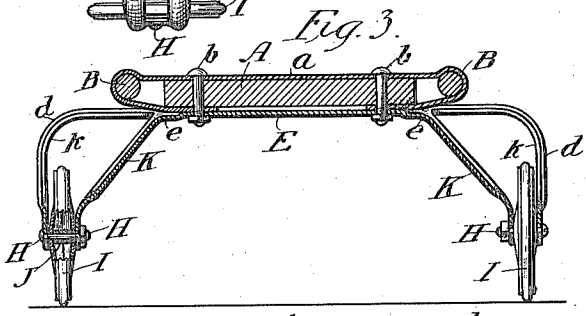


Fig. 4.

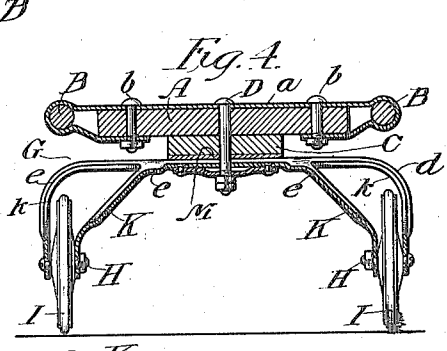
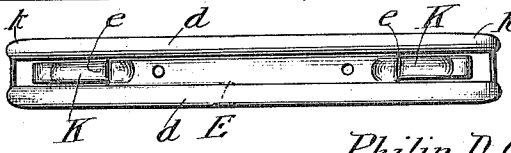


Fig. 5.



Witnesses:

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Atty.

UNITED STATES PATENT OFFICE.

PHILIP D. GRISWOLD, OF CHICAGO, ILLINOIS, ASSIGNOR TO BUFFINGTON WHEEL COMPANY, OF BURLINGTON, IOWA, A CORPORATION OF IOWA.

AXLE FOR WAGONS.

1,286,294. Specification of Letters Patent. Patented Dec. 3, 1918.

Application filed January 25, 1917. Serial No. 144,355.

To all whom it may concern:

Be it known that I, PHILIP D. GRISWOLD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Axles for Wagons, of which the following is a full, clear, and exact description.

My invention relates to axles for vehicles, and particularly to axles for toy wagons for children. As heretofore constructed, the axles of the toy wagon to which my improvements are particularly adapted to be applied, were made of two sheet metal plates,—one being placed longitudinally above and supported by the other and having their ends bent downward and separated and the wheels journaled between them. This arrangement was not only comparatively expensive and increased the weight of the wagon, but had a tendency to shear the bolts securing the superposed body to the two plates, or enlarge the holes through which said bolts passed, and thus loosen the connection and cause rattling and undue wear.

The object of my invention is to lighten, and at the same time greatly reduce the cost of material and labor in the construction of the axles of such wagon without reducing the strength of the same, and by employing a slightly thicker plate and fewer parts to avoid shearing the bolts or enlarging the bolt holes, and thus greatly prolong the life of the wagon. This I accomplish by the means hereinafter fully described, and as particularly pointed out in the claims.

In the drawings:

Figure 1 is a side view of a toy wagon employing axles embodying my invention.

Fig. 2 is a plan view of the same.

Fig. 3 is a transverse vertical section taken on dotted line 3—3, Fig. 1.

Fig. 4 is a transverse vertical section taken on dotted line 4—4, Fig. 1.

Fig. 5 is a plan view of said axle.

Referring to the drawings, A represents the board constituting the body of the wagon to which my improved axles are applied, and B, B, the coterminous hand-rails which are separated from and arranged parallel to the longitudinal edges of said body-board. These hand-rails are retained in this position by means of transverse straps *a*, *a*, that are secured to said board near each end thereof and have their ends extend beyond the sides of the same and bent around said rails, as shown, and then extend under and lap against the underside of the body-board and are secured thereto by bolts *b*, *b*. At the front end of the wagon these bolts *b* only pass through the body-board and the strap both above and below the same, but at the rear end of the wagon said bolts are made slightly longer and are employed to secure the axle E thereto.

Midway between the sides of its front end a suitable wooden block C is suitably secured to the underside of body-board A, and a king-bolt D is passed down through a central opening in the superposed portion of the forward strap *a*, said body-board and block C, and extends a suitable distance below the same to provide the pivot for the front axle G. Axles E and G are similar in construction except that the front axle is made less in length than the rear axle E so that when the wagon is turning the danger of the child's fingers being pinched by the axle when grasping the hand-rails above it is avoided. These axles are each made of a single strip of sheet metal, the portion of which under the body-board is of the same width, and the ends of which are, preferably, tapered and have their extremities rounded. Near each end they have longitudinal arms K, K, stamped out of their webs midway between their side edges, and the outer ends—the ends adjacent the ends of the axles are cut free. The end portions of the axles are bent downward so as to arch over the wheels and arms K, K, are also bent downward until their ends are on the inside of the wheels and opposite and parallel to the ends of the axles.

The wheels I, I, are of sufficient size and diameter to be placed between arms K and the ends *k* of the axle and are journaled upon sleeves J which latter space apart the said arms and ends, and are secured in position by bolts H.

A suitable metal washer M surrounds king-bolt D and is interposed between the front axle G and block C, and a suitably shaped sheet metal tongue N has its rear end riveted or otherwise secured to the underside of the center of length of said front axle, and has a suitable handle pivotally secured to its opposite or forward end.

These axles are made of sheet metal of

a thickness exceeding that used in the manufacture of the two-piece axle hereinbefore referred to, but in order to strengthen it, I have provided its longitudinal margins with beads *d*, *d*, the convexed sides of which face downward and which extend from the outer end of the slot resulting from stamping arms K from its web at one end to the axle to the end of the corresponding slot at the other end of the same. I also strengthen the base or root of arms K by corrugating the portion thereof above their lower extremities which are engaged by the wheels and extend said corrugations *e* a short distance into the web of the axle.

What I claim as new is:—

1. An axle for wagons comprising a metal strip the ends of which are bent downward; said strip near its ends having arms projecting downward therefrom mediate its longitudinal edges, and said arms having their lower extremities terminating opposite and parallel to the ends of the strip between which latter and said extremities wheels are adapted to be journaled.

2. In a wagon, an axle comprising a metal strip the ends of which are bent downward, longitudinal arms stamped out of the web of said strip mediate the side edges thereof which arms are bent downward and terminate opposite the ends of said strip, journaling devices connecting the ends of said strip and arms, and wheels journaled thereon.

3. A wagon comprising an axle consisting of a sheet metal strip having its ends turned downward and having longitudinal marginal corrugations or beads extending from near one end to near the opposite end thereof, longitudinal arms stamped out of the web of said axle between said beads the free end portions of said arms being bent downward and terminating opposite and parallel to the axle ends, journaling devices connecting the ends of the axle and the free ends of said arms, and wheels journaled thereon.

4. A wagon comprising an axle consisting of a sheet metal strip having its ends turned downward and having longitudinal marginal corrugations or beads extending near one end to near the opposite end thereof, longitudinal arms stamped out of the web of said axle between said beads the free end portions of said arms being bent downward and terminating opposite and parellel to the axle ends, and said ends each having a longitudinal corrugation which extends into the web of the axle adjacent the root thereof, journaling devices connecting the ends of the axle and the free ends of said arms, and wheels journaled thereon.

5. A wagon comprising a body-board, hand-rails separated from and parallel to the longitudinal side edges thereof, transverse straps secured upon said board and extending beyond the sides thereof and bent around said hand-rails and then back under the said board, an axle consisting of a sheet metal strip the ends of which are bent downward and have arms stamped out of the web thereof between its longitudinal edges, the free ends of said arms adjacent the ends of the axle being bent downward and terminating opposite and parallel to the axle ends, vertical bolts passing through and uniting said straps, body-board and axle together, journaling devices connecting the ends of the strip and lower ends of said arms, and wheels journaled thereon.

In witness whereof I have hereunto set my hand this 22d day of January, 1916.

PHILIP D. GRISWOLD.

Witnesses:

M. E. GRISWOLD,

FLORENCE MITCHELL.