No. 835,785. PATENTED NOV. 13, 1906.

H. J. FERRIS.

WAGON.

APPLICATION FILED SEPT. 12, 1905.

2 SHEETS—SHEET 1

Fig. 1.

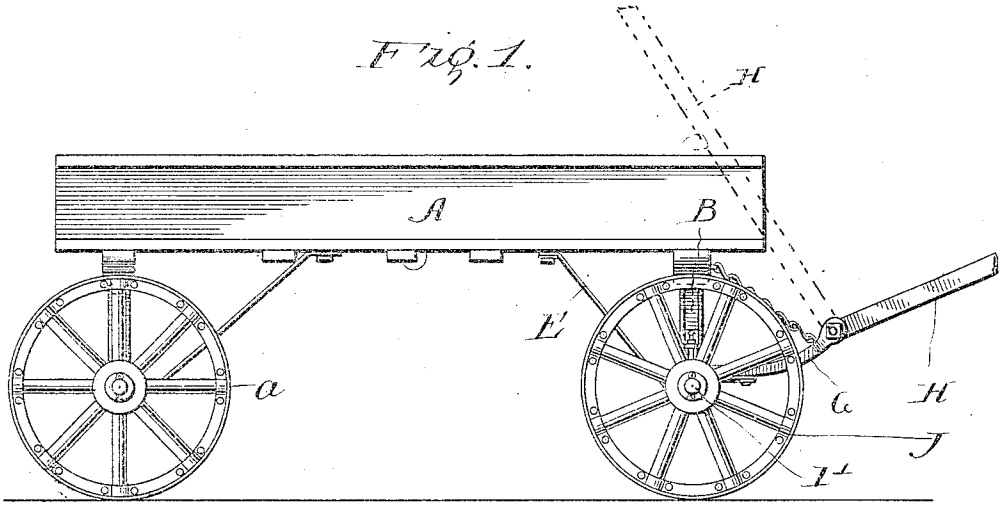
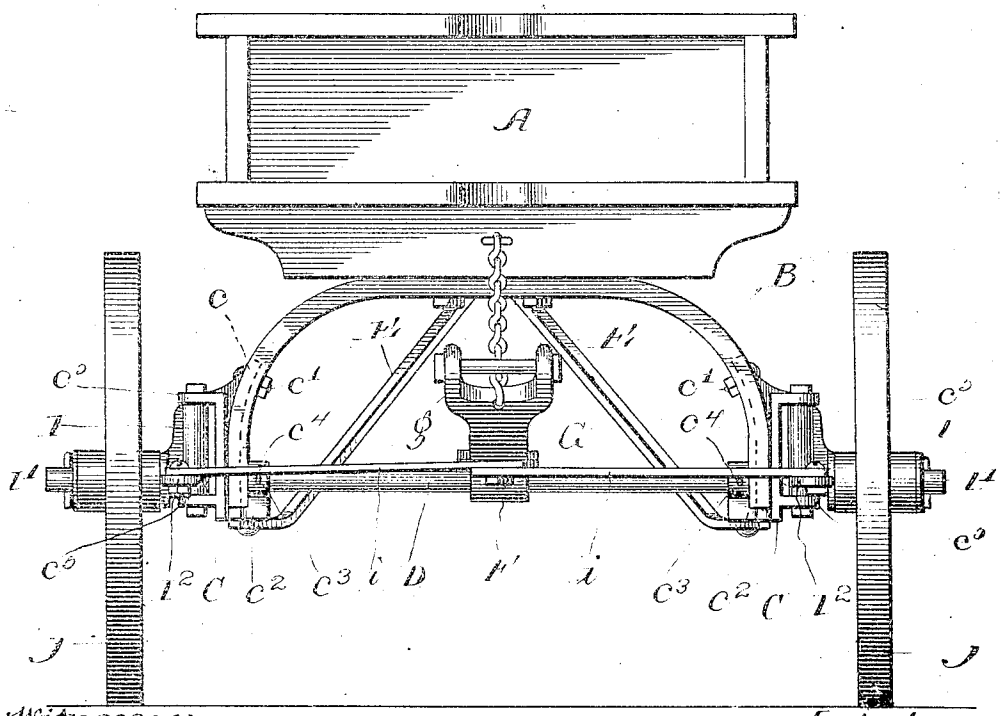


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

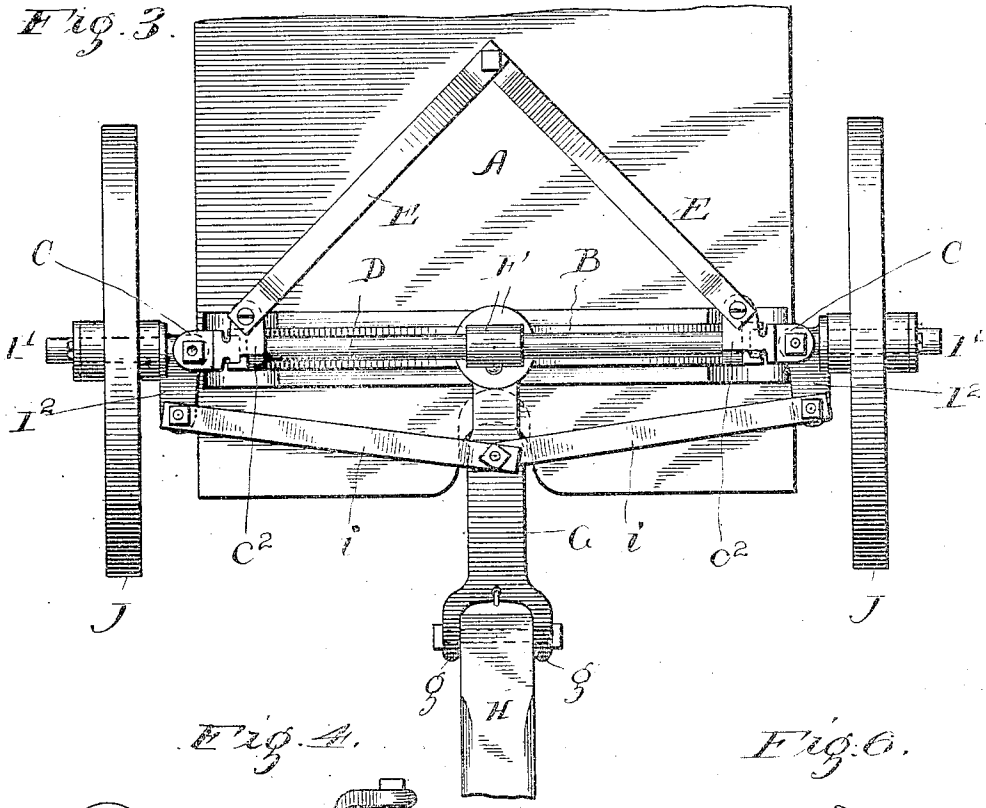


Fig. 4.

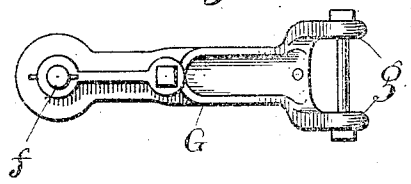


Fig. 6.

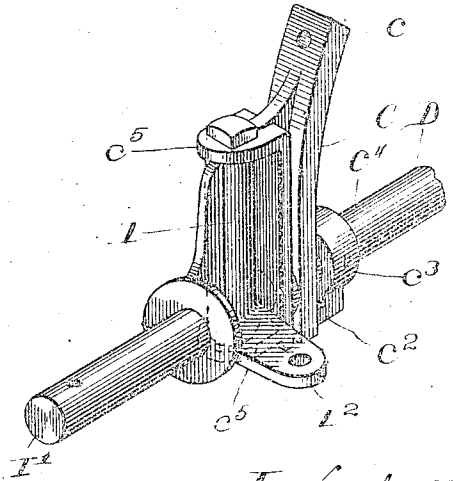
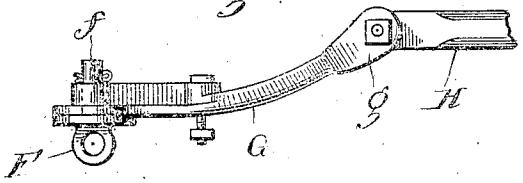


Fig. 5.



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UNITED STATES PATENT OFFICE.

HOWARD J. FERRIS, OF HARVARD, ILLINOIS, ASSIGNOR TO HUNT, HELM, FERRIS & COMPANY, OF HARVARD, ILLINOIS, A CORPORATION OF ILLINOIS.

WAGON.

No. 835,785. Specification of Letters Patent. Patented Nov. 13, 1906.

Application filed September 12, 1905. Serial No. 278,076.

To all whom it may concern:

Be it known that I, HOWARD J. FERRIS, a citizen of the United States of America, residing at Harvard, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Wagons, of which the following is a specification.

My invention relates to improvements in wagons, and is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved wagon. Fig. 2 is a front elevation thereof with the tongue removed. Fig. 3 is a bottom plan of the front axle and steering mechanism. Fig. 4 is a top plan of the single hound of my improved device. Fig. 5 is a detailed side elevation of the same, and Fig. 6 is a detailed perspective view of a steering-knuckle and the adjacent parts.

Referring to the drawings, A is a wagon-body of any desired form, the rear end of which is supported by wheels *a*, arranged in any ordinary manner. At the front of the wagon-body is an arch B, preferably of outwardly-facing channel-iron. At the lower and outer ends of the arch B are knuckle-fittings C, the construction of which is best seen in Fig. 6, from which it will be noted that each of the knuckle-fittings is provided with a curved upright portion *c*, which lies in the curve of the channel-iron and is secured thereto by means of a bolt *c'*. At the lower portion of the knuckle-fitting C is an inwardly-extending portion c^2, having an upwardly-projecting ear c^3, between which and the upright portion lies the channel-iron. By means of this construction the lower portion of the knuckle-fitting is secured to the channel-iron without the necessity of any manual manipulation whatever, the fitting being merely slipped into place and the upper bolt being secured in place. The ears c^3 and the upright portion *c* of the knuckle-fitting are both perforated for the passage of an axle D, which extends across the arch B and is secured at its ends thereto by pins c^4, passing through the axle and the ears c^3. Braces E run from the knuckle-fittings to the center of the wagon-bed some distance behind the point of attachment of the arch B, so that a particularly rigid bracing thereof is secured.

To the center of the axle D is secured a pivot-fitting F, having an upwardly-projecting pin *f*, upon which is swiveled a single hound G, the form and construction of which is clearly illustrated in the drawings. The forward end of the hound G is bifurcated to form ears *g*, between which is pivoted a tongue H, which can be used to draw the wagon in the ordinary way or which can be swung up against the wagon-bed and used to steer the same as a coasting-wagon.

Each of the knuckle-fittings C is provided with two laterally-extending ears c^5, between which are pivoted vertical posts I, each of which is provided with a preferably integral laterally-projecting shaft I' and a forwardly-projecting ear I^2. The ears I^2 are connected by links *i* with the hound G, as illustrated.

J indicates the front wheels of the vehicle, which are journaled upon the laterally-extending shafts I'. It will be obvious that by means of this connection the two wheels of the vehicle can be swung simultaneously in either direction by means of the tongue, so that the vehicle can be steered successfully in either of the ways above suggested.

My device is particularly advantageous in a toy-wagon for a number of reasons. With the ordinary toy wagon heretofore made, the same being ordinarily provided with a king-bolt steering apparatus, the weak point has always been the front axle, which is necessarily made of comparatively light material in order to keep the price of the vehicle within proper range for a toy construction and which is subjected to shocks wholly out of proportion to its strength. It is highly desirable to produce a wagon which can be constructed at a low cost, of comparatively cheap materials, and without an excess of manual labor, which will have a front axle and steering mechanism capable of withstanding extremely hard wear. With the king-bolt construction it is possible to brace the axle to the bed only at the center, for this is the only stationary point, and even such a brace must be swiveled to the axle in some manner. On the other hand, with my construction the ends of the axle can be braced with braces running to the center of the device, so that the axle while still made of comparatively light material is capable of withstanding any ordinary shock without difficulty. The manner in which the knuckle-fittings are secured to the ends of the arch and to the axle is particularly simple, so that the entire

structure can be assembled with a very slight amount of manual labor.

I realize that considerable variation is possible in the details of this construction without departing from the spirit of the invention, and I therefore do not intend to limit myself to the specific form herein shown and described.

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

1. In a toy wagon, the combination with a wagon-body, of a suitable vertical support rigidly secured to the front end thereof, an axle secured to the lower end of said support, knuckle-fittings secured to the support, shafts pivoted in the knuckles, wheels journaled on the shafts, a hound swiveled at the center of the axle, a tongue connected to the hound and means of connection between the tongue and shafts.

2. In a device of the class described, the combination with a suitable arch, of knuckle-fittings having laterally-extending ears and notches at their lower ends to receive the lower ends of the arch, shafts journaled between the laterally-extending ears on the fittings, and mechanism for rotating the shafts in a horizontal plane.

3. The combination with a wagon-body, of an arch extending downwardly therefrom, an axle extending through the lower ends of the arch, knuckle-fittings having vertical portions lying outside of the arches, inwardly-extending portions at the lower ends of the arches, and upwardly-extending perforated ears on the inside of the arches through which the ends of the axles pass, shafts swiveled between the laterally-extending ears of the fitting, wheels journaled on the shafts and mechanism for rotating the shafts in a horizontal plane.

In witness whereof I have signed the above application for Letters Patent, at Harvard, in the county of McHenry and State of Illinois, this 9th day of September, A. D. 1905.

HOWARD J. FERRIS.

Witnesses:
R. G. Eelle,
H. D. Crumb.