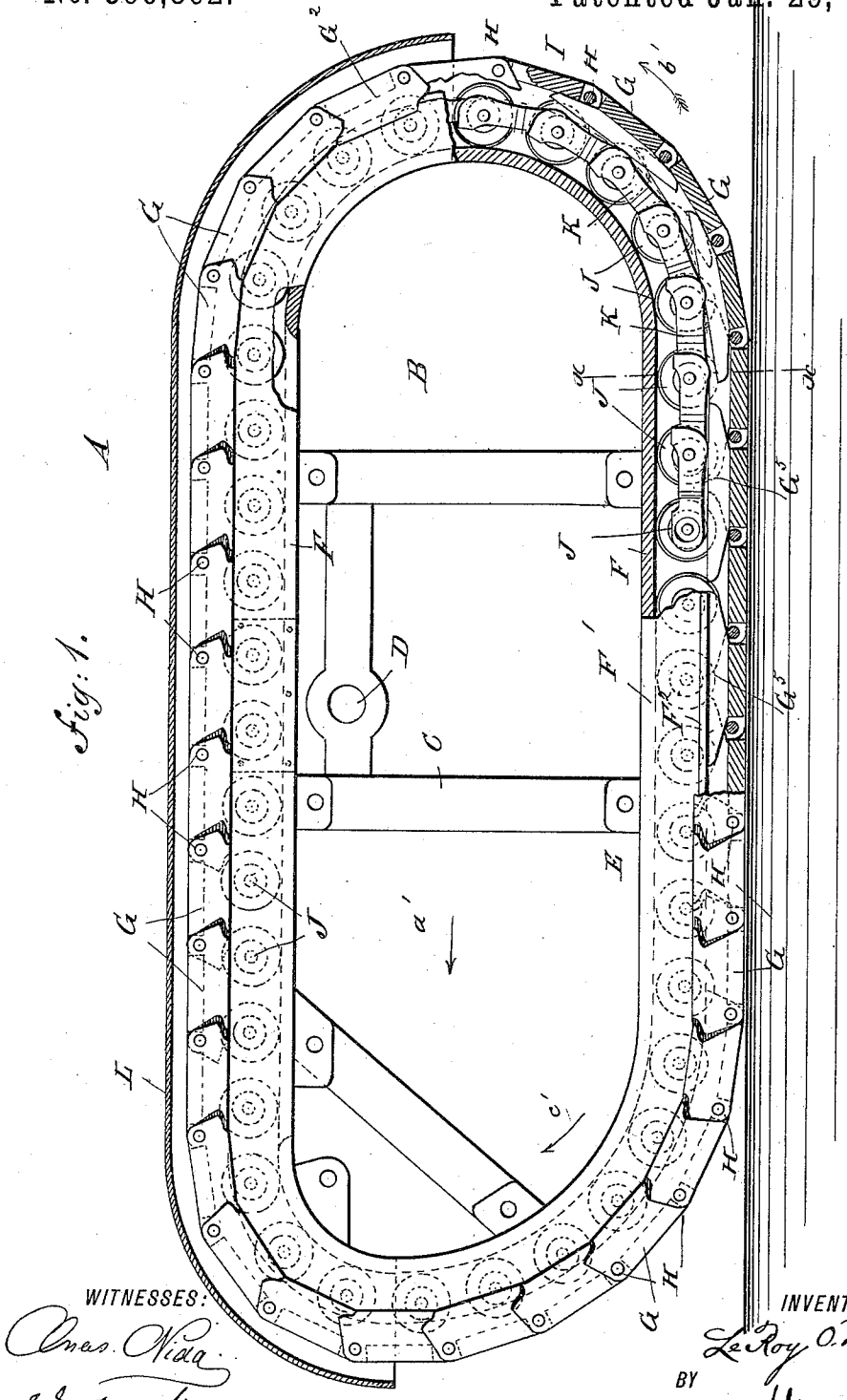
(No Model.) 2 Sheets—Sheet 1.

LE ROY O. DREW.

TRACTION WHEEL.

No. 396,862. Patented Jan. 29, 1889.



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(No Model.) 2 Sheets—Sheet 2.

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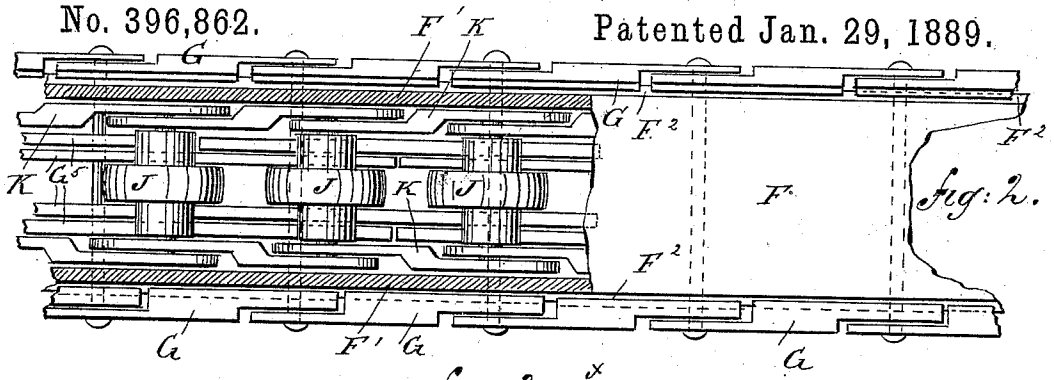
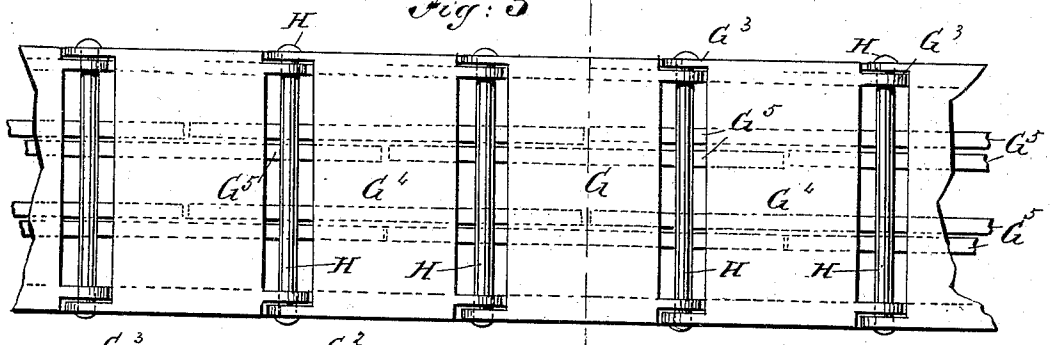


Fig: 2.

Fig: 3



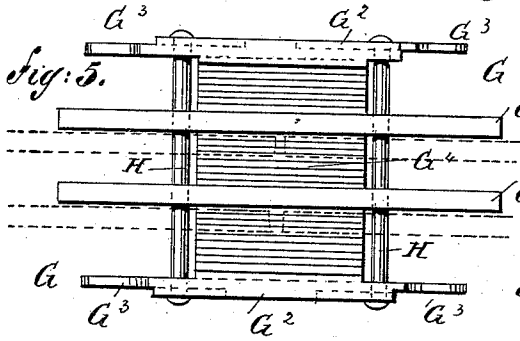


Fig: 5.

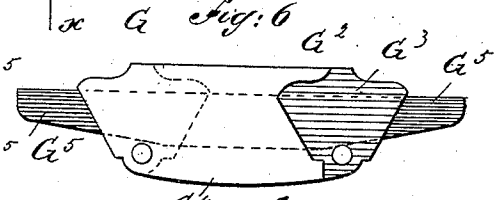


Fig: 6

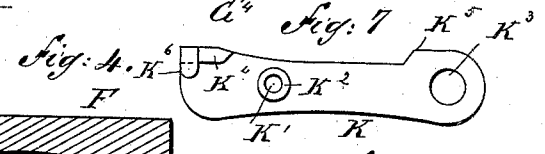


Fig: 4.

Fig: 7

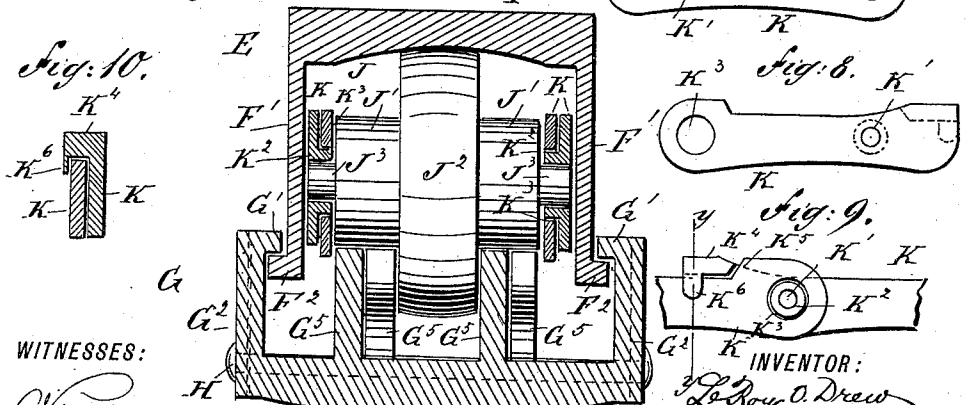


Fig: 10.

Fig: 8.

Fig: 9.

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UNITED STATES PATENT OFFICE.

LE ROY O. DREW, OF CARTHAGE, DAKOTA TERRITORY.

TRACTION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 396,862, dated January 29, 1889.

Application filed September 6, 1888. Serial No. 284,709. (No model.)

To all whom it may concern:

Be it known that I, LE ROY O. DREW, of Carthage, in the county of Miner and Territory of Dakota, have invented a new and Improved Traction-Wheel, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved traction-wheel which is simple and durable in construction and adapted to any vehicle, mowing-machines, reapers, &c.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement with parts in section. Fig. 2 is a plan view of the same with parts in section. Fig. 3 is an inverted plan view of the same. Fig. 4 is an enlarged transverse section of the same on the line $x\ x$ of Figs. 1 and 3. Fig. 5 is a plan view of one of the links forming the endless chain. Fig. 6 is a side elevation of the same. Fig. 7 is a side elevation of one of the roller-links. Fig. 8 is an inner side view of the same. Fig. 9 is a side elevation of the connecting ends of two succeeding roller-links, and Fig. 10 is a transverse section of the same on the line $y\ y$ of Fig. 9.

The improved traction-wheel A is provided with a main frame, B, having an inner bracket, C, provided with an aperture, D, into which fits one end of the axle or transverse beam for connecting two traction-wheels, A, with each other. The main frame B is also provided with a track, E, having an elongated shape, as plainly shown in Fig. 1, and supported by the bracket C. The rear end of the track E is semicircular, and the front end is curved easily from the bottom upward, as fully illustrated in Fig. 1.

The track E is U-shaped, and consists, principally, of the base F and the side parts, F′, extending outwardly from the said base F. At the outer end of each of the side parts, F′, is formed an outwardly-extending flange, F^2, on which rest corresponding flanges, G′, formed on the links G, connected with each other by bolts H to form an endless chain, I, which passes around the track E. Each of the links G (see Figs. 5 and 6) is provided with the side pieces, G^2, carrying the said flanges G′, and on the end of each side piece, G^2, is formed a recess, G^3, into which fits the corresponding recess G^3 of the next following link G. The side pieces, G^2, of each link are connected with each other by a bottom plate, G^4, adapted to rest on the ground when the several links G of the endless chain I are in their lowermost position.

In the middle of the bottom plate, G^4, of each link G are arranged two parallel track-plates, G^5, extending beyond each end of the bottom plate, G^4, so that the said projecting ends of one link project over the bottom plate of the next succeeding link and the track-plates G^5 of the said succeeding link fit alongside of the track-plates G^5 of the link G under consideration. Thus the track-plates G^5 form a continuous track on the endless chain I, and on the said track-plates travel the rollers J, connected with each other by the links K, so as to form an endless chain of rollers and links.

Each of the rollers J is provided with a hub, J′, traveling on the top edges of the parallel plates G^5 of the links G, and between the hubs J′ is formed the enlarged wheel J^2, which fits between the two parallel plates G^5 of the link G and travels on the under side (respectively the top) of the base-plate F of the track E. (See Figs. 1 and 4.) Each of the links K, which connect two succeeding rollers, J, with each other, is provided with an aperture, K′, into which fits a corresponding trunnion formed on each end of the hubs J′. The aperture K′ is surrounded by a hub, K^2, upon which fits the aperture K^3 of the next following link K, so that two succeeding links are jointed with each other in the shape of a hinge. The movement of the hinge of two succeeding links, however, is limited by a stop, K^4, formed on one end of the link K and resting on the top edge of the opposite end of the succeeding link, as plainly shown in Fig. 9. The links thus support each other on top of the track F, which latter may be cut away across the top, as shown in Fig. 1. To prevent the two succeeding links from becoming detached, I provide the stop K^4 with a downwardly-extending flange, K^6, which fits over

the outside of the following link K. The inner end of the stop K^4 rests against a corresponding notch, K^5, of the following link.

The upper part of the track E is covered by a hood, L, surrounding the sides and top of the said track E, as plainly shown in Fig. 1. When the several parts are in position, as illustrated in Fig. 1, and the wheel A is drawn forward in the direction of the arrow a', a traveling motion is imparted to the endless chain I as the bottom plates, G^4, of the several links G rest on the ground. The wheels J^2 of the lower rollers, J, which carry the frame B, travel only one-half as fast as frame B, the wheels J^2 being twice as large as the hubs J′ of the said rollers, which travel upon the outside track, I. The track below rollers, upon which rests the whole load, is always perfectly still upon the ground and forms a smooth straight and solid track for the rollers J to travel upon. Thus that part of chain above frame B travels in the direction of the arrow a' and the part below frame B rests still upon the ground as the rollers travel around frame B. Thus the chain I travels in the direction of the arrow b', while the rollers J travel in the direction of the arrow c' and about twice as fast.

It is understood that the weight of the frame B and its contents rests with the bottom of the frame on about one-third of the rollers J, and the latter, on account of being supported on the parallel plates G^5 of the bottom links G, press the bottom plates in firm contact with the ground. Thus when the machine is drawn forward in the direction of the arrow a' the endless chain I travels in the direction of the arrow b', one link after the other passing down onto the ground on the front, to remain there until the frame has moved forward the distance of the straight bottom part of the frame.

It will be seen that the several links of the endless chain I permit an easy turning around the curved part of the frame B, and in a similar manner the rollers J are guided around the curved parts of the base F by being loosely connected with each other by the links K. The overlapping ends of the parallel plates G^5 form a continuous track.

This traction-wheel A is adapted for all purposes for which common wheels are now employed. The wheel reduces the friction to a great extent and forms a convenient means for drawing vehicles over the ground.

It is understood that my improved traction-wheel operates on the principle of a wheel rolling upon a track, as the rollers are between two tracks.

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

1. In a traction-wheel, the endless chain I, consisting of a series of pivoted links, G, each provided with parallel track-plates G^5, projecting beyond the ends of the bottom thereof, substantially as herein shown and described.

2. In a traction-wheel, the endless chain I, consisting of a series of pivoted links, each formed of the side pieces, G^2, having the recessed ends G^3 and the bottom G^4, provided with the parallel track-plates G^5, projecting beyond the ends of the bottom, substantially as herein shown and described.

3. In a traction-wheel, the combination, with the U-shaped track E, provided with the outwardly-extending flanges F^2, of the endless chain I, composed of a series of pivoted links, G, provided with inwardly-projecting flanges G′, substantially as described.

4. In a traction-wheel, the combination, with the rollers J, of the links K, each provided with apertures K′ for the reception of the trunnions of the rollers, the hub K^2, surrounding the aperture, and the apertures K^3, substantially as described.

5. In a traction-wheel, the combination, with the rollers J, of the links K, each provided with the apertures K′ K^3, the hub K^2, the notch K^5, and the stop K^4, having flange K^6, substantially as herein shown and described.

6. In a traction-wheel, the combination, with an elongated frame forming an inside track and provided with outwardly-extending flanges, of rollers traveling on the said inside track, links for connecting the trunnions of the said rollers to form an endless chain, and a second endless chain provided with flanges fitting on the flanges of the frame and also provided with parallel plates forming an outside track for the said rollers, substantially as shown and described.

7. In a traction-wheel, the combination, with an elongated frame forming an inside track and provided with outwardly-extending flanges, of links having flanges fitting on the flanges of the said track, bolts for connecting the said links with each other to form an endless chain, bottom plates held on each link and adapted to pass onto the ground, parallel plates held on the said links to form a continuous track, rollers mounted to travel on the said parallel plates and also on the said inside track, and a second set of links for connecting the trunnions of the said rollers with each other, substantially as shown and described.

LE ROY O. DREW.

Witnesses:
THEO. G. HOSTER,
EDGAR TATE.