(No Model.) 2 Sheets—Sheet 1.

C. H. LOSER.

VELOCIPEDE.

No. 422,087. Patented Feb. 25, 1890.

Fig. 1.

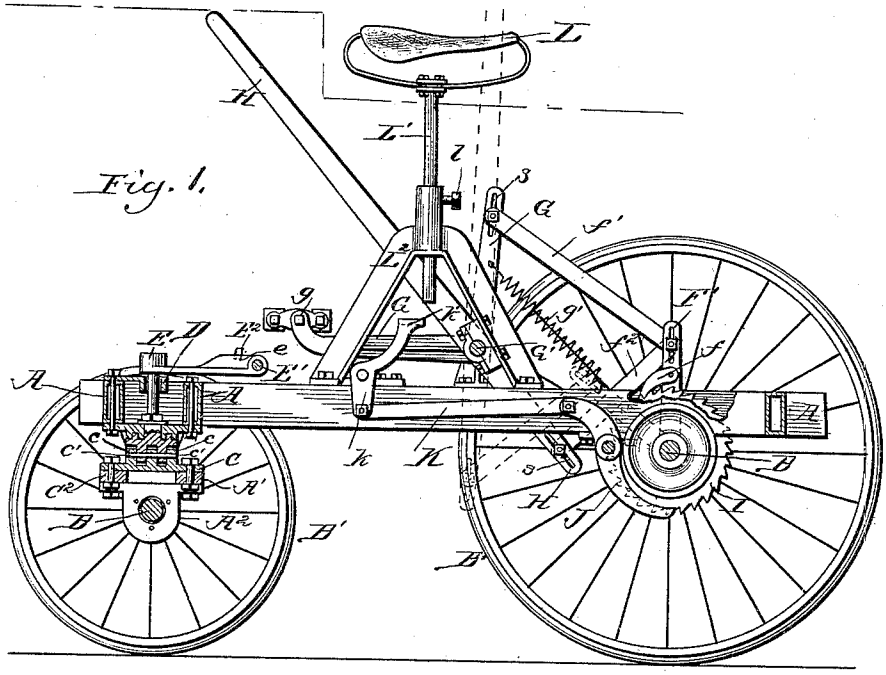
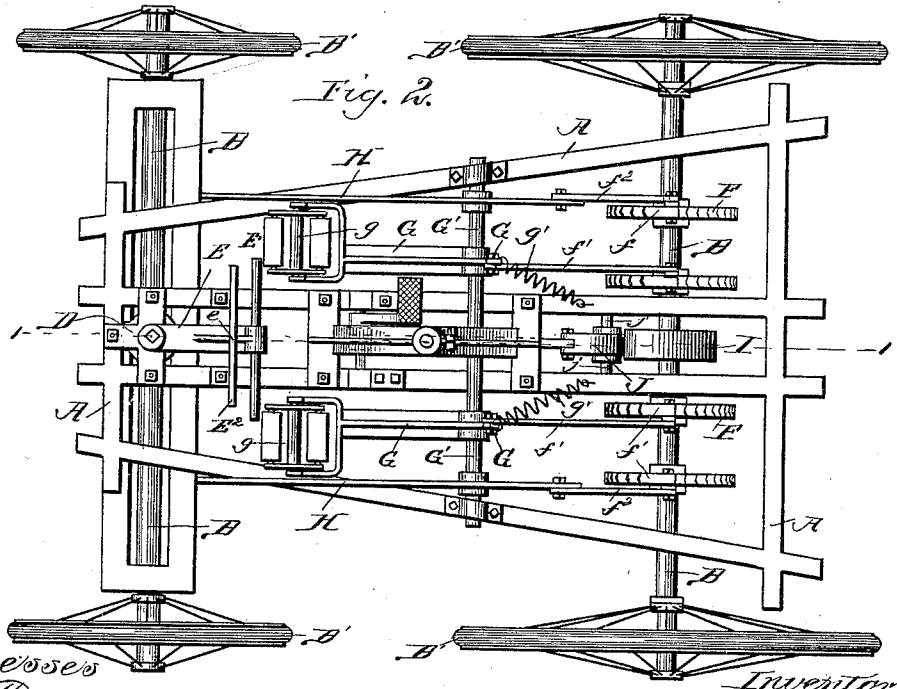


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

C. H. LOSER.

VELOCIPEDE.

No. 422,087. Patented Feb. 25, 1890.

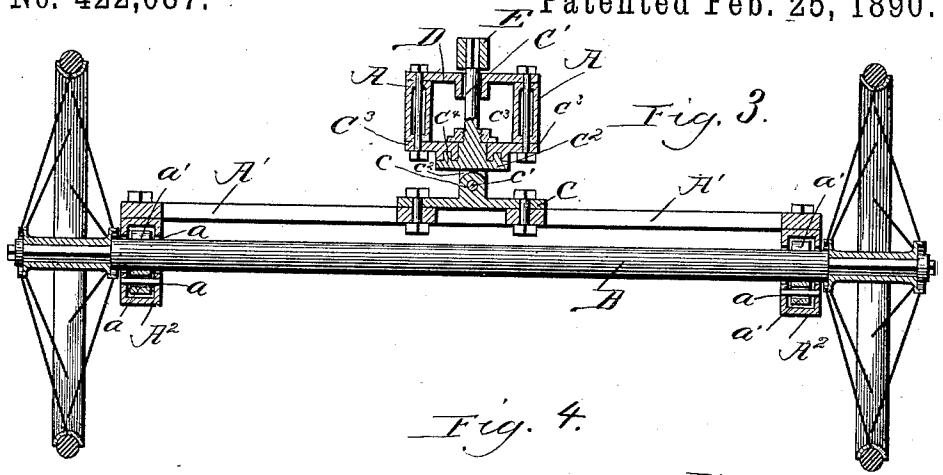
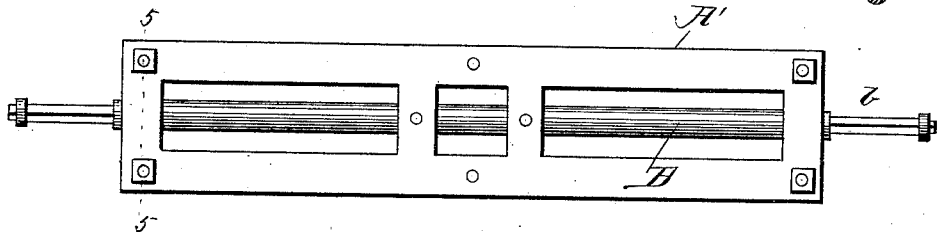


Fig. 3.

Fig. 4.



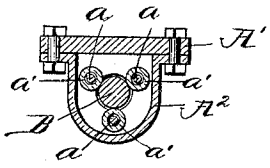


Fig. 5.

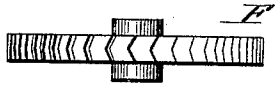


Fig. 6.

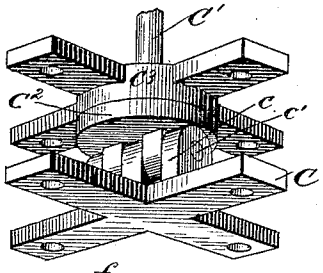


Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE.

CHARLES H. LOSER, OF CHICAGO, ILLINOIS.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 422,087, dated February 25, 1890.

Application filed December 11, 1889. Serial No. 333,334. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LOSER, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Velocipedes, of which the following is a specification.

My invention relates to velocipedes or other vehicles; and the objects of my improvements are, first, to provide a supplemental frame for the front axle in conjunction with a swivel or fifth-wheel connection, whereby the front wheels may be turned laterally for guiding the vehicle, and may rise and fall for adapting the same to inequalities or unevenness of surface in the roadway without torsional strain, and, second, to provide a double-propelling mechanism. I have attained these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of a velocipede containing my invention, taken on the line 1 1 of Fig. 2. Fig. is a plan view of the same. Fig. 3 is a transverse vertical section taken on the line of the front axle. Fig. 4 is a plan view of the front axle and the supplemental frame used in connection therewith. Fig. 5 is a transverse vertical section of the same on the line 5 5 of Fig. 4. Fig. 6 is an edge view of a detached ratchet-wheel. Fig. 7 is a perspective of the swivel-connection detached. Fig. 8 is a side elevation of a modification, showing a wheel with a plain periphery and a friction-eccentric on the lever for operating the wheel instead of a ratchet and pawl.

In the drawings, A designates the main frame, B the axles, and B′ the wheels. The wheels are attached rigidly to the axles, the latter having square ends *b*, which are fitted into square boxing in the hubs of the wheels.

The connection of the main frame with the rear axle is the same as that shown in Figs. 3 and 5 for connecting the supplemental frame A′ with the front axle, and it consists of a downwardly-projecting box A^2, the side plates of which support the ends of pins *a*, on which are placed rollers *a*′. These rollers afford an anti-friction bearing for the axles.

To the supplemental frame I secure a plate C, provided with lugs *c*, having pin-holes *c*′, and the lower end of the swivel-pin C^4 is provided with a plate C^2 integral therewith, and having corresponding lugs c^2 and pin-holes, whereby said plates C and C^2 may be hinged together by a bolt or pin passing through the holes *c*′. Said hinge is placed at right angles to the axle and is adapted to permit the wheels to rise and fall in passing over uneven surfaces without rocking the main frame.

To the upper side of the plate C^2 is fitted a plate C^3, which is bolted to the under side of the main frame and secured to said plate C^2 by a nut c^3, which impinges a projection of the latter plate and secures said two plates together in such manner as to permit the one to turn freely upon the other, the whole constituting what is commonly known as the fifth-wheel of vehicles. I prefer to form an annular tongue or bead c^4 upon the impinging-face of one of said plates to fit a corresponding groove in the other, but they may be made with plain faces.

On the top of the main frame is a plate D, with an opening for affording a bearing for the upper end of the swivel-pin. A guiding rod or bar E is attached to the upper end of swivel-pin, and is provided with a transverse bar E′ for operating the same with the feet. A cross-bar E^2, secured to the main frame, is placed above the guide-bar, and has a notch in the under side at *e* in the center, into which the guide-bar will engage sufficiently to hold the forward axle in parallel relation with the hind axle, and from which it may be disengaged by slight pressure downward upon the transverse bar E′ for guiding or turning the vehicle from a straight course. The rear axle is provided with four ratchets F, which are fixed rigidly thereto. In connection with each wheel there is an arm or lever F′, attached loosely to said axle and provided with a pawl *f*, adapted to engage the ratchet for operating the wheel to propel the vehicle. The pawl-levers of the two inner ratchet-wheels are connected by links *f*′ to bell-crank levers G, pivoted to a shaft G′, and provided with pedals *g* on their forward ends for propelling the vehicle with the feet. Springs *g*′ are provided to return the pedals

to normal position, and the pawl-levers of the two outer ratchet-wheels are connected by links f^2 to hand-levers H, which are pivoted to said shaft G′ for propelling the vehicle with the hands. The pedals and the hand-levers as thus arranged are independent of each other, and may be used separately or together for propelling the vehicle.

I provide the rear axle with a brake-wheel I in connection with a brake J, which is pivoted at j to the main frame and provided with a pedal k', whereby the brake is applied to the rear wheel.

The saddle or seat L is adjustable by means of a set-screw l, whereby the rod L′, which supports the seat, may be fixed at different heights on the main frame or the bracket L^2 thereof.

A friction-clutch f^3, as shown in Fig. 8, may be used on the plain periphery of the wheel F in place of the pawl and ratchet.

The connection of the links f' and f^2 with the bell-crank lever and hand-lever is made adjustable by means of a slot s and bolt for making the attachment at different points along the slot.

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

1. The combination, with the front axle, of the supplemental frame A′, the plates C C^2, hinged together, as shown, the swivel-pin C′, attached to the plate C^2, and the plate C^3, attached to the main frame, substantially as and for the purpose specified.

2. The combination, with the front axle, of the supplemental frame A, the swivel-pin and hinged plate constructed as shown and described, the guide-rod E, provided with the foot-piece E′, and the bar E^2, having a notch at e, as and for the purpose specified.

3. The combination, with the hind axle of the wheel F, pawl-levers F′, links f' and f^2, bell-crank levers G, and hand-lever H, all connected and arranged as shown relatively to one another.

4. The combination, with the hind axle, of the brake-wheel I, the brake J, pivoted to the main frame, the link K, and the brake-lever k, as and for the purpose specified.

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