

(No Model.)

2 Sheets—Sheet 1.

J. KELLING, Jr., & L. S. ISHAM.

TRICYCLE.

No. 302,498.

Patented July 22, 1884.

Fig. 1.

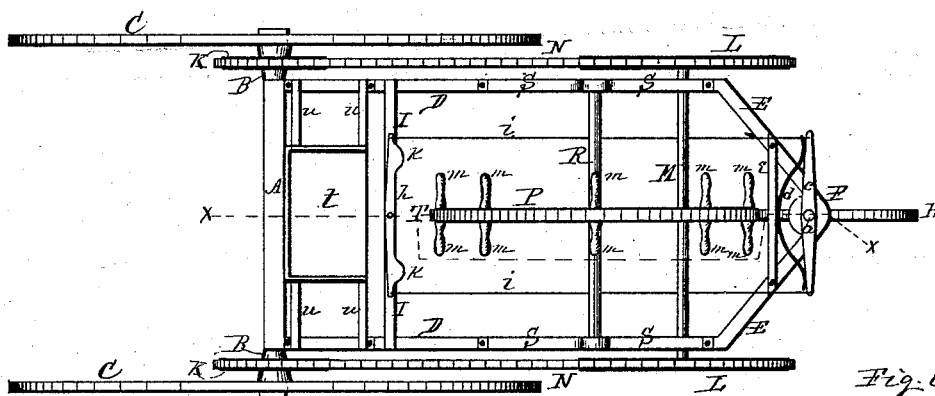


Fig. 6.

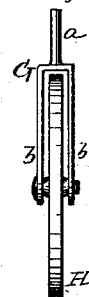


Fig. 4.

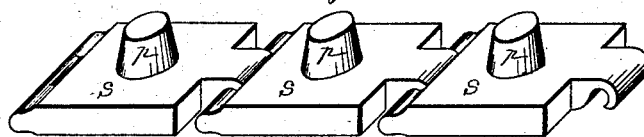
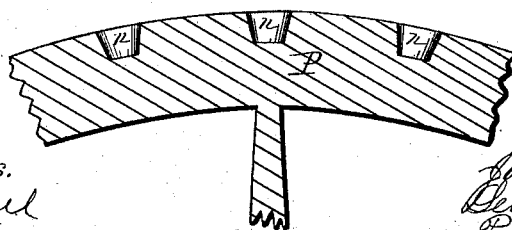


Fig. 5.



Witnesses.
A. O. Behl
C. F. Briggs

INVENTORS.
John Kelling, Jr.
Lewis S. Isham
Per. Jacob Behl
Atty.

(No Model.)

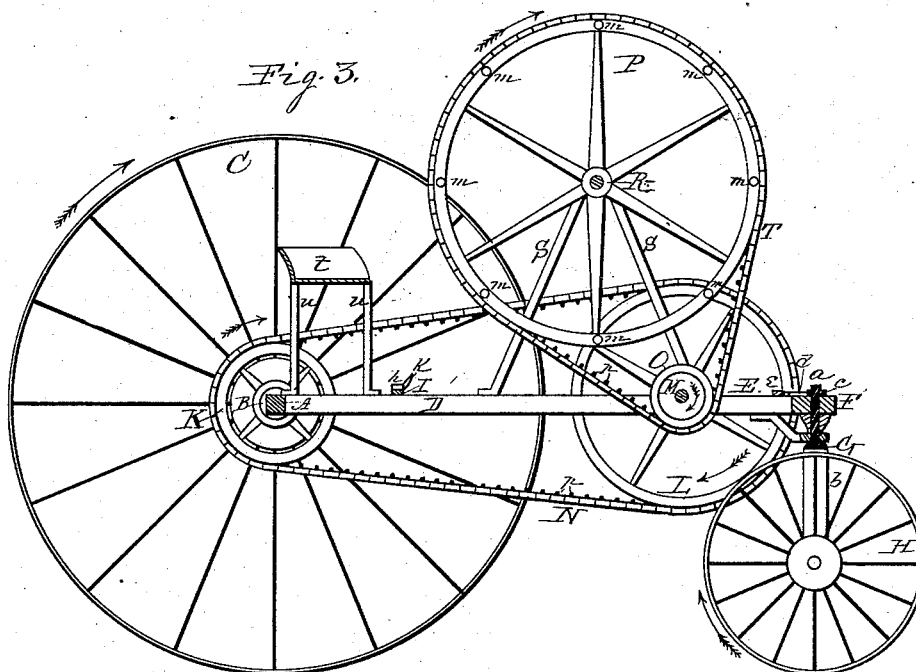
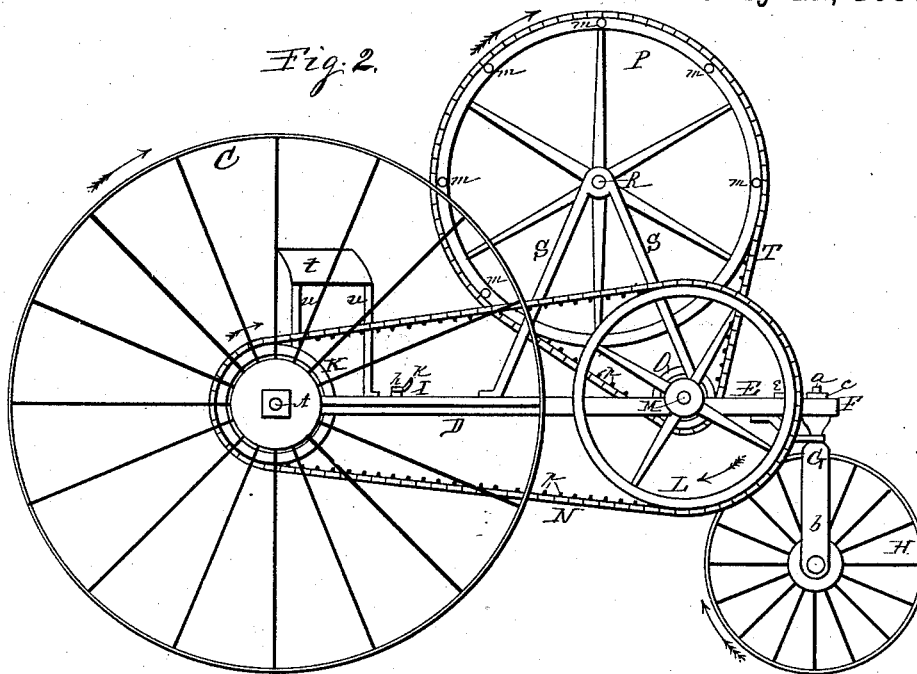
2 Sheets—Sheet 2.

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WITNESSES.
A. O. Belhel
C. F. Briggs

Inventors,
John Kelling, junr.
Lewis C. Graham.
Per. Jacob Behr, Jr.

UNITED STATES PATENT OFFICE.

JOHN KELLING, JR., AND LEWIS S. ISHAM, OF ROCKFORD, ILLINOIS.

TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 302,498, dated July 22, 1884.

Application filed December 18, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOHN KELLING, Jr., and LEWIS S. ISHAM, citizens of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Tricycle, of which the following is a specification.

The object of this invention is to obtain a higher speed than heretofore attainable in this class of vehicles; and it consists in a system of chain belt gearing connected with the driving-wheels and with hand-wheel to be operated by the occupant of the vehicle, all of which will be hereinafter more fully described, and are illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a tricycle embodying our invention. Fig. 2 is a side elevation. Fig. 3 is a lengthwise vertical section on dotted line *x* on Fig. 1. Fig. 4 is an isometrical representation of a portion of the chain-belt. Fig. 5 is a lengthwise vertical central section of a portion of the rim of one of the chain-belt wheels. Fig. 6 is a front elevation of the caster-wheel and caster-wheel yoke.

In the figures, A represents an axle-tree, the ends of which are fit in spindle form and receive the hubs B of the driving-wheels C, to revolve thereon in the usual manner.

At D are represented the side beams of a supporting-frame, having their rear ends fixed to the outer end portions of the axle-tree A, inside of the wheel-hubs. The forward end portions, E, of the side beams, D, incline toward each other and meet centrally at F, at which point they are provided with a vertical socket, which receives the spindle *a* of the caster-yoke G, producing a swivel-joint connection of the yoke G with the frame.

At H is represented a caster-wheel supported to revolve on suitable journal-supports in bearings in the lower ends of the arms *b* of the caster-yoke G. This caster-wheel H, in connection with the driving-wheels B, serves to support the frame, and in connection therewith constitutes the vehicle proper.

At *c* is represented a guide-bar having its center fixed to the upward-projecting end of the spindle of the caster-yoke, having its arms

extending laterally in a horizontal plane and at right angles with the tread of the caster-wheel.

At *d* is represented a spring-bar having its center fixed to the center of a transverse bar, *e*, fixed to the inclined beams E of the frame. The arms of this spring-bar *d* from its central connection are produced in a suitable curved form to cause their free ends to engage the rear edge of the end portions of the guide-bar *c*, and in its normal condition serves to hold the caster-wheel centrally in line with the travel of the driving-wheels C, but in such a manner as to permit a limited swinging movement of the guide-bar to change the angle of the caster-wheel relatively with the lengthwise axis of the frame to change the direction of travel of the vehicle.

At *h* is represented a sway-bar having its center pivotally connected to the center of a transverse bar, I, fixed to the side beams, D, of the frame. The ends of this sway-bar are connected with the ends of the guide-bar *c* by means of suitable rods or cords, *i*, in such a manner that the movement of the sway-bar will be imparted to the guide-bar. The sway-bar is provided at proper points with foot-supports, as at *k*, to receive the feet of the occupant mounted in the seat, to enable him to impart the required movement to the caster-wheel to give direction to the movement of the vehicle.

At K are represented chain-belt wheels fixed on the inner end of the hubs of the driving-wheels C.

L represents chain-belt wheels mounted on the projecting ends of a shaft, M, supported to revolve in suitable bearings on the side beams, D, of the frame. These chain-belt wheels K and L, in pairs, are placed in line, and are connected by means of suitable chain belts, N, which pass over the chain-belt wheels K and L in pairs on each side of the frame.

At O is represented a chain-belt wheel fixed centrally on the shaft M.

At P is represented a chain-belt wheel fixed upon a shaft, R, supported to revolve in suitable bearings in brackets S, having their feet fixed to the side beams, D, of the frame. These chain-belt wheels O and P are connected by

means of a suitable chain belt, T, in place thereon. The chain-belt wheel P is fitted at proper intervals with handles *m*, projecting from its opposite sides. The several chain-belt wheels, K, L, O, and P, in this instance, have the periphery of their rims perforated or provided at proper intervals with holes, as represented at *n* in Fig. 5, to receive the stud-pins *p*, which project centrally from the inner face of the links *s* of the chain, as shown in Fig. 4. This chain, as will be seen, is composed of links *s*, one end of which is produced in bar form to receive the hook-formed portion of the other end of the link, which is clearly shown in Fig. 4. Instead of this particular form of chain-belt wheels and the particular form of chain herein shown and described, the ordinary sprocket-wheel and the open-link belt-chain in common use may be employed.

At *t* is represented a seat mounted upon a bracket-support, *u*, having its foot portions fixed to the side beams, D, of the frame. The seat is in such position relatively with the wheel P and with the sway-bar *h* that an occupant mounted upon the seat will be in position to place his feet on the foot-supports, and also to readily grasp the handles *m* of the wheel P, to impart motion to the vehicle, causing the several wheels to revolve, and the vehicle to travel in the direction indicated by the arrows.

We claim as our invention—

1. The combination, with the caster or guide wheel of a tricycle, of a spring guide-bar and a pivoted sway-bar having link or cord connections with the guide-bar, substantially as and for the purpose set forth.

2. The combination, with the caster or guide wheel of a tricycle, of a guide-bar, a cross-bar arranged adjacent thereto, a spring interposed between said bars, and a pivoted sway-bar having link or cord connection with the guide-bar, substantially as set forth.

3. The combination, with the frame and the carrying and draw wheels, of wheels mounted concentric with said carrying-wheels, a shaft, M, supported near the forward end of the frame, wheels mounted upon the ends of said shaft, and connected by endless chain belts with the rear wheels, a gear-pinion mounted centrally on said shaft, and connected by an endless chain belt to a central hand-wheel supported upon the frame, substantially as set forth.

4. The combination, with the herein-described chain-belt wheels having perforations *n*, of a chain belt consisting of hinged links formed with lugs or pins to enter said perforations, substantially as set forth.

JOHN KELLING, JR.
LEWIS S. ISHAM.

Witnesses:

JACOB BEHEL,
A. O. BEHEL.