(No Model.)

T. R. A. WEBER, C. G. E. HENNIG & A. E. FROMMELT.

TRICYCLE.

No. 321,162. Patented June 30, 1885.

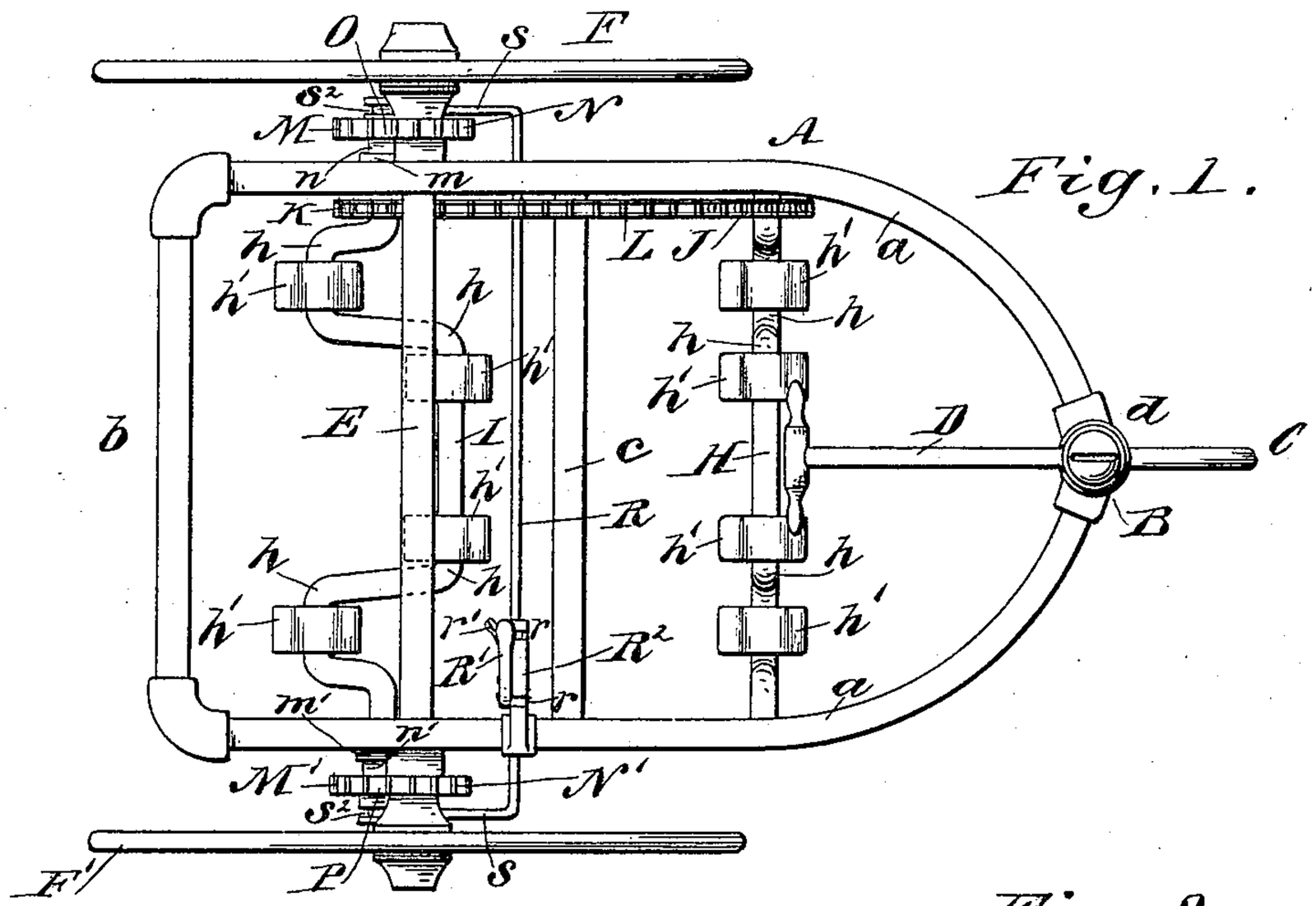

Fig. 1.

Fig. 2.

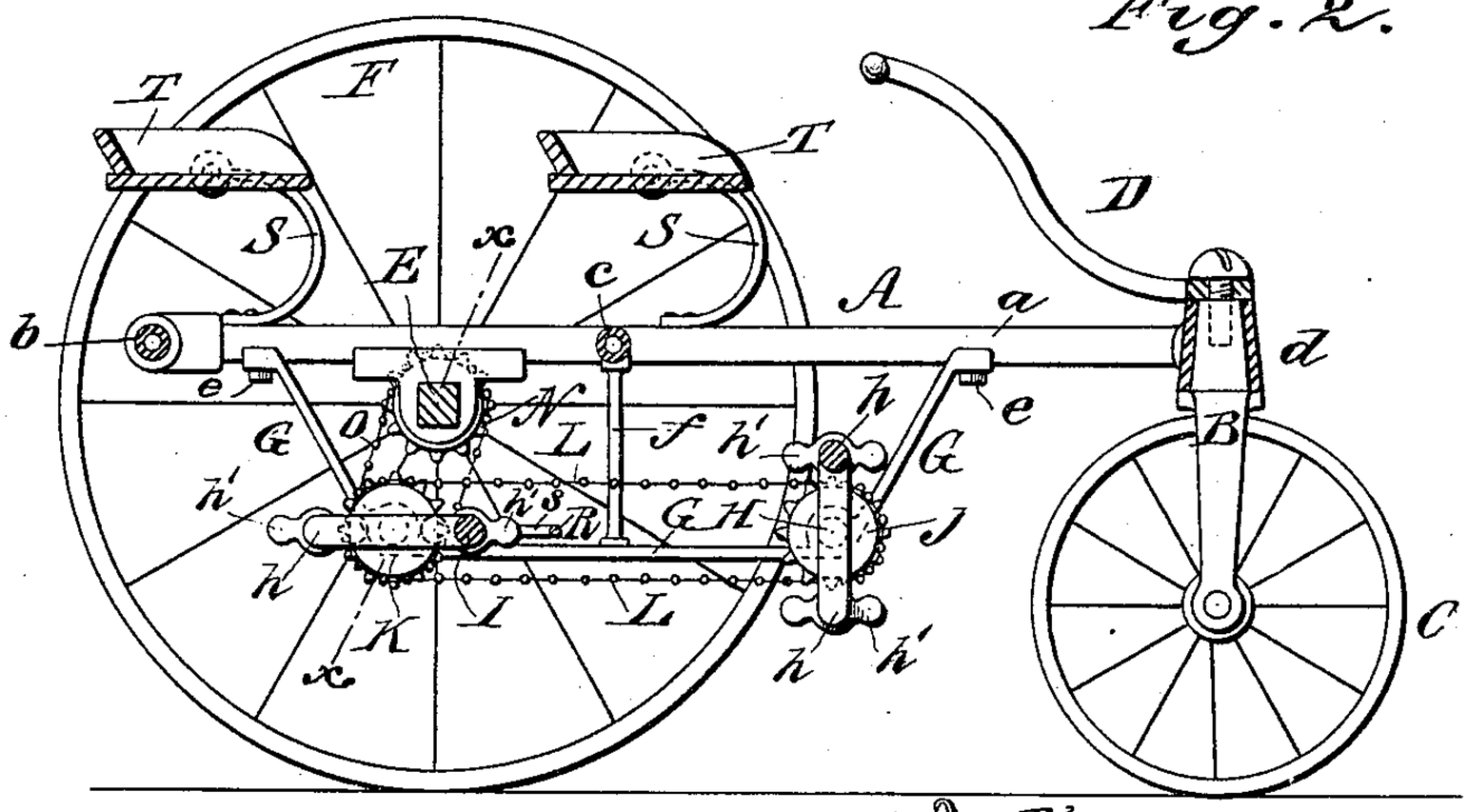

Fig. 3.

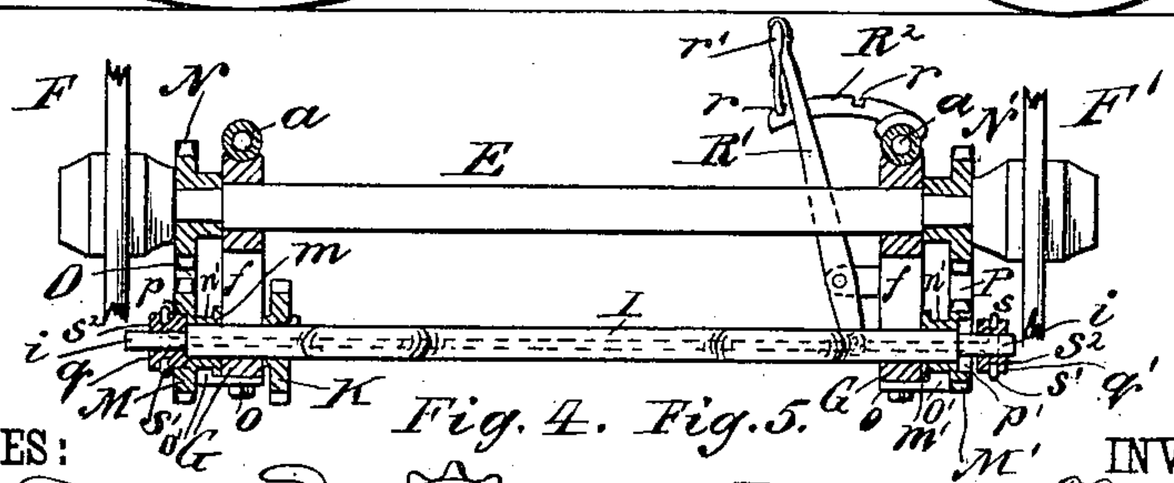

Fig. 4.

Fig. 5.

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TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 321,162, dated June 30, 1885.

Application filed February 25, 1885. (No model.)

To all whom it may concern:

Be it known that we, THEODOR R. A. WEBER, of the city, county and State of New York, and CARL G. E. HENNIG and ALFRED E. FROMMELT, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and Improved Tricycle, of which the following is a full, clear, and exact description.

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

Figure 1 is a plan view of our new tricycle with the seats removed. Fig 2 is a central longitudinal sectional elevation of the tricycle. Fig. 3 is a transverse sectional elevation taken on the line *x x* of Fig. 1, and Figs. 4 and 5 are, respectively, front and sectional views of sprocket-wheels removed from the shaft.

The invention will first be described in connection with the drawings and then pointed out in the claims.

The main frame A of the tricycle may be of any desired construction. In this instance it is composed of the bent side pieces, *a a*, rear cross-piece, *b*, central cross-piece, *c*, and front coupling, *d*, which is socketed to receive the turn-post B in and to which the front guide-wheel, C, is journaled.

To the upper end of the post B is secured the lever D, by which the post B and the wheel C may be turned for guiding the tricycle. The rear part of the main frame A rests upon the axle E, which has the main wheels F F′ journaled upon its ends.

Depending from the side pieces, *a a*, are the side frames or hangers, G G, secured to the side pieces, *a*, by bolts *e e*, and held or braced in the center by the rods or posts *f*.

Journaled in the forward parts of the side frames or hangers, G, is the treadle-shaft H, and journaled in the rear part of the said hangers is the treadle-shaft I. These shafts H I are by preference bent like crank-axles, each to form two pairs of rotary treadles, *h*, to which pedal-pieces, *h′*, are pivoted, as shown clearly in the drawings.

Instead of bending the treadle-shafts to form two sets of treadles a single set may be formed in them.

To one end of the treadle-shaft H is secured the sprocket or chain wheel J, and in line with the wheel J is secured, upon the treadle-shaft I, the sprocket or chain wheel K, and over these two wheels J K passes the endless chain L, so that the two treadle-shafts work together, and in order that each treadle-shaft shall assist the other past the dead-center, the chain L should be placed upon the sprocket-wheels J K, so that while the treadles of the shaft H stand vertical the treadles of the shaft I will be in horizontal position, as shown in Fig. 2. The treadle-shaft I extends at its ends past the side pieces, *a a*, of the main frame A, and at its ends said shaft I is provided with the sprocket or chain wheels M M′.

Upon the hubs of the wheels F F′ are secured the sprocket or chain wheels N N′, and over the wheels M N and M′ N′ are placed, respectively, the endless chains O P, so that the power applied to the treadle-shaft, H I, or either of them, will be communicated to the main wheels F F′, and thus propel the tricycle. The wheels M M′ are each formed with a shank, (marked *m* and *m′*, respectively,) and these shanks are each formed with a groove, (marked *n* and *n′*, respectively,) and the wheels M M′ are journaled upon the ends of the treadle-shaft I, outside of the hangers G G, and are held upon the shaft so as to be adapted to revolve freely thereon by the bent clips *o*, bolted to the under side of the hangers, the projections or lips *o′* of the clips entering the grooves of the shanks *m m′* of the wheels M M′, as shown clearly in Fig. 3. The wheel M′ is smaller than the wheel M, and these wheels M M′ are adapted to be alternately clutched to, and released from, the treadle-shaft I, so that the power of the treadle-shafts H I may be communicated to the tricycle either through the wheel M, chain O, wheel N, and main wheel F, or through the wheel M′, chain P, and main wheel F′, which latter will impart a less rapid speed to the tricycle than the former, as the wheel M′ is smaller than the wheel M.

For clutching the wheels M and M′ to, and releasing them from, the treadle-shaft I, we prefer to recess the outer surfaces of the wheels M M′, as shown at *p* and *p′*, and employ the square clutch-blocks *q q′*, placed on

the points *i* of the shaft, which blocks fit in the recesses *p p'*. The extreme outer ends or points *i i* of the treadle-shaft I are made square, and the clutch-blocks *q q'* are made to fit and slide upon the points *i*, so that they revolve with the treadle-shaft I, and when brought to engage with the recesses in the wheels M M' they lock the wheels to the treadle-shaft.

The blocks *q q'* are operated simultaneously in opposite directions, so that when the wheel M' is clutched the wheel M will be released, and vice versa, and for thus operating the clutch-blocks we employ the sliding bent rod R, (connected with the clutch-blocks, as described below,) the lever R' for operating the rod R, and the locking-crest R^2 with the notches *r*, of which the spring-catch *r'* of the lever R' is adapted to engage for locking the lever and the rod R to the right or left, as required. The rod R is connected to the blocks *q q'* by means of the arms *s s* (parts of the rod R) that are divided at their ends to form claws *s' s'* that enter circular grooves s^2 s^2, made in the blocks *q q'*, as shown clearly in Figs. 1 and 3, so that by a simple movement of the lever R' either main wheel F or F' may be made the drive-wheel, according as to whether a fast or slow speed is required.

S S represent curved springs secured upon the side pieces, *a*, of the main frame A, to which springs the seats T T are pivoted, and the seats T in this instance are made for two persons, each to correspond with the sets of rotary treadles formed in the treadle-shafts H I, and in some cases only one treadle-shaft will be used, in which case one of the seats T will be dispensed with.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The main wheels F F', provided with sprocket-wheels N N', the shaft I, provided with sprocket-wheels M M', and connected to wheels N N' by chains O P, in combination with the sliding clutch-blocks *q q'*, the rod R and lever R', the rod R being attached to the clutch-blocks for sliding them, and the wheels M M' being loose upon the shaft and recessed at *p p'*, substantially as and for the purposes set forth.

2. The main wheels F F', provided with sprocket-wheels N N', the shaft, I, provided with sprocket-wheels M M', and connected to wheels N N' by chains O P, in combination with the sliding clutch-blocks *q q'*, the rod R, lever R', the wheel M M' being loose upon the shaft and recessed at *p p'*, the treadle-shaft H, the sprocket-wheel J of said latter shaft, and the chain-belt L, substantially as and for the purpose set forth.

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Witnesses:
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