

(No Model.)

C. G. E. HENNIG.

TRICYCLE.

No. 316,146.

Patented Apr. 21, 1885.

Fig. 1.

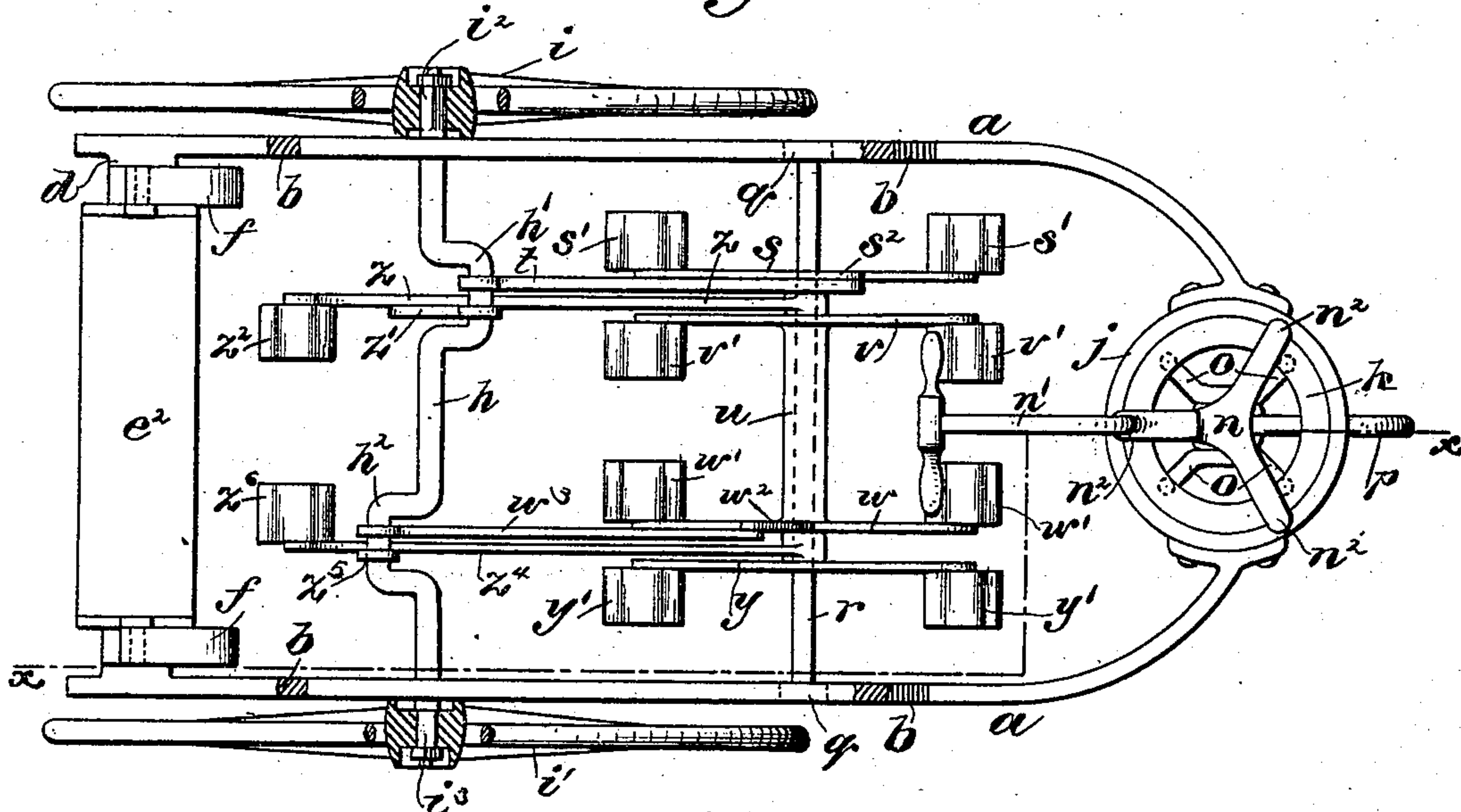


Fig. 2.

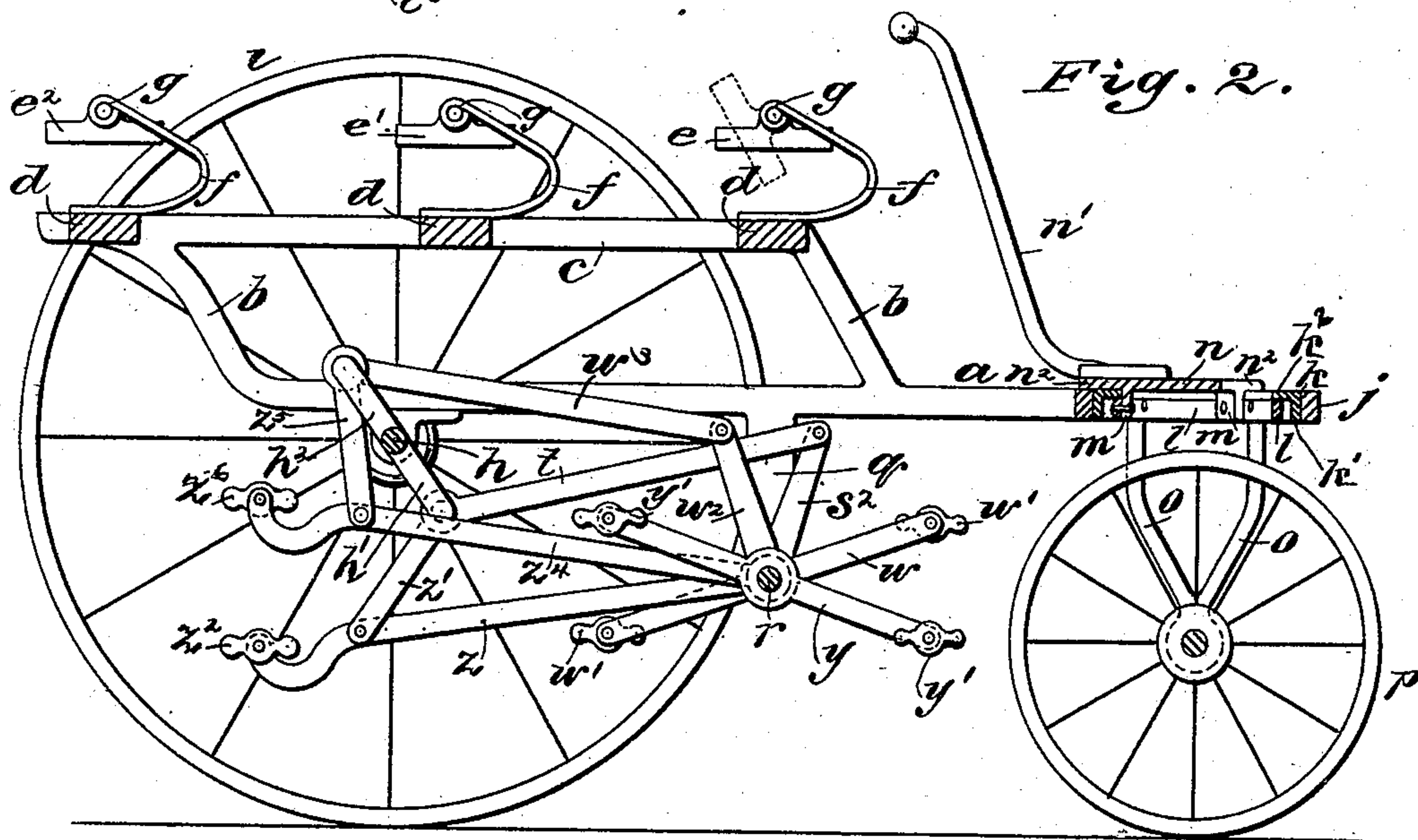
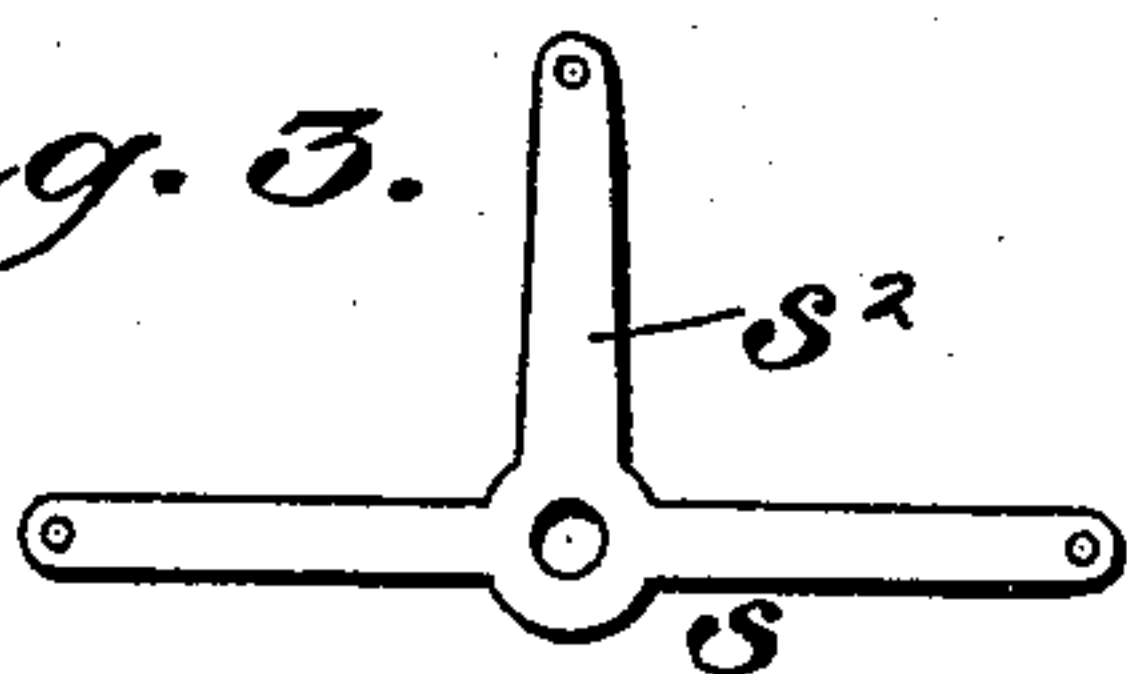


Fig. 3.



WITNESSES:

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CARL G. E. HENNIG, OF PATERSON, NEW JERSEY.

TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 316,146, dated April 21, 1885.

Application filed February 16, 1885. (No model.)

To all whom it may concern:

Be it known that I, CARL G. E. HENNIG, 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.

This invention relates to an improvement in my new tricycle shown and described in Re-issued Letters Patent No. 10,575, which were granted to me March 24, 1885; and my present invention consists, principally, in the addition of other treadles applied to the crank-axle, the additional treadles being so attached to the cranks of the axle that they act at the dead-center of the axle, as operated by the other treadles of the tricycle.

The invention also consists of the construction of the fifth-wheel of the tricycle, and of the employment of pivoted seats that accommodate themselves to the rider.

The invention finally consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

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 sectional plan view of my new and improved tricycle. Fig. 2 is a sectional side elevation of the same, taken on the line x of Fig. 1; and Fig. 3 is a side elevation of one of the treadles having a rocker-arm.

The frame of the tricycle is composed of the side pieces a , upwardly-projecting arms b , upper side pieces, c , and cross-pieces d , that connect the upper side pieces, c , together. The cross-pieces d support the seats e upon the curved spring-plates f , that are secured at their lower ends to the cross-pieces d , and rolled at their upper ends to form the eyes g , in which the seats e are pivoted, as shown in Fig. 1, so that the seats will turn from the position shown in full lines to that shown in dotted lines, or to any other angle to accommodate itself to the person or persons riding upon the tricycle. The main side bars a rest upon the double crank-axle h , on the ends of which axle the main wheels i are placed. The forward ends of the said main side bars a are bolted to the circle j . Within the circle j is fitted the ring k , which is made of angle-iron with the vertical-plate por-

tion k' and horizontal-plate portion k^2 . Below the horizontal-plate portion k^2 , and flush with its inner edge, is placed the ring l . This is bolted or riveted to the lugs m , formed upon the lower surface of the spider n , and has the vertical supports or arms o secured to it. The arms o have the front or guide wheel, p , journaled in and between their lower ends. The spider n has the guide-lever n' secured to it so that by turning the said lever to the right or left the fifth-wheel and the guide-wheel p will be turned for guiding the tricycle, and the arms of the spider n reach over the upper surface of the ring j , as shown at n^2 , so as to move upon the upper edge of said rings when the lever is turned, and these lips n^2 of the spider serve to prevent the fifth-wheel from dropping through the ring j .

From the main side pieces a of the frame of the tricycle depend the arms q , in and between which is held the shaft r . On this is fixed the treadle s , which is centrally fulcrumed upon the shaft r and projects in front and rear of the shaft. It is provided with a pedal, s' , upon each end, and it is formed or provided with an upwardly-projecting rocker-arm, s^2 , that is connected by connecting-rod t to the crank h' of the crank-axle h . A sleeve or tube, u , is placed loosely upon the shaft r . Secured to one end of this is the treadle v , which reaches in front and rear of the shaft r and tube u , and is provided with pedals v' at each end. At the other end of the tube u is secured the treadle w , which reaches in front and rear of the shaft r and tube u , and has pedals w' secured to each end, and, like the treadle s , is formed or provided with an upwardly-projecting rocker-arm, w^2 , which is connected by connecting-rod w^3 to the crank h^2 of the crank-axle h . Upon the shaft r is secured also the treadle y , which reaches in front and rear of the shaft r , and has pedals y' secured at its ends. The treadles w constitute two pairs of treadles reaching in front and rear of the shaft r , to work together and to be operated by two persons, one sitting on the seat e , the other immediately back upon the seat e' . The treadles s also constitute two pair of treadles working together by two persons, one on seat e , the other on seat e' .

Between the treadles s is placed loosely upon the shaft r the forward end of the treadle

2. This reaches back under and beyond the crank-axle h , and is connected to the crank h' of the axle by the connecting-rod z' , and is provided at its rear end with the pedal z^2 , to receive the foot of a person sitting upon the rear seat, e^2 , of the tricycle. Between the treadles $w y$ is also placed loosely upon the shaft r the forward end of a treadle, z^4 , which reaches back under the axle h , and is connected by the connecting-rod z^5 to the crank h^2 of the axle h , and at its rear end it is provided with the pedal z^6 to receive the foot of a person sitting upon the rear seat, e^2 . The treadles $z z^4$, connected as described, act upon the dead-center of the axle h , so that with these treadles the speed and ease with which the tricycle may be propelled is greatly improved. The large wheel i is the drive-wheel of the tricycle. It is placed upon the square shank i^2 , formed at the end of the axle h . The wheel i' is placed upon the journal i^3 , formed at the other end of the axle, so that this wheel may revolve upon the axle to permit the tricycle to be turned.

I have shown the tricycle made to carry six persons, the seats $e e' e^2$ being made of considerable length for that purpose; but the same principle of treadles may be involved in a tricycle made to carry three persons, in which case three narrow or single seats would be used placed in line with each other, and one set of double treadles will be omitted.

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

1. In a tricycle, the combination, with

treadles placed upon the shaft r and connected with the cranks of the main crank-axle h , to which the drive-wheels are attached, of the treadles $z z^4$, pivoted at their forward ends upon the shaft r and extending under and in rear of the main axle h , and connected to the cranks of the said main axle h to act with full leverage when the treadles on shaft r are at the dead-center, substantially as described.

2. The treadles $s y$, secured to shaft r , and treadles $v w$, attached to the sleeve u , placed loosely upon the shaft r , the treadles s and w being provided with rocker-arms $s^2 w^2$, respectively, connected to the opposite cranks of the axle h , in combination with the treadles $z z^4$ attached to the shaft r at their forward ends and reaching back under and in rear of axle h , and connected to the cranks $h' h^2$ thereof by connecting-rods $z' z^5$, substantially as described.

3. The springs f , supported upon the cross-piece d , in combination with the seats pivoted to the upper ends of the springs, substantially as described.

4. The side pieces a of the frame of the tricycle secured to the ring j , in combination with the inner rings, $k l$, and spider n , formed with lugs m and portions n^2 , that overlap the ring j , the arms o being attached to the ring l , substantially as and for the purposes described.

CARL G. E. HENNIG.

Witnesses:

HERMANN BECKLER,
GEORGE HANSMETZGER.