

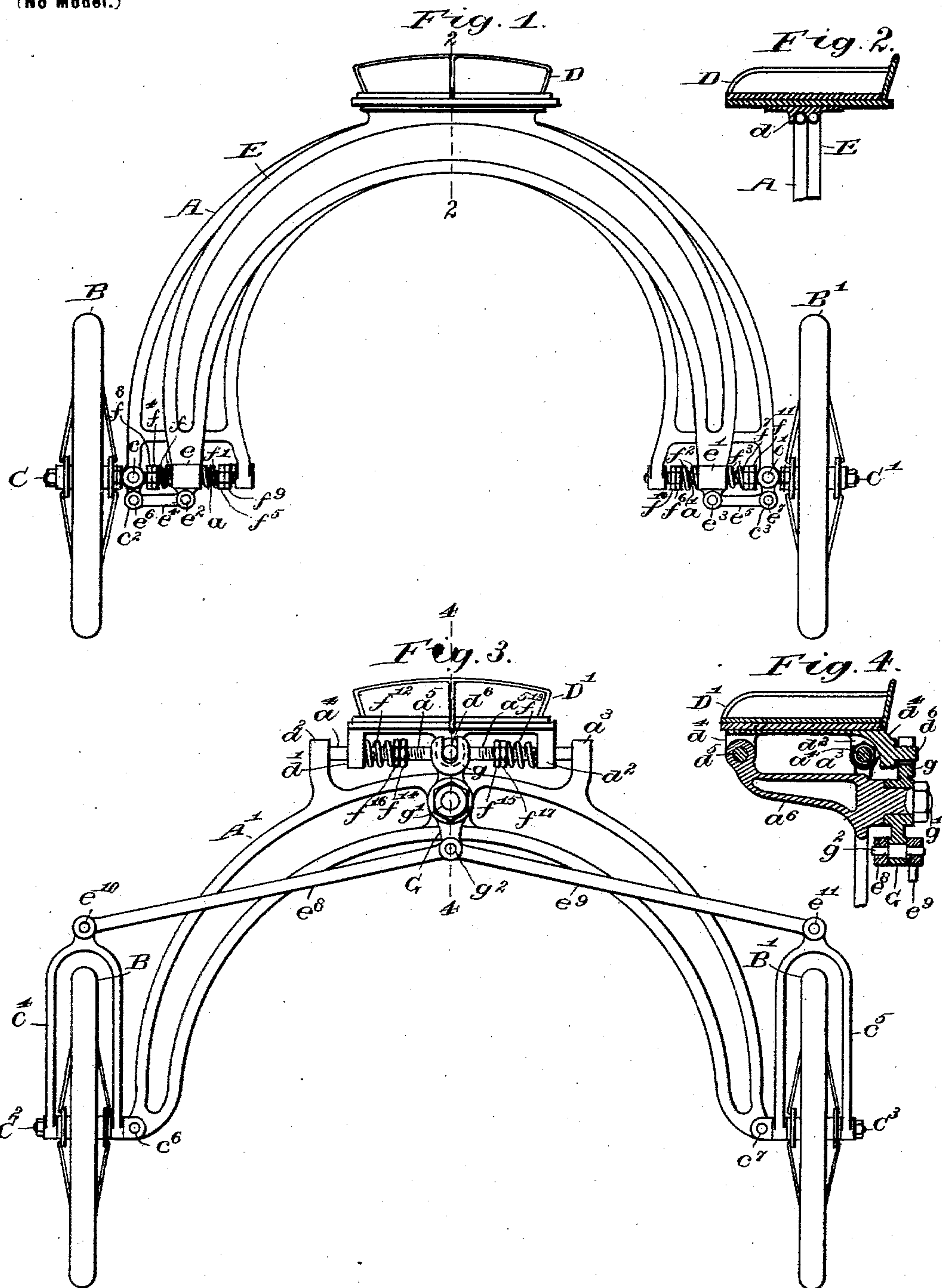
No. 629,237.

Patented July 18, 1899.

F. P. CHENEY.
SULKY.

(Application filed Sept. 8, 1896.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK P. CHENEY, OF LOWELL, MASSACHUSETTS.

SULKY.

SPECIFICATION forming part of Letters Patent No. 629,237, dated July 18, 1899.

Application filed September 8, 1896. Serial No. 605,129. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. CHENEY, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Sulkies, of which the following is a specification.

My invention relates to sulkies; and it consists in the combinations and devices herein-
after described and claimed.

The object of said invention is to cause the wheels in going around a curve to incline toward the center of said curve or in opposition to the action of centrifugal force. I accomplish this object by means of a seat which is laterally movable with respect to the main frame of the sulky and is connected to the pivoted axles on which the wheels turn in such a manner that the wheel on the outside of the curve is so inclined as to bring its top nearer to the center of the sulky by the action of centrifugal force on the seat and its occupant, the other wheel being equally moved in the same direction, so that the parallelism of the wheels with each other is always maintained, or the same purpose may be accomplished by a laterally-movable foot-rest similarly connected to pivoted axles.

In the accompanying drawings, Figure 1 is a rear view of a part of a sulky provided with my improvement and showing a laterally-movable seat; Fig. 2, a vertical central section, on the line 2 2 in Fig. 1, of the seat and its supporting parts; Fig. 3, a rear view of a modification of what is shown in Fig. 1; Fig. 4, a vertical central section of the seat and its supporting parts on the line 4 4 in Fig. 3.

The frame A is represented as a skeleton arch, and the wheels B B' as pneumatic or bicycle wheels; but the parts may be of any ordinary construction.

Referring to Figs. 1 and 2, the wheels B B' turn upon short independent axles C C', pivoted at c c' to the frame A. These axles are shaped like bell-crank levers, having arms c² c³, which project downward from them at about right angles to the body of said axles.

In the lower ends of the frame A are supported horizontal rods a a', one at each side of the sulky, these rods being normally in line with each other.

The seat D is rigidly secured on a supple-

mentary frame or arch E, the lower ends of which are provided with sleeves e e', each of which loosely surrounds one of the rods a a' and is adapted to slide thereon. The lower ends of the arch E extend below said rods a a' and are pivoted at e² e³ to the inner ends of links e⁴ e⁵, the outer ends of said links being pivoted at e⁶ e⁷ to the lower ends of the arms c² c³, so that the seat D and arch E may be moved laterally and in so moving will turn the axles upon the pivots c c' and vary the angles which the wheels make to a vertical plane. The wheels are at all times parallel to each other owing to the rigidity of the arch E and the fact that the links e⁴ e⁵ and axles C C' at each side of the sulky are like the corresponding parts at the other side of the same. The arch E is held upright by a ledge d, which extends down in front of the frame A and holds the top of said arch against said frame.

The seat D is normally held at the middle of the sulky by counteracting-springs f f' f² f³, which are compressed between the sleeves e e' and the sides of the frame which support the rods a a', as shown in Fig. 1, said springs being represented as helical wire springs surrounding said rods. The relative pressure of the springs on opposite sides of a sleeve is regulated by nuts f⁴ f⁵ f⁶ f⁷ and check-nuts f⁸ f⁹ f¹⁰ f¹¹, which turn on said rods, said rods being screw-threaded for that purpose.

When a sulky goes rapidly around a curve, the tendency of the centrifugal force acting upon the sulky and the driver is to turn the tops of the wheels toward the outside of the curved path of the sulky; but with the construction above described the movement of the driver, seat, and arch E outward will cause the wheels through the links e⁴ e⁵, arms c² c³, and axles c c' to assume an angle (with a vertical plane) which is the opposite of the angle which they would assume under the direct action of the centrifugal force—that is, will cause them to lean toward the center of the curved path and serve as a brace against the overturning of the sulky, thus causing the indirect result of the centrifugal force to neutralize its direct action. In Figs. 3 and 4 the same result is obtained by a construction somewhat different, but involving a laterally-movable seat D' and pivoted axles C² C³,

moved through mechanism which connects
 said seat and axles. In Figs. 3 and 4 the
 frame A is provided with upwardly-extending
 ears $a^2 a^3$, which support a stationary horizon-
 5 tal rod a^4 , and the seat D' is provided with
 downwardly-extending ears $d' d^2$, which sur-
 round said rod a^4 and may slide thereon, said
 seat being normally held over the middle of
 the frame A by counteracting-springs $f^{12} f^{13}$,
 10 represented as helical wire springs, com-
 pressed between the ears $d' d^2$ of the seat, and
 nuts $f^{14} f^{15}$, which may be turned on the
 screw-threaded portion a^5 of the rod a^4 to ad-
 just the seat to its normal position, said nuts
 15 $f^{14} f^{15}$ being held from accidental turning by
 check-nuts $f^{16} f^{17}$ in an obvious manner. The
 seat D' at the front thereof is also provided
 with two other ears, one, d^4 , of which is shown
 in Fig. 4, these supporting a horizontal rod
 20 d^5 , which slides freely in a bracket a^6 , which
 projects forward from the frame A to support
 the front of the seat, these ears being like the
 ears $d' d^2$ above described and directly in
 front of them when the latter are in their
 25 normal condition. Said seat D' is also pro-
 vided with a backwardly-extending projec-
 tion d^6 , which enters the forked upper end g
 of a lever G, pivoted at g' on the back of the
 frame A'. The lower end of the lever G is
 30 connected by links $e^8 e^9$ to yokes $c^4 c^5$, secured
 to or integral with the axles $C^2 C^3$, each link
 $e^8 e^9$ being pivoted at one end at g^2 to said le-
 ver G and at the other end at $e^{10} e^{11}$ to the top

of one of said yokes, and the axles $C^2 C^3$ being
 pivoted directly to the lower ends of the
 frame A' at $c^6 c^7$. Except as herein stated
 the parts shown in Figs. 3 and 4 are like those
 shown in Figs. 1 and 2. The lateral move-
 ment of the seat D' in one direction will ob-
 viously cause the tops of the corresponding
 40 wheels to lean in the opposite direction.

I claim as my invention—

1. The combination of the frame, pivoted
 axles, provided with yokes or arms, a driver-
 supporting device, a lever, to one end of
 45 which, said device is pivoted, wheels turning
 on said axles, and links or rods connecting
 the other end of said lever to said yokes or
 arms.

2. The combination of the frame, pivoted
 axles, provided with yokes or arms, a driver-
 supporting device, a lever, to one end of
 which, said device is pivoted, wheels turning
 on said axles, links or rods, connecting the
 other end of said lever to said yokes or arms,
 55 and counteracting-springs, normally to center
 said supporting device with reference to said
 frame.

In witness whereof I have signed this speci-
 fication, in the presence of two attesting wit-
 60 nesses, this 2d day of September, A. D. 1896.

FRANK P. CHENEY.

Witnesses:

ALBERT M. MOORE,

GRACE E. HIBBERT.