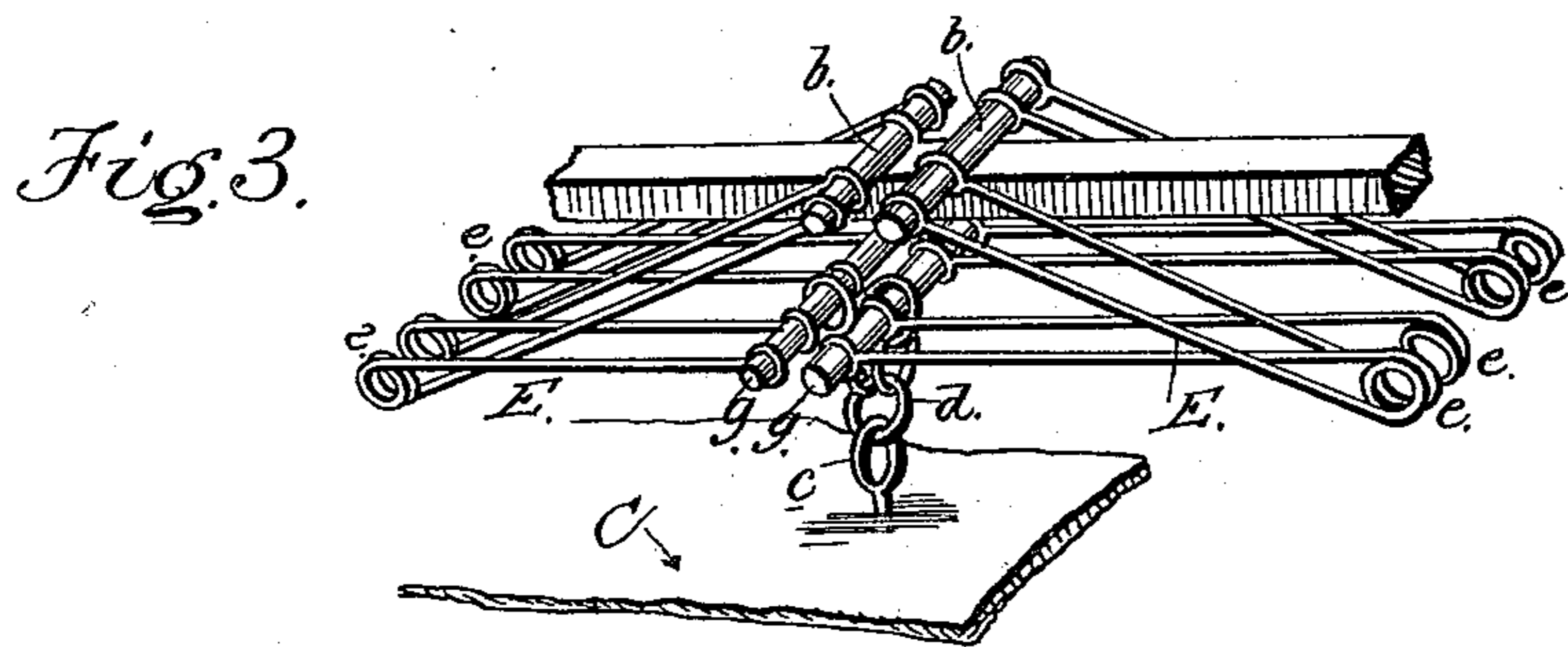
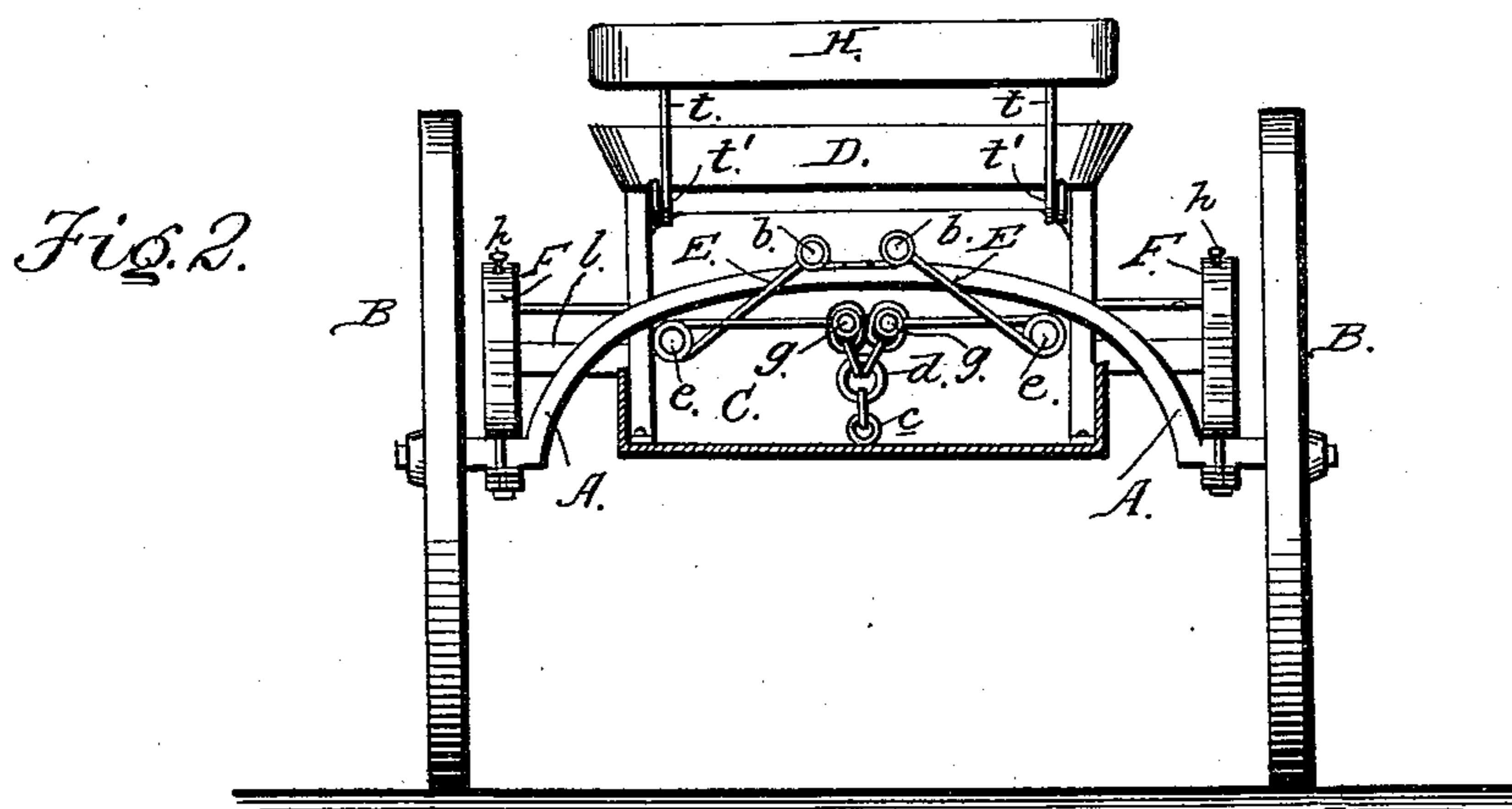
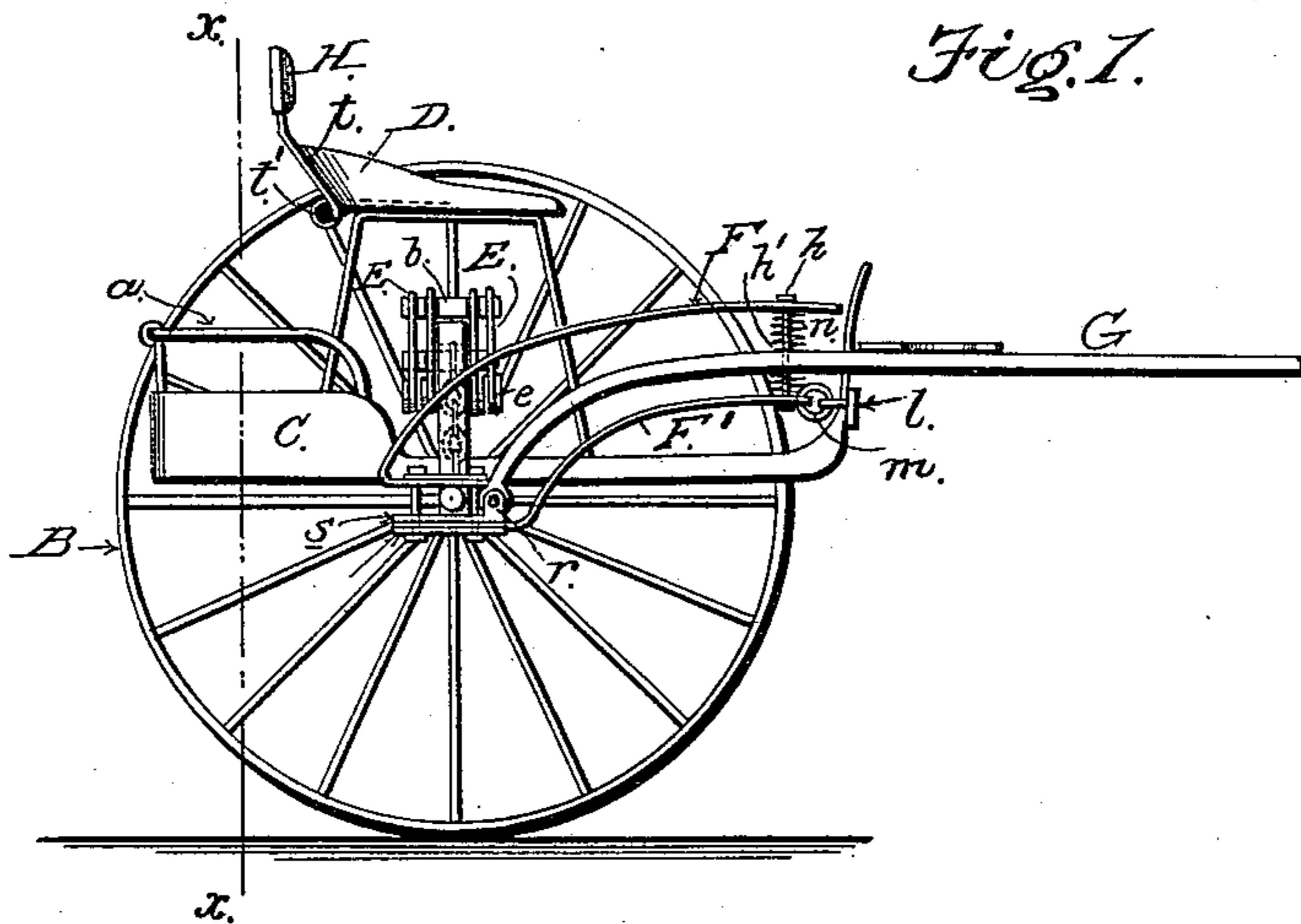


(No Model.)

J. G. TRUMP.  
TWO WHEELED VEHICLE.

No. 433,833.

Patented Aug. 5, 1890.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## TWO-WHEELED VEHICLE.

**SPECIFICATION** forming part of Letters Patent No. 433,833, dated August 5, 1890.

Application filed April 26, 1890. Serial No. 349,612. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN G. TRUMP, a citizen of the United States, residing at Vassar, in the county of Tuscola and State of Michigan, have invented certain new and useful Improvements in Vehicles, of which the following is a full and clear description, reference being had to the accompanying drawings, forming part of this specification, in  
10 which—

Figure 1 represents a side elevation of a two-wheeled vehicle embodying my invention and showing one of the wheels removed. Fig. 2 is a cross-sectional view of the same on the  
15 line X X of Fig. 1. Fig. 3 is a detail showing the springs arranged in pairs.

My invention relates to the general class of vehicles, and especially to the class of two-wheeled vehicles known as "road-carts;" and  
20 my invention consists in the constructions and combinations of devices which I shall hereinafter fully describe and claim.

In the accompanying drawings, A represents the main axle, upon the opposite ends  
25 of which the wheels B are mounted and adapted to rotate, and C is the body of the vehicle having a seat portion D supported thereon in any suitable manner, the said body having a railing *a* surrounding its rear portion. The axle or shaft A is arched at its  
30 central portion, extends across the vehicle between the seat and bottom of the body portion, and has secured to its upper surface near the central portion thereof suitable bearings, lugs, or pins *b*, adapted to have fitted to  
35 them one end of the springs E, whose opposite ends are free and are connected to an eye *c* or similar device on the floor of the body by means of a chain of loose links or  
40 other flexible connection, as shown at *d*. These springs are of peculiar construction and arrangement. They are arranged in pairs—two pairs being preferably upon each side of the axle—and each spring consists of a single  
45 piece of metal, heavy wire, or otherwise, one

end of which is first secured to its pins, lugs, or bearing *b* and carried downward toward the sides of the body, where it is then coiled, as at *e*, and its free end extended inward in an approximately horizontal plane, crossing  
50 the other or inclined arm of the spring, and has its free end secured to a pin *g* or like device.

While I prefer the springs being arranged in pairs, it is not absolutely necessary that  
55 such should be the case, as single springs may be used; but in either instance the springs on the right side of the center of the axle are reversely arranged to those on the left side. In other words, the springs on the same side  
60 of the axle, (front or rear,) after being secured to their respective pins or lugs, extend in opposite directions toward the sides of the body, and are coiled and secured at their free ends in the manner previously mentioned. After  
65 being thus arranged the pins or connections which unite the free ends of all the springs upon the right of the center of the axle and the pins or connections which join all the  
70 springs on the left of the center of the axle are connected with the eye, loop, or projection *c* in or on the floor of the body of the vehicle by any flexible connection *d*, such as a chain or series of links. From this description it will be seen that the weight of the body  
75 of the vehicle and of the occupant is transmitted through the flexible connection *d* to the free ends of the springs, which ends are pulled down against the resistance of the coils. This construction permits a free vertical  
80 movement, but prevents the disagreeable lateral or side motion, due to the movement of the horse, from being communicated to the body and seat of the vehicle.

Suitable spring-plates F and F', having  
85 their inner ends clipped to the axle, extend forward, one above and one below each shaft or thill G, and have their forward ends joined by rods *h*, which pass through holes *h'* in the shafts, while the front end of the lower plate  
90

F' is connected to a cross-bar *l* on the front of the body A by means of a link or loose connection *m*, whereby the front of the body is joined directly to the spring-plates F'.

5 Around the rods *h*, above and below the shafts or thills, are coiled springs *n*, which serve as cushions and as a means for holding the front of the body in its proper position and also allowing for the up-and-down or vibrating  
10 movement of said front.

The inner ends of the shafts or thills are pivotally held between lugs *r* on the forward ends of plates *s*, which lie between the inner ends of the spring-plates and the bottom of  
15 the axle, and are held in place by the clips before mentioned as securing the plates F and F' to the axle.

To provide as much comfort as possible for the occupant of the vehicle I construct the  
20 seat with a lazy-back H, which is secured to standards *t*, that are coiled at *t'* just under the back of the seat, and have their opposite or lower ends secured to the under surface of the seat in any suitable manner.

25 A vehicle constructed as above described overcomes the horse motion of the common road-cart. It permits the cart to ride easier over rough roads or obstructions, as the box or body of the vehicle is permitted to yield, so  
30 that when the wheels are passing over an obstruction or irregularity in the road the box or body remains level, thereby saving the driver or persons riding in the cart the disagreeable jolting common to many of the carts now in  
35 use.

While I have described my invention as being adapted to road-carts, I do not limit it to such carts, as the same constructions may be used on four-wheeled vehicles, with or  
40 without a box, like the one shown.

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

1. In a road-cart, a body portion suspended  
45 from the main axle, and a spring-connection between the body and axle having one end secured to the center of the axle and the other secured to the center of the floor of the body, substantially as herein described.

50 2. In a road-cart, a body portion and an arched axle extending above and across the same, in combination with oppositely-extending springs, each having one end secured to the center of the axle and the other end se-  
55 cured flexibly to the center of the floor of the body, substantially as herein described.

3. In a road-cart, a body portion having a seat supported thereon, in combination with an axle having its central portion arched and extending across the vehicle between the seat  
60 and floor of the body portion, and springs secured to the central portion of the axle and having their lower ends secured to the center of the floor of the body portion by means of a flexible connection, substantially as herein  
65 described.

4. In a road-cart, the body portion and the axle extending across the same above the floor thereof, in combination with oppositely-  
70 extending springs having one end secured to the axle and the opposite end free and secured to a connection which is secured to the center of the floor of the body, substantially as described.

5. In a road-cart, the body portion and the  
75 axle extending above and across the floor of the same, in combination with springs, each consisting of two arms crossing each other and formed with a coil at the outer end, one of said arms being secured to the axle and  
80 the other being free, and a link or chain connecting the free ends of the springs with the center of the floor of the body portion.

6. In a road-cart, the body portion and the axle extending across the floor of the same, in  
85 combination with oppositely - extending springs, one end of which is secured and the other free, said springs having a portion between said ends coiled, and a chain or link connection uniting the free ends of the springs  
90 with the center of the floor of the body portion, substantially as herein described.

7. In a road-cart, the axle, the body portion, and the shafts or thills, in combination with the  
95 springs, plates F and F' above and below the shafts, having their inner ends clipped to the axle and their outer ends joined by rods passing through the shafts, and springs on said rods between the plates and shafts, substan-  
100 tially as herein described.

8. In a road-cart, the combination of the body portion having a cross-bar at its front, the axle, the spring-plates clipped thereto and joined at their outer ends, and a link-con-  
105 nection between the outer ends of the plates and the cross-bar, substantially as herein described.

JOHN G. TRUMP.

Witnesses:

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