

(No Model.)

C. M. MURCH.
RUNNING GEAR FOR VEHICLES.

No. 294,742.

Patented Mar. 4, 1884.

FIG. 1.

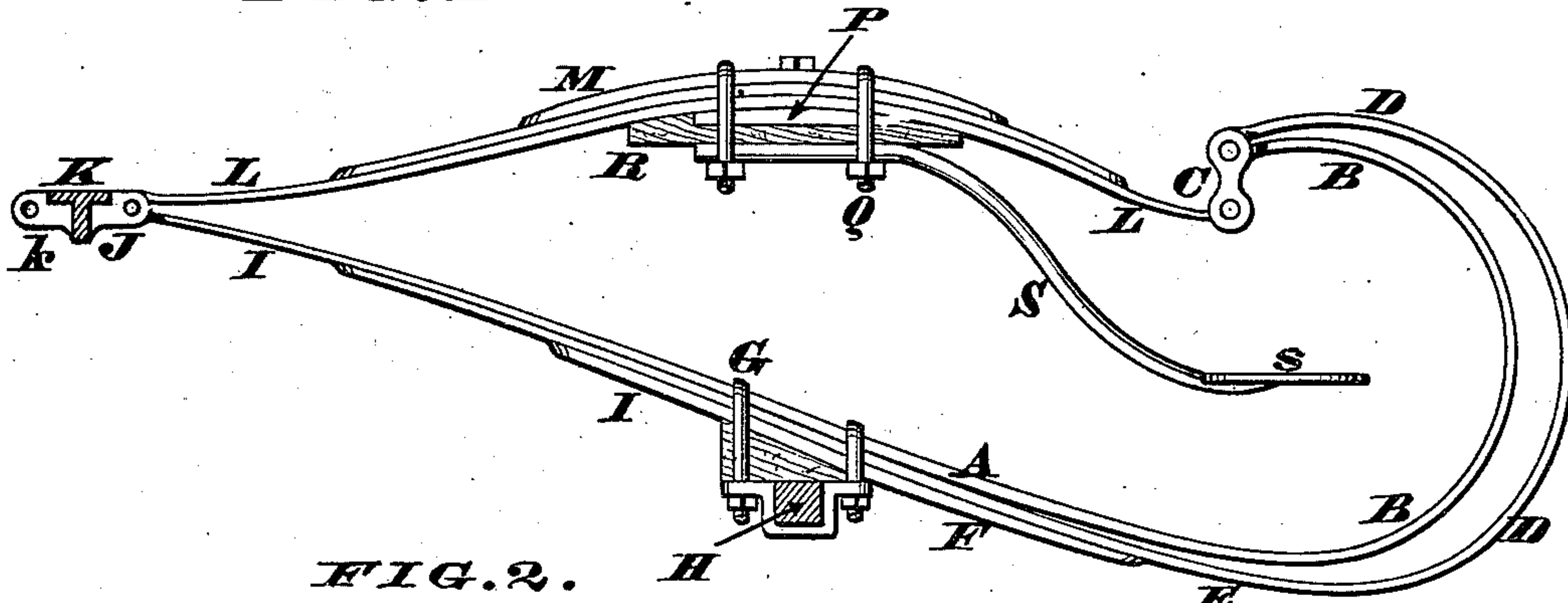


FIG. 2.

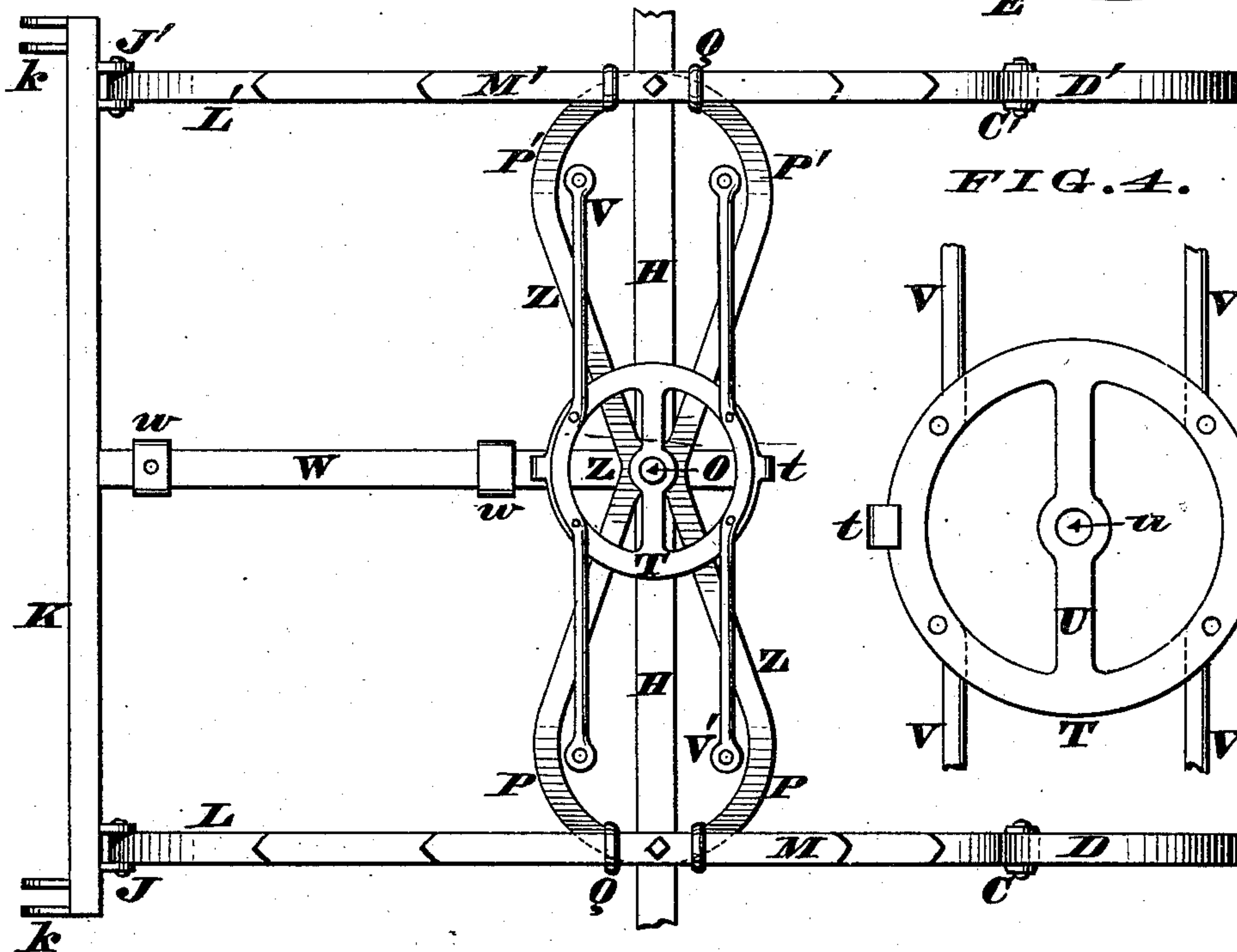


FIG. 4.

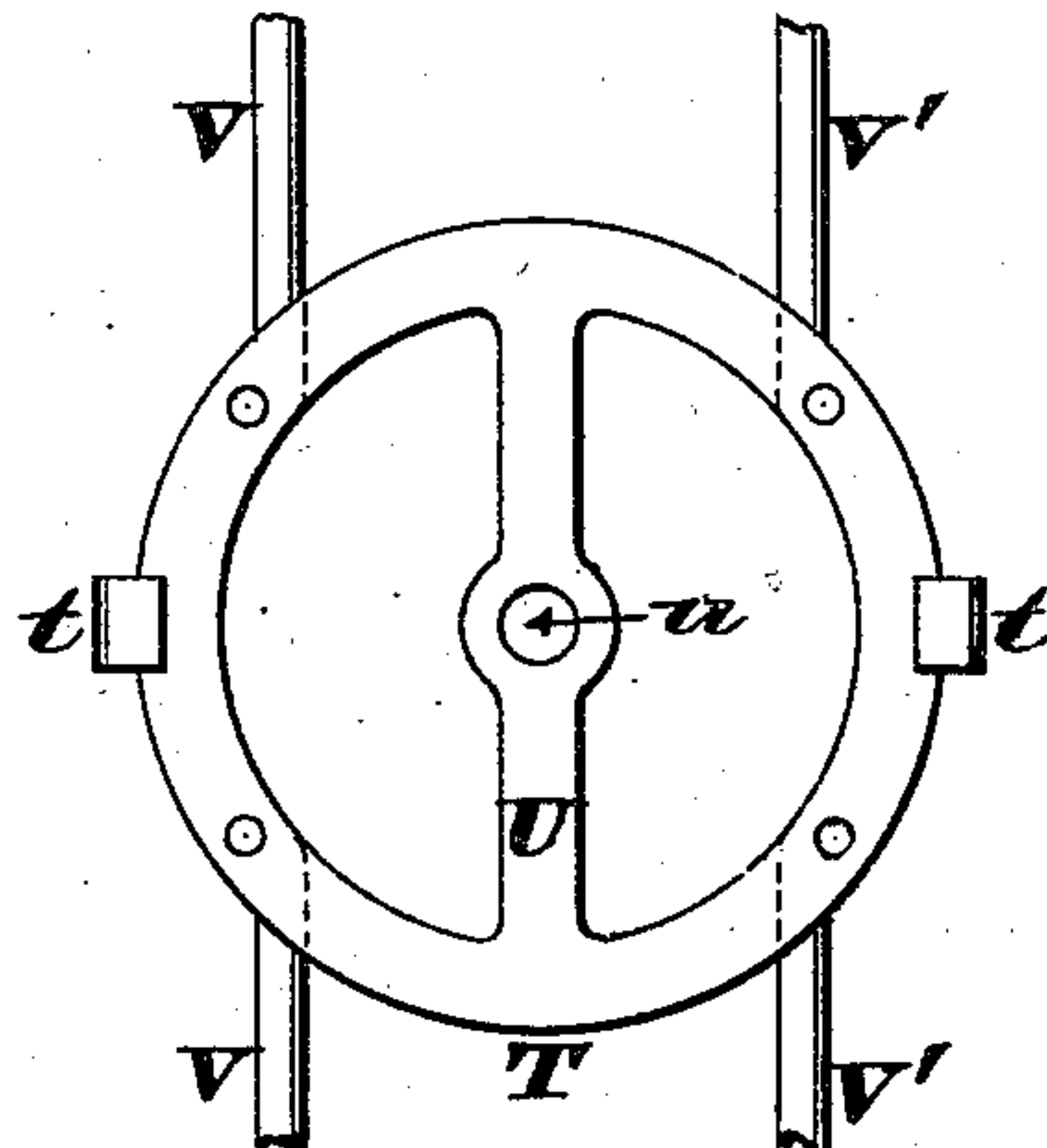
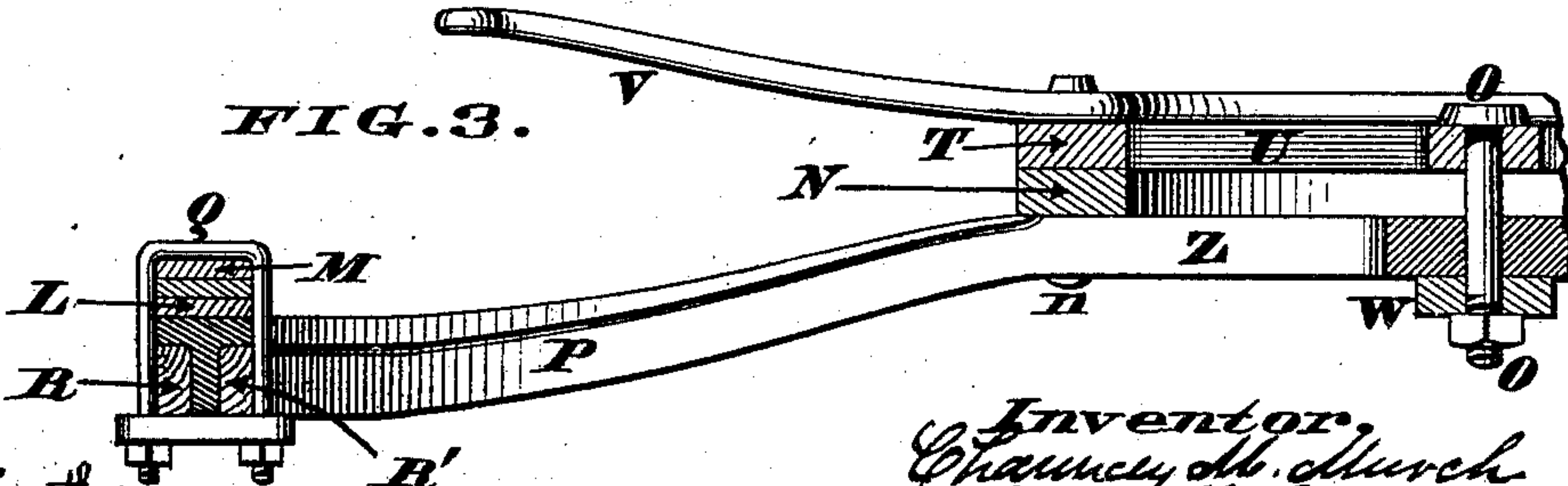


FIG. 3.



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Chauncey M. Murch
by James H. Layman
Att.

UNITED STATES PATENT OFFICE.

CHAUNCEY M. MURCH, OF CINCINNATI, OHIO.

RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 294,742, dated March 4, 1884.

Application filed December 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHAUNCEY M. MURCH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Running-Gear for Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The object of my invention is to improve either of the springs patented to me April 13, 1880, or October 16, 1883, so as to render said springs especially applicable to the front running-gear of a four-wheeled vehicle. This result is accomplished by giving considerable elevation to the front extension of said springs, and coupling this elevated member to one end of a semi-elliptic spring, the other or rear end of the latter being united by means of a shackle to the bearing, where the two upwardly-curved portions of the old springs are joined together. The semi-elliptic spring supports one end of an arched frame made of T-angle iron, which frame is pierced at its center to admit the king-bolt. Furthermore, this frame is X-shaped at center, but is bent to an approximately semicircular curve, where it is attached to the semi-elliptic springs. Owing to this arrangement of semi-elliptic springs and arched fifth-wheel frame, the necessary elevation of the front portion of the vehicle is obtained, while the upward extension of the lower spring causes the draft of the horses to be transmitted in part to the front axle, thereby causing the latter to maintain its proper relative position to the carriage or coach. Another advantage due to this upward prolongation of my old form of spring is that the splinter-bar is elevated so far above the ground as to render it impossible for the horse to injure himself by striking his hocks against said bar, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a side elevation of my improved running-gear. Fig. 2 is a plan of the same on a somewhat reduced scale. Fig. 3 is an enlarged transverse section of half of the arched fifth-wheel frame. Fig. 4 is an enlarged plan of the under side of the top plate of the fifth-wheel.

50 Referring to Fig. 1, A represents a steel plate, blade, or strip of any suitable stiffness, the rear end thereof being bent upwardly and

then forwardly, as at B, where it is joined by a shackle, C, to the curved portion D of another blade, E, which latter may be supported by one or more additional leaves, F, according to the weight of the vehicle.

G are clips that attach this composite spring to the front axle, H.

As above constructed and applied, the spring is substantially the same as seen in the patents previously referred to; but that portion, I, of the spring in front of the axle H, instead of being extended horizontally, is carried upwardly at any suitable angle, and is coupled by an ear, J, to the splinter-bar K, which latter is made of T-angle iron. Furthermore, this ear J serves as an attachment for the front end of a practically semi-elliptic spring, L, whose rear end is coupled to the lower bearing of shackle C. This spring may be stiffened with any desired number of extra leaves, M. This arrangement of springs, &c., is of course exactly duplicated on the other side of the running-gear, as seen at C' D' J' L' M' in Fig. 2.

N represents the lower ring of the fifth-wheel, (seen in Fig. 3,) said ring being secured with rivets or bolts *n* to an X-shaped frame, Z, made of ordinary iron bars, the center of said frame being pierced to admit the king-bolt O. The opposite ends of this frame are welded to curved members P P', composed of T-angle iron, which curved members are secured to the semi-elliptic springs L L' by clips Q. These clips retain in place the filling-blocks R R', and also the rod S, that supports the step s.

Adapted to revolve upon the ring N is the upper ring, T, of the fifth-wheel, having a diametrical arm, U, pierced at *u*, to admit the king-bolt O, and being provided with clips *t*, that grasp said ring N, in the usual manner.

Attached to the upper surface of ring T are arms V V', that support the vehicle-body. W is a draft-bar, one end of which is fastened to the splinter-bar K, while its rear end is passed under the frame Z and receives the king-bolt O. This draft-bar may have sockets or loops *w* to receive a pole; or clips *k k* may be applied to the splinter-bar when shafts are to be fitted to the vehicle.

By referring to Fig. 1 it will be noticed that the forward extension or prolongation, I, of

the composite spring A B D E F is carried up a considerable distance before it joins the splinter-bar K, which latter is about on a level with the lower bearing of shackle C, and as the spring L bends upwardly from these supports K C, it is evident the ends P P' of the fifth-wheel frame are some distance above the axle H. Again, by referring to Fig. 3, it will be seen that the frame P arches toward the center of the vehicle, and thereby increases the elevation of the fifth-wheel. Hence the incline I, semi-elliptic spring L, and arched frame P coact to raise the fifth-wheel so high as to allow the front wheels of the vehicle to turn under the same, thereby dispensing with perches, reaches, and coupling-poles. When the horse is drawing the vehicle, the strain is not thrown entirely upon the upper part of the spring, as is customarily done with coaches and other carriages of that class. Neither is the pull concentrated directly upon the front axle, but is about divided between the spring and axle. This result is due to the fact that the splinter-bar K is situated at the apex of a triangle, of which the springs I L form the two sides, while a line drawn vertically through the axle H constitutes the base thereof. Consequently these members I L transmit the strain almost equally to the axle and fifth-wheel and prevent said axle losing its proper position, either by being pulled forward or forced backward. Again, there is no sliding upon each other of the leaves of these members I L, because the crescent-shaped opening between the curved blade B and D contracts when any downward surge is thrown upon the spring, which yielding of said blades increases the durability of the running-gear and imparts a very easy motion to the vehicle mounted thereon.

It is evident the leading feature of my invention would be practically obtained by omitting one of the springs, as D E, and supporting the rear end of spring L on a single leaf, as A C; but the duplex arrangement A B D E is preferred.

I claim as my invention—

1. In combination with the lower spring, A B, having its forward extension, I, elevated and connected to the splinter-bar K, the upper spring, L, whose front or longer portion is attached to said extension I, while its rear or shorter portion is loosely coupled by a shackle, C, to the upwardly-curved termination B of the aforesaid lower spring, A, as herein described.

2. In combination with the composite spring A B D E I, the semi-elliptic spring L, coupled thereto in the manner described, and supporting a fifth-wheel frame, as set forth.

3. The combination, in a running-gear, of the X-shaped frame Z, terminating with curved portions P P', made of angle-iron, said frame being pierced at its center to receive the king-bolt O, and having the lower ring, N, of the fifth-wheel secured thereto, for the purpose described.

4. The combination, in a running-gear, of springs A B D E I L, shackle C, frame Z P P', fifth-wheel N T, and king-bolt O, for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

CHAUNCEY M. MURCH.

Witnesses:

JAMES H. LAYMAN,
L. H. BOND.