

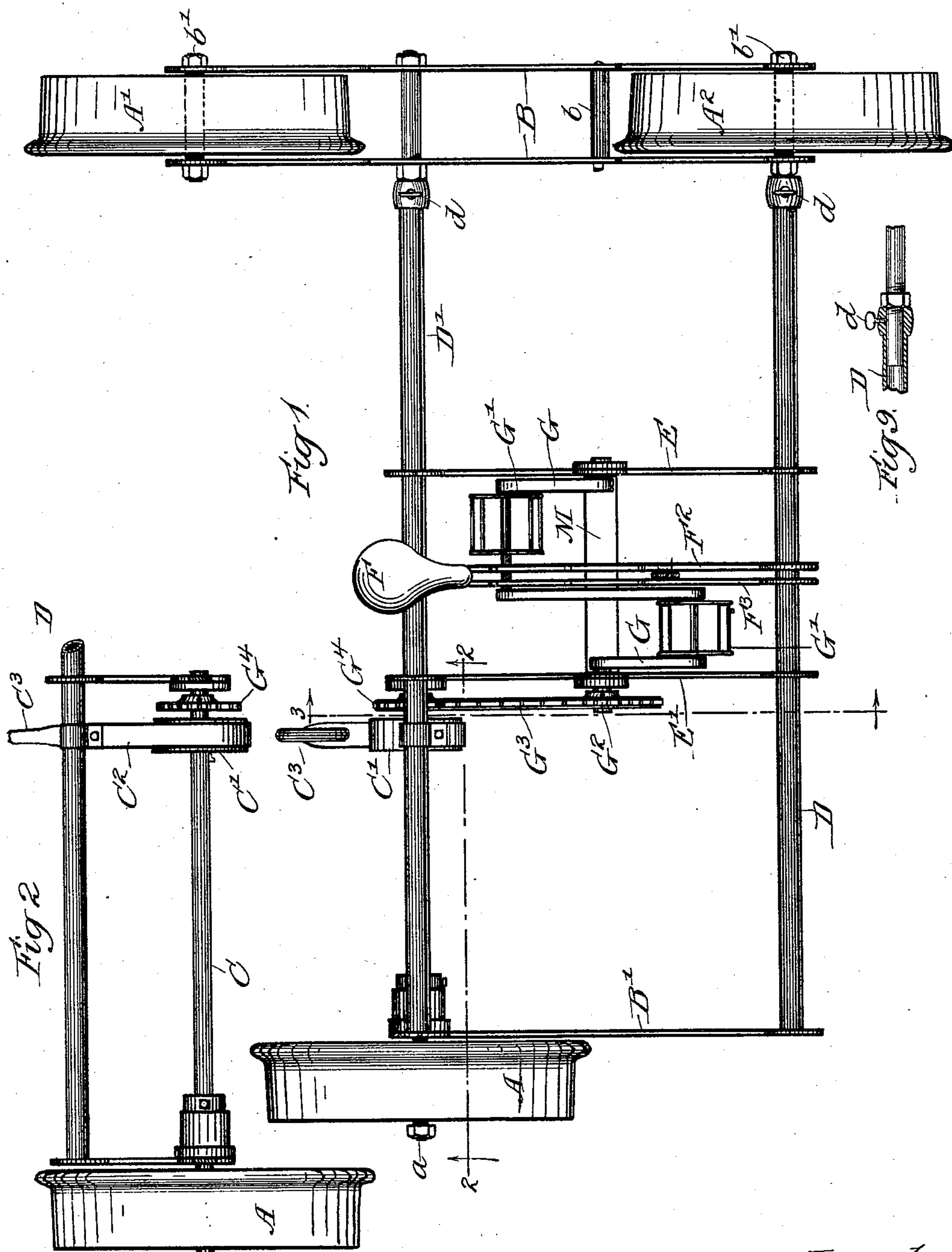
(No Model.)

4 Sheets—Sheet 1.

F. BRADY.
RAILWAY TRICYCLE.

No. 542,326.

Patented July 9, 1895.



Witnesses
O. R. Barnett
J. D. Mason.

Inventor
Frank Brady
by Raymond K. Oushin, Jr.
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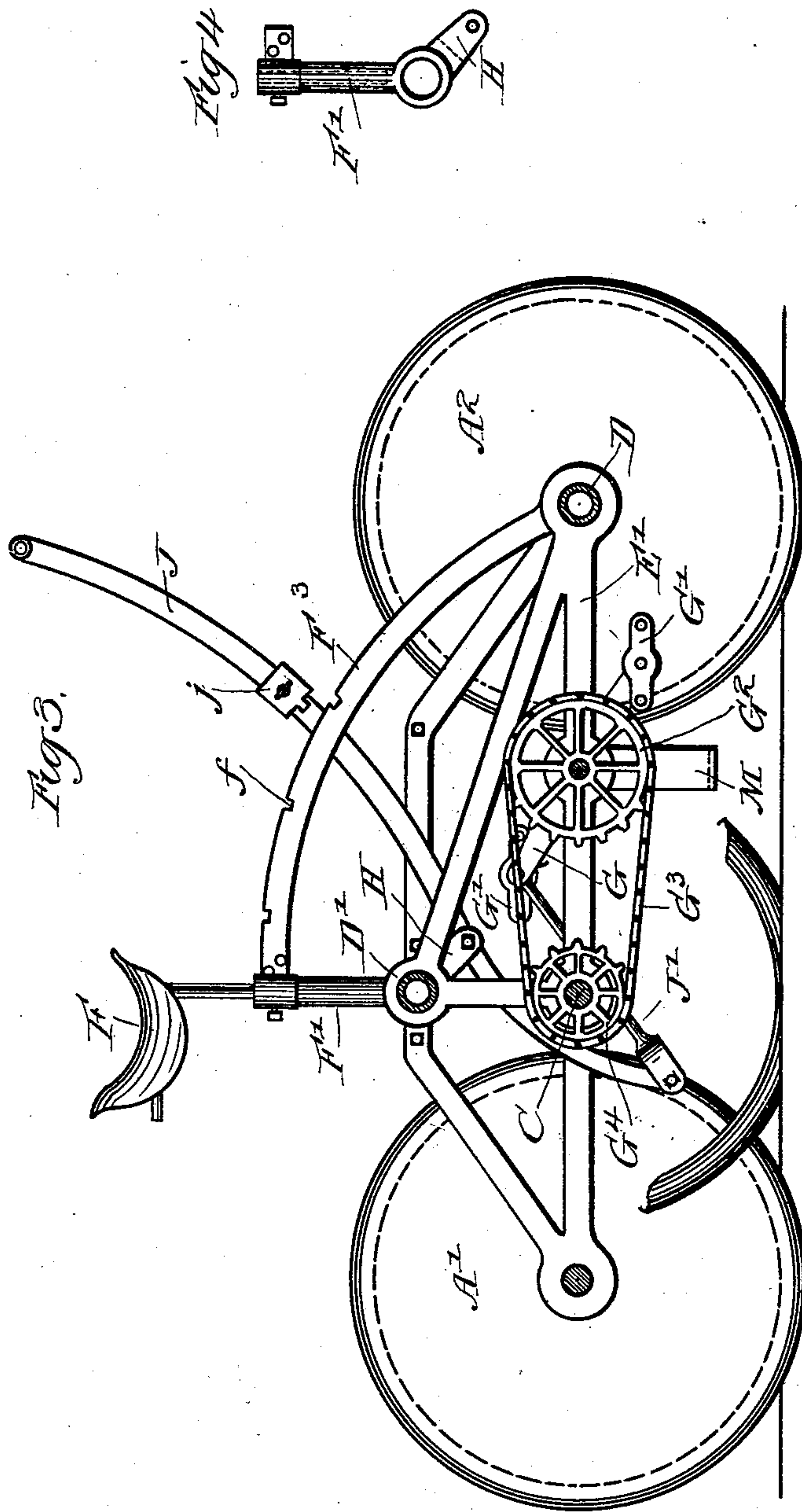
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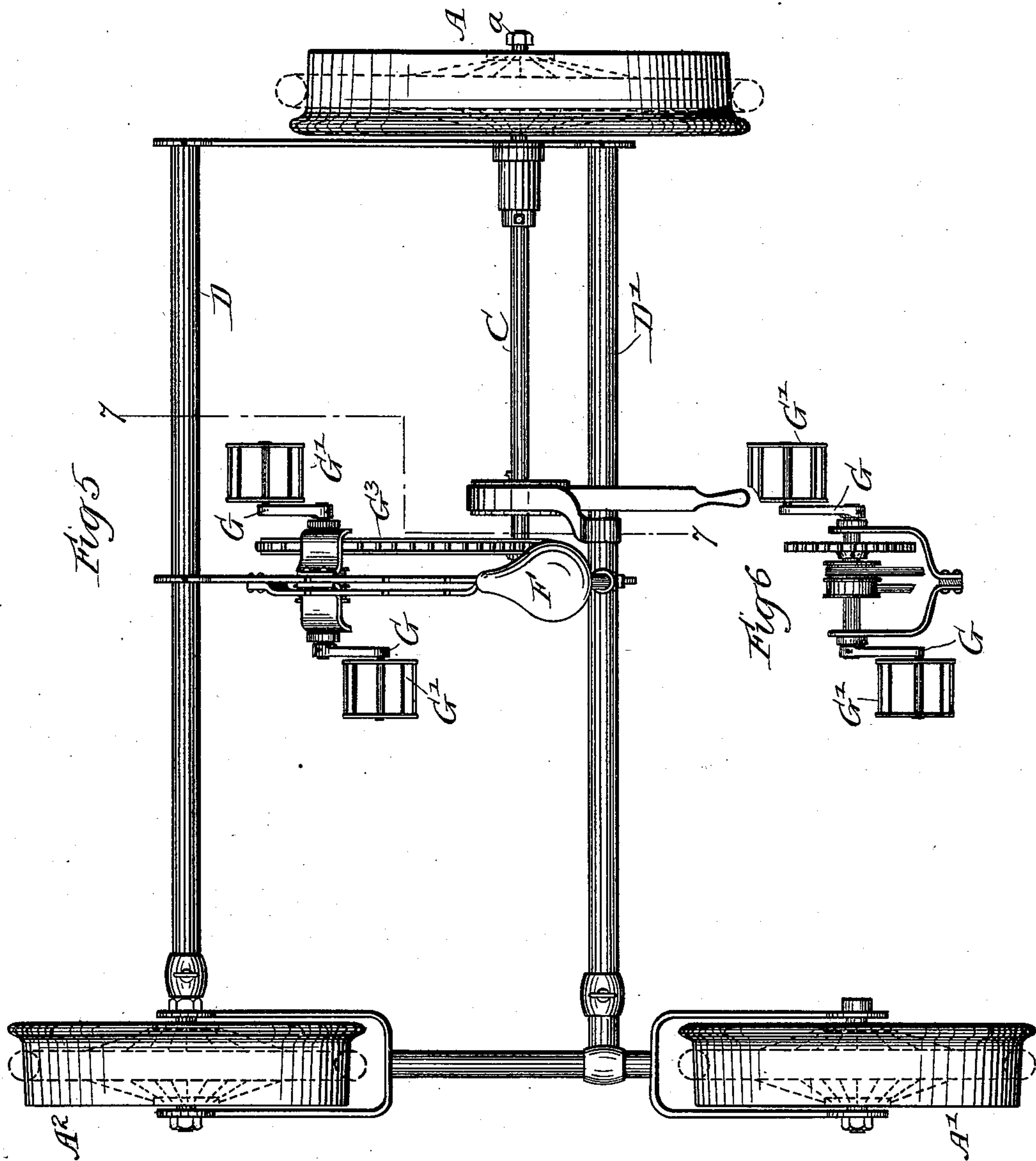
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No. 542,326.

Patented July 9, 1895.



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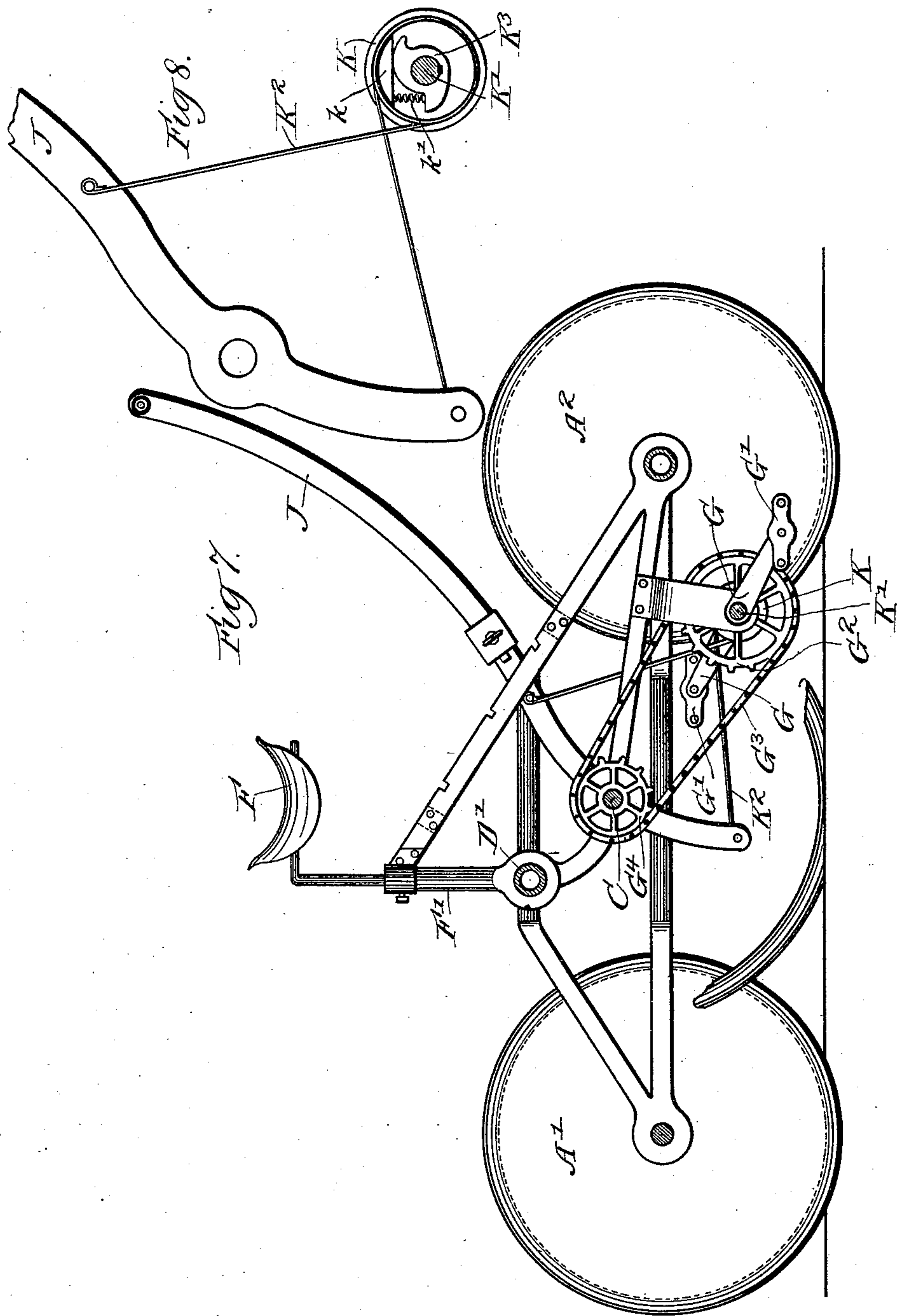
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4 Sheets—Sheet 4.

F. BRADY.
RAILWAY TRICYCLE.

No. 542,326.

Patented July 9, 1895.



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UNITED STATES PATENT OFFICE.

FRANK BRADY, OF CHICAGO, ILLINOIS.

RAILWAY-TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 542,226, dated July 9, 1895.

Application filed March 10, 1893. Serial No. 465,483. (No model.)

To all whom it may concern:

Be it known that I, FRANK BRADY, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Railway-Tricycles; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object the production of one of that class of velocipedes or tricycles for use on railway-tracks, although it is not necessarily limited to such use, and the vehicle might be used on an ordinary road.

It consists in the combination of devices and appliances hereinafter described and claimed.

Figure 1 is a plan view of the velocipede. Fig. 2 is a sectional elevation on the line 2 2 of Fig. 1. Fig. 3 is a sectional elevation on the line 3 3 of Fig. 1. Fig. 4 is the detail of construction. Fig. 5 is a plan view of a slight variation; Fig. 6, an elevation of a portion; Fig. 7, a side elevation on the line 7 7 of Fig. 5; Figs. 8 and 9, details of construction.

In carrying out the invention A A' A² represent the wheels of the vehicle, adapted to travel upon the railway-track rails, the wheel A traveling upon one rail and the wheels A' A² upon the other, the wheels A' and A² connected by parallel frames B, forming a wheel-frame, connected by the bolts b b', the latter forming axles for the wheels. Each of these wheel-frames is made up of two horizontal portions, one above the other, with diagonal braces connecting them.

C is a rod constituting the axle of the wheel A, to which the driving-gear is connected. Supported at one end by this rod C is the side frame B', connected with the wheel-frame B on the opposite side by the rods D D'.

E E' are braces or frames of metal similar to the frames B from the rod D to the rod D', about midway between the wheels and supporting the seat and driving mechanism.

The seat F is supported by a standard F' extending upward from the rod D' and braced by the braces F² F³.

Pivoted between the frames E E' are the

pedal-cranks carrying two pedals G'. These are of the ordinary construction and need not be elaborated upon in this description. On the spindle of the crank G is the usual sprocket-wheel G². This is connected by the usual sprocket-chain G³ with the sprocket-wheel G⁴ on the shaft of the wheel A. Motion is thus communicated to the latter.

On the shaft C of the wheel A is a band-wheel or friction-pulley C' and surrounding this is a strap C². Pivoted to the rod D' is a lever C³, one end of the strap C² being engaged to the lower end of this lever and the other end of the strap being engaged to the rod D', so that the operator by grasping the upper end of this lever can cause the strap to bear upon the wheel or pulley C' and thus have an effective brake.

Pivoted to an arm or projection, Fig. 3 is the lever J, its lower end connected by the rod J' with one of the cranks G. The connection between the rod J' and the crank G is made by providing the end of the rod with a hook which engages the crank, so that the rod can at any time be disengaged from the crank and the machine operated entirely by foot-power, and during said operation the rod can be temporarily connected with the lever (which is now locked) in any suitable manner, or by engaging the rod to the crank both foot and hand power may be used.

The braces F² and F³ are formed in the arc of a circle and provided with one or more notches f, and the lever J is provided with an adjustable block j with a thumb-screw, said block engaging a notch in the braces F² F³ and locked therein by the thumb-screw. Thus should the operator not desire to use the hand-power he can lock the lever in any desired position and use it as a handle to grasp and thus obtain more purchase with his feet.

It will be observed that the rods D D' are detachably engaged to the frame B by the bolts b b' extending into said rods (which are preferably hollow, and when so are preferably made of gas-pipe) and locked there by the thumb-screws d. It will also be observed that by removing the nut a the wheel A can be removed.

In Figs. 5, 6, 7, and 8 I have shown a slight variation in the form of mechanism. The end

of the hand-lever J instead of being connected to one of the cranks by the rod J' is engaged to the shaft of the cranks G by a friction-clutch. (Shown in detail in Fig. 8.) This clutch consists of a hollow wheel K loosely mounted on the crank-shaft K'. Around the periphery of this wheel K is passed a band K², one end connected to the lever J above its pivotal point and the other connected thereto below its pivotal point, the two portions of the band crossing each other. Keyed to the shaft K' is a cam K³, and between this cam and the inner periphery of the wheel is a loose block k, connected with the cam by a spring k'. Thus when the wheel K is revolved by a pull on the portion K² of the strap the block k wedges between the cam and the inner periphery of the wheel and the wheel carries the shaft around with it.

It will be observed that in Fig. 5 I have indicated by dotted lines the provision of wheels with pneumatic tires, whereby the vehicle might be used upon an ordinary road or other surface and not be confined to use on a railway-track. It will also be observed that I have made the wheel-frame B, carrying the wheels A' A², as well as the wheel A on the opposite side, readily attachable to and detachable from the balance of the construction, so that when shipping or transporting the vehicle from one point to another the frame may be separated and more conveniently packed for shipping. To protect the pedal mechanism I extend the guard M (Figs. 1 and 3) from the frame E to the frame E'. Again, it will be observed that by the peculiar curved shape of the lever J the connections can be made with the driving mechanism and yet the upper end of the lever be at the desired point to be grasped.

By the above construction I have provided an exceedingly light, compact, and yet durable form of railway velocipede or tricycle, one that can be readily "knocked down" for shipping, one in which the most destructible parts are protected by a suitable guard, one in which the operator sits in the most desirable point on the framework, and one in which either hand or foot power, or both, may be used to drive the vehicle.

What I claim is—

1. In a railway tricycle the combination with the wheels, the wheel frame and the main frame, said wheel frame detachable from the main frame, of the driving power, sub-

stantially between the two ends of the main frame, said power consisting of a lever for driving by hand and foot mechanism for driving with the feet, substantially as described.

2. In a railway tricycle the combination with the driving wheel, and its axle, and connections between said axle and an auxiliary driving shaft, of a lever J for driving the latter, said lever bent or curved, and the detachable link connection between said lever, and said auxiliary shaft, substantially as shown and described.

3. In a railway tricycle the combination with an auxiliary driving shaft of a lever for driving the same, and clutch mechanism connecting the lever and shaft consisting of a flexible band, one end connected with the lever above its pivotal point and the other end to the lever below the pivotal point, the two portions of the band crossing each other, a wheel loosely mounted on the shaft, around the periphery of which the band is passed, and clutch mechanism within the wheel for engaging the wheel to the shaft when the wheel is revolved in one direction, substantially as described.

4. In a railway tricycle the combination with the wheels and the wheel frame of the main frame on which the driving mechanism is mounted, said main frame consisting of two parallel rods extending from one wheel frame to the other, said rods attachable to and detachable from the wheel frame, at one end, substantially as described.

5. In a railway tricycle the combination with the main frame, a hand driving lever, and the seat standard supported by said frame of a brace extending from said seat standard to the main frame, said brace provided with notches into which locking mechanism on the lever may engage, substantially as described.

6. In a railway tricycle the combination with the main frame and driving gear mounted thereon, said driving gear consisting of foot mechanism and hand mechanism of a lever constituting the hand mechanism, said lever provided with mechanism whereby it may be disengaged from the driving gear and with locking mechanism whereby it may be locked in the desired position when disengaged, substantially as described.

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Witnesses:

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