

(No Model.)

3 Sheets—Sheet 1.

J. W. MATTESON.

TRICYCLE.

No. 323,052.

Patented July 28, 1885.

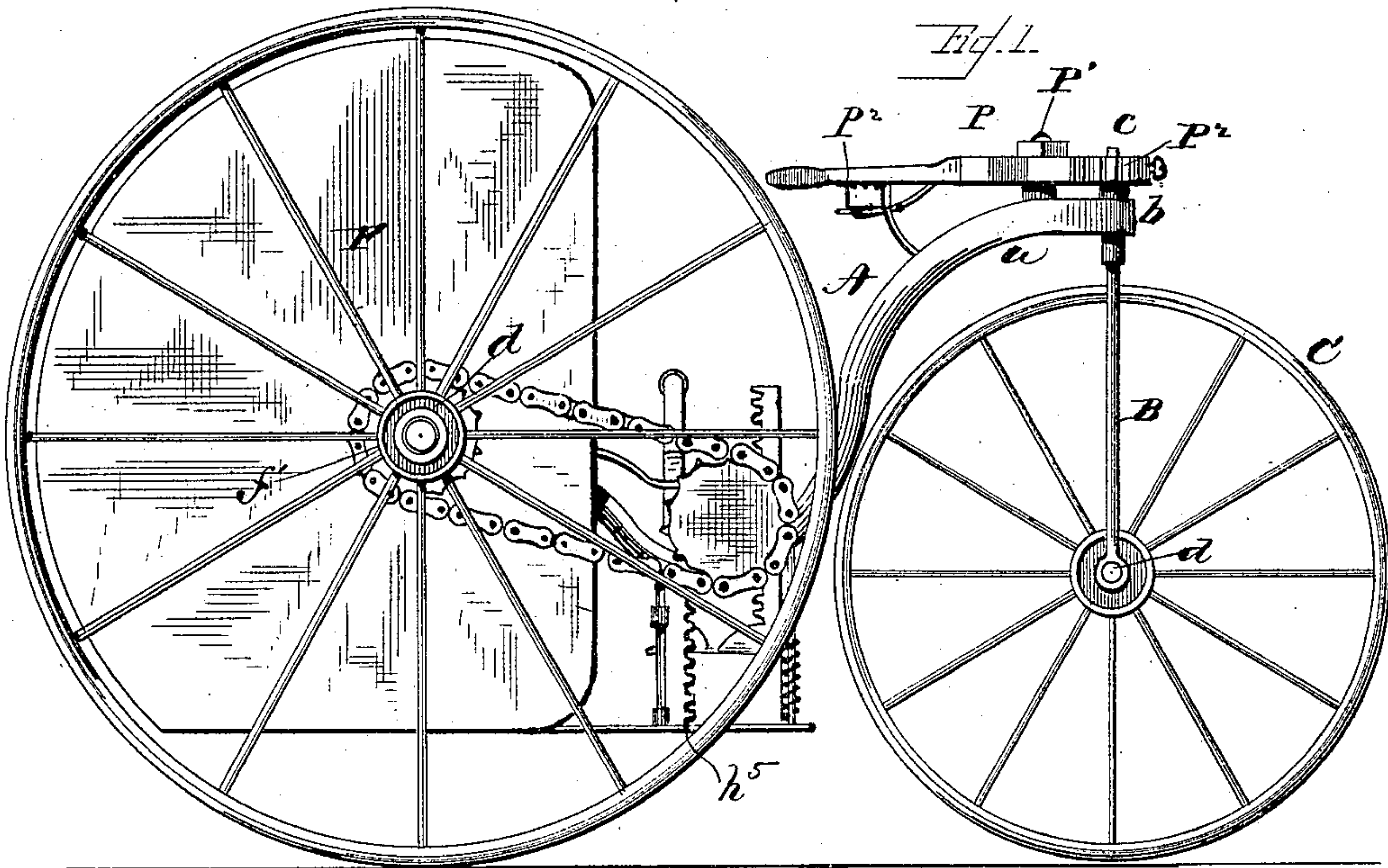
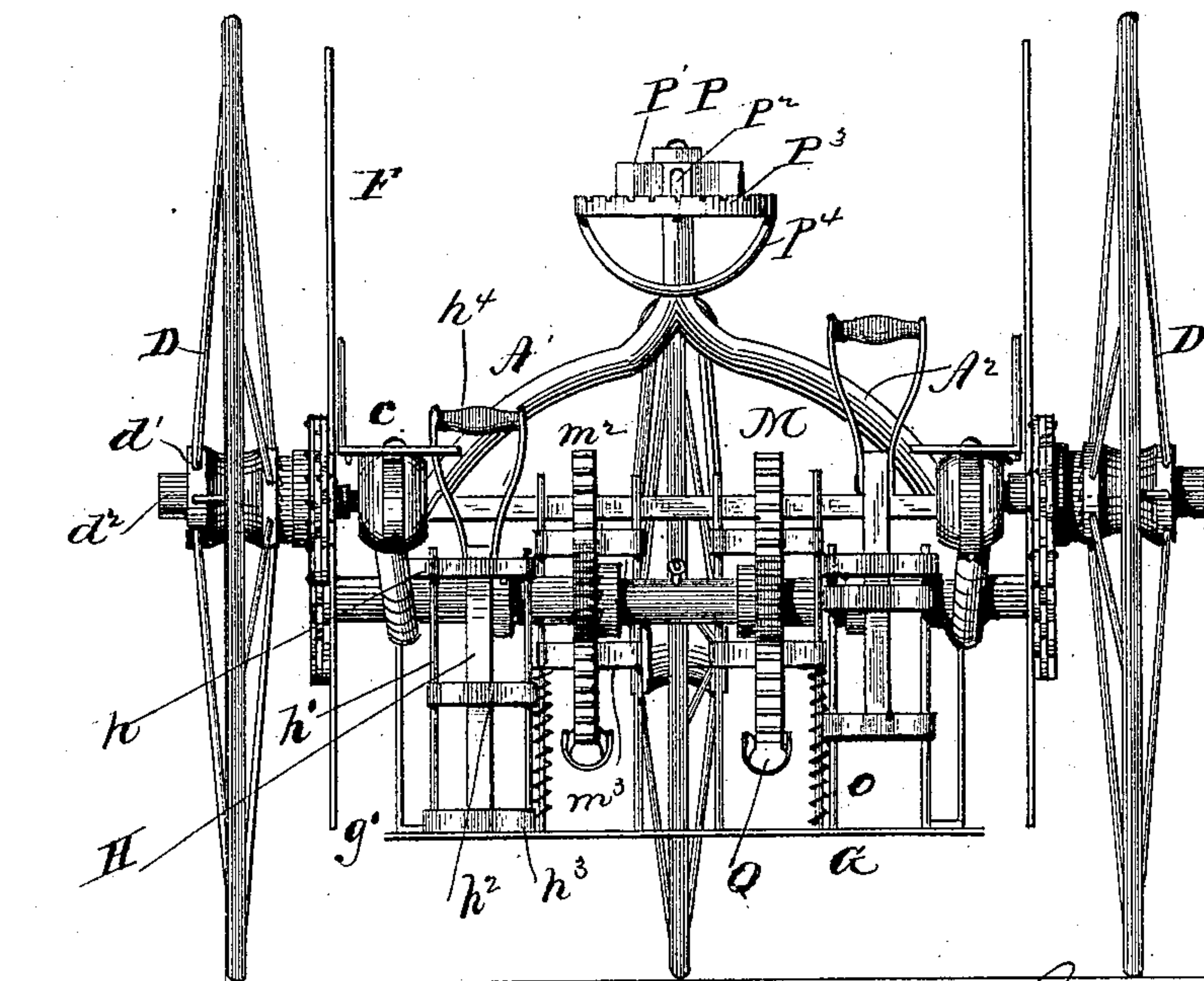


Fig. 2.



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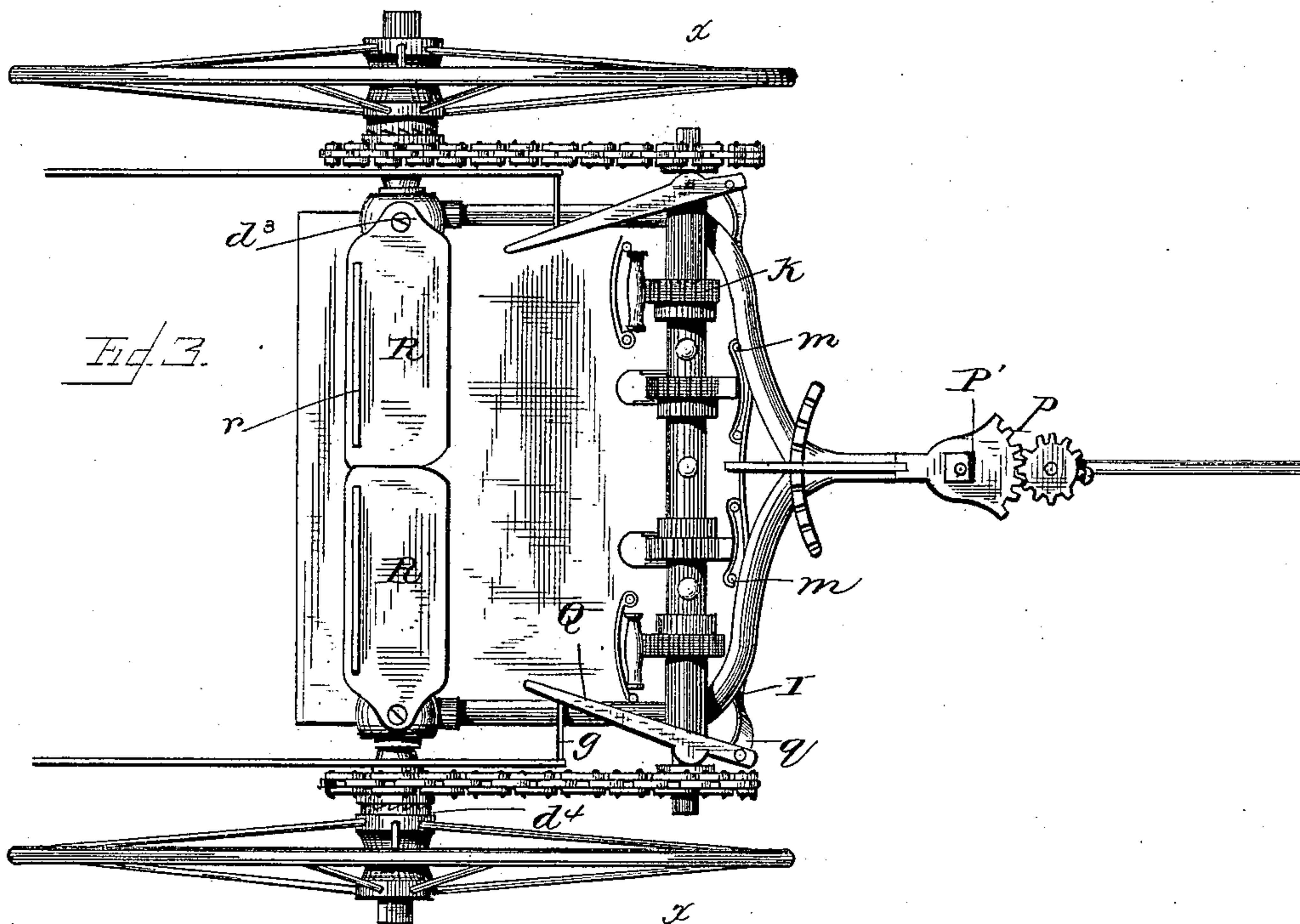


Fig. 3.

Fig. 5.

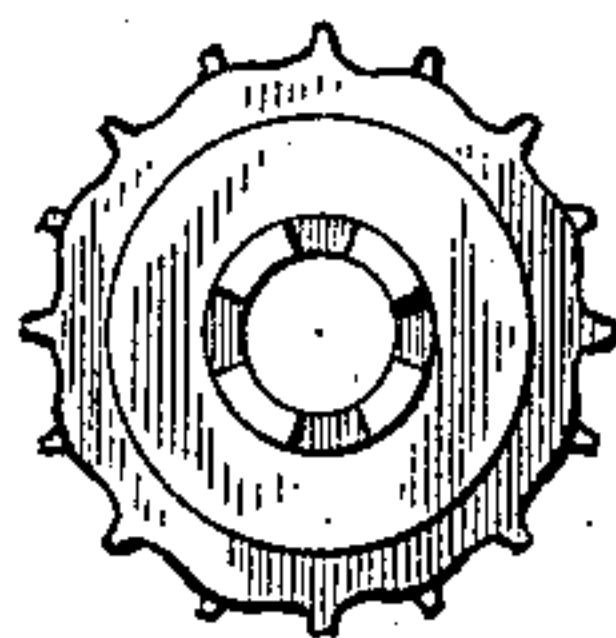


Fig. 4.

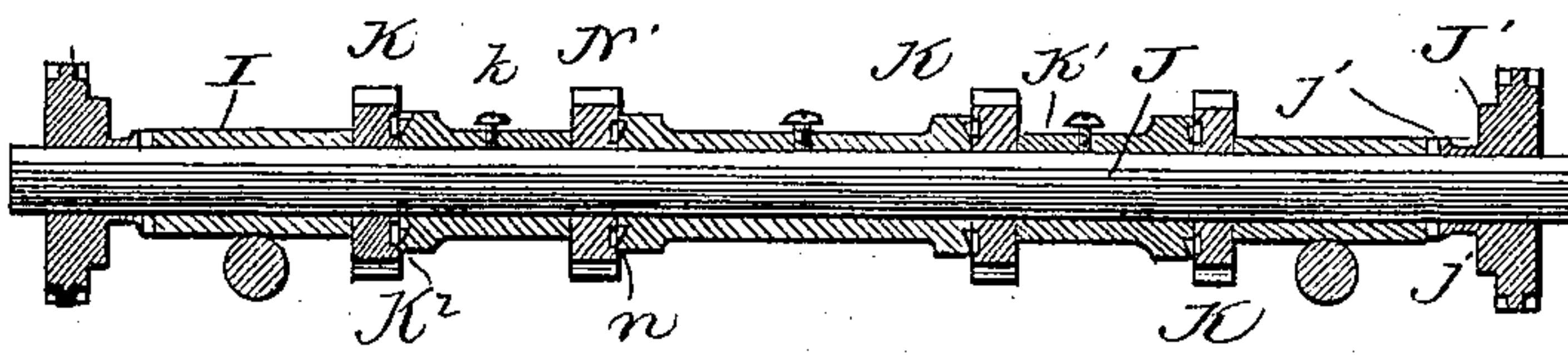


Fig. 6.

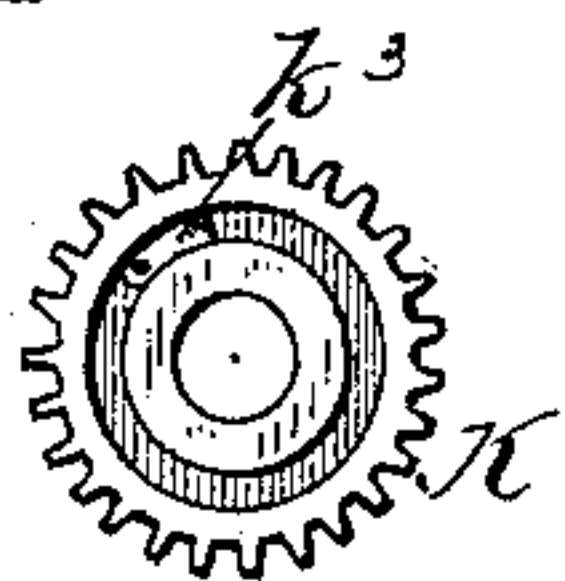
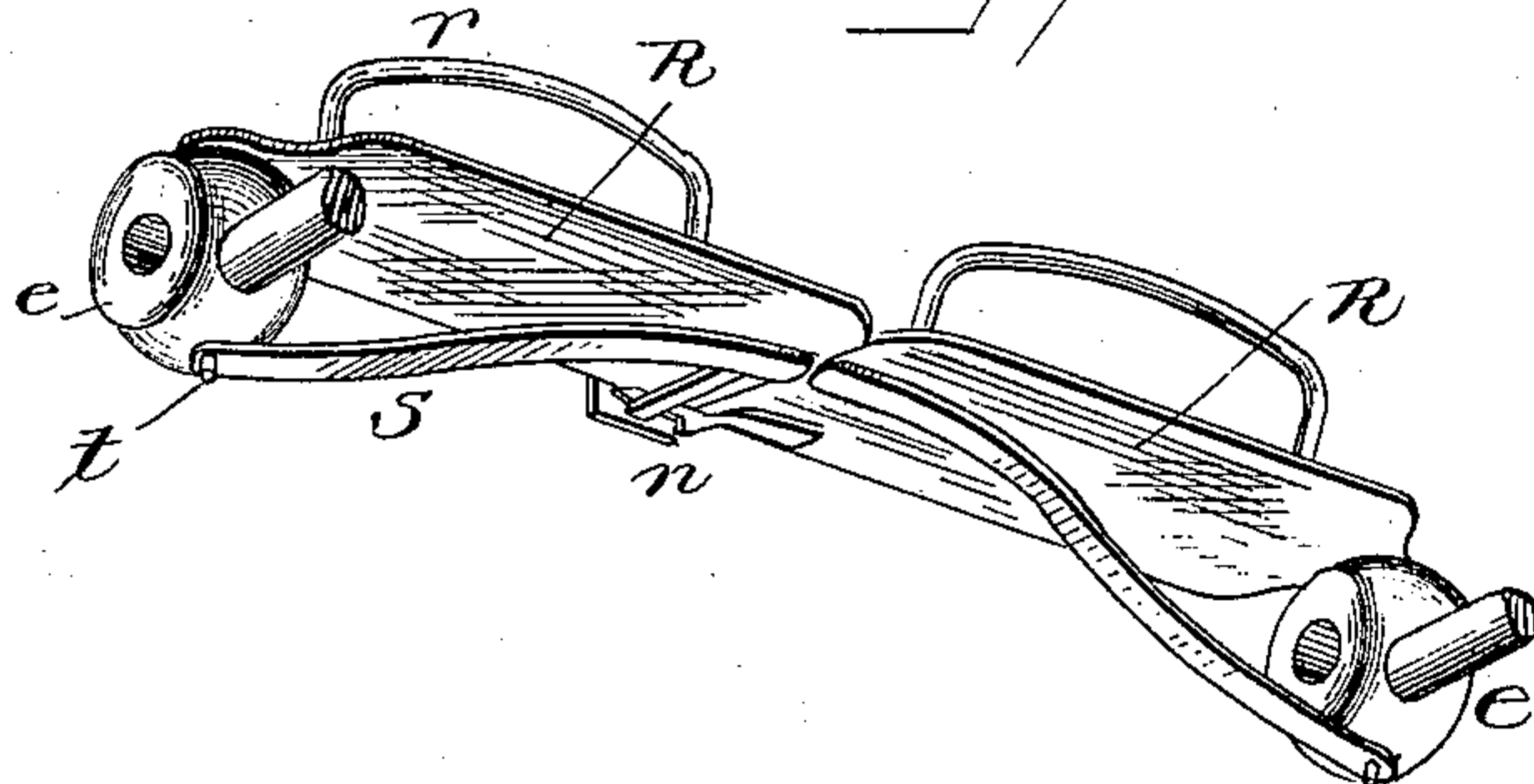


Fig. 7.



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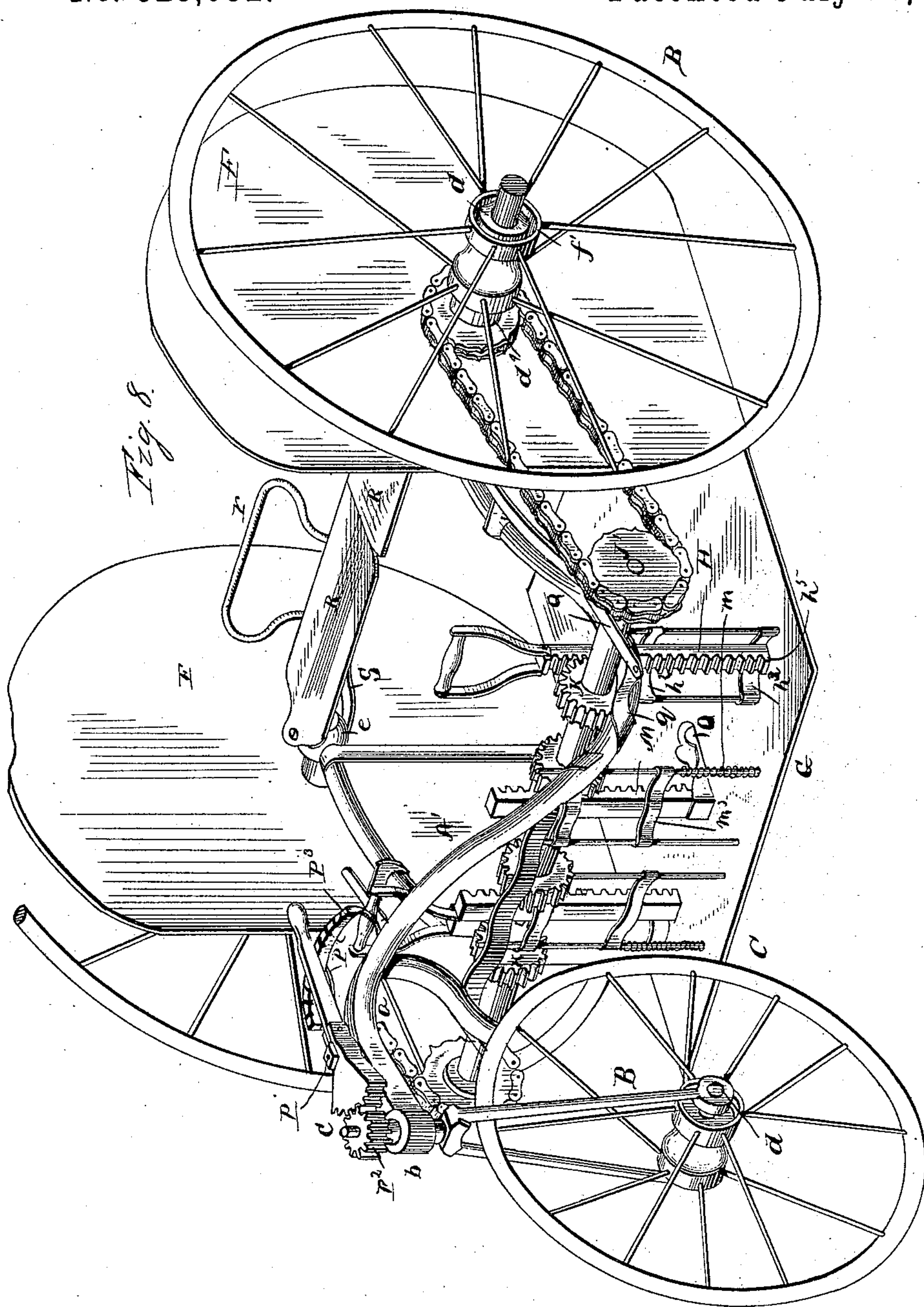
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# UNITED STATES PATENT OFFICE.

JEFFERSON W. MATTESON, OF HEBRON, PENNSYLVANIA.

## TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 323,052, dated July 28, 1885.

Application filed November 1, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JEFFERSON W. MATTESON, a citizen of the United States of America, residing at Hebron, in the county of Potter and State of Pennsylvania, have invented certain new and useful Improvements in Tricycles; and I do hereby 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to tricycles; and it consists in the improvements hereinafter described and set forth, and then sought to be specifically defined in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of my improved tricycle. Fig. 2 is a rear and Fig. 3 a plan view of the same. Fig. 4 is a sectional detail on the dotted line *x x* of Fig. 3. Figs. 5, 6, and 7 are detail views; and Fig. 8 is a perspective view.

The supporting-frame of the machine consists of a rod, A, which is projected at its front end to form the horizontal portion *a*, which terminates in the loop *b*, designed to receive the shank *c* of the vertical yoke B, looped at its lower end to receive the journals *d* of the guide-wheel C. The rod A is bifurcated to provide the rearwardly-extending portions A' A'', each of which depends down from the horizontal portion *a*, and is then bent upward and rearward, each terminating at its rear end in a socket, *e*.

D D represent the rear carrying-wheels of the structure, the hubs *d'* of which are mounted loosely on the stub-shaft *d''*, the inner end of which shaft bears in the adjacent socket *e*, and is clamped therein by means of a screw, *d'''*, which pierces said socket and bites the end of said shaft. Each hub *d'* is provided on its inner face with a ratchet-wheel, *d''''*, which is adapted on the forward rotation of said wheel to engage a pawl located on an adjacent sprocket-wheel, *f'*, which is mounted loosely on the shaft *d''*, but is held in position thereon by being retained between said ratch-

et-wheel *d''''* and a plate or guard, F, which is pierced by said stub-shaft *d''*, and is provided on its inner side with a collar, *f''*, which embraces said shaft and bears against the adjacent socket *e*, thereby insuring the proper lateral position of the several parts mentioned. An arm, *g*, is secured on each of the rear portions of the rods A, so as to bear against the adjacent plate F and re-enforce the same against pressure. A strap, *g'*, depends from each rear portion, A' A'', adjacent to its socket *e*, and is secured at its lower end to a horizontal plate or platform, G. A brace, *h*, is secured to each of the rods A A', near the front depressed portion thereof, and each of the said braces extends inward toward the center of the machine for the attachment of parallel rods *h'*, the lower ends of which are secured to the platform G, the centers being braced by a strap, *h''*, which is looped at its ends to embrace said rod so as to play vertically thereon. A second strap, *h'''*, is located near the bottom of said rods, so as to play vertically thereon. A vertical rod, H, is connected to the straps *h'' h'''*, as shown in Fig. 2, and terminates at its upper end in a handle, *h''''*, the front face of said bar being arranged so as to present a vertical series of rack-teeth, *h''''*. A sleeve, I, is located upon the depressed portion of each of the sections A' A'', as indicated most clearly in Fig. 4, and each of the said sleeves is designed to form the end bearing for a transverse shaft, J, which has loosely mounted on each end a sprocket-wheel, J', provided on its inner face with a hub, *j*, having a series of teeth, *j'*. A gear-wheel, K, is mounted loosely on the said shaft J immediately opposite each vertical rack-bar H, so as to mesh with the teeth thereof. A sleeve, K', is located on the shaft J adjacent to each of the gear-wheels K, and the said sleeve is rigidly secured to said shaft by means of a set-screw, *k'*, one end of said sleeve K' being arranged to present a ratchet-face, *k''*, designed to be engaged by a dog, *k'''*, located in a recess in the adjacent side face of the gear-wheel K when the said gear-wheel is rotated in a forward direction. Two vertical series of parallel rods, *m m'*, are located between and slightly in advance of the rods *h'*, and each pair is pro-



vided with a transverse series of straps,  $m''$ ,  $m'''$ , arranged on said rods, similar to the straps  $h''$   $h'''$ , and having secured thereto a vertical rack-bar, M, the rear rack-face of which meshes with a gear-wheel, N, mounted loosely on the shaft J, and designed to rotate said shaft by means of a central sleeve, K'', provided at its ends with ratchet-faces  $n$ , adapted to be engaged by pawls on the adjacent gear-wheels N when said gear-wheels are rotated in a forward direction. A spring,  $o$ , embraces one of the rods of each pair  $m$   $m'$ , so as to maintain the straps of each pair about the upper portions of said rods. The lower ends of each of the vertical rack-bars M carry a pedal, O.

P represents a stud located on the horizontal portions  $a$  of the rod A, and forming the pivotal bearing for a casting, P', the front face of which is provided with a series of rack-teeth,  $p$ , arranged in the form of an arc and adapted to mesh with the teeth of a gear-pinion, P'', bolted on the upper end of the shank  $c$  of the yoke B. The casting B' has pivoted at its rear portion a hand-lever,  $p''$ , which is designed to engage one of a series of notches formed in a curved bar, P''', supported on the rod A by means of a curved brace,  $p''''$ . A plate,  $q$ , projects from each rod A' A'' and forms the fulcrum on which to pivot the front end of the lever Q, provided with a pin on its under side designed to engage one of the teeth  $j'$  in the adjacent wheel J'.

R R' represent two plates, which are pivoted on the upper side of the socket  $e$ , as shown in Fig. 3, and which, when arranged as shown in said figure, form conjointly a double seat, each section R R' being provided with a bent wire rod,  $r$ , to serve as a back for said seat. A spring-brace,  $s$ , is secured at one end to the under side of each of the seat-sections R R', while its other end is perforated for the engagement of a pin,  $t$ , depending from the under side of each of the sockets  $e$ .

A suitable fastening device,  $u$ , is designed to secure the seat-sections together in the positions illustrated in Figs. 3 and 7.

A link-chain serves to transmit motion from each wheel J' to each sprocket-wheel  $f'$ .

The operation of the device is as follows: Two persons are each to manipulate one of the bars H and M. It will be obvious that as each bar M is depressed it will rotate the adjacent gear-wheel N, so that the pawl of the same will engage the ratchet-face of the sleeve K' and revolve the shaft J, and consequently rotate the carrying-wheels D of the machine. The successive lifting of the bar H will effect the like rotation of the adjacent gear-wheel K, and continued revolution of shaft J and carrying-wheels D. The operator effects the return of the bar H to its first position by means of the handle  $h''''$  thereof, the reverse revolution of the gear-wheel K resulting in a disengagement of said wheel from the adjacent sleeve, K', thereby preventing any reverse movement of the shaft J'. The springs  $o$  effect the return of the bars N to

their first position. Either or both of the carrying-wheels may be thrown into and out of engagement with the shaft J and appliances by means of the levers Q, which shift the wheels J' on the shaft J into and out of engagement with a pin projecting from said shaft.

It will be apparent that the machine can be easily operated by a single person, inasmuch as both feet can be readily placed upon the pedals while both bars, H, can be operated by the hands, either of which can be released to manipulate the lever  $p''$ , so as to swing the casting and effect a partial turning of the guide-wheel C in either direction.

The guard-plates F serve as a protection against liability of injury to the operator by contact with the revolving wheels D.

I claim—

1. The combination, in a tricycle, of a main frame, carrying-wheels mounted loosely upon shafts projecting from said frame, a drive-shaft, a vertical bar or bars having rack-teeth, a gear-wheel mounted on said drive-shaft, and clutch mechanism secured to said shaft and adapted to be operated by said gear-wheel when the same is rotated by said bar in a predetermined direction, substantially as set forth.

2. The combination, in a tricycle, of a main frame having stub-shafts, as described, carrying-wheels mounted loosely thereon, a drive-shaft suitably journaled at the front of the machine and carrying a ratchet device, a gear-wheel mounted loosely on said shaft, and adapted to engage said ratchet device when rotated in a forward direction, a vertical rack-bar engaging said gear-wheel and guided between parallel vertical bars, and means for transmitting motion from said drive-shaft to said carrying-wheels, substantially as set forth.

3. The combination, in a tricycle constructed and operating substantially as described, of a seat consisting of pivoted sections R R' and devices for securing said sections together, as and for the purpose specified.

4. The combination, in a tricycle constructed and operating substantially as described, of a seat consisting of pivoted sections R R' and spring-braces secured on the under side of said sections and pivotally attached to fixed portions of the machine, substantially as set forth.

5. The combination, in a tricycle, of a main frame carrying wheels mounted loosely upon shafts projecting from said frame, a drive-shaft, vertical parallel guide-bars, actuating rack-bars located between the same, a spring for maintaining each rack-bar in a normal position, a gear-wheel mounted on said drive-shaft, and clutch mechanism secured to said shaft and adapted to be operated by said gear-wheel when the same is rotated by said rack-bars in a predetermined direction, substantially as set forth.

6. The combination, in a tricycle, of a main frame carrying wheels mounted loosely upon



shafts projecting from said frame, a drive-  
shaft, sprocket-wheels J', mounted loosely  
thereon, link chains connecting said sprocket-  
wheels to drive said carrying-wheels, gear-  
5 wheels mounted on said drive-shaft, ratchet-  
sleeves rigidly mounted on said shaft, means  
for throwing said sprocket-wheels into and  
out of engagement with the said sleeves, ver-  
tical rack-bars meshing with the gear-wheels  
10 on the driving-shaft, and clutch mechanism

adapted to permit said gear-wheel to operate  
said sleeves when rotated in a predetermined  
direction, substantially as set forth.

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

JEFFERSON W. MATTESON.

Witnesses:

F. N. AYARS,

J. B. MATTESON.