

(No Model.)

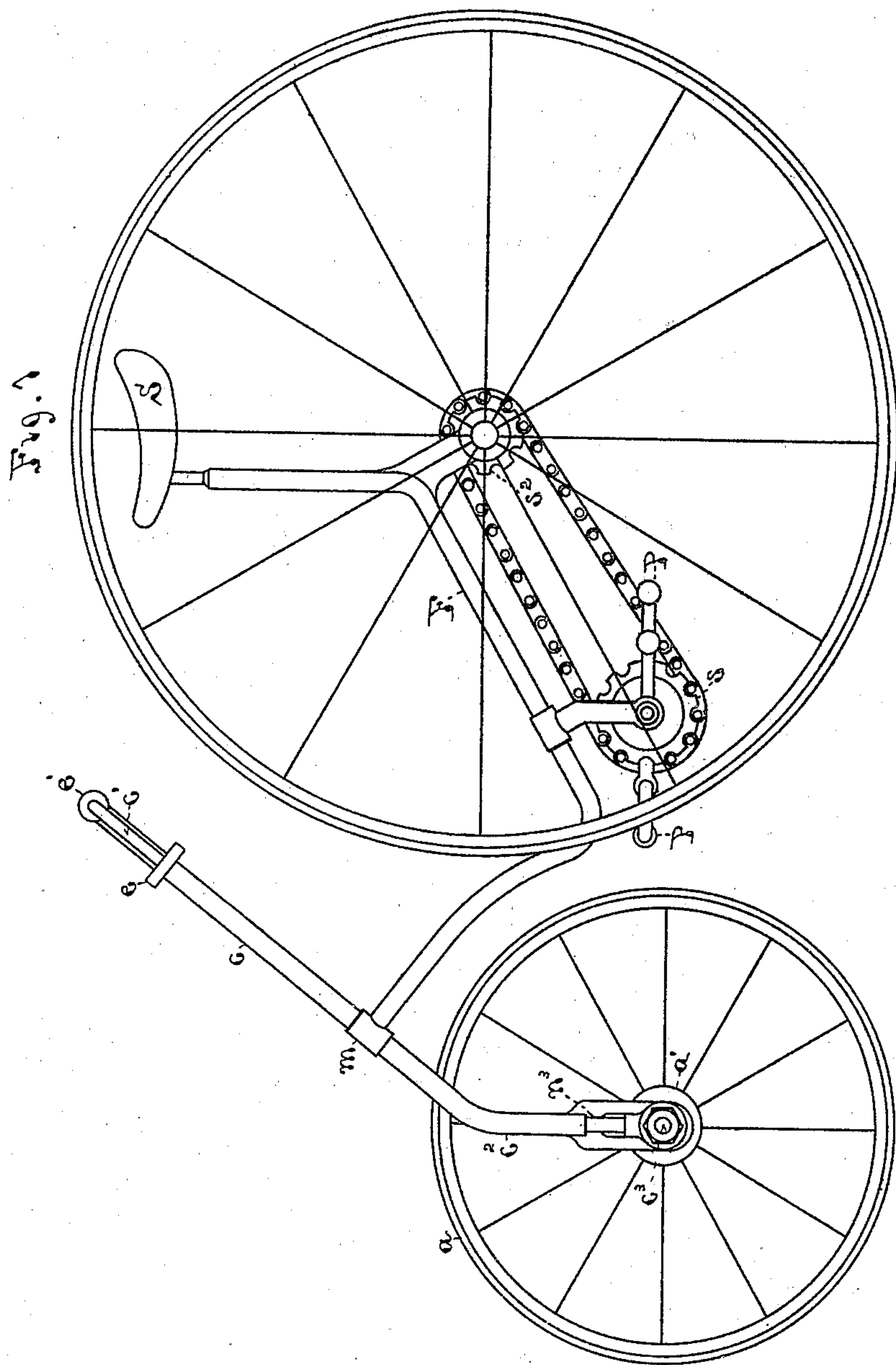
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J. M. MARLIN.

VELOCIPÈDE.

No. 369,540.

Patented Sept. 6, 1887.



Witnesses
 Mrs. Bromer,
 N. P. Ockington.

Inventor
John H. Martin
By David Wallace
Atty.

(No Model.)

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J. M. MARLIN.

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Fig. 3

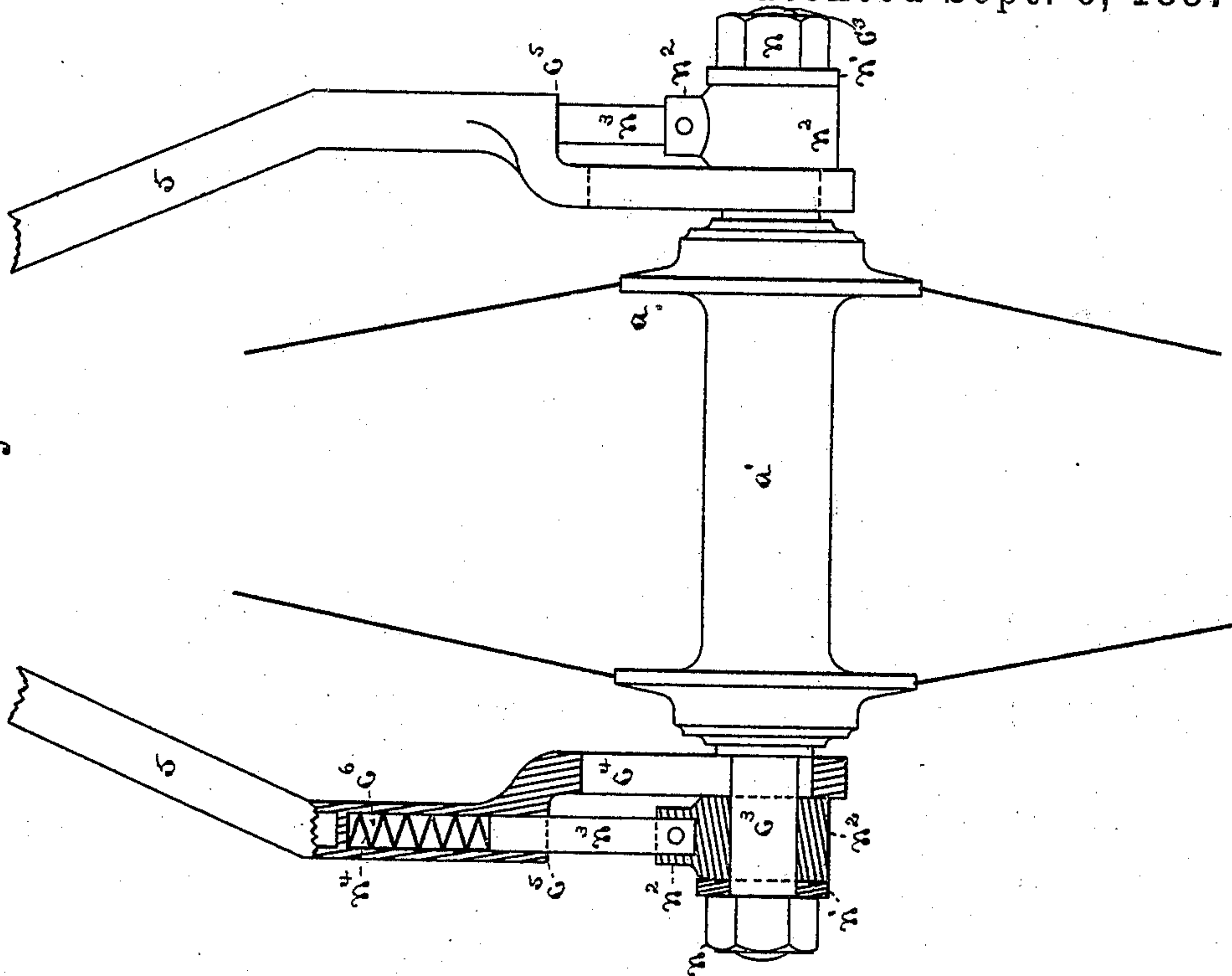
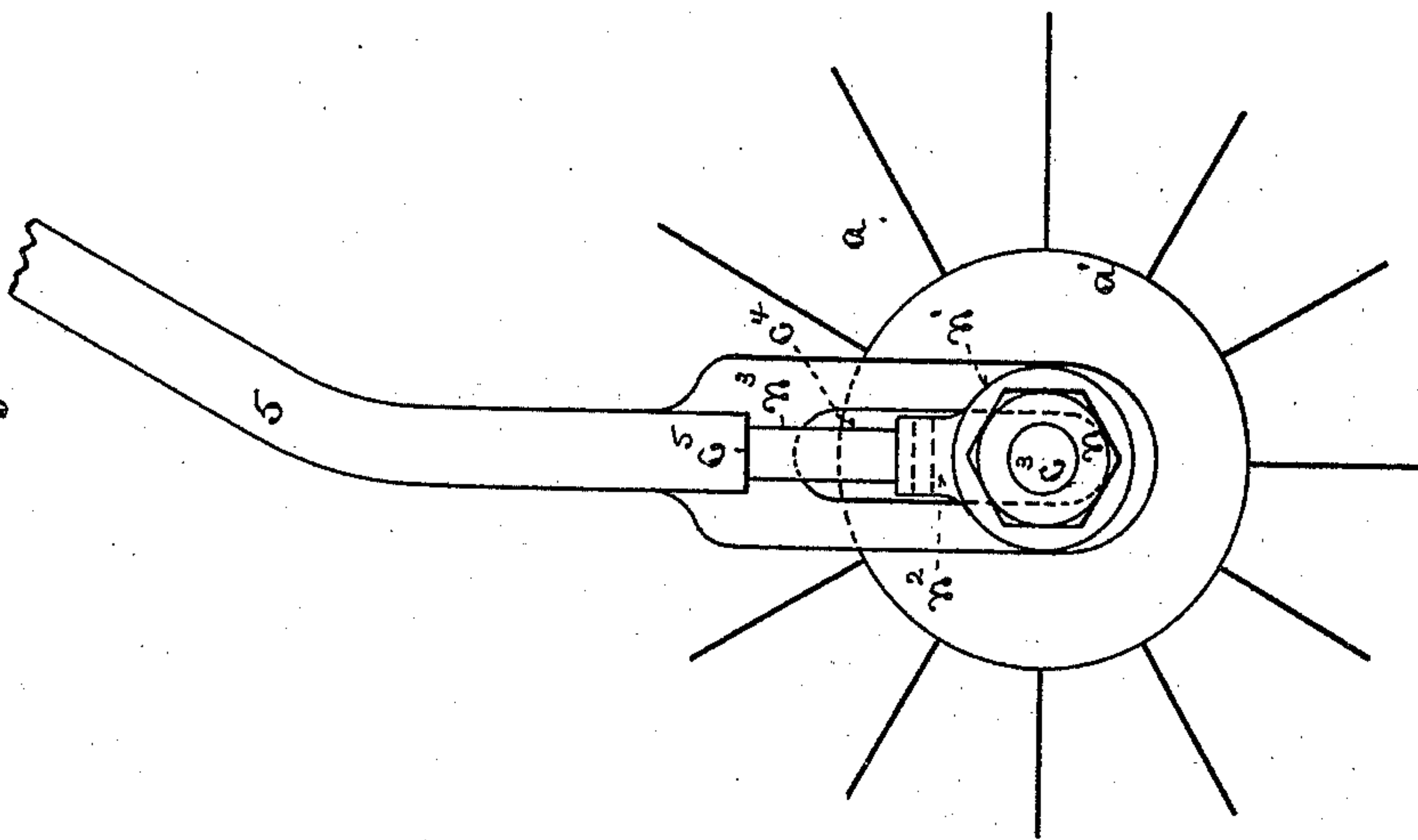


Fig. 2



Witnesses
Wm. B. Brown
A. P. Ockington.

Inventor
John M. Marlin
By David H. H. H. H.
Atty

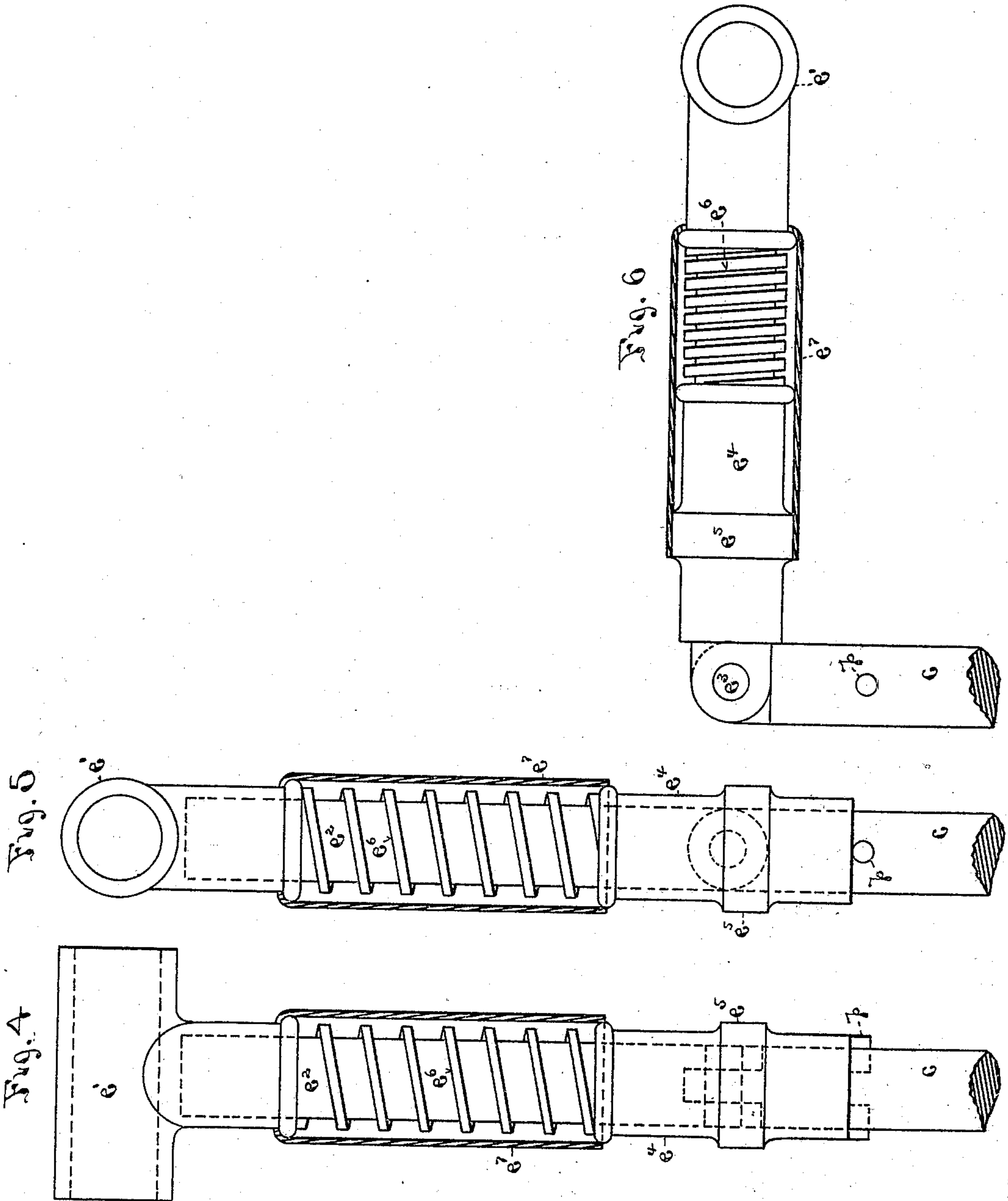
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Atty

UNITED STATES PATENT OFFICE.

JOHN M. MARLIN, OF NEW HAVEN, CONNECTICUT.

VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 369,540, dated September 6, 1887.

Application filed June 6, 1887. Serial No. 240,353. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. MARLIN, of New Haven, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Velocipedes, of which the following is a specification.

My invention relates to velocipedes; and it consists in certain new and useful constructions and combinations of the several parts of the same, substantially as hereinafter described and claimed. They are shown in the present application as applied to the form of velocipede known as a "tricycle;" but they may be applied to bicycles and quadricycles.

In the drawings, Figure 1 is a side elevation of a tricycle having my improvements applied thereto. Fig. 2 is a side elevation of a portion of the steering-wheel and fork, enlarged to show the details of construction more clearly. Fig. 3 is a front view of the same, partly in section. Fig. 4 is a front view of the upper portion of the steering-shaft and its sleeve which holds the handle-bar, showing the folding-down mechanism. Fig. 5 is a side view of the same. Fig. 6 is the same as Fig. 5, with the shaft and handle-bars sleeve folded down.

A is one of the large driving-wheels of the machine, mounted on one end of the divided driving-axle in the usual way. Another similar wheel is mounted upon the opposite end of the same. Between these wheels the frame F is connected to the axle by the usual bearings.

S is the saddle attached to the upper end of frame F. The sprocket-wheel *s* is attached to the frame and revolved by the pedals P P. The chain *s'* connects this sprocket-wheel to another one, *s''*, attached to the axle. At the forward end of frame F is attached the sleeve *m*, through which the steering-rod *c* passes, turning in the sleeve freely. The steering-rod carries upon its upper end the handle-bar *c'*, and at its lower end the fork *c''*. The bifurcation of the latter receives the small or steering wheel *a*, which revolves upon the fixed shaft *c'''*, passing through the hub *a'* of the wheel. This shaft is held from endwise motion in the slots *c''* in each member of the fork *c''* by means of nuts *n n* and washers *n' n'* on each end of it. The shaft is, however, capable of vertical movement in these slots. The mem-

bers 5 5 of the fork *c''* are brought down vertically for a certain distance directly over the shaft *c'''*, and are then bent or curved inward and downward, so as to leave an end or shoulder, *c''*, on the lower face of the vertical portion. A chamber, *c''*, is then made, extending from this lower face vertically upward in each member 5 of the fork for some distance. Directly beneath this chamber the collar *n''* is fixed on the shaft *c'''*, and in the upper side of this collar is attached the rod *n''*, extending upward into chamber *c''*. Above this rod the spiral spring *n''* is placed in the chamber. As both members of the fork *c''* are provided with these several parts, made alike, when the wheel *a* passes over rough places these springs yield and relieve the rider from jar, especially in the handle-bar. This construction of the parts furnishes an elastic or yielding connection between the axis of wheel *a* and the fork, which cannot be deflected by strains upon the wheel, and therefore permits a large size of wheel to be used, which has the springs covered or cased into the ordinary size of fork, and the plungers or rods *n''* so arranged as not to allow dust to collect under the covering, and which permits of the fork being made tubular, and therefore stronger, and is in all respects much neater in appearance than other forms of spring connecting the wheel and fork.

The handle-bar *c'*, at the upper end of the steering-rod *c*, has handles *e* on its ends, and it, with the rod, is T-shaped, forming the top of the T. It is secured in the socket *e'*, Figs. 4, 5, and 6, at the top of a supplemental portion or short section, *e''*, hinged or pivoted to the upper end of the steering-rod by the pivot *e'''*. The section *e''* is of the same shape and diameter in cross-section as the rod *c*, so that when swung on its pivot to bring its longer axis into line with that of the rod the sleeve *e''*, which is fitted to slide closely over them, may be moved to cover the joint of the hinge between them and practically unite them into a single rigid rod. I form the sleeve with a projecting band or collar, *e''*, around its exterior, to enable it to be more easily grasped and slid along on the rods *c e''*. In order to insure a perfect fit of the sleeve over the lower end of rod *e''* and the upper end of rod *c*, adjacent to the hinge uniting them, I form this sleeve with a taper of about one-hundredth of

an inch in its bore, with the bottom end of the bore the largest, and make a corresponding taper of the exterior of the part of the rods mentioned. By this means the bore of the sleeve and the exterior of the rods at those parts can be brought to an exact fit, and when the sleeve is seated upon that portion of them its internal taper is too slight to allow of any strain upon the handles to raise it from its seat. I thus prevent all rattling of the sleeve upon the rods, or either of them.

A pin, *p*, may be secured transversely through the rod *c* below the path of the sleeve at the proper position to prevent the sleeve from being driven so tightly upon its tapering seat as to be difficult of removal; but it may be omitted, or the tapering seat for the sleeve may be omitted and the pin *p* relied on to arrest the downward movement of the sleeve at the proper point. Above the sleeve *e*⁴, and between it and the socket *e*¹, I place the spiral spring *e*⁶, which serves to hold the sleeve *e*⁴ down onto its seat between the sleeve and the shoulder of socket *e*¹, and to the latter I attach the downwardly-projecting tube *e*⁷, (shown in section in Figs. 4, 5, and 6,) which surrounds the spring and the upper end of sleeve *e*⁴, and serves to cover and keep dust and dirt out of the joints between the parts. The upper part of sleeve *e*⁴ slides upward within this tube *e*⁷ when the sleeve is raised.

By the above construction of the parts I make the handle-bar folding, so that it may be turned down to allow the rider to mount the saddle from between the large wheels in front more readily. When the rider has mounted, the simple turning of the handle-bar, so as to bring the rods *c* and *e*² into line, will allow the spring *e*⁶ to force the sleeve *e*⁴ over the hinge or joint and automatically lock the rods together. The sleeve *e*⁴ can also be most conveniently drawn upward, and the handle-bar folded down by the rider when in the saddle *S* preparatory to dismounting.

If desired, the ends of the branches 5 5 of fork *c*², which project below shoulders *c*⁵ *c*⁵, may be removed and the plungers *n*³ *n*³ be relied on to connect wheel *a* to the fork; but I prefer the construction before described.

What I claim as new and of my invention is—

1. The combination of the members 5 5 of fork *c*², provided with slots *c*⁴ and vertical chambers *c*⁶, opening downward, wheel *a*, its shaft *c*³, plungers *n*³, attached to the shaft and projecting upward into said chambers, and springs *n*⁴, substantially as described.

2. The combination of the members 5 5 of fork *c*, provided with vertical chambers *c*⁶, opening downward, wheel *a*, revolving around

its fixed shaft *c*³, plungers *n*³, attached to the fixed shaft and projecting upward into said chambers, and springs *n*⁴, substantially as described.

3. The combination of the members 5 5 of fork *c*², provided with slots *c*⁴ and vertical chambers *c*⁶, opening downwardly, wheel *a*, its shaft *c*³, collars *n*² around said shaft, with plungers *n*³ projecting upward therefrom into said chambers, and springs *n*⁴, substantially as described.

4. The combination of the members 5 5 of fork *c*², provided with slots *c*⁴ and vertical chambers *c*⁶, opening downwardly, wheel *a*, its shaft *c*³, nuts *n* *n*, collars *n*² around said shaft, with plungers *n*³, projecting upward into said chambers, and springs *n*⁴, substantially as described.

5. The combination of the handle-bar *c*¹, steering-rod formed of two sections, *e*² and *c*, united by a horizontal pivot and provided with a seat or stop upon the lower one, sleeve *e*⁴, adapted to slide longitudinally thereon and cover the joint between them and to be maintained in that position by the seat or stop and the frame, and wheels *a* *A* and saddle *S*, arranged in relation to each other and said handle-bar, substantially as described.

6. The combination of the handle-bar *c*¹, steering-rod formed of two sections, *e*² and *c*, united by a horizontal pivot and provided with a seat or stop upon the lower one, sleeve *e*⁴, adapted to slide longitudinally thereon and cover the joint between them and to be maintained in that position by the seat or stop, and spiral spring *e*⁶, substantially as described.

7. The combination of the handle-bar *c*¹, steering-rod formed of two sections, *e*² and *c*, united by a horizontal pivot and provided with a seat or stop upon the lower one, sleeve *e*⁴, adapted to slide longitudinally thereon and cover the joint between them and to be maintained in that position by the seat or stop, spiral spring *e*⁶, and tubular sleeve *e*⁷, covering the same and arranged to allow the same to move longitudinally therein, substantially as described.

8. The combination of the handle-bar *c*¹, steering-rod formed of two sections, *e*² and *c*, united by a horizontal pivot and provided with a tapering seat formed on both sides of said pivot, and sleeve *e*⁴, adapted to slide longitudinally thereon and cover the joint between them and provided with a tapering bore fitting said seat on both sides of said pivot, substantially as described.

JOHN M. MARLIN.

Witnesses:

C. F. DEMMER,
J. LAWLOR.