

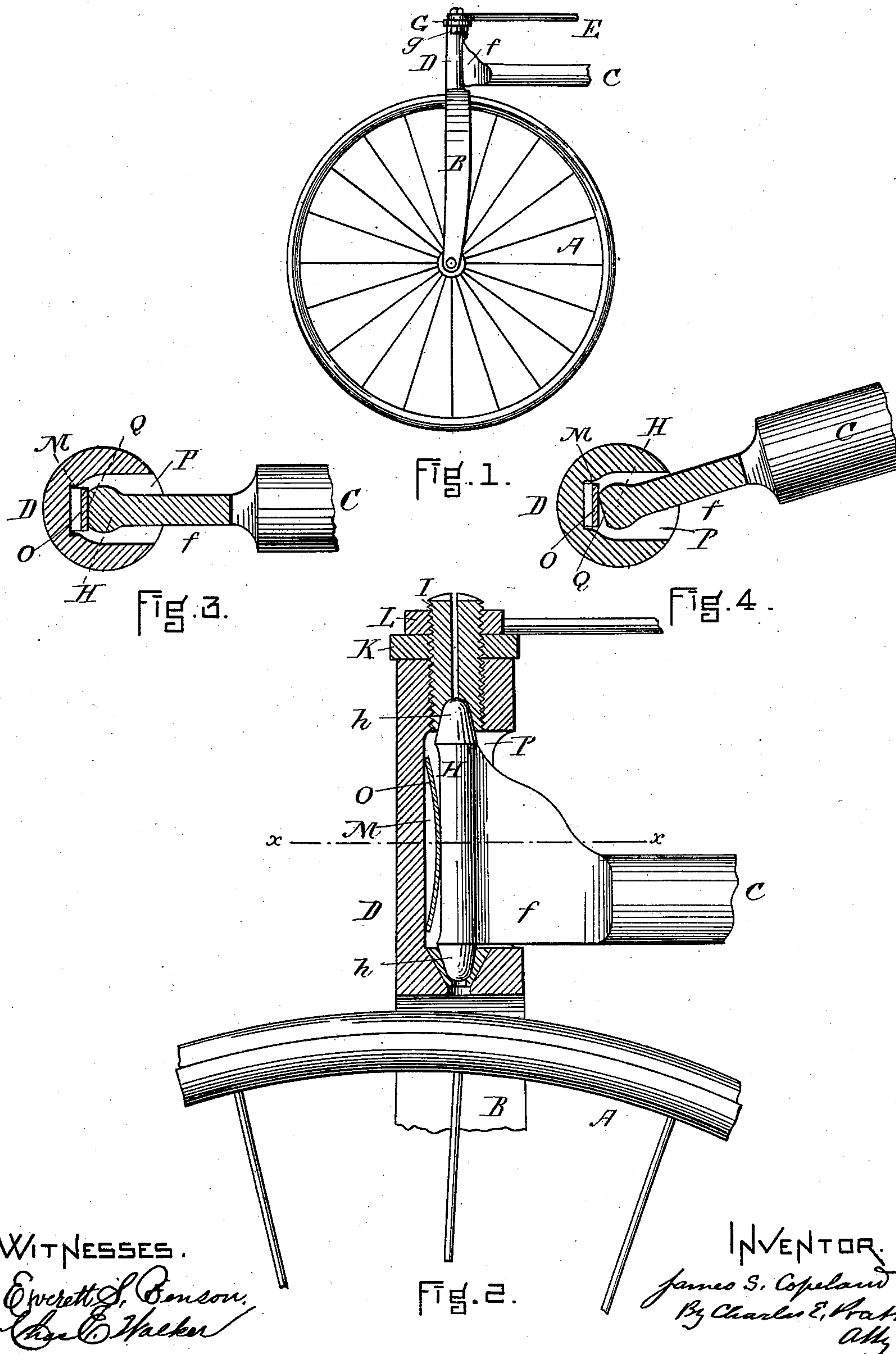
(No Model.)

J. S. COPELAND.

VELOCIPEDÉ.

No. 364,632..

Patented June 14, 1887.



WITNESSES.

Everett S. Benson.
Chas. C. Walker

FIG. 2.

INVENTOR.

James S. Copeland
By Charles E. Pratt
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UNITED STATES PATENT OFFICE.

JAMES S. COPELAND, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE
POPE MANUFACTURING COMPANY, OF PORTLAND, MAINE.

VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 364,632, dated June 14, 1887.

Application filed January 28, 1887. Serial No. 225,771. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. COPELAND, of the city of Hartford, county of Hartford, and State of Connecticut, have invented a new and
5 useful Improvement in Velocipede Steering-Heads, of which the following is a specification.

The object of my improvement is to afford a simple practicable means of producing a
10 tendency in the steering mechanism to retain and to return to its normal position as against causes of deflection, whether communicated at the will of the rider through the steering mechanism or through the irregularities and
15 obstructions of the roads, and to provide this means in a neat form and so as not to disfigure the appearance of the velocipede.

The accompanying drawings show a tricycle constructed to embody my improvement
20 in one form, and in these Figure 1 shows in elevation a steering-wheel, fork, steering-head, and part of the reach or frame and steering-rod of the tricycle. Fig. 2 shows the same enlarged, partly in vertical sections; and Figs.
25 3 and 4 show the same in horizontal section on the line *x x*, looking downward.

A is a steering-wheel. B is a fork. C is a reach or part of the frame. D is a cylindrical steering-head. E is a steering-rod leading
30 from the steering mechanism on the body of the velocipede to and connected by suitable joint, *g*, with the arm G, projecting from and attached to or rigidly connected with the upper end of the steering-head. H is a steering-
35 spindle having the upper and lower steering-centers *h h*, and connected by the neck *f* with the reach C. I is an adjusting-bolt affording a seat for the upper steering-center. K is a washer. L is a set-nut. M is a space or small
40 chamber in the front interior side of the steering-head with a flattened side, as shown in Figs. 3 and 4. O is a bent leaf-spring. F is an opening in the rear side of the steering-head to allow play of the neck F and insertion
45 of the steering-spindle, and Q is a flattened front side or surface upon the steering-spindle H.

In this form of construction it will be ob-

served that I have used an ordinary steering mechanism for a tricycle with a cylindrical
50 head and its inclosed steering-spindle and neck and their connecting-arms; that I have formed a flattened surface in and upon the interior of the steering-head and an enlarged chamber therein and a flattened surface upon
55 the steering-spindle on the front side, and that in this enlarged chamber and between the flattened surfaces of the spindle and the head I have inserted a stiff plate or leaf spring, bent so that its ends shall rest upon one of the
60 flattened surfaces and its middle part upon another; and the operation of this contrivance is as follows: When the steering-head is turned so as to deflect the steering-wheel from its normal plane, the distance between the two flat-
65 tened surfaces is contracted and the spring compressed, as shown in Fig. 4, and when the pressure causing the deflection is slackened the force of the spring tends to throw the steering-head about again, so as to bring the
70 flattened surfaces parallel to each other and the spring to its position of least tension, as shown in Fig. 3. The tendency to deflection of the steering-wheel, caused by irregularities and obstructions in the road, is resisted by
75 the spring and its connected parts by an operation similar to that described.

It is obvious that modifications may be made in the form and arrangement of the parts described without departing from the substance
80 of my invention, and I do not mean to limit myself precisely to the things shown and described.

I claim as new and of my invention—

1. In a velocipede, a leaf-spring operating
85 between the steering-spindle and the interior of the steering-head as a yielding detent.

2. The combination of a curved flat spring, as O, with a flattened surface, as Q, a steering-
90 spindle, as H, and a cavity, as M, in a steering-head, as D, and connected parts, constructed to operate essentially as set forth.

J. S. COPELAND.

Witnesses:

EDWIN S. HOUSE,
A. J. WELLES.