

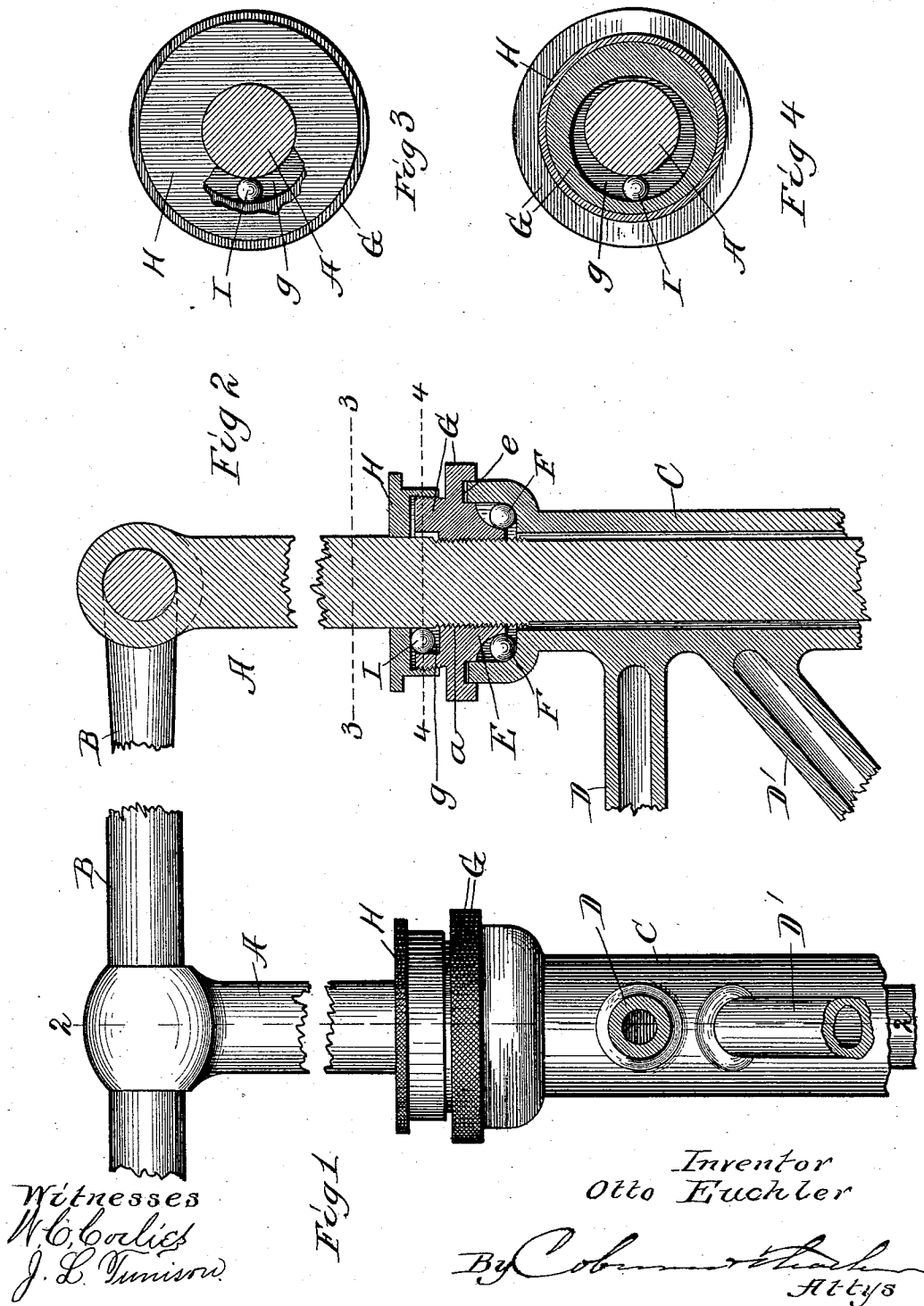
(No Model.)

O. EUCHLER.

CONE BEARING AND BALL LOCK FOR BICYCLES.

No. 486,452.

Patented Nov. 22, 1892.



UNITED STATES PATENT OFFICE.

OTTO EUCHLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALFRED FEATHERSTONE, OF SAME PLACE.

CONE-BEARING AND BALL-LOCK FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 486,452, dated November 22, 1892.

Application filed December 13, 1890. Serial No. 374,610. (No model.)

To all whom it may concern:

Be it known that I, OTTO EUCHLER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Cone-Bearings and Ball-Locks for Bicycles, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an elevation of the upper portion of the steering-head and neck of a bicycle embodying my improvement; Fig. 2, a vertical section of the same, taken on the line 2 2 of Fig. 1; Fig. 3, a plan section taken on the line 3 3 of Fig. 2, and Fig. 4 also a plan section taken on the line 4 4 of Fig. 2.

My invention relates to ball-bearings for bicycles and velocipedes in which an adjustable cone is employed as a part of the bearing device; and the particular portion of the device to which my improvement pertains is the fastening by means of which the cone is secured in any particular adjustment.

In the drawings I have shown my improvement applied to the steering-head and neck of a bicycle or velocipede; but this is simply for the purpose of illustration, as the improvement is adapted and intended for use with ball-bearings wherever applied in bicycles or elsewhere with the well known adjustable cone as a part of the device.

In the drawings, A represents the steering-head of a bicycle provided with the usual handle B at its upper end. The steering-head passes up through the neck C of the backbone in the usual way, the neck here shown being provided with the brace-rods D and D', which, in a well-known construction of bicycle, extend backward to the rear wheel and make the connecting-frame between the two wheels in what is generally known as a "safety-bicycle," having the functions of the old form of backbone. At the upper end of the neck C the metal is flared or bent outward and upward, so as to form a kind of cup at this end of the neck, the diameter of which is somewhat larger than that of the neck proper. The cone E is of the usual construction upon its inner or conical surface and is internally threaded, so as to be secured

upon the steering-head by means of a threaded section *a* upon the latter. On the cone face of this device there is also provided an annular groove *e*, which is adapted to receive the upper edge of the cup on the neck. The bearing-balls F are arranged in the cup and between it and the cone, as usual, and as shown in Fig. 2 of the drawings. On the opposite face of the cone is a flange G, and the opening *g* through it for the steering-head is cut out eccentrically to the latter, as seen in Fig. 4. This flange is also provided with an external thread, and a threaded cap H is adapted to be turned upon the flange, so as to completely cover and protect it. A ball I is inserted in the eccentric space between the steering-head and wall of the cone-flange, as seen in Figs. 2 and 4, and the jamming of this ball in this space locks the cone in any position to which it may be adjusted. This locking-ball I is made of a diameter equal to the greatest width of the eccentric space between the steering-head and cone-flange. Obviously, then, when it is inserted at this point, as seen in Fig. 4, there can be no turning of the cone on the head. It will be rigidly secured to the head, so as to turn with it. The cone being first turned up on the threaded portion of the steering-head so as to closely fit upon the balls in the cup of the neck, the locking-ball is crowded into its place in the eccentric space, as already described, thereby locking the cone to the head, and the screw-cap is then turned upon the flange, thus preventing the removal or disturbance of the locking-ball, as seen in Fig. 2. When it is desired to adjust the cone, the screw-cap is turned off, the locking-ball is forced out from its seat, the cone is turned into the position required, and the lock and cap are again applied, as described above. It will be seen that with this fastening device there is no danger of injury to the threads on any part, as the lock does not jam upon the threaded section.

The improvement is not intended to be limited to the particular application described above, and shown in the drawings, for it is obvious that it may be applied to the bearings of the wheels and elsewhere, and in other places where ball-bearings are used with an adjustable cone or its equivalent, and I de-

sire to be understood as claiming the improvement for all applications to which it is adapted. In details of construction there may be some modifications, especially in adapting the device to different locations without losing the main feature of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

- 10 1. In an adjustable ball-bearing, the cone adjustable against the bearing-balls and provided with an eccentric opening, in combination with a shaft on which the cone is mounted by means of screw-threads, the thread on
15 the said shaft terminating at a point inside

the line of contact of the locking-ball of the shaft, and a locking-ball inserted in said eccentric opening, substantially as and for the purposes specified.

2. In adjustable ball-bearings, the cup for 20 the reception of the balls, in combination with the shaft A, the bearing-balls F, arranged in the cup, the adjustable cone E, provided with flange G and eccentric opening *g*, the locking-ball I, and the cap H, substantially as and 25 for the purposes specified.

OTTO EUCHLER.

Witnesses:

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