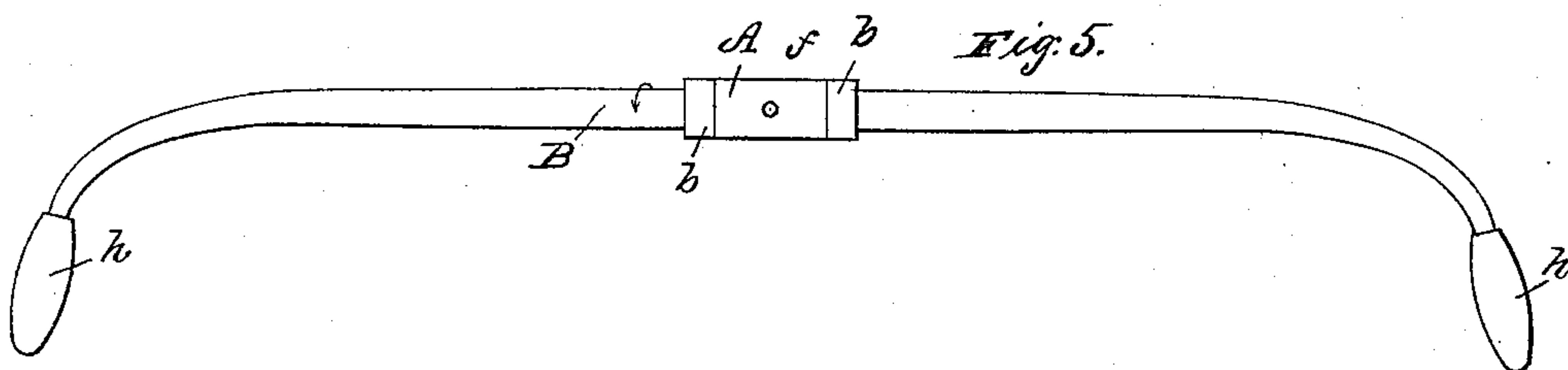
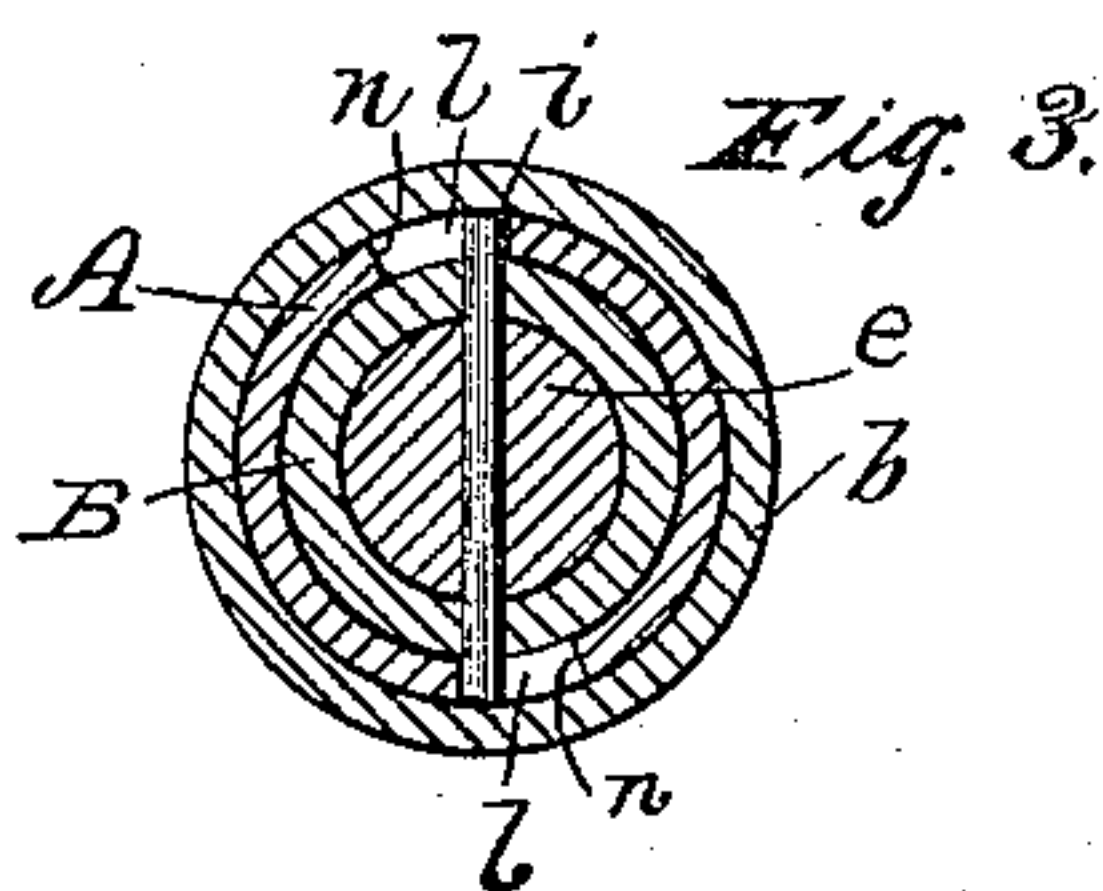
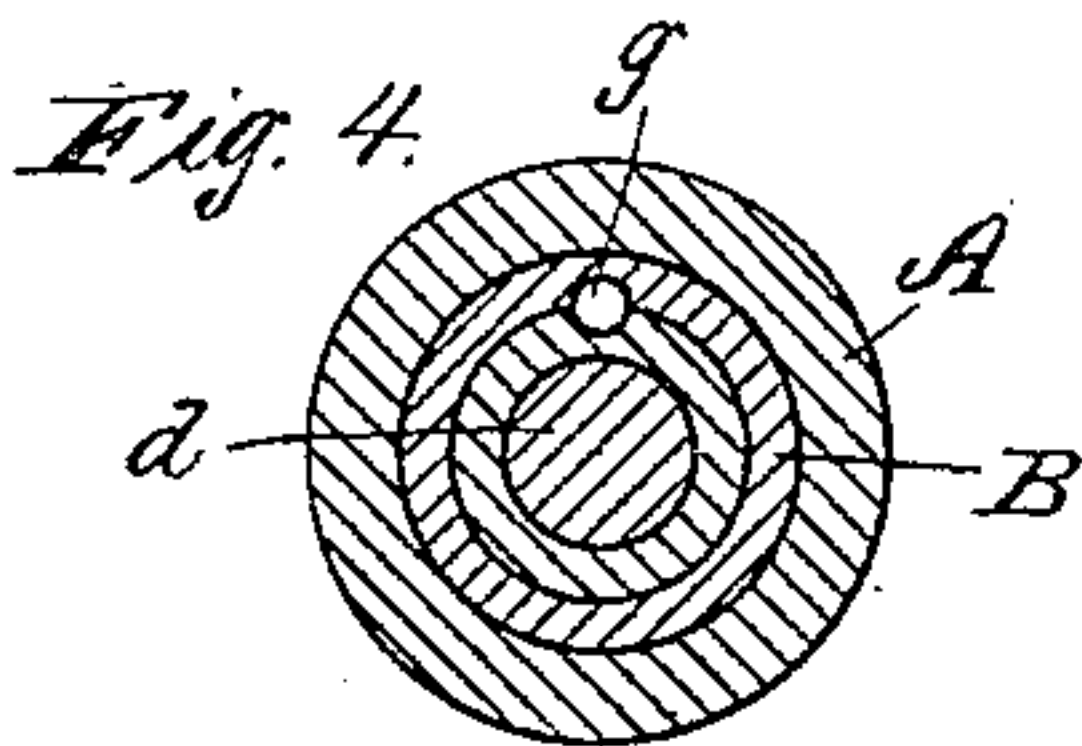
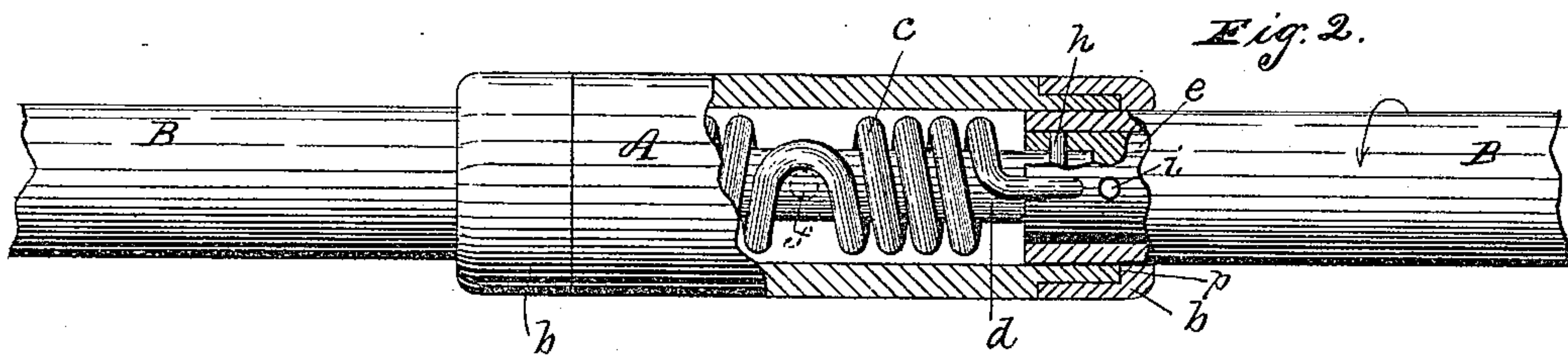
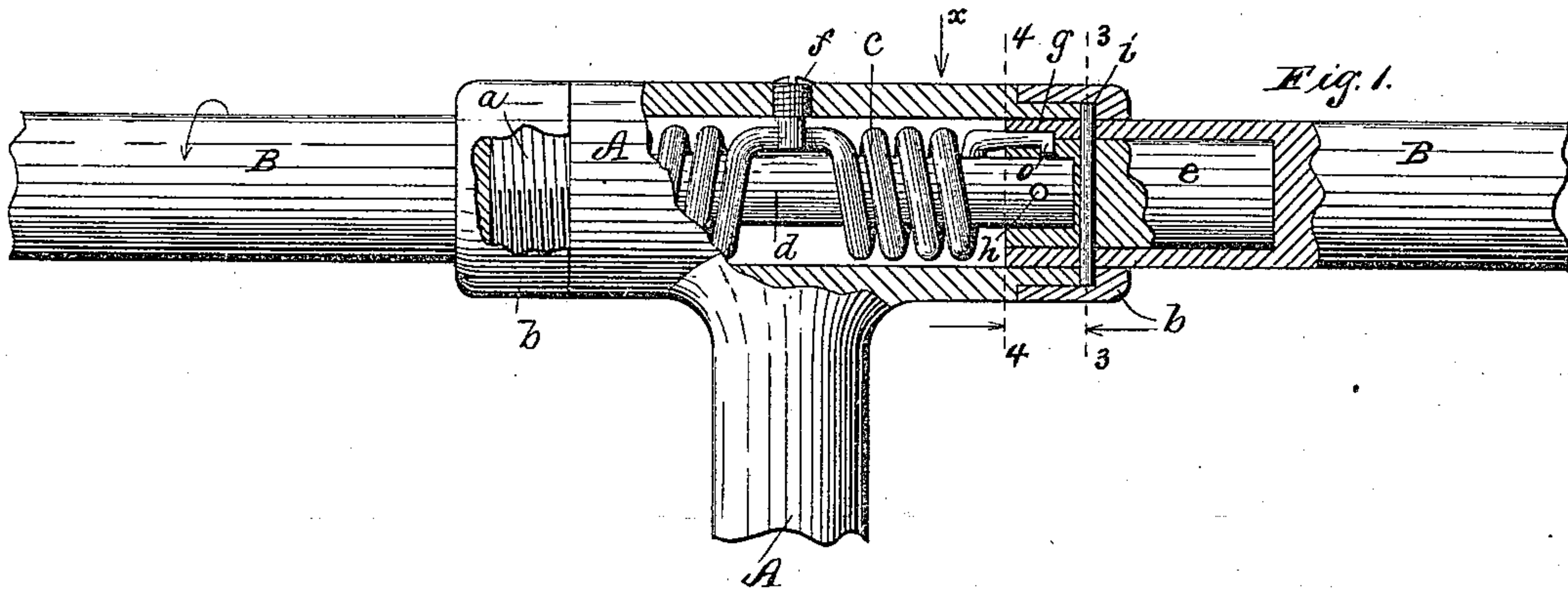


(No Model.)

G. D. & W. F. KENDALL.
HANDLE BAR FOR BICYCLES.

No. 440,312.

Patented Nov. 11, 1890.



Attest:

M. L. McDermott.
M. D. Phillips.

Inventors:
George D. Kendall,
William F. Kendall,
By E. B. Whitmore, Atty.

UNITED STATES PATENT OFFICE.

GEORGE D. KENDALL AND WILLIAM F. KENDALL, OF ROCHESTER, NEW YORK, ASSIGNORS TO A. CHAPIN GOODENOUGH, OF SAME PLACE.

HANDLE-BAR FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 440,312, dated November 11, 1890.

Application filed August 9, 1890. Serial No. 361,512. (No model.)

To all whom it may concern:

Be it known that we, GEORGE D. KENDALL and WILLIAM F. KENDALL, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in a Bicycle-Head and Handle-Bar, which improvement is fully set forth in the following specification and shown in the accompanying drawings.

Our invention relates to the heads and handle-bars of bicycles or velocipedes; and it has for its object the application of an inclosed torsional spring to actuate or press the handle-bar for the purpose of preventing the disagreeable and injurious jar to the hands of the rider resulting from passing over rough ground or pavements.

The invention is hereinafter fully described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a rear sectional elevation of the head of a bicycle, showing our invention; Fig. 2, a view of the same, indicated by arrow *x* in Fig. 1, parts being sectioned and broken away; Fig. 3, a cross-section on the dotted line 3 3 in Fig. 1, viewed as indicated by the arrow pointed thereon; Fig. 4, a section on the dotted line 4 4 in Fig. 1, viewed opposite to Fig. 3; and Fig. 5, drawn to a small scale, shows a general plan of the handle-bar.

Referring to the parts, A is the head of a bicycle, and B the handle-bar. The head is formed with a horizontal hollow or cylindrical part, slightly reduced at its ends and threaded, as shown at *a*, to receive screw-caps *b b*. The handle-bar is divided into two parts, the inner ends of which parts enter the respective open ends of the head and are fitted to turn therein on a horizontal axis. The hollow head incloses a two-way or sheep's-horn spring *c*, the two parts of which extend from the middle to and join the respective inclosed ends of the handle-bar. The spring is held upon a core or cylinder *d*, having its respective ends resting in cavities formed in plugs *e*, the latter being inserted in the hollow ends of the two parts of the handle-bar. The construction is such that the axes of the hollow part of the head, the two parts of the handle-bar, the spring, the core *d*, and the plugs *e* all

coincide. The middle part of the spring is held from moving relatively with the head by means of a pin *f*, threaded in the head, as shown, while the two outer ends of the spring are turned to horizontal positions and joined rigidly to the respective ends of the two parts of the handle-bar. These ends of the spring are made to enter cavities *g*, Figs. 1 and 4, made half in the parts of the handle-bar and half in the plugs, as shown, so that when put in place in said cavities the ends of the spring form keys for said plugs and the parts of the handle-bar preventing them from turning independently of each other. Pins *h* pass transversely through the respective ends of the core *d* and the plugs *e* to hold those parts rigidly together, while other pins *i* pass transversely through the respective plugs and the ends of the parts of the handle-bar, which serve to hold said plugs and said parts of the handle-bar rigidly together. By these means the two parts of the handle-bar are rigidly connected and made to move or act as one piece, while they are at the same time prevented from being pulled out of the head.

Now, it will be understood that any rotatory motion of the handle-bar on its axis in the direction indicated by the curved arrows (which corresponds to a downward motion of the handles *k k*) will be made against the action of the spring; or, in other words, the hands of the rider rest upon the handles of a handle-bar actuated by a spring, so as to yield to the downward pressure of the hands. This action of the spring deadens the jar or jolting of the handle-bar while the rider is passing over rough ground. The spring is double or formed with several similar coils on each side of the center, so as to act alike upon each half of the handle-bar.

Stops are provided to limit the distance through which the handle-bar may turn. This is effected by forming notches *l l*, Fig. 3, in the ends of the head to receive the extreme ends of the pins *i i*. These notches are so formed that the pins are held normally against one side of each by the spring, the middle of the latter resting against the screw-pin *f*. In this relation of the parts the handles *k k* are about horizontal or in convenient positions for the grip of the hands. The notches are

formed so that the handles may be turned downward, as above described, to a limited extent, which is determined by the pins encountering the opposite ends *n n* of the notches. The extreme ends of the spring are formed into hook *o*, which enter cavities in the plugs *e* for the purpose of preventing them from drawing out of their rests in the plugs.

10 The screw-caps *b b* are formed with internal shoulders *p*, Fig. 2, which rest against the ends of the head *A*, and the end portions of the pins *i* that project from the handle-bar bear against these shoulders. This forms another means for preventing the parts of the handle-bar from drawing out of the head, and also prevents an endwise motion of the handle-bar as a whole. Cavities *l l* are formed in the ends of the head, as above described, to make room for the pins and to allow a limited rotatory motion of the handle-bar.

What we claim as our invention is—

1. The hollow head of a bicycle or velocipede, in combination with the handle-bar, the latter being divided and the parts joined to the head so as to have a rotatory motion therein, and a spring within the head, connecting the latter with the respective parts of the handle-bar, said spring being between the opposing ends of the two parts of the handle-bar, substantially as shown.

2. The hollow head of a bicycle or velocipede, in combination with the handle-bar, the latter being divided and the parts joined to the head so as to have a rotatory motion therein, and a spring within the head, having its middle part held by the head, with the end portions coiled in opposite directions and held by the respective parts of the handle-bar, the head, the parts of the handle-bar, and the spring having a common axis, substantially as shown and described.

3. The hollow head of a bicycle or velocipede, in combination with a divided handle-

bar held to turn in the head, a spring connecting said head and said parts of the handle-bar, a core for the spring, and plugs or rests for said core held by said parts of the handle-bar, substantially as shown and described.

4. The hollow head of a bicycle or velocipede, in combination with a divided handle-bar held to turn in the head, a spring connecting said head and said parts of the handle-bar, a core for the spring, and rests for said core held by said parts of the handle-bar, said spring having its ends bent or hooked into cavities in said rests, substantially as and for the purpose set forth.

5. The hollow head of a bicycle or velocipede, in combination with the handle-bar, the latter being divided and the parts joined to the head so as to have a rotatory motion therein, screw-caps for said head having internal shoulders, and transverse pins in said parts of the handle-bar, the ends of the pins projecting to bear against said shoulders of the screw-caps, substantially as and for the purpose set forth.

6. The hollow head of a bicycle or velocipede, in combination with the handle-bar, the latter being divided and the parts joined to the head so as to turn therein, screw-caps for said head having internal shoulders bearing against said head, and transverse pins in the handle-bar to bear against said shoulders of the screw-caps, said head being formed with notches or cavities to receive the ends of the pins, substantially as shown and described.

In witness whereof we have hereunto set our hands, this 5th day of August, 1890, in the presence of two subscribing witnesses.

GEORGE D. KENDALL.
WILLIAM F. KENDALL.

Witnesses:

E. B. WHITMORE,
M. L. McDERMOTT.