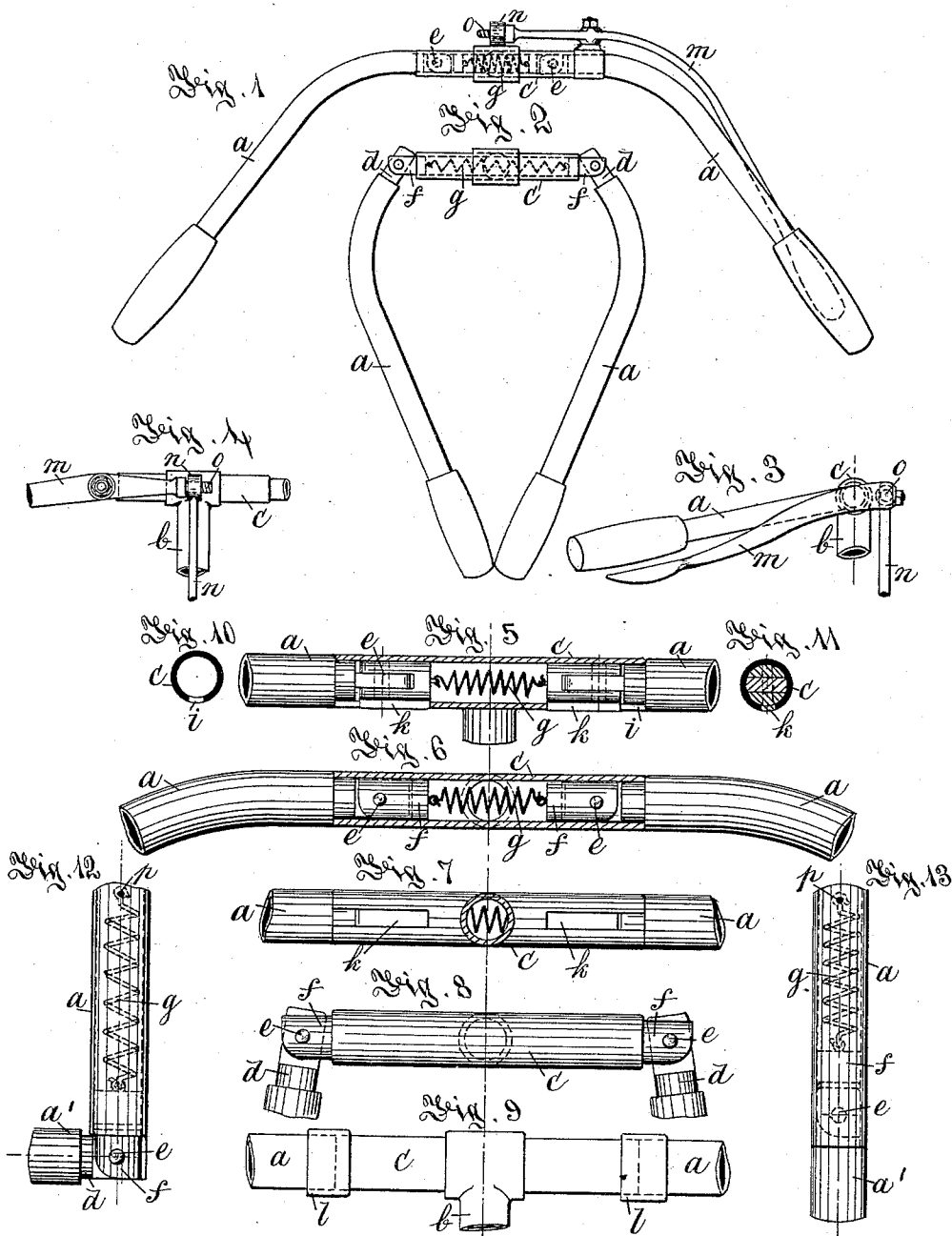


(No Model.)

W. PARKES.
SPRING JOINT FOR BICYCLE HANDLES.

No. 469,592.

Patented Feb. 23, 1892.



Witnesses:
J. C. Wilson
Chas. E. Riordon.

Inventor:
Walter Parkes
by
Whitman & Wilkinson
Attorneys.

UNITED STATES PATENT OFFICE.

WALTER PARKES, OF READING, ENGLAND.

SPRING-JOINT FOR BICYCLE-HANDLES.

SPECIFICATION forming part of Letters Patent No. 469,592, dated February 23, 1892.

Application filed June 23, 1891. Serial No. 397,241. (No model.)

To all whom it may concern:

Be it known that I, WALTER PARKES, engineer, a subject of the Queen of Great Britain, residing at Reading, in the county of Berks, England, have invented a new and useful Improvement in Spring-Joints, of which the following is a specification.

My invention relates to an improved spring-joint for the handle-bars by which the steering of bicycles, tricycles, and other velocipedes is effected and for other purposes; and the objects of my improvement are to provide means by which such handle-bars or other bars when not in use can be folded into a small compass and when extended are perfectly rigid and firm. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11 illustrate my invention applied to the handle-bar of a bicycle or other velocipede, Fig. 1 being a plan showing the handle-bar open; Fig. 2, the same closed; Figs. 3 and 4, side and front views, respectively, showing the connection with the brake-spindle, Fig. 5 being a vertical section through a handle-bar; Fig. 6, a similar horizontal section; Fig. 7, a view from below, showing the guides; and Fig. 8, a view from above, showing the handles closed. Figs. 10 and 11 are respectively sections through a handle-bar and through the improved joint and guide, and Fig. 9 is a front view of a modification in which fixed collars are shown upon the ends of the tube. Figs. 12 and 13 are respectively views of my improved joint closed and opened and applied to the handle of a mowing-machine or a similar purpose.

The same letters of reference indicate the same parts in the several figures.

a are the handle-bars, and b is a T-piece attached to the head of the fork of the velocipede and having the transverse tubular piece c , to which the handle-bar is attached, the latter being bent more or less backward and downward in the usual way, as shown in Figs. 1, 2, and 3. The two parts of the handle-bar are hinged to the transverse tubular T-piece c in the following way: Into or upon the inner end of the bar I fix or form a projecting stud or pin d , which when the handle is extended for use fits into the end of the tube

c , the pin or stud d being of sufficient length to hold the handle-bar firmly in its place. In the outer end of the pin d I make a horizontal joint e , upon which is jointed and turns the end of a cylindrical piece f , which also fits freely into the tube c , so that when the piece f and the pin d are opened out into line with each other and inserted into the tube c , as shown in Figs. 1, 5, 6, and 7, the tube c forms, together with the handle-bar a , a sufficiently rigid continuous bar by which steering can be effected in the usual way. In order to hold the parts together in the position described, one end of a helical spring g is attached to the end of the cylindrical piece f , the other end of the spring g being similarly attached to the other cylindrical piece f , which is jointed, as described above, to the pin d upon the other handle-bar a . When it is desired to fold back the handles, (when not in use,) the bars a are drawn out endwise, extending the spring g sufficiently to expose the joints e and allow the handle-bars a to be turned back at right angles, or nearly so, as shown in Figs. 2 and 8. When the handle-bars a are again extended, the elasticity of the spring g draws the cylindrical pieces f , the joints e , and the pins or studs d upon the handle-bars a into the tubular T-piece c , and no joint or projection of any kind is in this arrangement visible. Instead of the arrangement described a separate spring g may be used for each part a of the handle-bar, the inner end of the spring g being held by a cross-pin or other fastening, as illustrated in Figs. 12 and 13. A guide is made in each end of the tubular T-piece c to prevent the handle-bars a from turning round in the latter, such guide consisting of a longitudinal slot i at each end of the tube c , Figs. 5, 7, 10, and 11, Fig. 10 being a cross-section of the tube c and Fig. 11 a similar section through the tube c and the joint e , a projection or stud k upon the lower side of the cylindrical pieces f fitting and sliding in the slots i and limiting the movement of the pieces f , so that they cannot be drawn completely out of the tube c . In order to strengthen the slotted ends of the tube c they may be provided with fixed collars l , Fig. 9, and these collars may project beyond the ends of the tube c , as

shown, so that the ends of the handle-bars *a* enter them for a short distance when extended.

In order that the brake-lever *m* upon one of the handle-bars *a* of a bicycle, Figs. 1, 3, and 4, may be automatically connected with the upper end of the vertical brake-spindle *k*, carried by the fork of the velocipede, when the handle-bar is opened out and disconnected when it is closed, the upper end of the brake-spindle *n* is formed with a hole or eye into which a stud *o* at the inner end of the brake-lever *m* enters sufficiently far to connect them securely. When the handle-bar is drawn out for the purpose of folding it, as described, the stud *o* is withdrawn from the eye in the brake-spindle *n* and disconnected, so that the handle-bar can be folded back, and when the bar is again unfolded and straightened for use the stud *o* comes to the proper position opposite to the eye, into which it enters automatically when the spring *g* draws the handle-bar into its proper position, as above described. The eye may be kept in its place by a nut or pin at the end of the stud *o*.

The folding joint described is applicable not only to the handle-bars of bicycles and other velocipedes, but to other purposes where it is required that a bar or handle ordinarily fixed in a determined rigid position shall be capable of being quickly and easily turned back

out of the way when not in use—as, for instance, for the handle of a mowing-machine or of a truck, or for the leg of a table, or for many other purposes. Such an application is illustrated in Figs. 12 and 13, in which *aa'* are the two parts of a tubular bar, one of which *a'* is provided with a projecting stud or pin *d*, jointed at *e* to a movable piece *f*, which slides in the other part *a*. The spring *g* is attached at one end to the movable piece *f* and at the other end to a transverse pin *p* in the tubular bar *a*, so that the two parts can either be firmly held in an extended position, as shown in Fig. 13, or drawn out and folded back at right angles, as shown in Fig. 12.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

The improved folding joint for the handle-bars of bicycles and other velocipedes and for other purposes, consisting of the stud or pin *d*, joint *e*, cylindrical sliding piece *f*, spring *g*, and guide *h*, all fitting in the tube *c*, substantially as set forth and shown.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WALTER PARKES.

Witnesses:

ARTHUR E. EDWARDS,
TANEY N. RIDGWAY.