

(No Model.)

W. P. BENHAM.

VELOCIPÈDE.

No. 277,870.

Patented May 22, 1883.

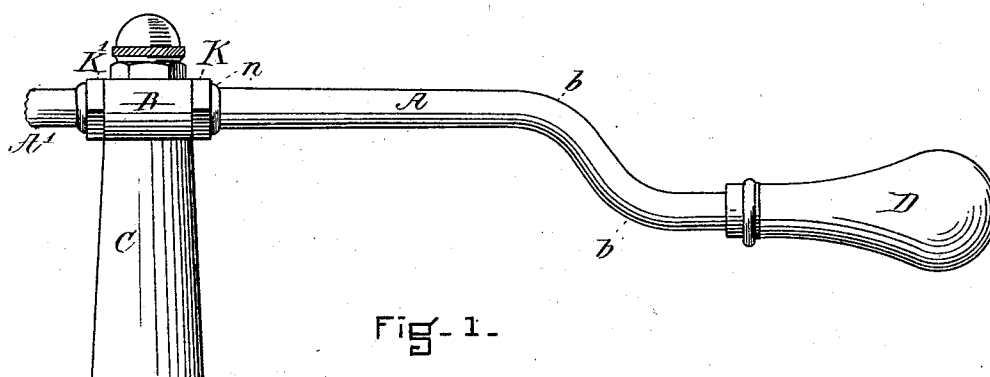


Fig. 1.

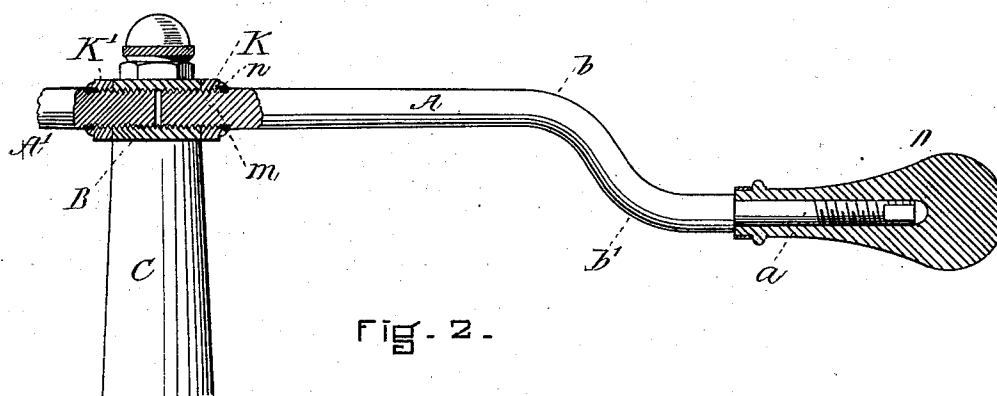


Fig. 2.

WITNESSES

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VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 277,870, dated May 22, 1883.

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To all whom it may concern:

Be it known that I, WILLIAM P. BENHAM, of the city of Hartford and State of Connecticut, have invented certain new and useful Improvements in Velocipedes, of which the following is a specification.

My improvements relate to the steering mechanism, and particularly to that class of steering mechanism in which the guiding-wheel is held in forks terminating in the steering-head above the wheel, to which is connected handle-bars for direct operation of the guiding-wheel by pressure of the hands upon the handles. This class of mechanism is found in bicycles and sometimes in tricycles and other velocipedes. I describe my improvements as applied to a bicycle having a cylindrical head; and in the drawings annexed hereto—

Figure 1 shows in elevation part of a cylindrical bicycle-head with handle-bar and handle (part of the handle-bar being broken off) embodying my improvements in one form. Fig. 2 shows, partly in elevation and partly in vertical section, the same things more in detail.

Heretofore it has been customary to make the handle-bar in one long rod, either solid or tubular, extending equally to either side of the head, and held in lugs attached to the head, or else forming part of it, by screws or clamps. The handle-bar of this construction has been usually straight and slipped or driven into and through the lugs for half its length, and then fastened. Sometimes the bars of this construction have been bent or curved after being put in place in the lug. They have been bent near the lug upward and then outward, so as to allow greater distance between the pedal and the handle-bar for room for the operation of the leg and thigh of the rider. They have sometimes been curved first upward near the lug, then outward, and then again downward, so as to secure the advantage of space for the leg and thigh of the rider, as in the other case, and also to carry the handle to the lower position, so that the arm of the rider should be nearer straight in riding. They have also been carried out straight from the lug for considerable distance, then bent downward, and then upward, so as to give a lower position for

the handle, as in the preceding instance. Handle-bars have also been made, both in straight and in curved form, in two pieces or halves, and screwed into the lug, the curvature being the same as above described, so as to make the position of the handle either higher or lower than the lug on the head of the bicycle, and the bar or segment being threaded and inserted in the lug, so as to bring or find a stop either at the inner end of the thread in the lug or at the inner end of the thread on the handle-bar. Now, the difficulties with these forms of bars are that in the case of the long or continuous bar first described, when it is desired that it shall be curved or bent, the bending must be done, on one side at least, after the bar is fitted into the lug, and this is a matter of great inconvenience and expense; and in the shorter or half-bar form the bar must either be bent after it has been inserted in the particular lug for which it is intended, and screwed home, in order to secure the desired position of the handle, or else, if inserted after bending, must be threaded or filed, so as to make the particular fit for the particular lug with which it is to go.

Now, the objects of my improvements are, first, to provide an interchangeable handle-bar which may be readily applied to either side of the head or to any machine without further fitting; second, to gain a firm securement in position and to strengthen the handle-bar at the lug, where it most needs it; third, to produce a universal "dropped" or curved handle-bar, with which a handle may be set not only upward or downward in a vertical line, as has heretofore been done, but also either upward or downward or in any position desired by the individual rider, in order to give him the most efficient and comfortable reach, and be capable of improved and firm adjustment and securement in such case, and, fourth, to secure economy and convenience in manufacture.

The nature of my improvements will be apparent from the following description, taken in connection with the drawings.

A is a stock of a handle-bar or half-bar.

B is a handle-bar lug.

C is a cylindrical steering-head.

D is a handle.

Stock A is curved downward at *b* and outward at *b'*, and has a tang, *a*, to receive the handle D, and has its opposite end formed to the threaded tenon *m*, adapted to be screwed into a threaded mortise in a lug, B.

K is a movable adjusting-shoulder, bored and threaded to fit and be revolved upon the threaded tenon *m*, with its outward face in a plane at right angles to its bore, and adapted to fit the upward face of the lug B, or be parallel with it. It may be preferred to make the tenon *m* of larger diameter than the part of the stock A annexed to it by the thickness of the thread to be turned on it, so that its diameter within the thread shall be equal to the diameter of the stock beyond the thread, though I think the need of that avoided by my improved shoulder, and also to make the stock A tapering slightly toward the tang, though I consider that unnecessary in a curved bar; but I prefer to make the length of the threaded tenon equal to the necessary entrance into the lug B for strength and security, and a few threads for the movable shoulder K to operate upon, and to form a bead, *n*, on the movable shoulder K for neatness of finish, and so that the shoulder with the bead will entirely cover the part of the threaded tenon remaining outside of the lug. I make the movable shoulder K hexagonal in its outer contour for the application of a wrench; and I also make a square or flattened end of the tang *a*, for the application of a wrench.

A' is a stock on a handle-bar, similar to A, and K' is a movable adjusting-shoulder similar to K.

I make the handle-bar or half-bar, including a stock, tenon, and tang, of any desired form or curvature, and either slip the movable adjusting-shoulder K onto the stock over the tang before the handle is applied, when the tenon is of larger diameter, or else screw it backward over the tenon end onto the stock. I then put the handle on in its place. The handle-bar is then ready for application to either side of the machine; or to any other machine having a similar lug, B. To keep the handle-bar in position, I insert the tenon in the mortise of the lug B, and screw it in by revolving the handle-bar until it has sufficiently entered the lug, and until the handle D is in the desired position, either upward or downward, backward or

forward, or at any point in the circle which it describes or may be desired, and I then secure it in that position firmly, by screwing up the movable adjusting-shoulder K tightly to the lug B. The handle-bar may be put in place also by means of a wrench applied to the square and flattened end of the tang *a*, the handle D being removed.

It is obvious that the movable shoulder K operates as a set-nut, as an adjusting-shoulder, and as a strengthening-brace for the bar or stock annexed to the lug. It is also obvious that the lug to which the bar is attached may be at any part of the head, or on the fork below the head, and that the stock may be bent to any other form, may be hollow or solid, may be fitted with any handle, and that the movable shoulder K may be of any other exterior form, as desired, or may be separated from the lug by a washer, or may be made in two parts for greater certainty as a set-nut, and also that this contrivance may be applied to a tricycle or other velocipede, or to an open head as well as to the cylindrical head of a bicycle, as I have shown. This construction obviates the objections of previous forms; and secures the advantages, previously referred to, of an interchangeable universally-adjustable strong and secure handle-bar, whether for a straight or a dropped or curved one.

I claim as new and of my invention—

1. An improved handle-bar for velocipedes, consisting in a stock, A, a tang, *a*, for a handle, a tenon, *m*, for a steering-head, and a movable adjusting-shoulder, K, constructed and adapted essentially as set forth.

2. The described improvement in dropped handle-bars for velocipedes, consisting, essentially, in making the stock in two bent pieces, A A', with tangs *a* on the outer ends fitted for handles, and tenons *m* on the inner ends fitted for a lug or lugs on the steering-head, and in providing the stocks with movable adjusting-shoulders K K', for securing them in desired position, essentially as set forth.

3. In a velocipede, the movable adjusting-shoulder K, combined with the stock A, tenon *m*, and lug B, substantially as set forth.

WILLIAM P. BENHAM.

In presence of—

WM. B. BROTHERTON,
GEO. B. COBURN.