(No Model.) 2 Sheets—Sheet 1.

E. G. LATTA.

VELOCIPEDE.

No. 391,900. Patented Oct. 30, 1888.

Fig. 1.

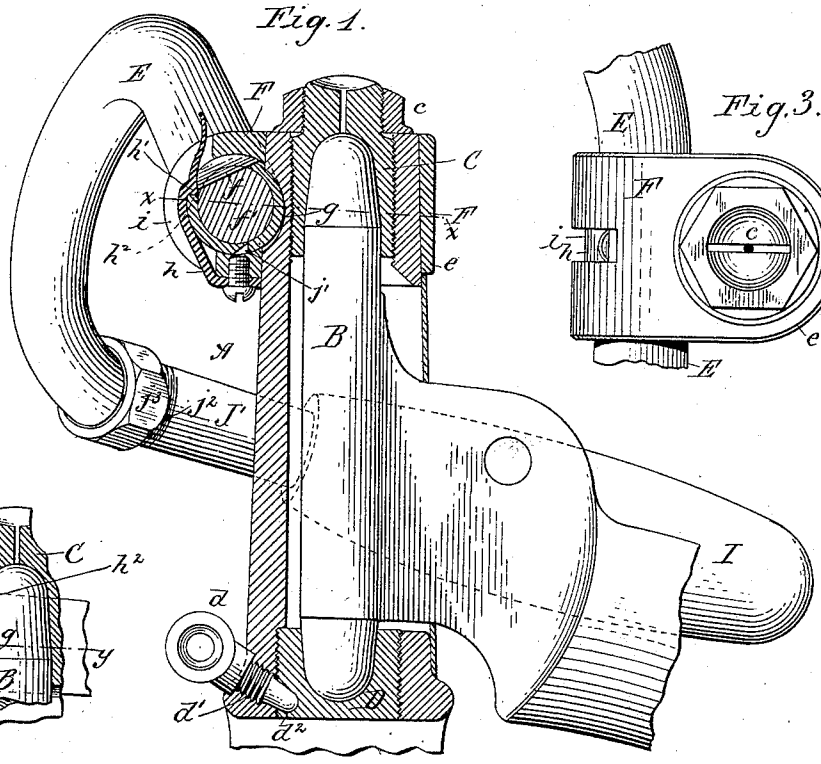


Fig. 3.

Fig. 2.

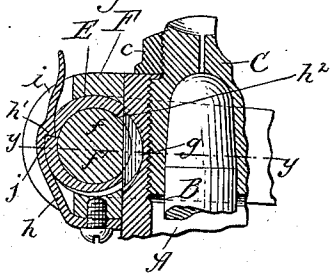


Fig. 4.

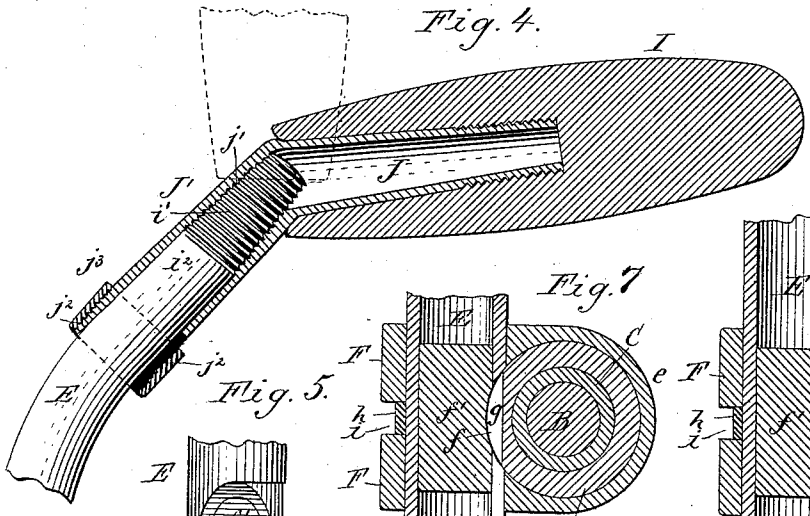


Fig. 5.

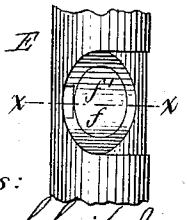


Fig. 7.

Fig. 6.

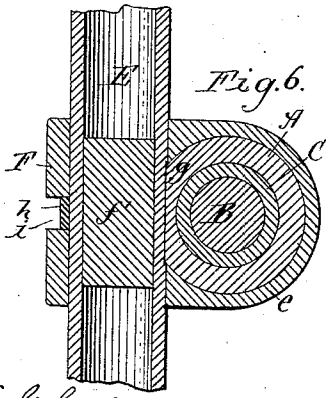
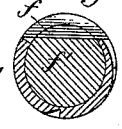


Fig. 8.



Witnesses:
Geo. J. Buchheit Jr.
Theo. L. Popp.

E. G. Latta. Inventor.
By Wilhelm Bonner.
Attorneys.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.)

2 Sheets—Sheet 2.

E. G. LATTA.

VELOCIPEDE.

No. 391,900. Patented Oct. 30, 1888.

Fig. 9.

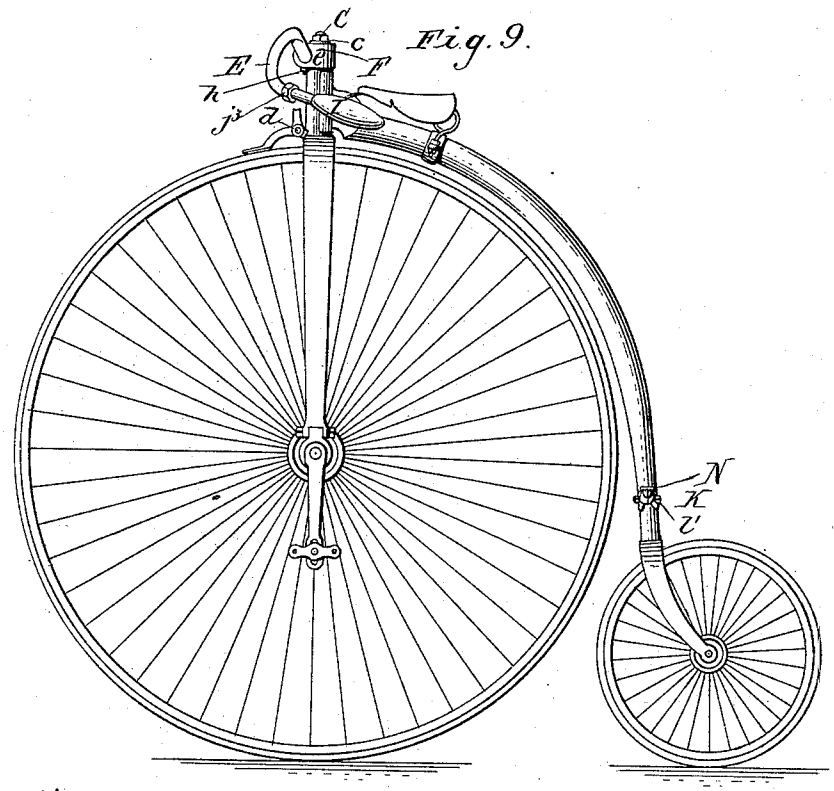


Fig. 10.

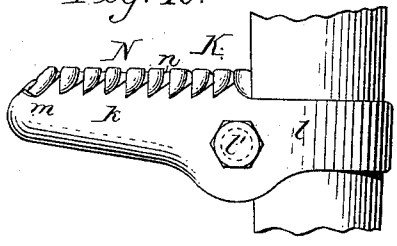


Fig. 11.

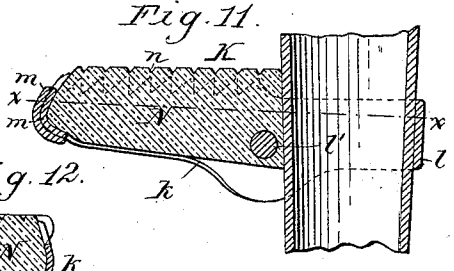


Fig. 12.



Fig. 13.

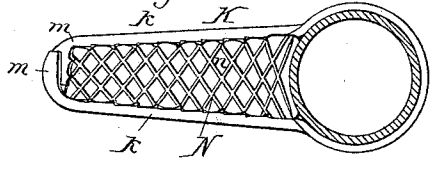
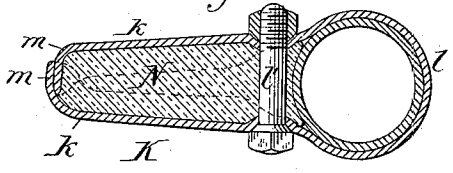


Fig. 14.



Witnesses:
Geo. J. Buchheit Jr.
Theo. L. Popp.

E. G. Latta, Inventor.
By Wilhelm Bonner.
Attorneys.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EMMIT G. LATTA, OF FRIENDSHIP, NEW YORK, ASSIGNOR TO THE POPE MANUFACTURING COMPANY, OF PORTLAND, MAINE.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 391,900, dated October 30, 1888.

Application filed January 19, 1888. Serial No. 261,222. (No model.)

To all whom it may concern:

Be it known that I, EMMIT G. LATTA, of Friendship, in the county of Allegany and State of New York, have invented new and useful Improvements in Velocipedes, of which the following is a specification.

The object of this invention is to attach the handle-bar to the steering-head in such manner that it can be readily removed therefrom or be turned out of the way, so as to stand in line with the backbone and wheels; also, to render the handles adjustable on the handle-bar, so that their angle with reference to the handle-bar can be changed at desire; also, to secure the lower bearing of the spindle to the steering-head in a simple manner, and, finally, to provide a light, strong, and cheap step for mounting the machine, which will not injure the rider or tear his clothing.

The invention consists to these ends of the improvements which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a vertical sectional elevation of the steering-head and handle-bar, showing the latter in the position in which it is secured to the steering-head. Fig. 2 is a similar view of the upper portion of the steering-head, showing the handle-bar in the position in which it and its bracket can be applied to, removed from, or turned on the steering-head. Fig. 3 is a top plan view of the steering-head and handle-bar lug. Fig. 4 is a longitudinal section of one of the adjustable handles applied to the end of the handle-bar. Fig. 5 is a top plan view of the central portion of the handle-bar. Fig. 6 is a horizontal section in line *x x*, Fig. 1, showing the handle-bar in a locked position. Fig. 7 is a similar view in line *y y*, Fig. 2, showing the handle-bar in an unlocked position. Fig. 8 is a vertical cross-section in line *x x*, Fig. 5. Fig. 9 is a side elevation of a velocipede provided with my improvements. Fig. 10 is a side elevation of the step secured to the backbone of the velocipede. Fig. 11 is a vertical longitudinal section thereof. Fig. 12 is a cross-section of the same. Fig. 13 is a top plan view of the step. Fig. 14 is a horizontal section thereof in line *x x*, Fig. 11.

Like letters of reference refer to like parts in the several figures.

A represents the cylindrical steering-head, which is of the usual construction, and B is the spindle, arranged with its upper center in an adjusting-screw, C, and with its lower end in a step, D. The latter is provided with an external screw-thread, and is fitted in a screw-threaded opening in the lower end of the steering-head. The step D is held in its seat against turning by the brake-stud *d*, which is arranged in a screw-threaded opening, *d'*, formed near the lower end of the steering-head, and projects with its inner end into a socket or opening, d^2, formed in the adjacent portion of the step D. By this construction the brake-stud serves a double function and dispenses with the use of an extra screw for retaining the step D in place.

The adjusting-screw C is held against turning by the customary jam-nut, *c*.

E represents the handle-bar, which is preferably constructed in the form of a compound curve in a well-known manner, and F is the lug or bracket to which the handle-bar is secured, and which is attached to the steering-head by a collar, *e*, fitting over the upper end of the latter and formed integral with the lug. The upper end of the steering-head is slightly tapered, and the bore of the collar *e* is correspondingly tapered. The lug or bracket F is provided with a horizontal opening, in which the handle-bar is arranged, and the central portion of the handle-bar is flattened or cut away on one side, as shown at *f*. The front side of the steering-head is provided with a concave recess or cavity, *g*, into which the rear curved side of the handle-bar projects when the latter is locked in position. Upon turning the handle-bar so as to bring its flattened side *f* opposite or in line with the recess of the steering-head, as shown in Figs. 2 and 7, the handle-bar will clear said recess, and the handle-bar and the collar *e* can be lifted from the upper end of the steering-head. The collar *e* and handle-bar are applied to the steering-head by turning the handle-bar into the above-mentioned position before passing the collar over the steering-head. The central portion of the handle-bar, arranged within

the lug F, is made eccentric or of gradually-increasing radius, and the radius of curvature of the concave recess *g* is somewhat smaller than the largest radius of the eccentric portion of the handle-bar, as shown in Figs. 1 and 2, so that by turning the handle-bar in the proper direction its eccentric portion is wedged against the concave face of the recess *g*, thereby tightly clamping the handle-bar in the lug F, and at the same time securing the lug to the steering-head by clamping its collar *e* upon the latter. The central eccentric portion of the handle-bar is so arranged with reference to the concave recess *g* that the handle-bar is locked in the lug by lifting on the handles. The handle-bar is preferably made of tubing and its central portion is re-enforced by a plug, *f'*.

h represents a flat spring, secured with its lower end to the under side of the lug F, and arranged in a slot or recess, *i*, formed in the front side of the lug. The spring *h* is provided with a hook or nose, *h'*, which engages in a notch or recess, h^2, formed in the circumference of the central portion of the handle-bar, which hook prevents the handle-bar from being turned backwardly in a direction opposite to that necessary to tighten the handle-bar in the lug.

When it is desired to remove the handle-bar and lug from the steering-head, the upper end of the spring *h* is pushed forward to disengage the hook from the notch h^2, when the bar can be turned backwardly to bring its cut-away portion *f* opposite the recess *g*. Another notch, *j*, is formed in the circumference of the handle-bar, and is arranged diametrically opposite the flattened portion *f*, so that when the handle-bar is turned so that said flattened portion *f* registers with the recess *g* the hook will engage in the notch *j* and hold the handle-bar in the position in which it can be applied or removed, or be turned upon the steering-head with the collar *e* so as to stand parallel or in line with the backbone, if desired. In either case this is quickly accomplished without the use of tools and without disturbing the adjustment of the steering-centers. The spring *h* extends upwardly above the lug F to form a thumb piece for disengaging the spring.

The spring *h* is not absolutely essential to the fastening of the handle-bar, and may be omitted, if desired, as the handle-bar cannot become loose while the rider pulls on the handles, and in case it should become loose at any other time it is readily tightened by lifting on the handles.

I represents one of the handles or grips, which are constructed of hard rubber or other suitable material. The handle I is secured by means of a screw-thread or otherwise to a core or tang, J, which is provided with an angular extension, J', secured to the end of the handle-bar. The ends of the latter are inclined backwardly, as shown in Fig. 1, and are provided with an external screw-thread, *i'*, which engages with the internal screw-thread, *j'*, formed in the adjacent angular extension J'. The front end of the latter is tapered and split longitudinally, and is provided with an external screw-thread, j^2, which is embraced by a clamping-nut, j^3, as shown in Fig. 4, whereby the extension is firmly secured to the end of the handle-bar. Upon loosening the clamping-nut j^3 the handle can be given a half-turn to change its position from that shown in Figs. 1 and 4 to that indicated by dotted lines in Fig. 4; or the handles can be adjusted to stand in a position intermediate between the two illustrated in the drawings by giving it less than a half-turn. When the handles have been adjusted, the clamping-nuts j^3 are again tightened. The ends *i'* of the handle-bars are preferably of the same size as the tang J, so that the latter and its angular portion J' may be removed and the handle be secured directly to the ends *i'* of the handle-bar, in which case it occupies the same position as the ordinary handle of a bent or curved handle-bar. In Figs. 1 and 4 the handle is shown in the position of a spade-handle.

By my improved handle-extension J J' the three most desirable positions of the handle are obtained and several intermediate adjustments of two of the positions, as well as three adjustments of the length of the handle-bar and its leverage. It is lighter and stronger, and can be manufactured at less expense than a spade-handle.

It is obvious that the angle of the extension J' with reference to the tang J may be varied, and that the extension may be fitted in the end of the tubular handle-bar and be secured therein by a clamping-nut in a manner similar to that in which the shank of the spade-handle is secured to the handle-bar in my pending application filed November 3, 1887, Serial No. 254,159.

K represents the step whereby the velocipede is mounted, and which is secured to the lower portion of the backbone. The step K is stamped of sheet metal, and is composed of two serrated or toothed branches, *k k*, which are connected at their rear ends by a curved loop or ring, *l*, which encircles the backbone, the step being secured to the backbone by a horizontal bolt, *l'*, passing through the branches *k k* on one side of the backbone. The bolt-holes l^2 are preferably countersunk or made conical to fit the adjacent corresponding faces of the bolt *l'*, as shown in Fig. 14. This construction enables the bolt to be easily applied and to hold equally well on different parts of the backbone.

The outer ends, *m m*, of the branches *k k* are curved inwardly, and one end overlaps or interlocks with the other end, as shown in Figs. 11, 13, and 14. This construction causes both ends of the branches to support any weight which is applied to either branch of the step.

The end portions, *m m*, of the step are made concave or semicircular in cross-section, as shown in Fig. 12, which construction increases the strength of the branches *k k* and prevents

the same from bending forwardly when the rider applies his weight from the rear, and also causes the teeth or serrations at the upper edge of the branches to incline inwardly and thereby lessen the liability of catching the rider's clothing.

N represents a block, of rubber or other elastic material, arranged in the cavity formed between the branches *k k*, and projecting a short distance above the serrations or teeth of the branches when in a normal position, so as to serve as a guard, which protects the rider's clothing and person from accidental injury by contact with the teeth of the step. Upon placing the foot on the step the rubber is depressed sufficiently to expose the serrations and allow the same to come in contact with the sole of the rider's shoe and thereby prevent the foot from slipping.

The rubber block N is made slightly larger than its cavity, and is clamped in place between the branches *k k* in the act of securing the step to the backbone. The sharp points of the teeth of the step embed themselves in the sides of the rubber guard N, and their liability to cause injury is thereby still further lessened. The upper flat surface of the rubber guard N is provided with shallow diagonal grooves or depressions *n*, as shown in Figs. 11, 12, and 13, and the outer ends of these grooves intersect each other at the points of the teeth, so as to better expose the teeth when the guard is depressed. Besides being clamped between the branches *k k* of the step, the guard N is further secured in place by the horizontal bolt *l'*, which passes through the guard, as shown in Figs. 11 and 14. The guard also prevents the step from becoming filled with dirt, &c.

I claim as my invention—

1. The combination, with a steering-head, of a detachable handle-bar bracket and a handle-bar seated in said bracket and adapted to interlock with the steering-head by turning the handle-bar in its seat, substantially as set forth.

2. The combination, with a steering-head, of a detachable handle-bar bracket and a handle-bar interlocking with said steering-head by turning the handle-bar in one direction, while by turning the bar in the opposite direction the bracket with the handle-bar can be turned on the steering-head or be removed therefrom, substantially as set forth.

3. The combination, with the handle-bar bracket and the steering-head, of a handle-bar seated in said bracket and made eccentric or of gradually-increasing radius, whereby the bar is clamped against the steering-head by turning it in its seat, substantially as set forth.

4. The combination, with the handle-bar bracket and the steering-head provided with a recess or cavity, of a handle-bar arranged in said bracket and made eccentric or of gradually-increasing radius and provided with a flattened or cut-away portion, which, when arranged opposite the cavity of the steering-head, permits the handle-bar and bracket to be turned on the steering-head or be removed therefrom, substantially as set forth.

5. The combination, with a steering-head and a detachable handle-bar bracket, of a handle bar which is interlocked with the steering-head by a partial turn on its axis, and a spring whereby the handle-bar is held against retrograde movement, substantially as set forth.

6. The combination, with the steering-head and the handle-bar lug provided with a vertical slot or recess, of an eccentric handle-bar seated in said handle-bar lug and provided with one or more notches or depressions, and a spring hook or catch arranged in the slot of the bracket and adapted to engage in one or the other of said recesses, substantially as set forth.

7. The combination, with the steering-head and the lower detachable center bearing provided with a recess or socket, of the brake-stud arranged at the lower end of the steering-head and projecting with its inner end into the recess of the center bearing, substantially as set forth.

8. The combination, with the handle-bar, of a handle provided with a tang or shank having an angular extension which is adjustably attached to the handle-bar, substantially as set forth.

9. An adjustable velocipede-handle provided with a detachable angular extension, whereby the handle can be connected with the handle-bar by means of the extension or be applied directly to the end of the handle-bar, substantially as set forth.

10. The combination, with the threaded handle-bar, of a handle provided with a detachable angular extension or shank split longitudinally and provided with a screw-thread engaging with the thread of the handle-bar, and a clamping-nut whereby the extension is secured to the handle-bar, substantially as set forth.

11. A velocipede-step consisting of two serrated branches interlocked at their outer ends, and a loop or clip whereby the step is secured to the backbone, substantially as set forth.

12. A velocipede step consisting of a loop encircling the backbone and formed with two outwardly-projecting branches, the outer ends of which are interlocked, so as to support each other against vertical and lateral displacement, substantially as set forth.

13. A velocipede-step consisting of two branches connected by a loop encircling the backbone, said branches being made curved or concaved, so as to form together a frame of semicircular cross section, or nearly so, substantially as set forth.

14. A velocipede step provided with two serrated edges inclined inwardly toward each other, substantially as set forth.

15. In a step, the combination, with two serrated side bars or branches, of an elastic or yielding guard arranged between said side bars, substantially as set forth.

16. The combination, with a step having

teeth or serrations, of an elastic or yielding guard having its upper surface arranged flush with or slightly above the teeth of the step when in a normal position, while exposing the teeth when pressure is applied to the guard, substantially as set forth.

17. The combination, with the side bars or branches of the step provided with teeth or serrations and forming a frame having an open top, of a cushion or elastic tooth-guard clamped between said branches, substantially as set forth.

18. In a step, the combination, with the two serrated branches and a clip or loop surrounding the backbone, of a rubber or other elastic guard arranged between said branches, and a clamping-bolt passing through said branches and the guard, substantially as set forth.

19. In a step, the combination, with the two serrated branches provided with conical bolt-holes, and a loop or clamp encircling the backbone, of a clamping-bolt connecting said branches and provided with conical faces, substantially as set forth.

Witness my hand this 4th day of January, 1888.

EMMIT G. LATTA.

Witnesses:
W. WARD RICE,
FRED N. RICE.