

(No Model.)

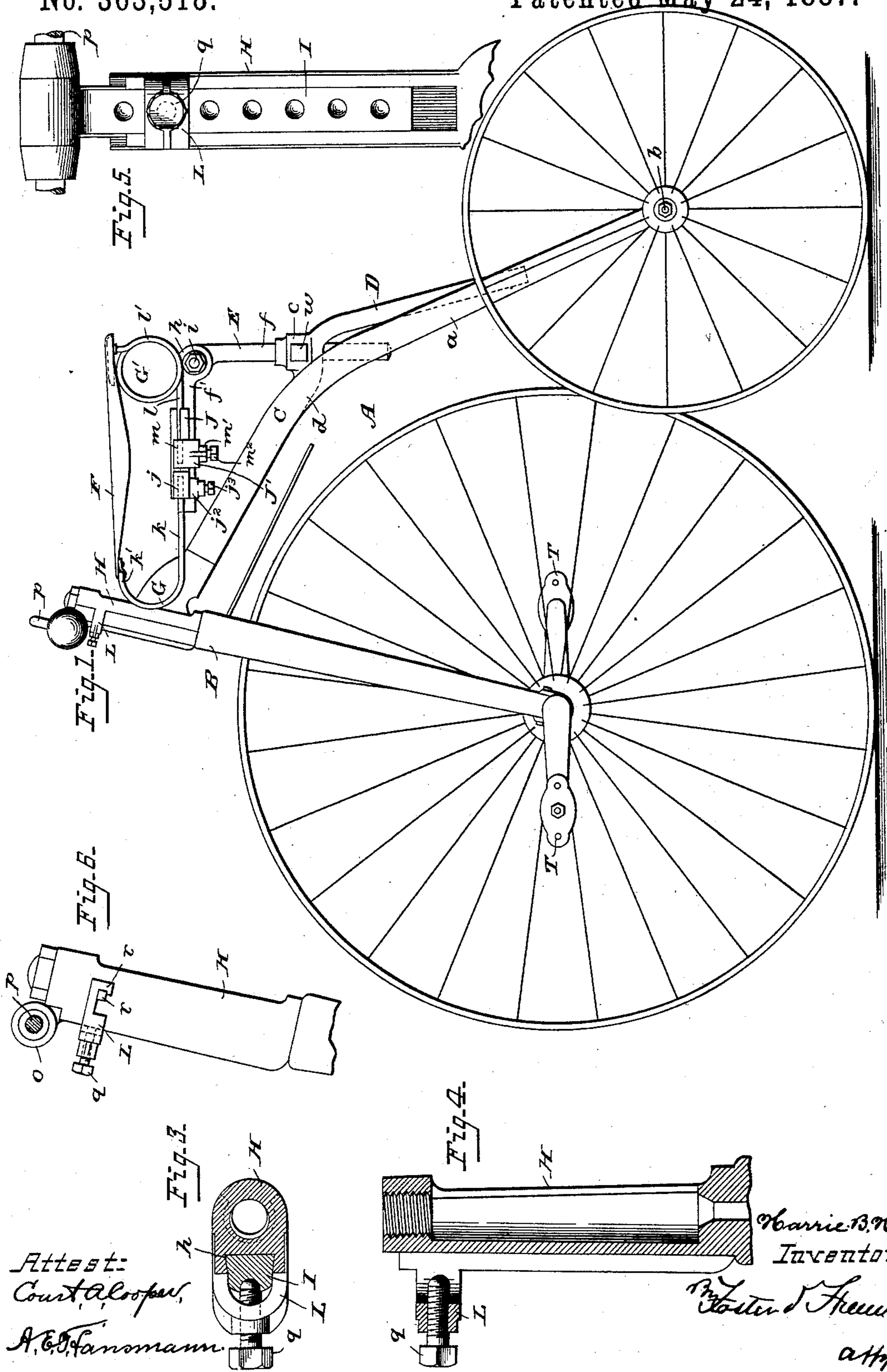
2 Sheets—Sheet 1.

H. B. HART.

VELOCIPÈDE.

No. 363,518.

Patented May 24, 1887.

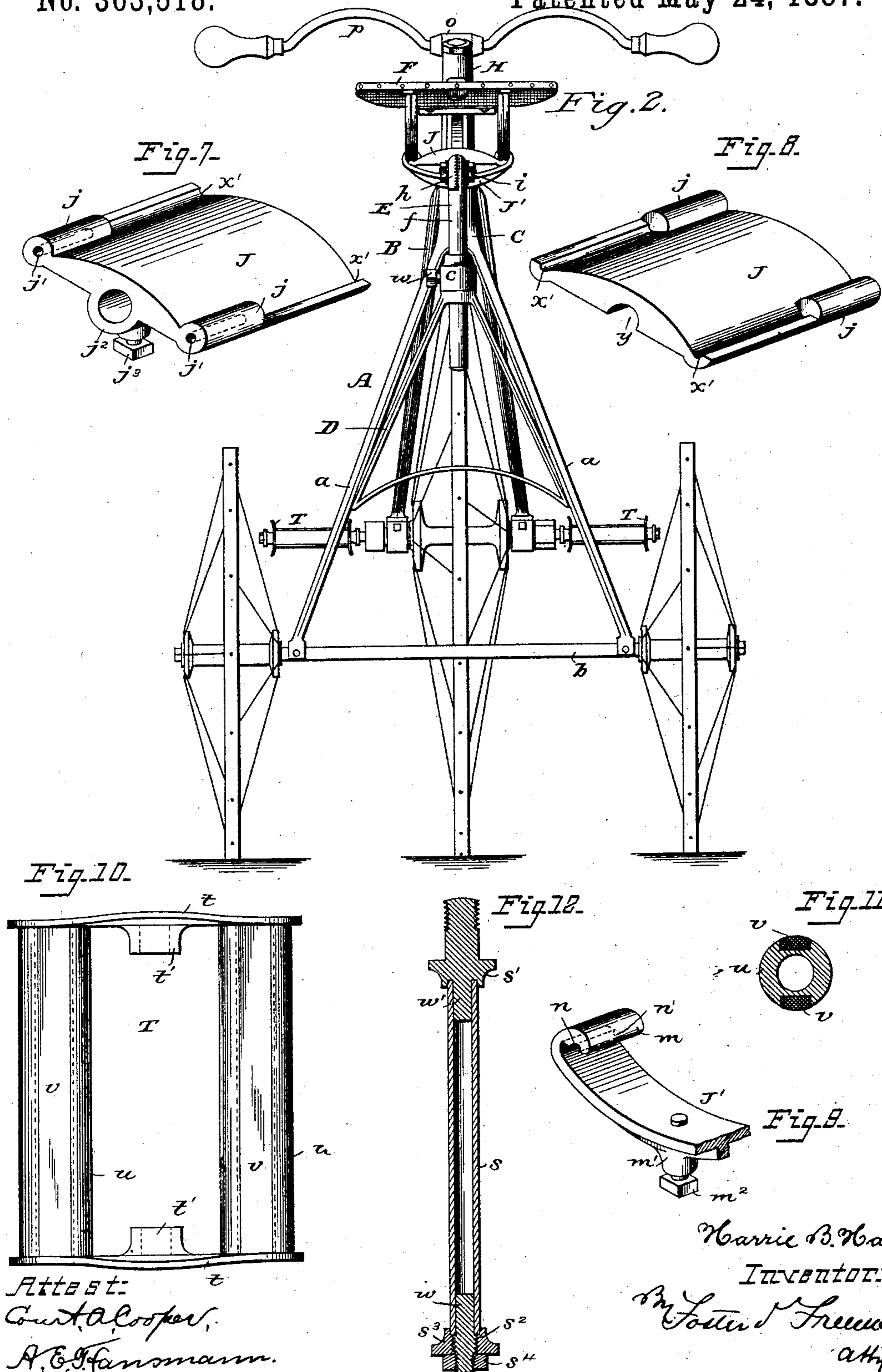


N. PETERS, Photo-Lithographer, Washington, D. C.

2 Sheets—Sheet 2.

No. 363,518.

Patented May 24, 1887.



UNITED STATES PATENT OFFICE.

HARRIE B. HART, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
HART CYCLE COMPANY, OF SAME PLACE.

VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 363,518, dated May 24, 1887.

Application filed June 1, 1886. Serial No. 203,801. (No model.)

To all whom it may concern:

Be it known that I, HARRIE B. HART, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Velocipedes, of which the following is a specification.

The object of my invention is to provide a light, durable, and inexpensive velocipede with its various parts readily adjustable, so as to adapt the machine to the growth of children or to riders of different sizes, while at the same time the parts are so disposed as to combine ease and facility of manipulation with comfort to the rider; and to these ends the invention consists in the novel construction and arrangement of the various features of the machine, as hereinafter fully set forth.

In the drawings, Figure 1 is a side elevation of one form of velocipede embodying my invention. Fig. 2 is a rear view of Fig. 1. Figs. 3 and 4 are respectively cross and vertical sections of the head of the velocipede. Fig. 5 is an enlarged face view of the head and adjustable handle support or bracket. Fig. 6 is a side view of the head, showing a modified form of the securing-clamp for the handle-support. Fig. 7 is a perspective view of one member of the securing-clamp for the saddle. Fig. 8 is a similar view looking in the opposite direction. Fig. 9 is a perspective view of part of the other member of saddle-clamp. Fig. 10 is a plan view of the pedal. Fig. 11 is a cross-section of one of the pedal-rods, and Fig. 12 is a longitudinal section of the pedal-pin.

A designates the frame of the velocipede, and consists, generally, of a front fork, B, and a reach or backbone, C, pivotally joined together and mounted either upon two or three wheels in the usual manner.

The backbone C is bifurcated a short distance below the neck to form legs *a a*, suitably spread and connected at their lower extremities to the rear axle, *b*. Secured to and supported between the legs, to brace and stiffen the latter against lateral thrusts, while also serving as a support for the seat-post, is an approximately triangular-shaped frame, D, terminating at its upper end in a forwardly-projecting arm, *d*, and having an enlargement or hub, *e*, provided

with a vertical opening. This frame D and its forwardly-projecting arm *d* are rigidly connected to the backbone between the legs thereof in any convenient way, as by brazing, riveting, or otherwise.

To permit of a vertical adjustment of the saddle with respect to the frame of the machine, and at the same time allow the forward end of the saddle to be raised and lowered to change the plane of its upper surface from the horizontal to such an inclination as may suit the rider, I mount the saddle upon a jointed seat post or standard, E, supported within the opening in the hub *e* of the brace D, and secured therein at any height to which it may be adjusted by a set-screw, *w*, or other convenient means. The seat post or standard E is composed of two members or bars, *f f'*, the former constituting the standard proper and the latter the saddle-supporting arm, and these bars are pivotally secured together and each enlarged at one end to form a hub, *h*, roughened or serrated on its inner face, so that upon clamping the two members together by a bolt, *i*, or otherwise, they will remain in any position to which they may be set. By this means it will be seen that the members of the seat post or standard may with great facility be adjusted with respect to each other, thereby changing the position of the saddle as may be desired.

To add flexibility to the saddle and reduce the liability of its chafing the person of the rider, I mount the saddle F at its respective extremities upon independent springs G G', supported by the horizontal member of the seat-post in such a manner that the springs may be easily adjusted to and from each other to alter the tension of the seat.

The forward spring, G, is formed from a single piece of metal, and is composed of two similarly-shaped members, *k k*, joined and bent at their upturned ends to constitute a loop, *k'*, from which the adjacent end of the saddle is suspended. The rear spring, G', is likewise composed of two similar members, *l l*; but in this instance each member is separate and provided with a coil, *l'*, as shown, to afford increased elasticity at the rear of the seat. The upwardly-projecting portion of each member

of the spring G' may be extended laterally beyond the body thereof to afford a proper support for the rear end of the saddle; but, as preferred and shown, the latter is stretched upon
5 and connected to a cross-piece to which the upper end of each member is secured.

To provide a rigid and durable connection between the saddle and its supporting-standard, and one which will also permit of ready
10 and independent adjustment of the springs to regulate the tension of the saddle, I employ a clamp of novel construction, consisting, principally, of a body or plate, J , and an adjustable member or arm, J' , adapted to slide upon
15 the plate. This plate J may be cast or otherwise suitably made, and is formed on its upper side, at one end and at its opposite edges, with bosses j , each provided with a central opening, j' , extending from the outer end thereof
20 to within a short distance of its rear end. The plate J is grooved at x' in rear of each boss and in line with the opening therein, while its reverse side is centrally grooved at y and provided with a hub, j^2 , carrying a set-screw, j^3 .
25 The adjustable arm J' is provided with a hub, m' , carrying a set-screw, m^2 , and up-turned and inwardly-projecting lugs m , which latter are adapted to fit over the edges of the plate J , and the under surface of each lug is
30 grooved at n as far as the lip n' at the inner edge of the arm, the grooves n corresponding with the grooves x' in the adjacent face of the plate.

When the clamp is in position, the arm f' of
35 the seat-standard rests within the groove y of the plate J , while the end of the standard projects through and is secured within the hub j^2 by the set-screw, the ends of the side members of the forward spring being inserted into the
40 openings in the bosses j . The ends of the rear springs are held within the grooves x' of the plate J by the lugs m of the arm J' , and are prevented from slipping forward on the plate by the lip n' at the termination of the grooves
45 in the lugs of the arm, while the latter also secures the rear end of the plate to the supporting-standard.

It will be observed from the peculiar construction of the clamp that by loosening and
50 adjusting the arm J' upon its support the saddle-springs may with great facility be brought together or spread apart to vary the tension of the saddle, and that by also releasing the screws j^3 and m^2 the entire saddle and its securing-clamp may be adjusted upon the stand-
55 ard to change the relation of the saddle with respect to the head of the machine, after which the parts may again be permanently secured in place.

In order to obtain a firm and extended vertical adjustment of the handle-bar of the machine to easily adapt the latter to the peculiarities of the rider, I provide the forward face of the head H preferably with a dovetail
65 groove, h , in which slides a correspondingly-shaped support or bracket, I , terminating at

its upper end in a hub, o , through which the handle-bar p projects. This groove h extends throughout the length of the head, thus affording increased bearing-surface for the bracket
70 I and greater adjustment of the handle-bar above the machine, with additional security against breakage or liability of the parts becoming displaced.

The bracket I may be secured in its adjusted
75 position by any proper means, the device shown and preferred for this purpose consisting of a yoke, L , cast in one piece with the head and carrying a set-screw, q , by which the bracket is firmly clamped in place. By
80 casting the yoke as part of the head it will be seen that increased strength and rigidity is secured, while at the same time the parts may be produced at comparatively small cost and with great facility.
85

Instead of forming the yoke in one piece with the head, as described, it may in some instances be detachable, as shown in Fig. 6, in which case it fits over the bracket I and passes partly round the head, terminating in
90 lugs r , fitting over ears r' on opposite sides of the head, while in other cases the yoke may be entirely dispensed with and a set-screw passed directly through the bracket, securing it firmly in position.
95

In velocipedes of the cheaper grades—such as those commonly used by children—the pedals have heretofore been constructed entirely of metal, or of wood and metal, because of the increased expense of pedals with flexible bearing-
100 pieces for the feet. To obtain the advantages arising from the use of rubber-covered pedals in machines of this class, and at the same time furnish a pedal which may be produced at a small cost, I cast the entire body portion of
105 the pedal T , consisting of the usual end pieces, t , and hollow cross-pieces u , in one piece. The cross-pieces u may be variously shaped in cross-section, and are formed with recesses or grooves on their opposite sides, into which
110 rubber strips v are inserted and permanently secured therein by cement or otherwise, while the end pieces, t , are each cast with an enlargement, t' , constituting the bearing for the pedal-pin.
115

It will be obvious that by casting the pedal as indicated it may be readily and cheaply produced, and requires very little cleaning off or polishing before being placed upon the machine.
120

To obtain a pedal pin or shaft with increased rigidity and lighter than the solid pin now commonly used, I construct said pin of a tube, s , in the ends of which are brazed plugs w w' , the latter being formed with a shoulder, s' ,
125 constituting one of the bearings for the pedal, while beyond said shoulder the plug is properly shaped to fit into the slot in the crank-arm of the machine, as usual, and then terminates in a threaded end for the reception of
130 the securing-nut. The plug w is enlarged at s^2 to correspond to the outer diameter of the

tube *s*, and is screw-threaded to receive the second bearing, *s*³, of the pedal, while beyond said enlargement it is again reduced in size and threaded to receive the jam-nut *s*⁴. By this construction of the plug *w* it will be observed that upon unscrewing the jam-nut and bearing *s*³ the pedal may be easily removed from the pin.

Various modifications of the different features of my invention will readily suggest themselves, and I therefore do not limit myself to the exact construction and arrangement shown.

I am aware that it is not new to construct saddle-clamps in sections so connected as to permit the saddle to be set at different inclinations, and therefore make no claim to such devices.

I am also aware that it is not broadly new to provide a velocipede with a vertically-adjustable bracket carrying the handle-bar, and therefore do not claim such construction in itself; but in all such cases, so far as I am aware, the bracket supports the handle-bar below the top of the head, and is capable only of a limited movement, not suited for the present purpose.

I claim—

1. The combination, in a velocipede provided with a tubular backbone forked at or near its rear end, of a saddle and a brace inserted between and rigidly secured to the forks of said backbone and adapted to stiffen said forks against lateral thrusts and adjustably supporting the saddle, substantially as described.

2. The combination, in a velocipede provided with a forked backbone, of a saddle carried by a standard and a brace inserted between the forks of said backbone and having a hub and clamp at its upper extremity, substantially as described.

3. The combination, in a velocipede having a forked backbone, of a saddle carried by a standard, an approximately triangular-shaped brace rigidly secured to the forks, as described, and provided with a hub and forwardly-projecting arm, and means for adjustably securing said standard within the hub, substantially as described.

4. The combination, with a velocipede, of a saddle, an approximately L-shaped standard therefor composed of two bars pivotally connected and adjustably clamped together at the pivot-point, the downwardly-extending bar being vertically adjustable within its supporting-frame, all substantially as and for the purpose described.

5. The combination, with a velocipede, of a vertically-adjustable standard, consisting of two bars pivotally connected and adjustably clamped together at the pivot-point, one bar being vertically adjustable within its supporting-frame and the other adjustably supporting the saddle, substantially as and for the purpose described.

6. In a velocipede, the combination, with the grooved head, of an adjustable bracket fitting said groove and projecting normally above the head, said bracket being provided at its upper end with a hub carrying the handle-bar, and a yoke fitting over said bracket and clamping the latter in position after adjustment, substantially as and for the purpose described.

7. In a velocipede, the combination, with a head having a dovetailed groove, of an adjustable bracket fitting said groove and projecting normally above the head, and provided with a hub carrying the handle-bar, and a yoke formed as part of the head and carrying a set-screw, substantially as described.

8. The improved bicycle-saddle, consisting of the flexible body portion and two independent double springs, shaped as described, the forward spring being formed from a single piece of metal and the rear spring of two separate members, and the opposite ends of said body portion being suspended from the upturned portions of the springs, substantially as described.

9. The combination, in a saddle-retaining clamp, of a plate adapted to be secured to the seat-post, as described, provided with recessed lugs, and an arm adjustable on said plate and having upturned ends, substantially as described.

10. The combination, in a saddle-retaining clamp, of a plate grooved, as described, and formed at one end and respectively on opposite sides with a boss carrying a set-screw and recessed lugs, and an arm adjustable on said plate and provided with upturned grooved ends and a set-screw, substantially as set forth.

11. The combination, with the saddle supported at opposite ends upon independent springs, of a securing-clamp consisting of a plate grooved, as described, and provided on its under side near one end with a retaining device and on its opposite side with lugs recessed to receive the ends of the front spring, and an arm adjustable upon said plate and constructed to secure the ends of the rear spring to the plate and the adjacent end of the latter to the seat-post, substantially as and for the purpose set forth.

12. The improved pedal consisting of the cast-metal frame composed of end and cross pieces, as described, said cross-pieces being formed on opposite sides with channels, substantially as described.

13. The improved pedal consisting of the cast-metal frame composed of end and cross pieces, as described, the cross-pieces having channels on opposite sides, and strips of rubber inserted and secured within said channels, substantially as described.

14. The improved pedal-pin consisting of a tubular body portion provided at its ends with plugs inserted and secured therein, as described, said plugs carrying the pedal-bearing.

ings and attaching means, substantially as set forth.

15. As an improved article of manufacture,
a seat-post composed of a standard and a sad-
5 dle-supporting arm jointed thereto, substan-
tially as and for the purpose set forth.

In testimony whereof I have signed my name

to this specification in the presence of two sub-
scribing witnesses.

HARRIE B. HART.

Witnesses:

WM. A. REDDING,
JAMES S. PHILLIPS.