(No Model.) 3 Sheets—Sheet 1.

C. E. COURTNEY.

VELOCIPEDE.

No. 348,619. Patented Sept. 7, 1886.

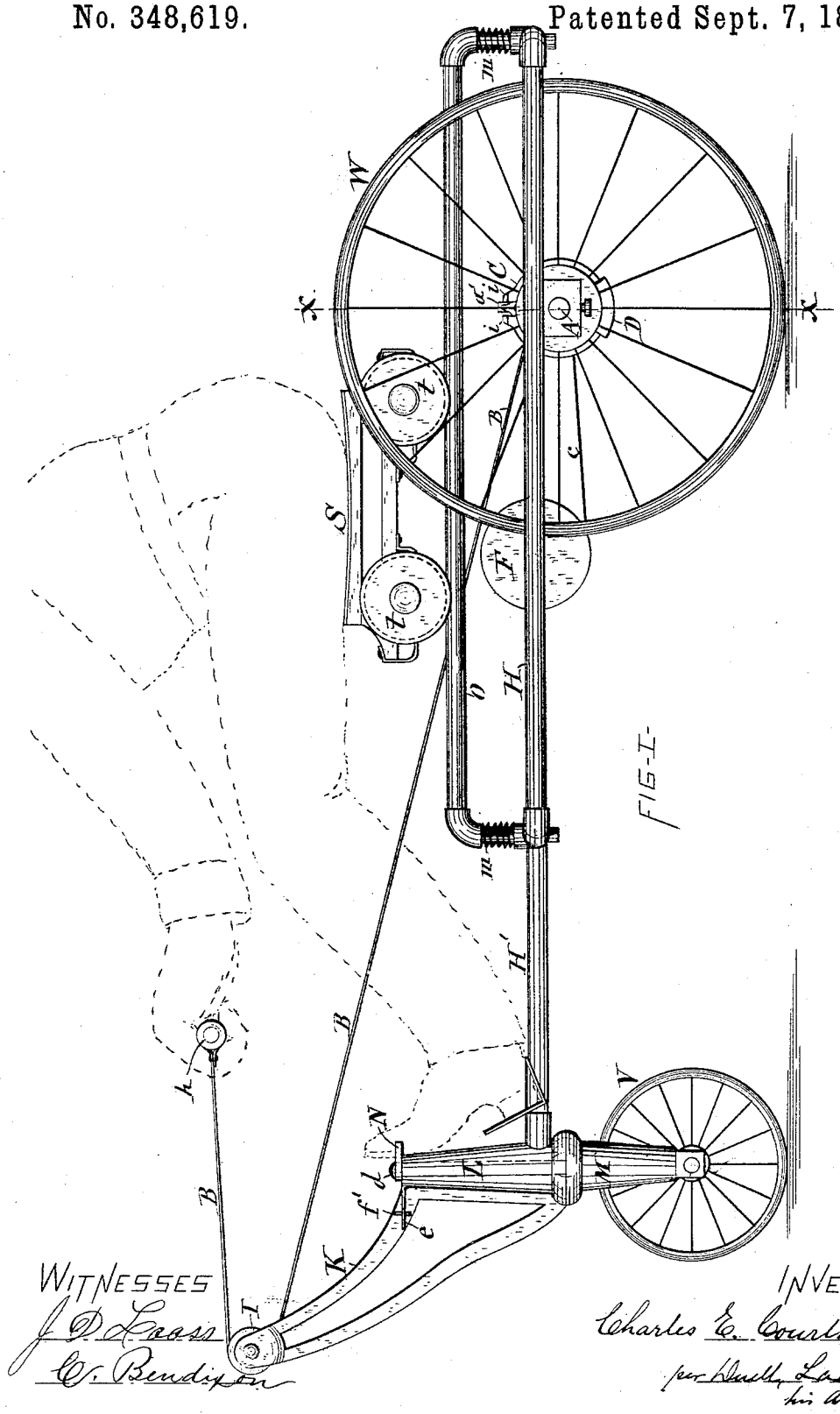


FIG-I-

WITNESSES
J. D. Lacass
C. Bendixon

INVENTOR
Charles E. Courtney
per Church Lacass & Hay
his Attys

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

(No Model.) 3 Sheets—Sheet 2.

C. E. COURTNEY.

VELOCIPEDE.

No. 348,619. Patented Sept. 7, 1886.

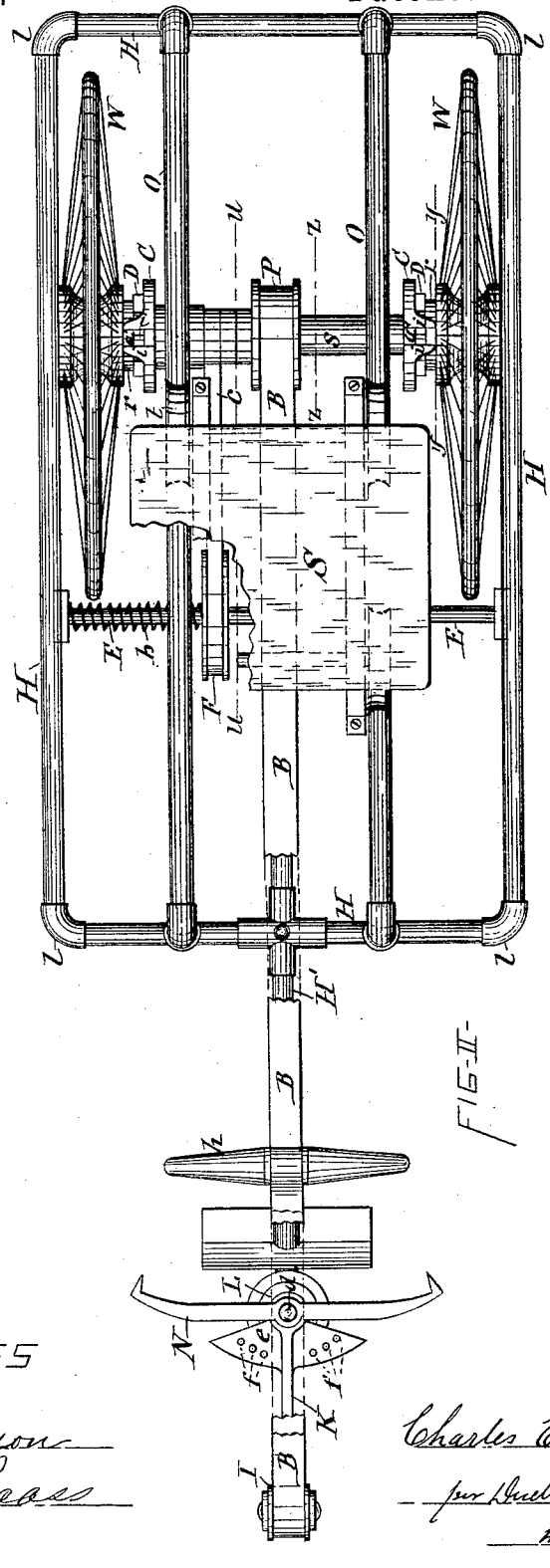


FIG. II.

WITNESSES

C. Bendixon

J. D. Laass

INVENTOR

Charles E. Courtney

per Duell, Laass & Hey

his Attys

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

(No Model.) 3 Sheets—Sheet 3.

C. E. COURTNEY.

VELOCIPEDE.

No. 348,619. Patented Sept. 7, 1886.

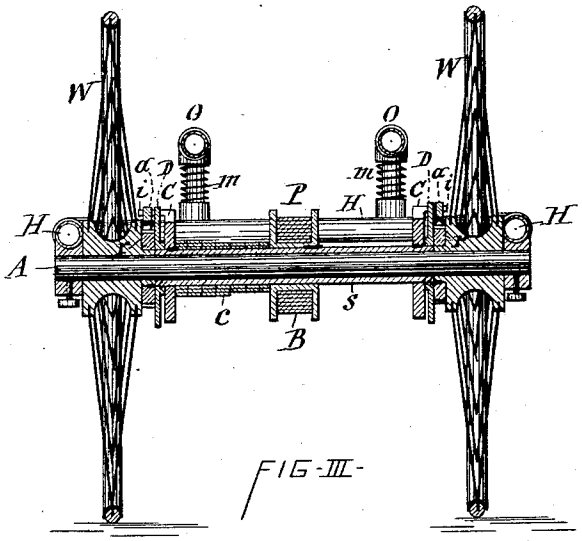


FIG-III-

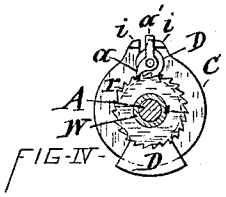


FIG-IV-

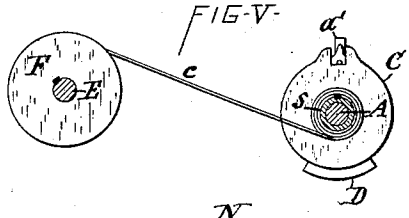


FIG-V-

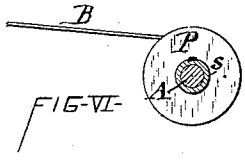


FIG-VI-

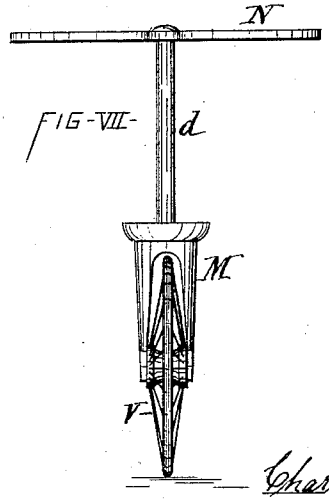


FIG-VII-

WITNESSES

J. D. Lacey

C. Bendixon

INVENTOR

Charles E. Courtney

per Duell, Lacey & Hay

his attys

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

UNITED STATES PATENT OFFICE.

CHARLES E. COURTNEY, OF UNION SPRINGS, NEW YORK.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 348,619, dated September 7, 1886.

Application filed December 5, 1885. Serial No. 184,761. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. COURTNEY, of Union Springs, in the county of Cayuga, in the State of New York, have invented new and useful Improvements in Velocipedes, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel construction of a velocipede, and means for propelling the same, as hereinafter fully described, and specifically pointed out in the claims.

In the annexed drawings, Figure I is a side elevation of my improved velocipede. Fig. II is a plan view of the same, with portions broken away to illustrate the underlying parts. Fig. III is a vertical transverse section on line *x x* Fig. I. Figs. IV, V, and VI are vertical longitudinal sections, respectively, on lines *y y*, *u u*, and *z z*, Fig. II; and Fig. VII is a detached front view of the steering-wheel and pedestal on which it is journaled.

Similar letters of reference indicate corresponding parts.

W W represent the two traction-wheels, which are journaled on opposite ends of the axle A, and H is the frame of the velocipede, which is rigidly secured to the axle at the outside of the wheels W W. For the purpose of combining compactness and minimum weight with maximum stability, I construct said frame of metallic tubing, two straight long pieces of which constitute the sides of the frame, and are connected at their lower ends by means of the usual screw-threaded elbows, *l l l l*, to shorter straight cross-pieces of said tubing, the whole forming a rectangular skeleton frame.

Between the hubs of the two wheels W W, I place on the axle A, a sleeve, *s*, which loosely embraces said axle, so as to allow it to freely turn thereon. On the said sleeve is rigidly secured the driving-pulley P, which is thus loosely mounted on the axle. The front of the frame H is provided with a forward extension, H', of the form of a tongue rigidly secured to the frame. To the forward or free end of the extension H' is firmly attached a vertical socket or journal-box, L, and in this is journaled the vertical spindle *d*, which projects from the pedestal M, and extends through the box L, and has rigidly secured to its upper end the steering-lever N. On the lower end of the pedestal M is journaled the steering-wheel V, which serves to support the forward portion of the velocipede. From the front of the box L projects a rigid arm, K, on the end of which is pivoted a sheave, I. A belt, B, is wound at one end around the driving-pulley P, and extended with its opposite end around the sheave I, and back toward the frame H, so as to bring the free end of said belt within reach by the occupant of the velocipede, said end of the belt being provided with a suitable handle, *h*, to facilitate the manipulation of the belt. On each end of the sleeve *s* is loosely hung an arm, D, which is weighted underneath the sleeve, so as to sustain said arm normally in one position. On the upper end of each of said arms D is pivoted a pawl, *a*, which engages a ratchet, *r*, which is firmly secured to the hub of the wheel W, and is pitched so as to be engaged by the pawl and transmit motion to the wheel W when the belt B is being unwound from the driving-pulley P. The pawls are made to alternately take hold of the ratchets and to release the same automatically with the rotation of the sleeve *s*, alternately in opposite directions, by means of collars C C, rigidly attached to the sleeve and provided with lateral projections *i i*, between which project shanks *a' a'*, formed on the pawls.

E denotes a counter-shaft arranged parallel to the axle and firmly secured to the frame H. On said shaft is loosely mounted a pulley, F, on which is wound one end of a belt, *c*, the opposite end of which is wound around the sleeve *s* in opposite direction from the winding of the belt B. A spiral spring, *b*, surrounding the shaft E, and connected at one end to the frame H and at the opposite end to the pulley F, serves to rotate said pulley so as to cause it to wind thereon the belt *c*.

O O are two horizontal skids arranged longitudinally between the wheels W W, and elastically connected to the frame H by springs *m m*, interposed between them. Said skids are supported above the frame a proper height to clear the pulleys P and F.

Upon the skids is mounted movably the seat S, which rides on the axles of two sets of rollers,

t t, which latter are grooved or flanged to guide them on the skids O O, on which said rollers travel.

e represents a plate, which projects horizontally laterally from the vertical journal-box L, hereinbefore described. Said plate is provided with a series of holes, *f f*, for the reception of pins *f'*, which project upward from the plate, so as to be encountered by the steering-lever N when turned on its axis. This plate *e*, with its pins *f'*, serves to limit the movement of the steering-lever and thus guard against too suddenly turning the velocipede from a direct course and the resultant danger of upsetting the velocipede.

The series of holes *f f* allows the guard-pins *f'* to be set in different positions, to vary the limitation of the movement of the steering-lever, as may be desired.

The operation of my invention is as follows: The operator being seated on the seat S takes hold by his hands of the handle *h* and draws the same toward him. The resultant draft on the belt B imparts rotary motion to the pulley P, and this motion is transmitted to the wheels W W by the pawls and ratchets *a r*. During the rotation of the pulley P the belt *c* is wound upon the sleeve *s* and unwound from the pulley F, against the resistance of the spring *b*. After the operator has drawn out the belt B as far as he desires he relaxes the draft on the said belt, which is then immediately rewound on the pulley P by the action of the spring *b* which turns the pulley F to wind thereon the belt *c*, and thereby turns the sleeve *s*, with the pulley P, in opposite direction from its previous motion. In the meantime the collars C C, revolving with the sleeve *s*, throw the pawls *a a* out of engagement with the ratchets *r r*, and thus allow the wheels W W to continue their motion in one direction. The winding up of the belt B brings the manipulating-handle *h* again forward in position to allow the operator to draw out the belt B, and thereby impart another impulse to the movement of the velocipede. It will be observed that the described movement of the operator is similar to that assumed by an oarsman, and consequently this velocipede serves as a convenient means for the exercise of oarsmen. In the back and forward movement of the operator the seat S is caused to run back and forth on the skids O O, and thus affords greater range of action to the operator. The steering is effected by the feet of the operator pressing on the steering-lever N.

I do not limit myself to the use of the within-described pawl and ratchet *a r* for transmitting motion to the wheels W W, as it is obvious that the same result can be attained by means of any of the usual and well-known clutches used for analogous purposes. In fact the said pawl and ratchet do constitute a species of two-part clutch.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the axle and traction-wheels journaled thereon, the sleeve *s*, loosely embracing the axle, the pulley P, and collars C C, both rigidly attached to the sleeve, the arms D D, hung loosely on the sleeve and weighted underneath said sleeve, the pawls *a a*, pivoted on said arms and having the shanks *a' a'*, engaged with the collars C C, the ratchets *r r*, attached to the traction-wheels, and the belt B, wound on the pulley, substantially as described and shown.

2. In combination with the axle, traction-wheels, and frame, the loose sleeve *s*, pulley P, rigidly attached to the sleeve, the belt B, wound on the pulley, and the pawl and ratchet arranged to transmit motion from the sleeve to the traction-wheels, the counter-shaft E, pulley F, spiral spring *b*, attached at one end to the frame and at the opposite end to the pulley F, and the belt *c*, wound at one end on the said pulley and at the opposite end on the sleeve *s*, in opposite direction from the winding of the belt B, substantially as described and shown, for the purpose set forth.

3. In combination with the frame, its vertical journal-box L, pedestal M, wheel V, journaled on said pedestal, spindle *d*, projecting from the pedestal through the box L, and the steering-lever N, attached to said spindle, the plate *e*, projecting laterally from the journal-box and provided with a series of holes, *f f*, and guard-pins *f' f'*, inserted removably in said holes, substantially as described and shown, for the purpose set forth.

4. The combination, with the frame H, of the skids O O, elastically connected to the said frame, and the seat mounted movably on said skids, substantially as set forth.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 23d day of November, 1885.

CHARLES E. COURTNEY. [L. S.]

Witnesses:

FREDERICK H. GIBBS,

C. BENDIXON.