

(No Model.)

2 Sheets—Sheet 1.

E. HUMBRECHT.  
VELOCIPEDE.

No. 571,069.

Patented Nov. 10, 1896.

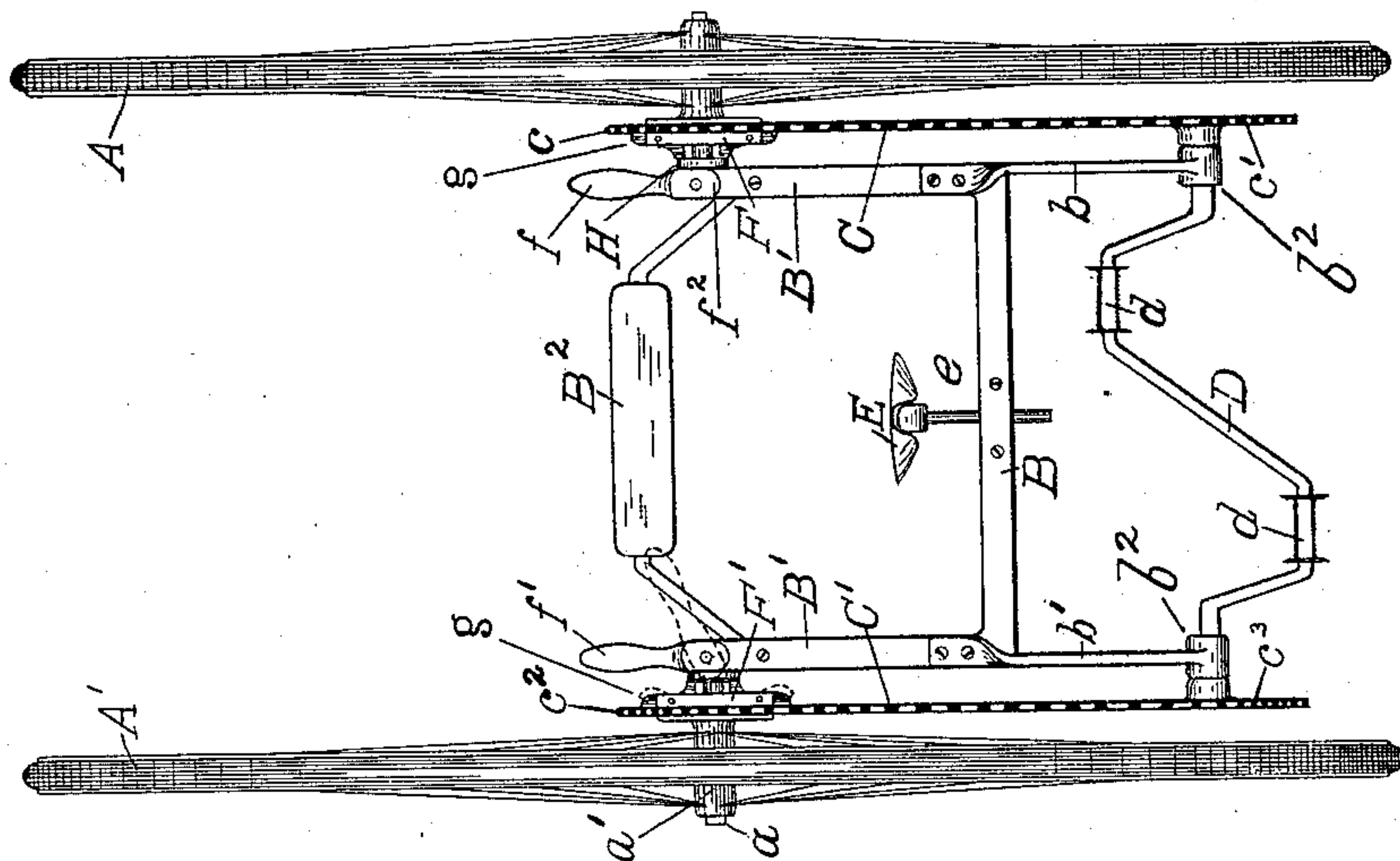


Fig. 2

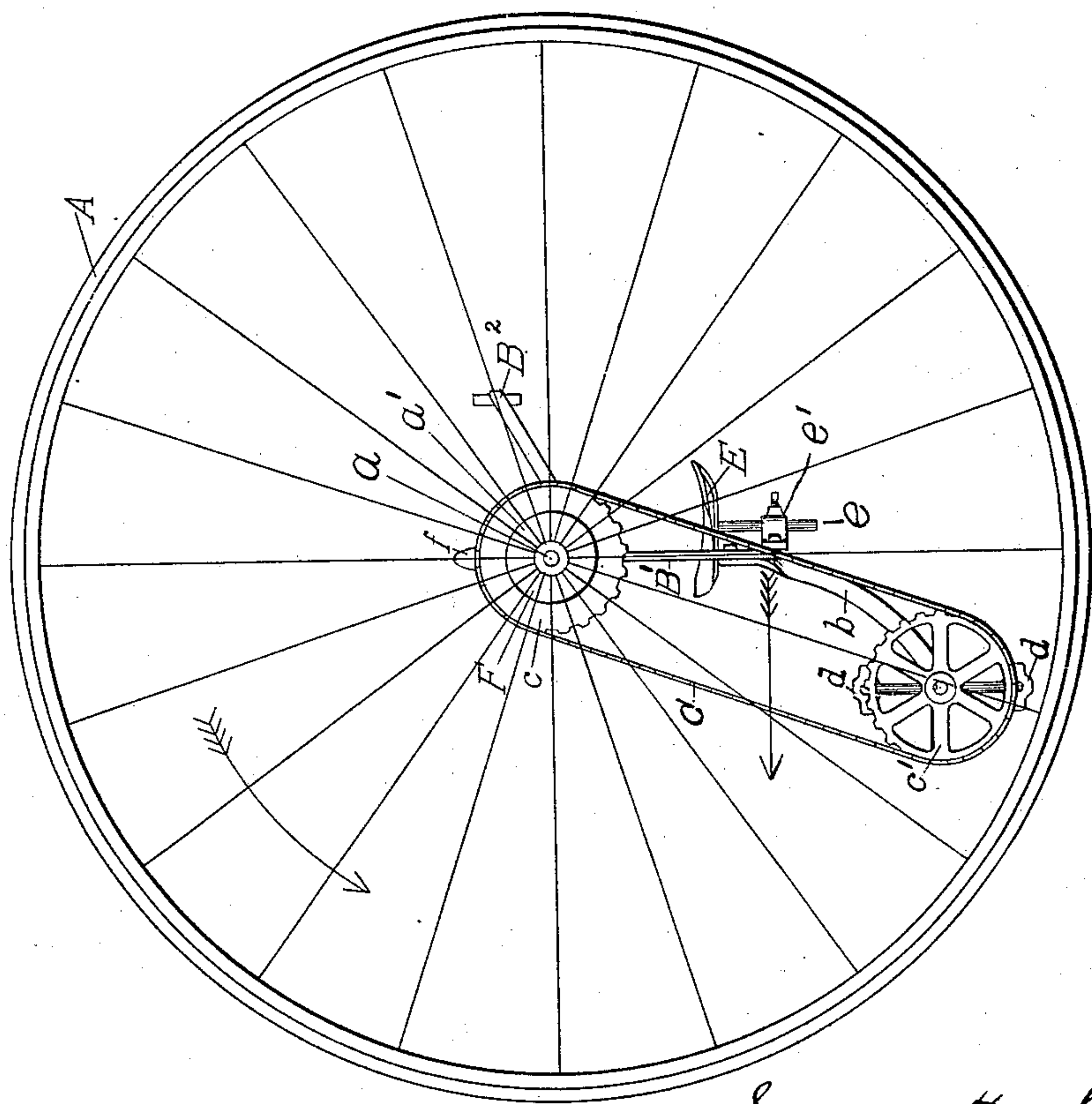


Fig. 1

WITNESSES

Sherwood R. Paylor  
L. M. Jones

Erasmus Humbrecht,  
INVENTOR

by John E. Jones,  
his Attorney.

(No Model.)

2 Sheets—Sheet 2.

E. HUMBRECHT.  
VELOCIPÈDE.

No. 571,069.

Patented Nov. 10, 1896.

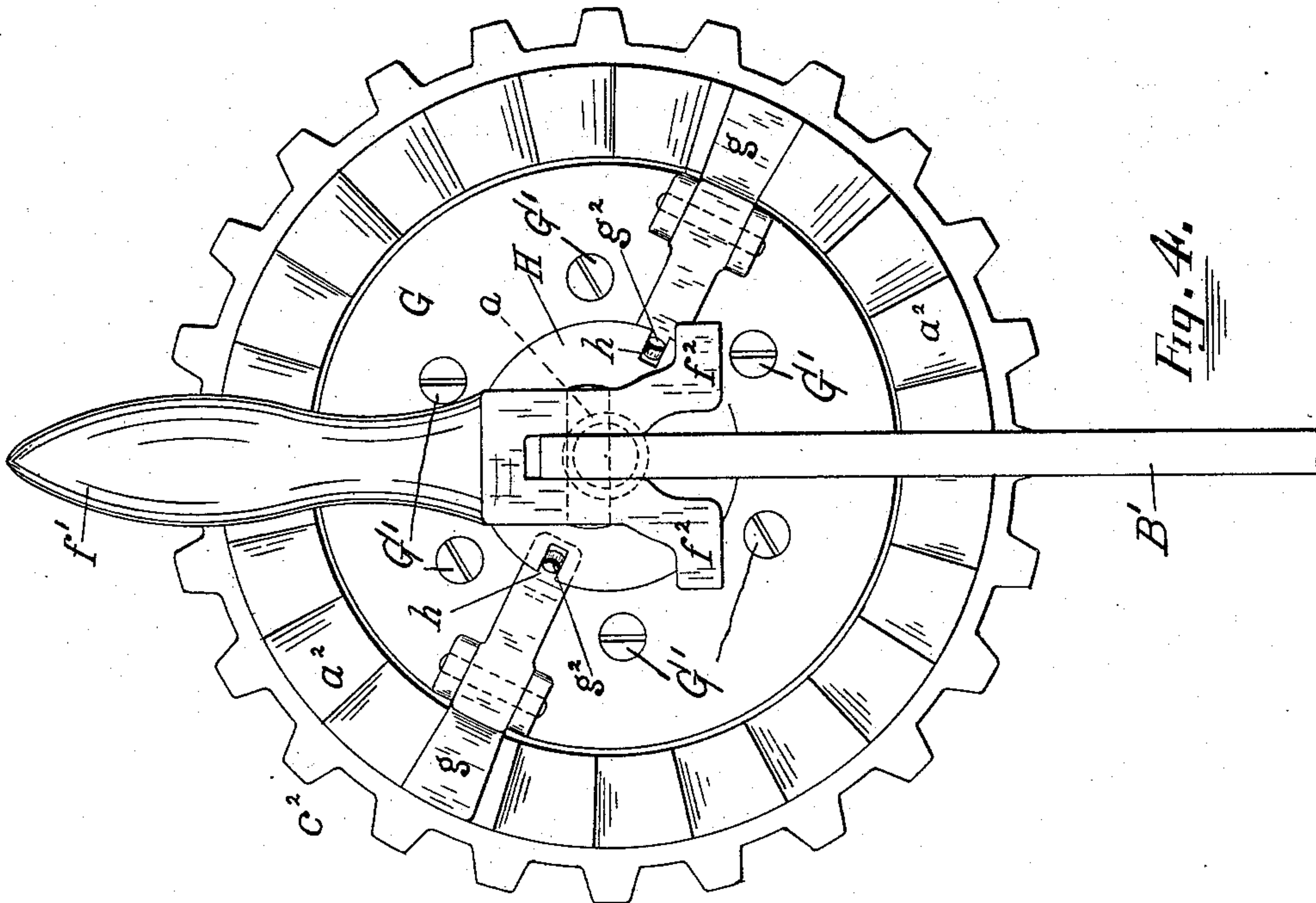


Fig. 4.

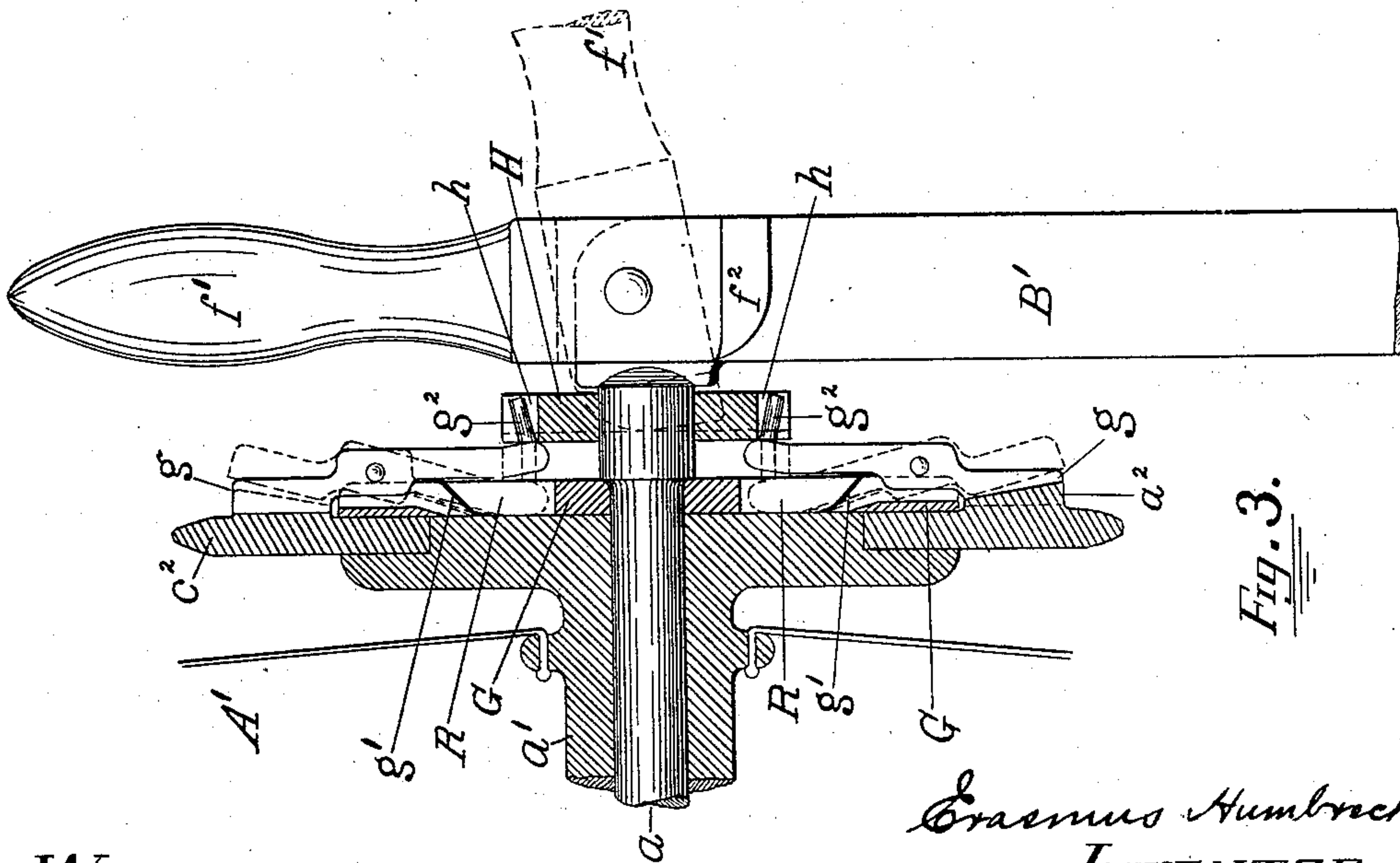


Fig. 3.

WITNESSES

*Sherwood R. Taylor*  
*L. M. Jones*

*Erasmus Humbrecht,*  
INVENTOR

*by John E. Jones,*  
*his attorney.*



# UNITED STATES PATENT OFFICE.

ERASMUS HUMBRECHT, OF CINCINNATI, OHIO.

## VELOCIPEDÉ.

SPECIFICATION forming part of Letters Patent No. 571,069, dated November 10, 1896.

Application filed June 29, 1896. Serial No. 597,270. (No model.)

*To all whom it may concern:*

Be it known that I, ERASMUS HUMBRECHT, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Velocipedes, of which the following is a specification.

My invention relates to improvements in velocipedes, or, more particularly speaking, to bicycles, in which the two supporting-wheels employed are of the same size and journaled side by side at the opposite ends of a single shaft, instead of being tandem, as in the form in general use; and my invention consists in the novel features of construction hereinafter fully described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a velocipede embodying my invention; Fig. 2, a front elevation; Fig. 3, a broken sectional elevation of the clutch mechanism especially adapted to my velocipede, and Fig. 4 a side elevation of the device seen in Fig. 3.

A A' represent the two supporting-wheels, both of which also act as drivers.

B B' B' together comprise a U-shape frame or transverse reach having lateral arms *a a* at its opposite upper ends, which form the axles for the journaling of said wheels.

*a' a'* represent the flanged hubs of the supporting-wheels.

*b b'* are downwardly and forwardly projecting curved arms or bracket-supporting bars, attached at their upper ends to the opposite lower corners of frame A and provided with journal-bearings at their lower free ends, in which journals a transverse crank-shaft D, having a pair of pedals or foot-spools *d d*, as best seen in Fig. 2.

C C' represent a pair of drive-chains running over two pairs of sprocket-wheels *c c'* and *c<sup>2</sup> c<sup>3</sup>*, respectively, the sprockets *c c<sup>2</sup>* being loose ones and mounted on the shouldered flanges of the two wheel-hubs *a'* and the sprockets *c' c<sup>3</sup>* being rigidly mounted on the opposite ends of said crank-shaft D.

E represents the rider's seat, having a supporting bar or stem *e*, which is secured in a vertically-adjustable manner in the central box or socket *e'* of the horizontal portion or cross-bar B of the shaft-frame A. This seat

must always lie in a position below the plane of the axles *a*, or the centers of the supporting-wheels, thereby preventing the overbalancing of the rider or his falling backward, the position of the pedal-shaft D forward of said axles also aiding in the prevention of any overbalancing either forward or backward and enabling the rider's feet to properly engage the treadles for propelling the vehicle.

B<sup>2</sup> is a back-rest for the rider, the same being supported on arms which project rearwardly from the upper ends of the vertical portions B' B' of the shaft-frame A, as best seen in Figs. 1 and 2. The seat may be made as shown or it may be a box or receptacle suitably mounted on said cross-bar B of the shaft-frame. Such a box could be provided with a cushion for a seat and made to contain a motor of any kind capable of driving the wheels by suitable connection therewith, and in which event the crank-shaft D could be dispensed with, as a shaft would be provided to project beyond either end of said box and have sprocket-wheels thereon to operatively connect the drive-chains with the sprockets *c c<sup>2</sup>*, much shorter chains thus answering the purpose.

Instead of using the box for a motor it could be made use of as a receptacle for goods, tools necessary, or a carry-all.

F F' are clutches at either side adjacent the flanged inner faces of the wheel-hubs *a'* for detachable contact and engagement therewith. These clutches are mounted at the inner ends of the axles *a a* and are each preferably constructed as follows: A recessed disk G is secured to hub *a'* by means of screws G' and has two or more radially-disposed latches or pawls *g g* pivotally mounted thereon. These latches engage a circular series of radial teeth *a<sup>2</sup>*, made in the side face of each of the two sprocket-wheels *c c<sup>2</sup>*, and are automatically and positively held in such engagement by means of springs *g' g'*, mounted on the faces of the several hubs *a'*, as best seen in Fig. 3. The inner ends of these latches move or drop into the recesses R made in each disk G, and are provided with pins *g<sup>2</sup>*, which engage open slots or notches *h h*, cut in the periphery of a sliding disk H, which latter is loosely mounted on axle *a*.

The sprockets *c c<sup>2</sup>* run free on the shoul-



dered hubs  $a'$  when the clutch-bolts or pawls  $g$   $g$  are released, the latter action being performed by means of the hand-levers  $f$   $f'$ , which are pivotally mounted on the upper ends of the shaft-frame or reach-bars  $B'$   $B'$ , and whose inner forked ends or projections  $f^2$  have beveled or rounded cam-faces, which, on the depression of said hand-levers, engage the contiguous faces of disks  $H$  and press or force the latter outward toward the disks  $G$  for intimate frictional contact therewith, as best seen in dotted lines in Figs. 2 and 3. This frictional contact of the disks  $G$  and  $H$  materially aids in the braking and stopping of the wheels, but the frictional contact of the inner ends  $f^2$  of said hand-levers against the disks  $H$  is really intended as the best and most convenient means of braking.

In the operation of the machine the handles  $f$   $f'$  serve to control said clutches, the one  $f$  being used when it is desired to run the left wheel and sprocket devices free and thereby turn to the left, and the other used when it is desired to turn to the right in a like manner. It is obvious that other forms of clutch mechanism could be used, but I prefer that herein shown and described as being especially adapted to the purpose and construction of vehicle claimed.

The two arrows seen in Fig. 1 indicate the direction of rotation of the wheels and forward movement of the machine, respectively. The swift forward rotation of the supporting-wheels is constantly and duly compensated for by the opposite swinging motion or momentum of the rider on the depressed portion of the U-shape frame or reach  $A$ , whereby the stopping and starting of the machine is to a great degree facilitated. Thus the rider cannot very well upset either way.

To guide or steer the machine, the hand-levers are depressed or drawn downward on their pivots, the one,  $f$ , to the right in Fig. 2

being swung or drawn inwardly and downwardly when it is desired to free its clutch mechanism and drive-chain  $C$  from driving connection with wheel  $A$ , which latter then rides free and permits the machine to turn to the right, and during that time the clutch-handle  $f'$  remains in its upright normal position with the accompanying clutch and drive-chain in driving connection with the wheel  $A'$ . Handle  $f'$  is depressed and the same operation as that of handle  $f$  is performed to turn the machine to the left.

I claim—

In a bicycle or velocipede, the combination of a U-shape frame or reach  $A$ ; a pair of axles  $a$ ,  $a$ , projecting laterally from the opposite upper ends thereof; a pair of supporting-wheels journaled on said axles above the plane of the cross-bar  $B$  of said reach; a seat or receptacle  $E$  mounted on said cross-bar  $B$  in a plane below that of the journals or axes of both said wheels; a pair of bracket-arms  $b$ ,  $b'$ , projecting downwardly and forwardly from the lower, opposite corners of said reach; a horizontal crank-shaft having foot pedals or spools mounted thereon and journaling in the outer ends of said bracket-arms  $b$ ,  $b'$ ; a pair of drive-chains connecting a pair of rigid sprockets on said crank-shaft with a pair of loose sprockets on the hubs of the supporting-wheels; a back-rest  $B^2$  for the rider; and a suitable clutch mechanism, comprising a pair of handles  $f$ ,  $f'$ , disks  $G$ ,  $R$ , spring latches or pawls  $g$ ,  $g'$ ,  $g^2$ , and notched sliding disks  $H$ ,  $h$ ; the whole being constructed, arranged, and adapted to be operated for the propulsion and guidance of the machine, substantially as herein set forth.

E. HUMBRECHT.

Witnesses:

A. PEINNEKE,  
FRANK D. RETTICH.