

(No Model.)

E. SLIPPERN.  
BICYCLE PROPELLING MECHANISM.

No. 598,026.

Patented Jan. 25, 1898.

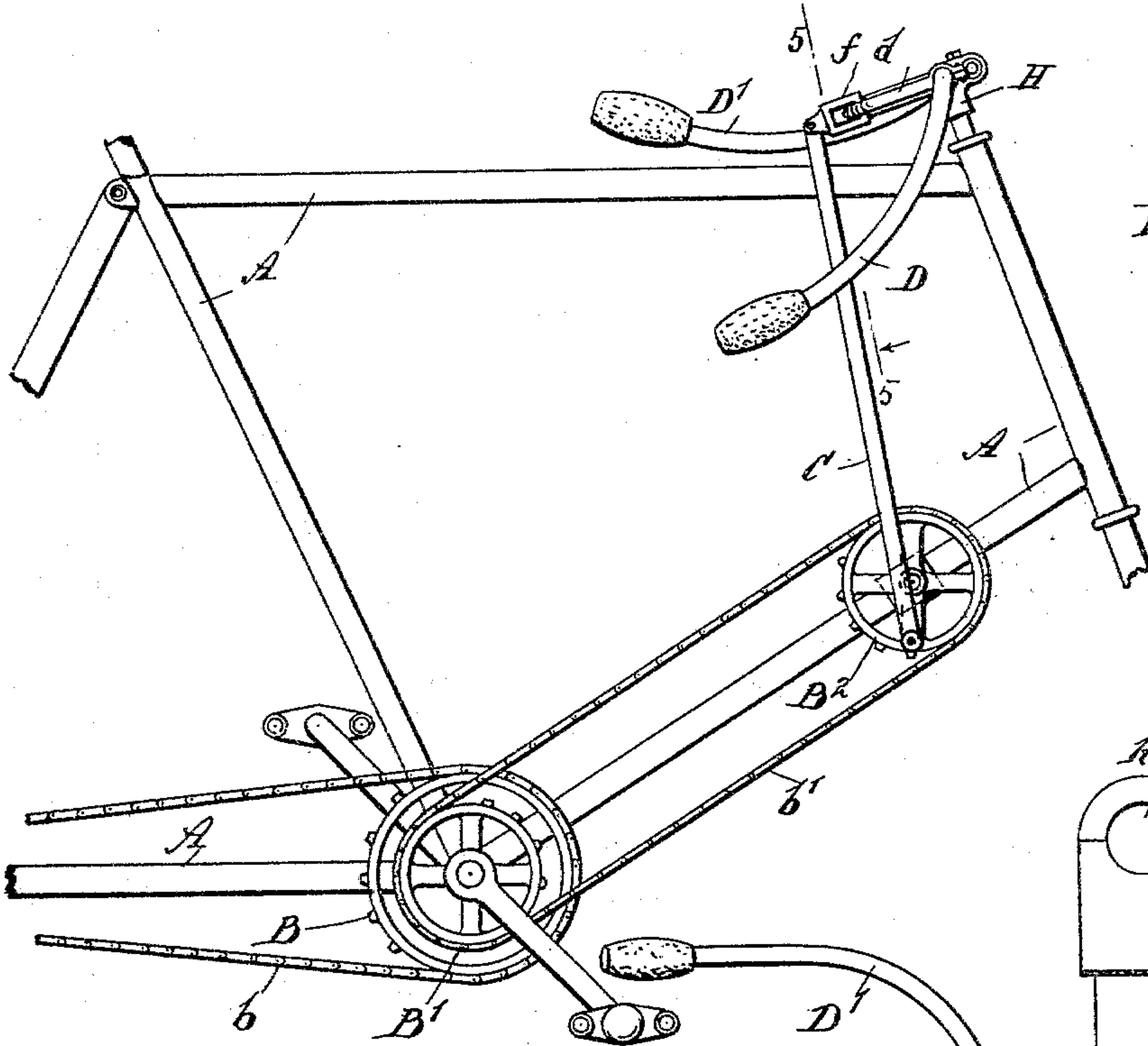


Fig. 1

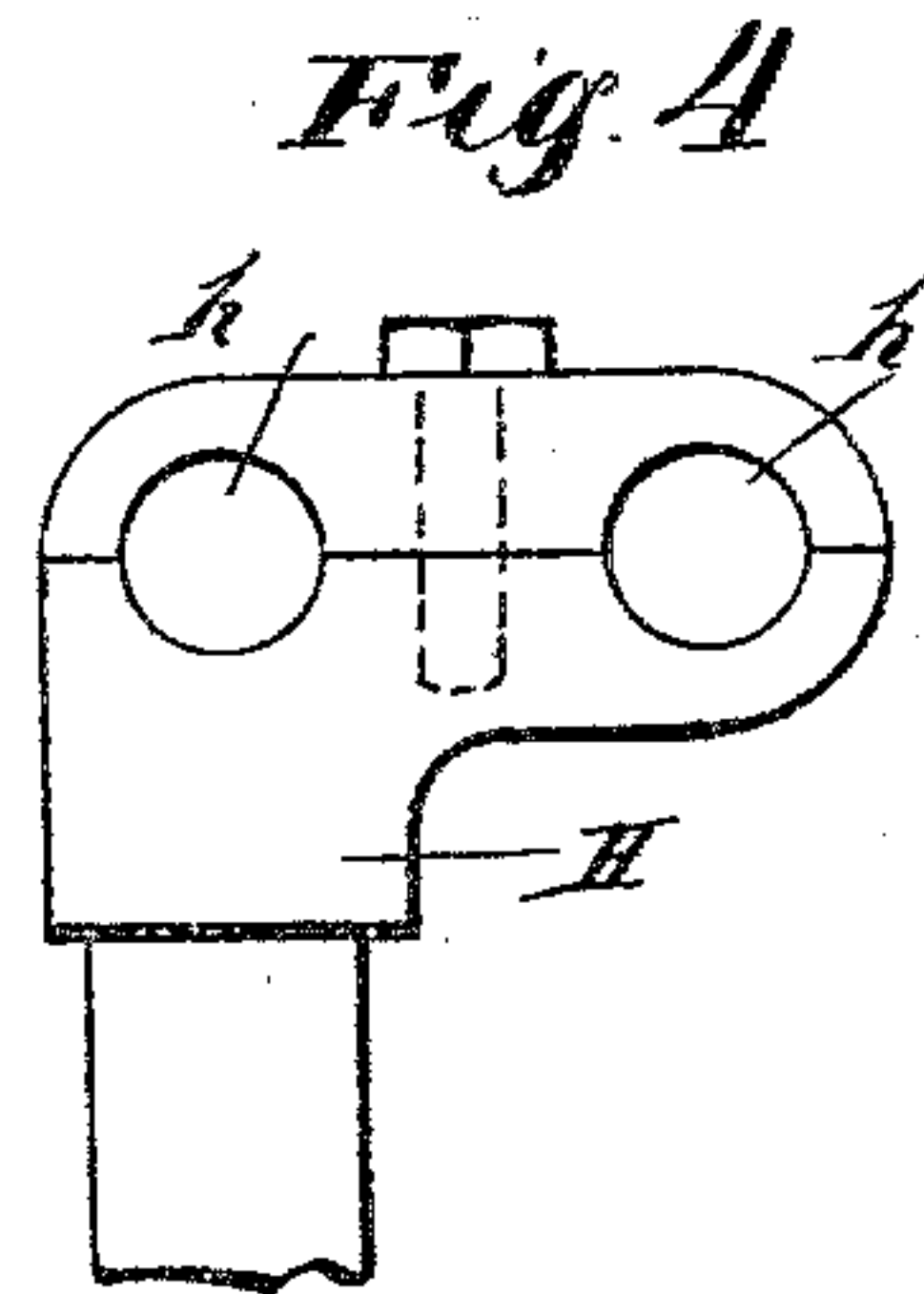


Fig. 4

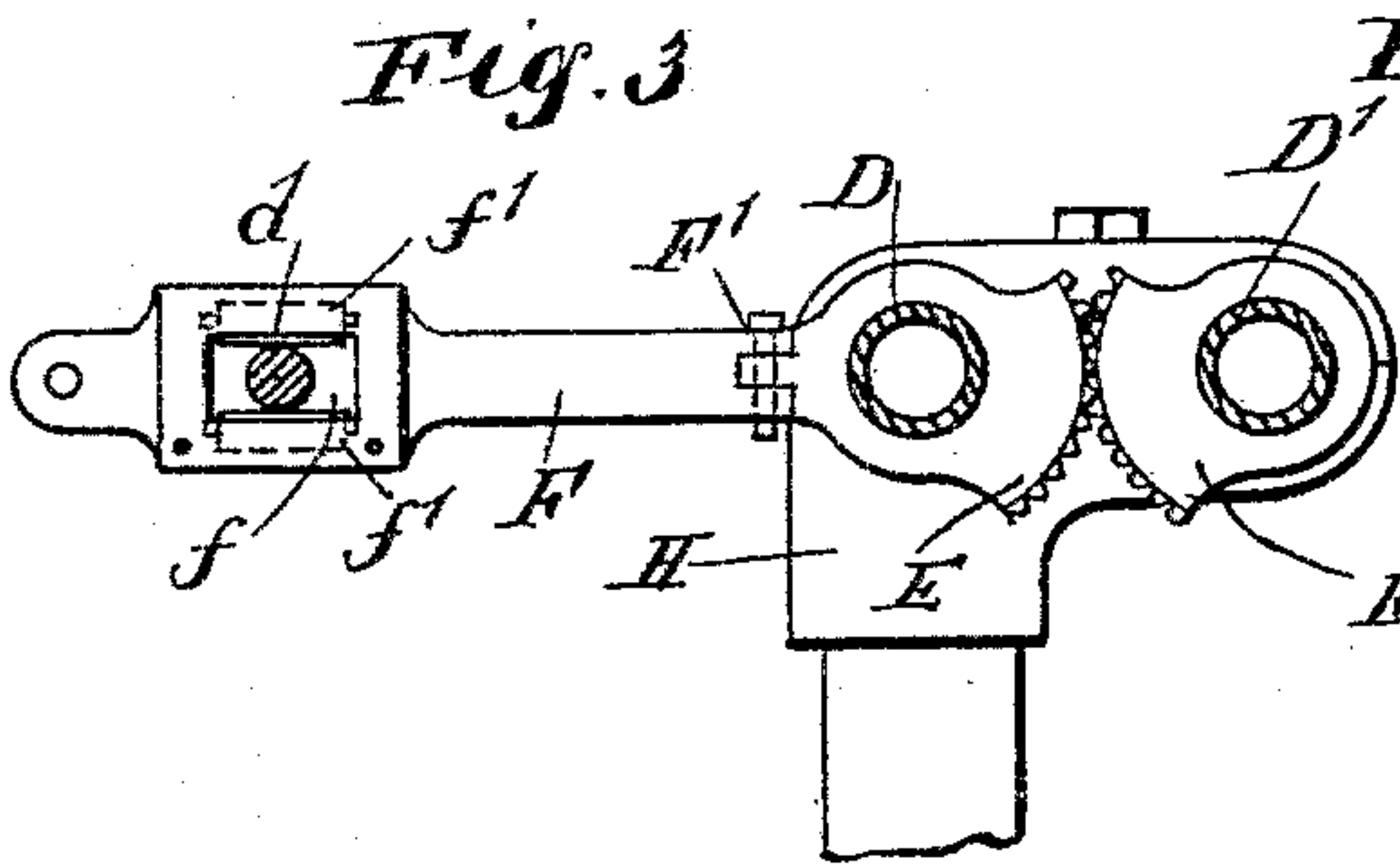


Fig. 3

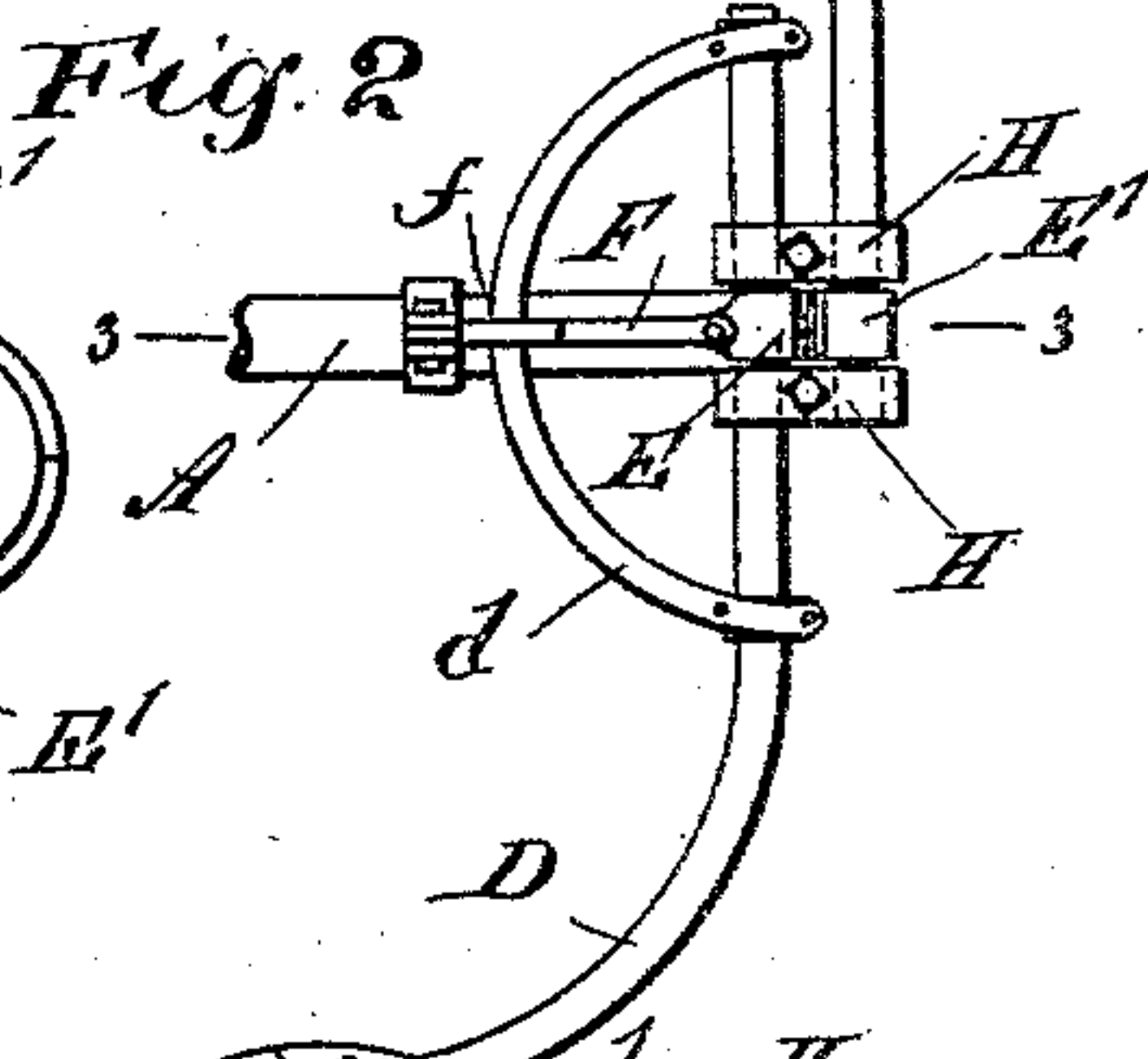


Fig. 2

Fig. 5

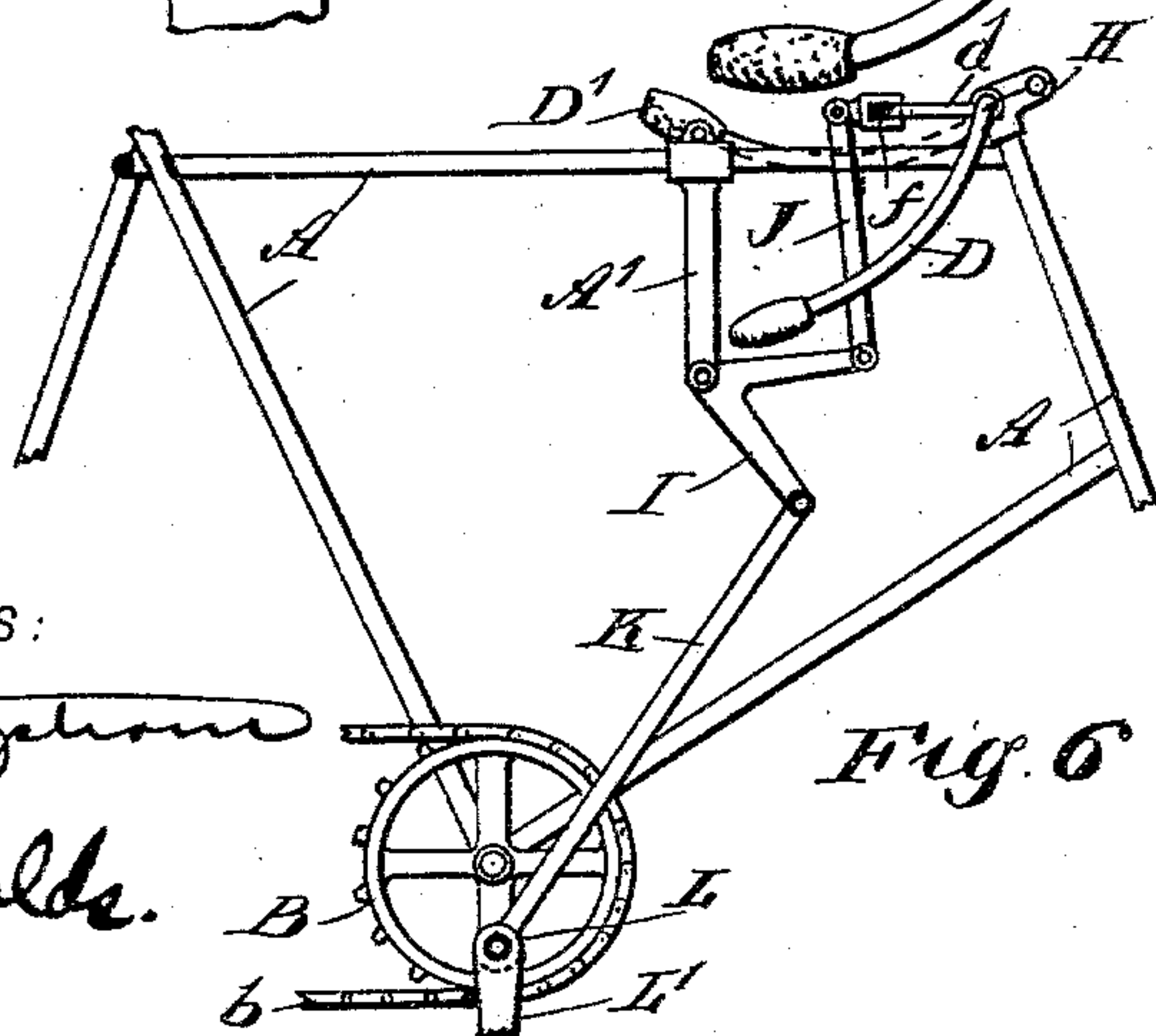
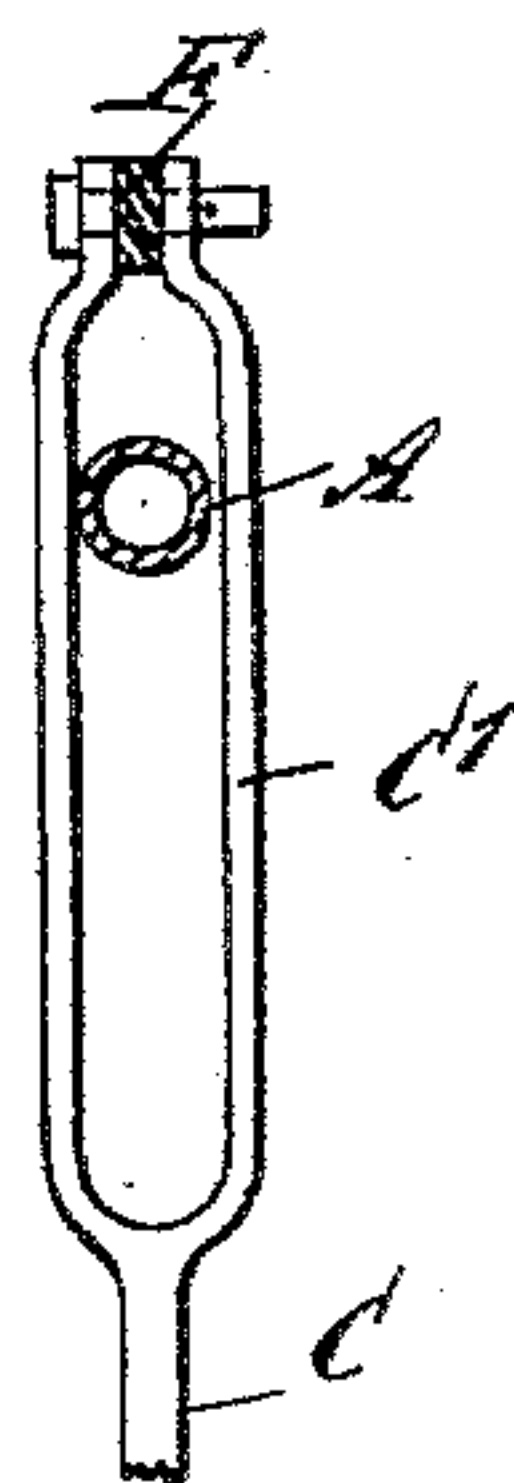


Fig. 6

WITNESSES:

John Benzham  
H. L. Reynolds.

INVENTOR  
E. Slippern.  
BY *man*  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

ERLING SLIPPERN, OF ANACONDA, MONTANA.

## BICYCLE-PROPELLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 598,026, dated January 25, 1898.

Application filed June 24, 1897. Serial No. 642,156. (No model.)

*To all whom it may concern:*

Be it known that I, ERLING SLIPPERN, of Anaconda, in the county of Deer Lodge and State of Montana, have invented a new and  
5 Improved Bicycle-Propelling Mechanism, of which the following is a full, clear, and exact description.

My invention relates to an improvement in mechanism for propelling bicycles, and has  
10 for its object the utilization of the strength of the arms to assist in propelling the wheel.

My invention consists of certain improved constructions which will be hereinafter described, and particularly pointed out in the  
15 claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

20 Figure 1 is a side elevation of a portion of a bicycle-frame, showing my mechanism applied thereto. Fig. 2 is a top plan view of the handle-bars. Fig. 3 is a side elevation, partly in section, showing the upper end of the bicycle-head and the rearwardly-extending arm or lever connected to the handle-bar.  
25 Fig. 4 is a side elevation of the bicycle-head. Fig. 5 is a front elevation of the upper portion of the link connecting the handle-bar mechanism with the sprocket-wheel; and Fig.  
30 6 is a side elevation of a portion of the bicycle-frame, showing a slightly-modified form of connection between the handle-bar and the sprocket-wheel.

35 My device is intended to be applied to bicycles especially constructed therefor and also to bicycles which have been previously constructed.

40 The frame A of the bicycle is of the usual or any suitable form, as are also the crank-shaft, pedals, main sprocket-wheel B, and the sprocket-chain b, leading to the rear wheel of the bicycle.

45 The handle-bars are divided into two halves, each projecting to its own side of the wheel. The two halves D and D' of the handle-bars are separately mounted in the upper end of the head H, which latter is formed with two side flanges, each having two holes  
50 or journals h for receiving the handle-bars, as is clearly shown in Figs. 3 and 4.

The handle-bar D' simply passes through the two sides of the head H, while the handle-bar D passes through both sides of the head and extends a short distance beyond one side 55 of the head. To each of the handle-bars between the sides of the head are attached segment-gears E E', the gear E' being attached to the side D' of the handle-bar and the gear E to the side D of the handle-bar. These 60 two segments mesh with each other, so that the up and down motions of the two sides of the handle-bar are opposite, one being up while the other is down.

To the gear E is pivoted by a vertical pivot 65 F' an arm F, which extends to the rear and is provided near its rear end with a longitudinal opening f, adapted to receive a semi-circularly-curved bar d. Said arm F is provided upon each side of this opening with 70 friction-rollers f', adapted to engage the top and bottom surfaces of the bar d.

To the extreme rear end of the bar F is attached a rod or link C, which at its upper end is forked, as shown at C' in Fig. 5, so as 75 to pass on either side of the top tube of the bicycle-frame. This top tube also serves as a guide to hold the link in place and prevent side motion thereof. At its lower end said rod or link C is connected to the sprocket- 80 wheel B<sup>2</sup>, which is mounted upon the frame of the machine.

The sprocket-wheel B<sup>2</sup> is connected by a chain b' with a sprocket-wheel B', attached to the main crank-shaft. These two sprocket- 85 wheels B' and B<sup>2</sup> should be of the same size and the adjustment of the wheels be such that the motion of the handle-bars will be opposite that of the pedals, the right handle-bar rising while the right pedal is descending. 90

In Fig. 6 a slight modification in the connecting means is shown. In this case the link J, which corresponds in construction with the link or rod C except that it is shorter, connects at its lower end with a bell-crank lever 95 I, pivoted upon the bracket A', attached to the upper tube of the bicycle-frame. The bell-crank lever I is connected by a second link K to a pin L upon the sprocket-wheel B, and to the pin L is fixed the outer portion of 100 a crank L', carrying one of the pedals. Under either form of construction the power ap-



plied through the handle-bars will be transmitted to the main crank-shaft and assist the motion of the pedals.

By the means herein shown and described the rider will be able to apply more power to the wheel than by the use of the pedals alone. This will enable a larger gear to be used, and consequently increased speed or an increased power will result, which will enable very heavy grades to be overcome by the rider.

In swinging the handle-bars, as is necessary in turning, the semicircularly-curved arm *d* will move between the friction-rollers *f'*, mounted upon each side of the open end *f* of the lever *F*. The handle-bars will therefore be connected to the bar *F* in all positions.

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

1. A bicycle-propelling mechanism comprising the usual foot propelling mechanism, in combination with a handle-bar having each side separate, and journaled in the head, gear or toothed connections between the two halves of the handle-bar, a rearwardly-extending bar

attached to one half of the handle-bar and curved in a semicircle, a link or rod provided with guides and slidably embracing said semicircular bar, and connections from said link or rod to the foot propelling mechanism, substantially as described.

2. A bicycle-propelling mechanism comprising the usual foot propelling mechanism, in combination with a handle-bar having each side separate and journaled in the head, gear or toothed connections between the two halves of the handle-bar, whereby their motion is opposite, a rearwardly-extending bar attached to one half of the handle-bar and curved in a semicircle, a bar connected to the handle-bar by a vertical pivot and embracing the semicircular bar, a link connected to the outer end of the said pivoted bar, and connections from the link to the foot propelling mechanism, substantially as described.

ERLING SLIPPERN.

Witnesses:

ALEX. PARKER,  
C. TOUSETH.