

**No. 652,131.**

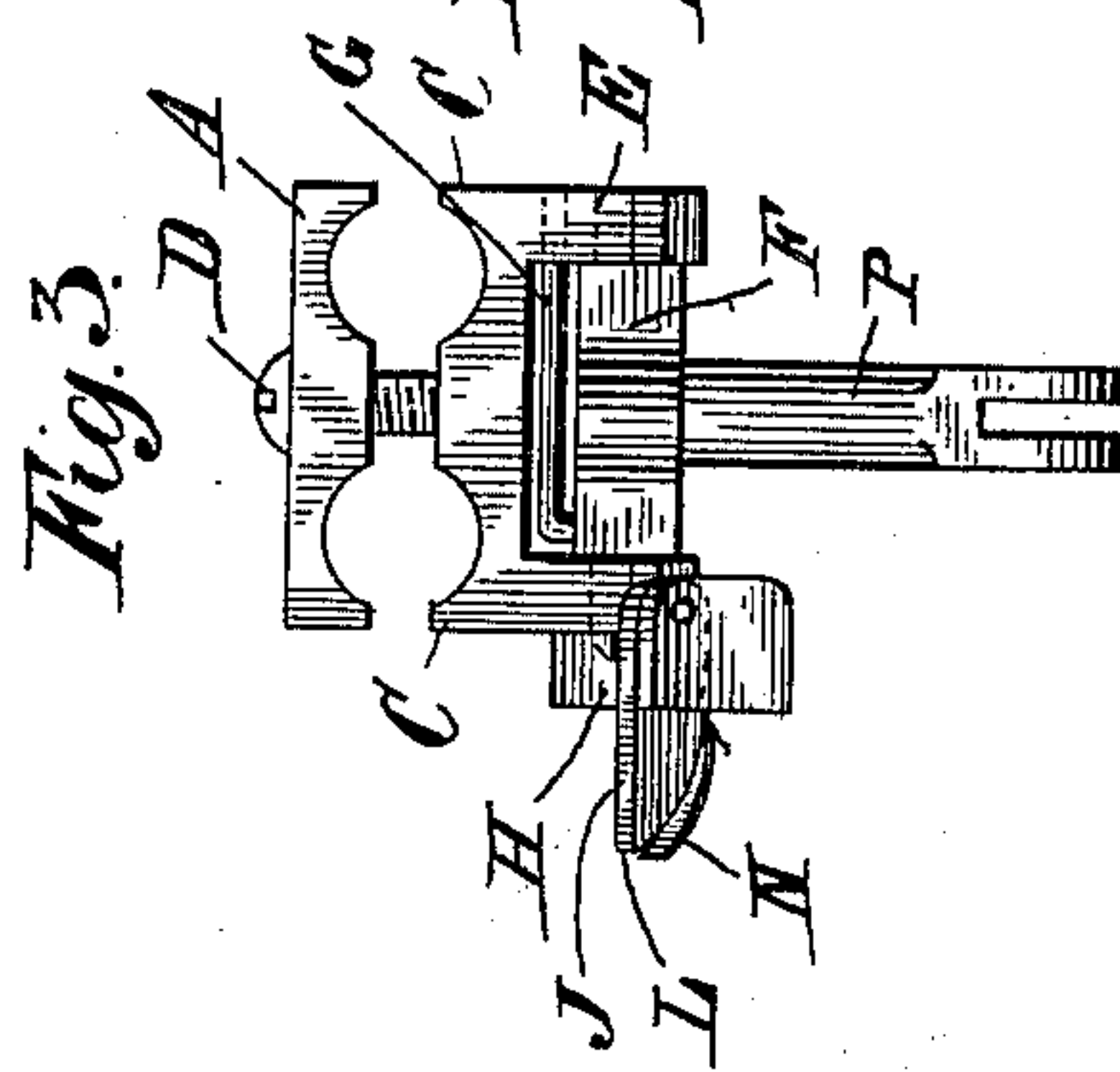
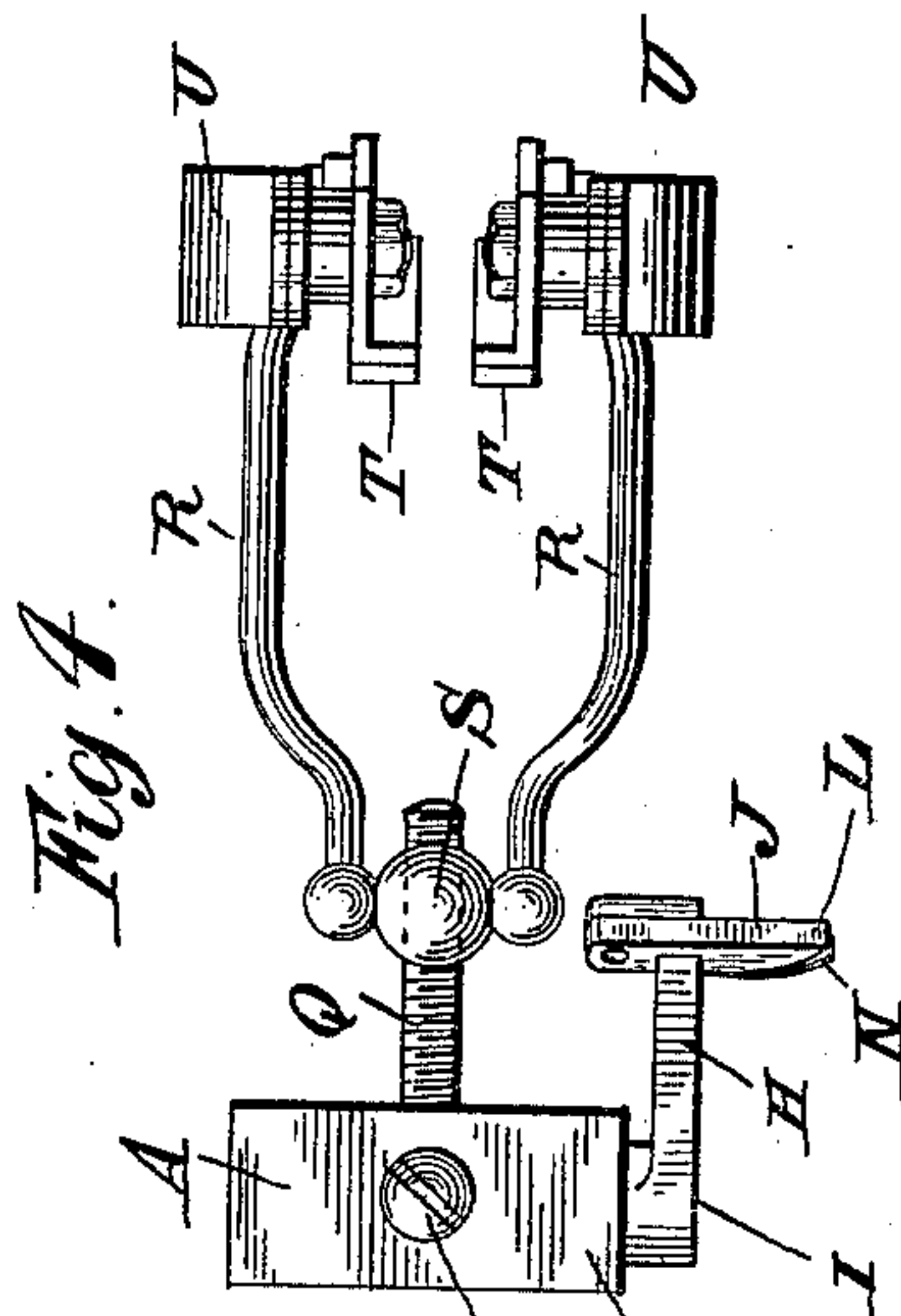
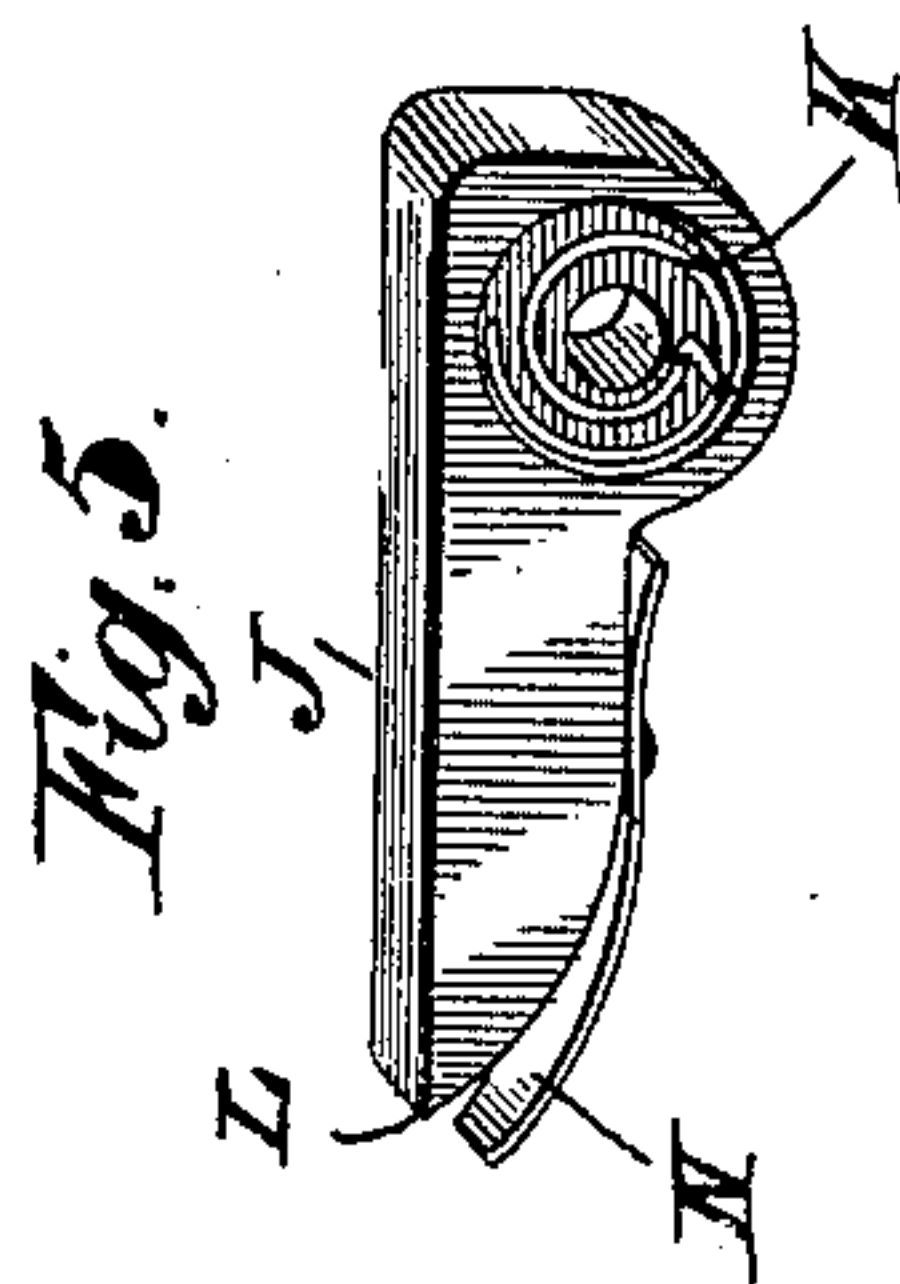
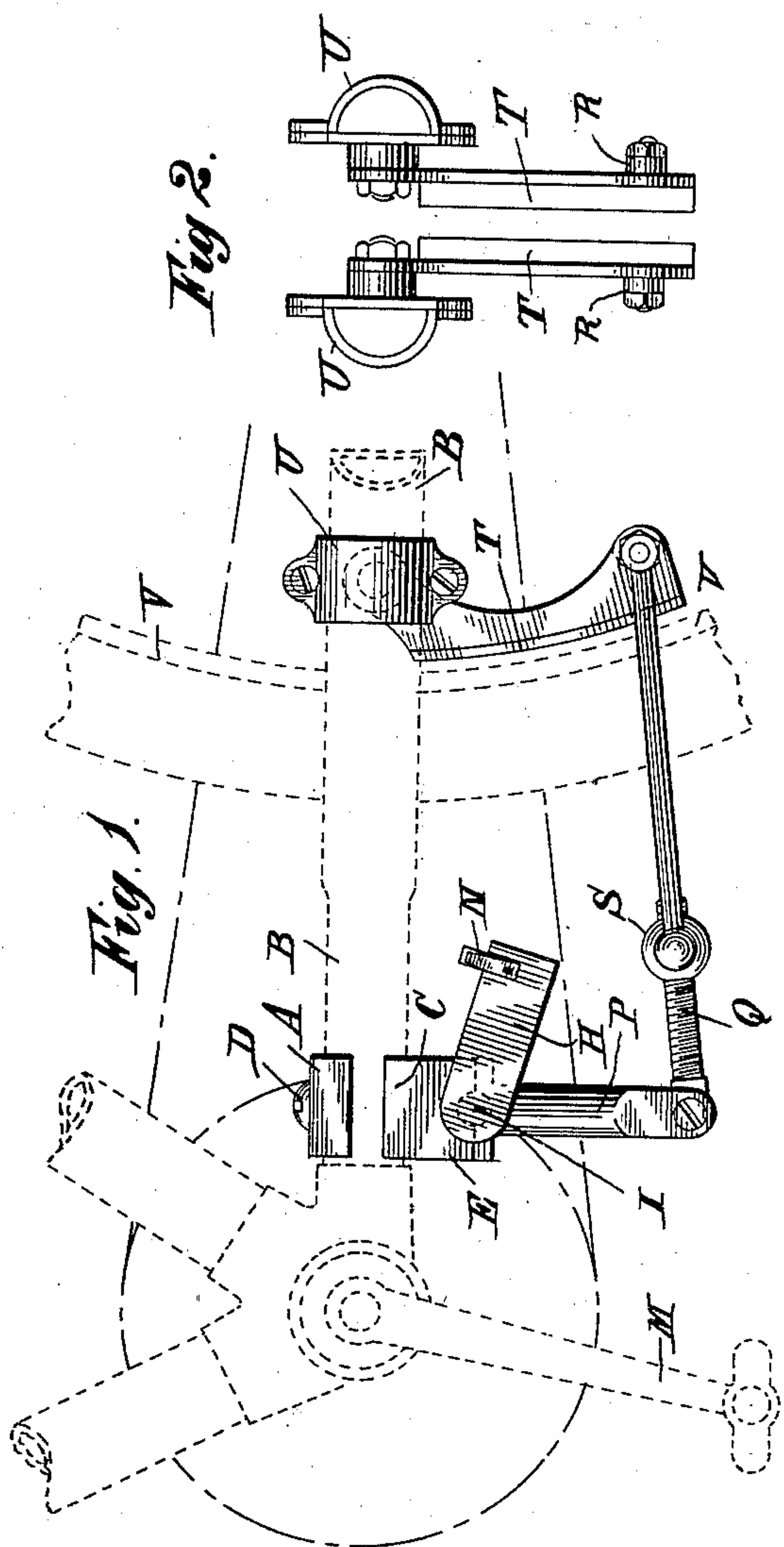
**Patented June 19, 1900.**

**N. MITCHELL.**  
**BACK PEDALING BRAKE.**

(Application filed July 20, 1899.)

(No Model.)

**2 Sheets—Sheet 1.**



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2 Sheets—Sheet 2.

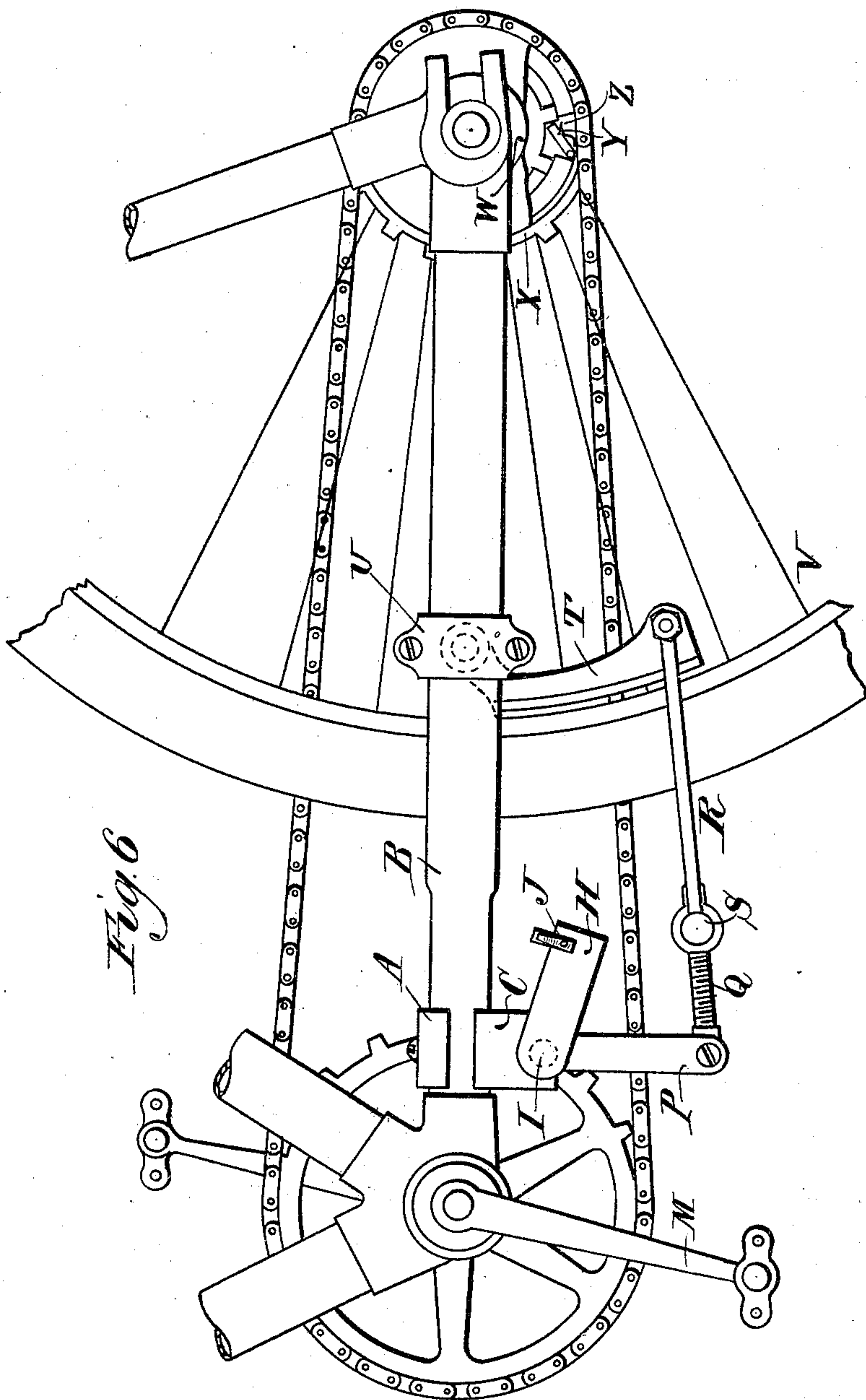


Fig. 6

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# UNITED STATES PATENT OFFICE.

NOAH MITCHELL, OF LONDON, ENGLAND.

## BACK-PEDALING BRAKE.

SPECIFICATION forming part of Letters Patent No. 652,131, dated June 19, 1900.

Application filed July 20, 1899. Serial No. 724,555. (No model.)

*To all whom it may concern:*

Be it known that I, NOAH MITCHELL, a citizen of the United States of America, residing at No. 194 Regent street, London, England, have invented certain new and useful Improvements in Back-Pedaling Brakes, of which the following is a specification.

This invention relates to back-pedaling brakes.

To carry this invention into practice, I provide a kind of brace and bridge in which, by screws, crutches or rods are adjustable to fit to or between the frame near the pedal-bracket. The bridge has lugs with holes for a cross shaft or bar of a lever, which can be kept in one position by a spring and be releasable by pressure, such as by the foot-pedal during slight reverse motion. The lever is in connection with a rim twin brake of a loop or straddle-like frame suspended from the back forks and only to be applied to the rim of, say, the free wheel of a bicycle. The spring keeps the brake off and a back-pedaling puts it on, a spring return-lip of the first-named lever being also provided, which the pedal on its crank presses clear while pedaling onward, but becomes blocked on the reverse.

My invention is shown on the accompanying sheet of drawings.

Figure 1 is a side elevation; Fig. 2, a back end view; Fig. 3, a front end view; Fig. 4, a plan; Fig. 5, a detached perspective elevation of side slip or catch lug. Fig. 6 is a detail side elevation, partly broken away to show the clutch mechanism.

A is a brace or saddle to rest on socket ends of rear fork B of, say, a bicycle; C, a bridge to go under the socket end of rear fork and secured thereto and to the brace A by screws D D to fix them; E E, lugs depending from bridge C for carrying the cross-bar F, which is somewhat free to oscillate between them; G, a spring having its ends secured on the cross-bar F and in one of the depending lugs E, respectively; H, a crank-arm on extension-pivot I of cross-bar F and carrying a slip-lever J, pivoted therein by inclosed coiled spring K, said slip-lever J being set at right angles, with its nose L projecting therefrom to be struck and lifted by the pedal-crank M at each rotation, clicking noise being prevented by the impulse-spring

N, secured to the under side of said slip-lever J; P, a rod depending from the cross-bar F for adjustable connection by screw-pin Q with the two arms R R by their swivel cross-head S; T T, leather-faced brake-blocks attached at their lower ends to the arms R R, said brake-blocks being hung from clips U U, bolted to each rear-fork arm B for simultaneous pressure against the inner peripheral side face of the wheel V, when by a reverse or back motion of the pedal presses on the slip-lever J, such pressure then overcoming the tension of the spring K and putting the brakes T T into contact with the rim of the wheel V to a degree determined by the rider's foot, such as when going downhill and the rear wheel running free, the descent being then completely under the rider's control. On the rider restarting for forward motion the pressure of the pedal is removed from the slip-lever J, and the action of the springs K forces the brakes clear of the wheel-rim.

A form of clutch which will permit of the forward movement of the driving-wheel independent of the pedals, cranks, and front sprocket-wheel is illustrated in Fig. 6 of the drawings. The toothed wheel W is secured to the hub of the driving-wheel V, and the rear sprocket-wheel X has a recess therein in which is pivotally mounted a pawl Y, adapted to engage the teeth of the wheel W, the same being normally held in operative relation therewith by a spring Z. By this construction it will be observed that during the forward movement of the cranks M the pawl Y will engage one of the teeth of the wheel W, and through the sprocket chain and wheels the movement of said cranks will be transmitted to the rear driving-wheel V. During back-pedaling, however, or when the movement of the pedals is stopped the wheel V is permitted to run free or independent of the cranks M, at which time the teeth of the wheel W ride over the pawl Y.

What I claim, and desire to secure by Letters Patent, is—

In a back-pedaling brake for cycles, the combination with the driving sprocket-wheel, to which the cranks are connected, the cycle-wheel driven from said sprocket-wheel, and a clutch between said sprocket-wheel and said driven wheel whereby the latter will be re-



leased from the former and allowed to run  
free upon back-pedaling pressure being ap-  
plied to said cranks, of brake-shoes pivoted  
to the cycle-frame and adapted to engage  
5 the inner surface of the driven-wheel rim, a  
bracket secured to the frame adjacent to said  
sprocket-wheel, a rock-shaft mounted therein,  
a crank-arm on said rock-shaft, a spring se-  
cured to said bracket and to said rock-shaft  
10 for normally maintaining the free end of said  
crank-arm in raised position, a lever pivoted  
to said crank-arm and extending outwardly  
therefrom, a spring connection between said  
lever and said crank-arm, a spring on the  
15 under side of said lever adapted to be en-  
gaged by one of the cranks secured to said

sprocket-wheel, during the forward movement  
thereof, and connections between said rock-  
shaft and said brake-shoes, whereby upon the  
rearward movement of said cranks said lever 20  
will be depressed, and, through said crank-  
arm, said rock-shaft will be rocked and said  
brake-shoes brought into engagement with  
said wheel-rim.

In testimony whereof I have hereunto set 25  
my hand in presence of two subscribing wit-  
nesses.

NOAH MITCHELL.

Witnesses:

RICHARD CORE GARDNER,  
JAMES GEORGE NEWMAN.