

(No Model.)

2 Sheets—Sheet 1.

M. COOPER.
TRICYCLE.

No. 286,180.

Patented Oct. 9, 1883.

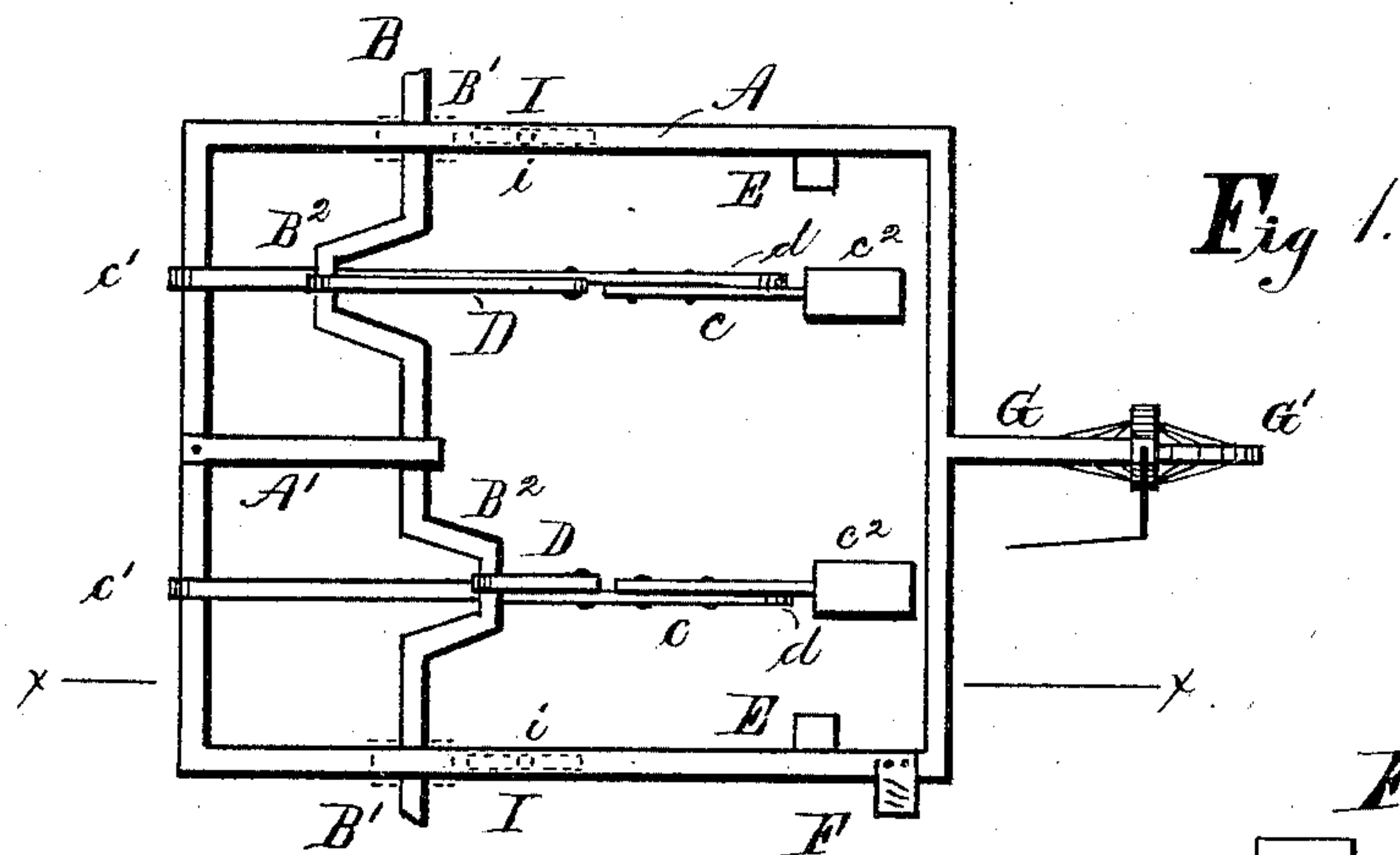


Fig 1.

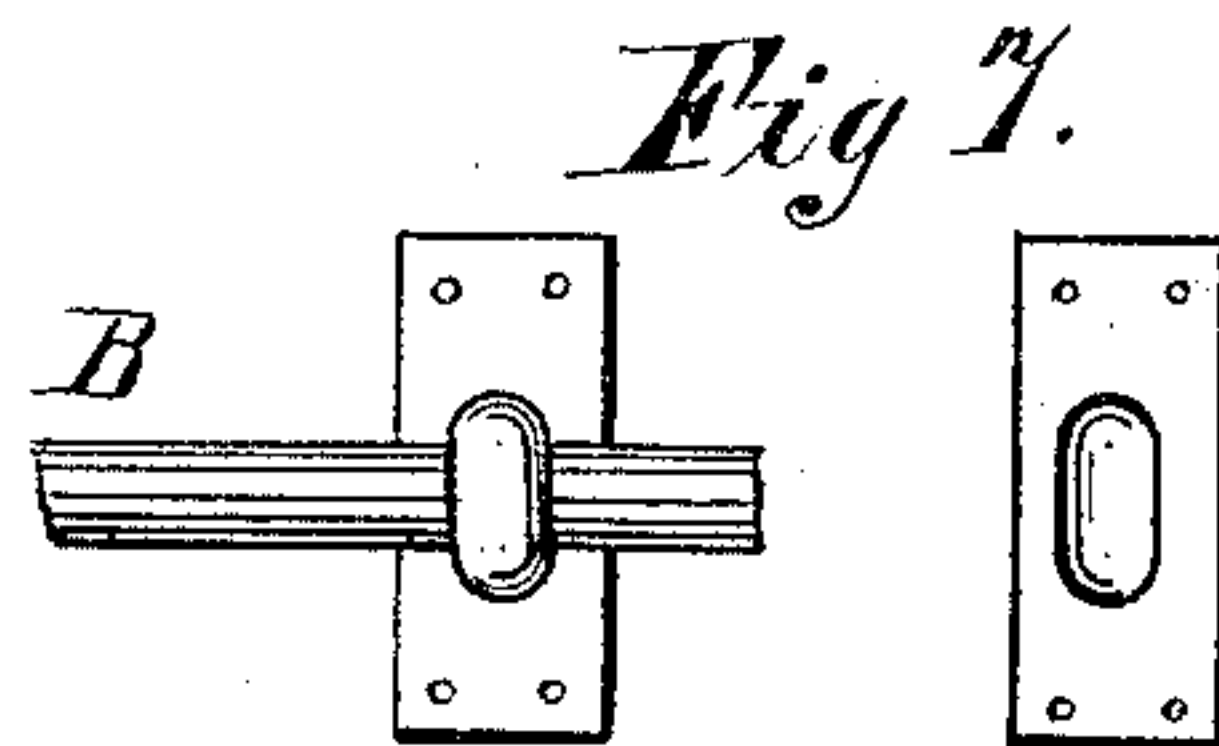


Fig 7.

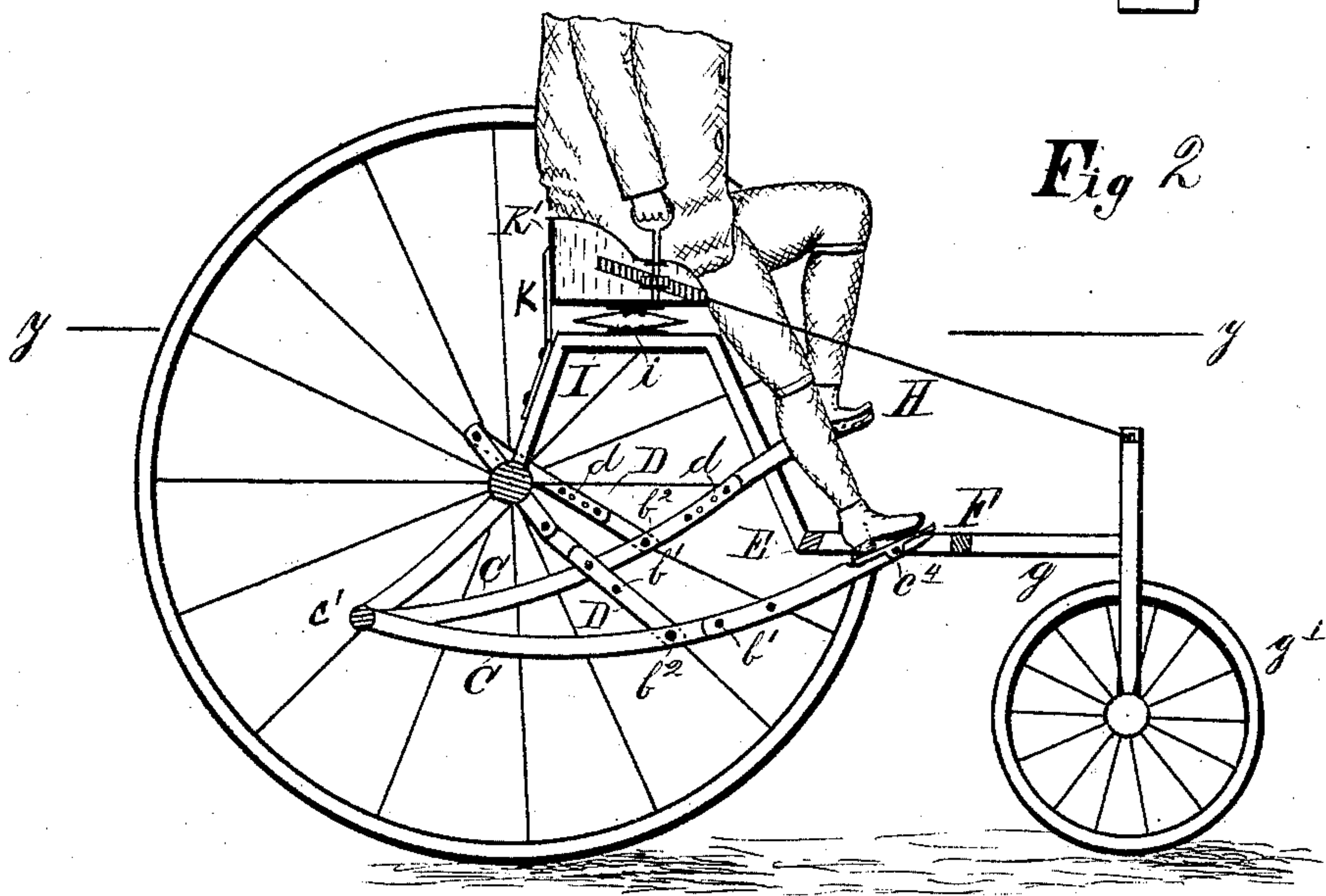


Fig 2

Witnesses:

C. G. Swift
Sherwood Phelps

Inventor:

Montraville Cooper

By J. S. Duffie.
Attorney.

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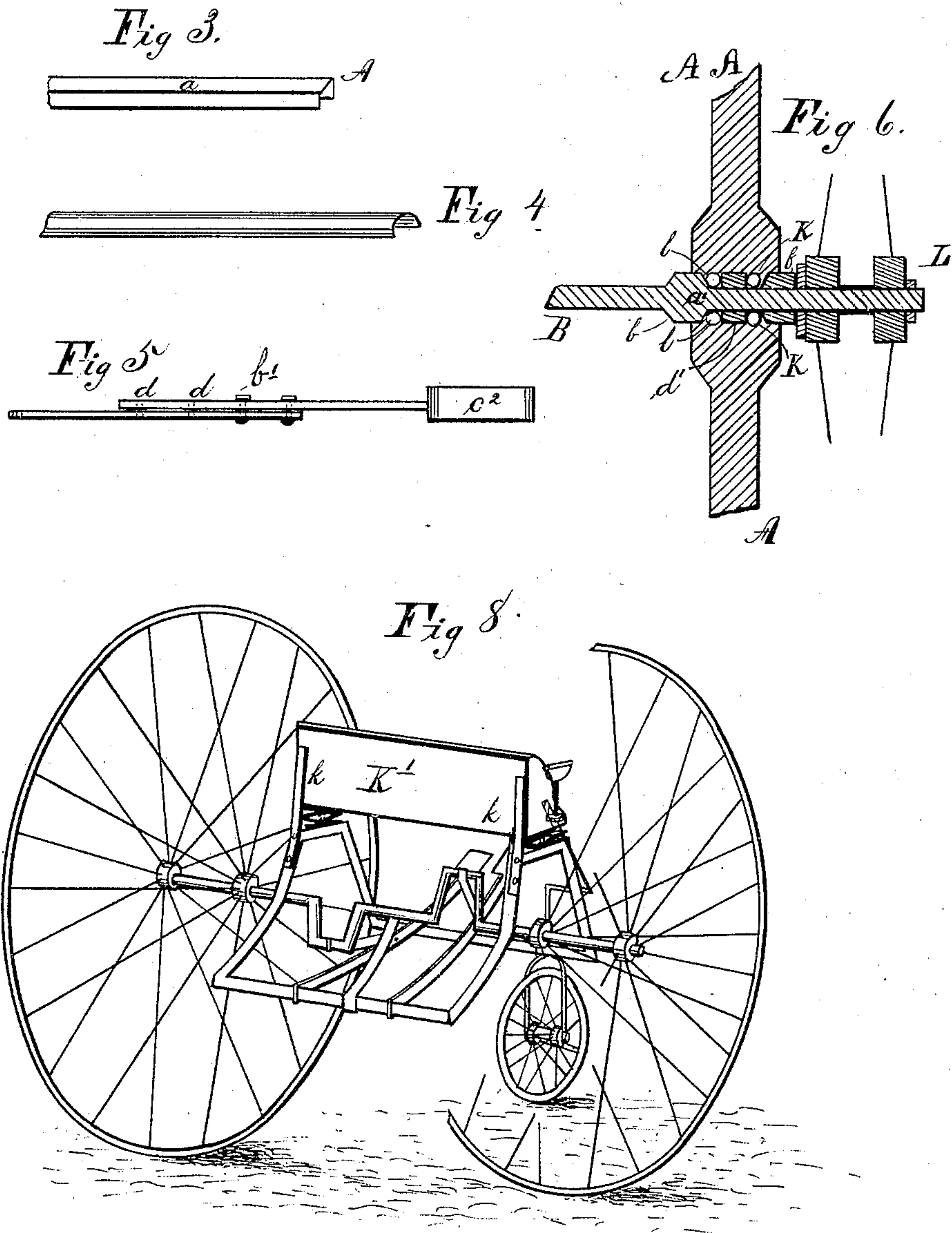
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Sherwood Welch.

Inventor:
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Attorney.

UNITED STATES PATENT OFFICE.

MONTRAVILLE COOPER, OF COLUMBIA, SOUTH CAROLINA.

TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 286,180, dated October 9, 1883.

Application filed July 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, MONTRAVILLE COOPER, a citizen of the United States, residing at Columbia, in the county of Richland and State of South Carolina, have invented certain new and useful Improvements in Tricycles and Attachments therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to tricycles; and it consists of a tricycle that is adapted to the use of men or women, young or old persons, and has its frame so constructed that it can be easily mounted or dismounted. Its extension pedal-levers and connecting-arms are capable of being adjusted to suit a long or short person and economize the muscular strength, and is so constructed as to adapt the motion of the legs as near that of walking as possible, and in ascending a hill the rider may stand up and throw all of his weight on the pedals, by which means he will be enabled to ascend quite a steep hill.

In the accompanying drawings, Figure 1 represents a top plan view of my tricycle's side wheels left off, cut through at the line *yy* of Fig. 2. Fig. 2 is a side elevation with the front side cut away at the line *xx* of Fig. 1. Fig. 3 is a view of a piece of the U-shaped bar of steel out of which the frame is constructed. Fig. 4 is a view of a piece of half-cylindrical bar that may be used in constructing the frame; or the frame, as well as the driving-axle, may be made of light tubular steel, the object being to have the machine as light as possible consonant with sufficient strength. Fig. 5 represents an edge view of the front ends of one of the pedal-levers with foot-rest attached. Fig. 6 is a longitudinal sectional view of my ball-socket, in which shaft B works at points B'. Fig. 7 shows the two halves of a simple box, having depressions for the ball of the axle B to work in in cheap machines, in which case I shall use the simple box instead of the ball-socket. Fig. 8 is a perspective view of the machine when complete.

B is the driving-axle.

A is the frame. *ll* represent four balls—

two above and two below the axle; and *k k* represent four balls—two above and two below the axle also.

d' is a loose washer working on the axle B between the balls *ll* and *k k*.

b is a beveled shoulder on axle B, against which the balls *ll* work.

f is a beveled washer working on axle B between the hub of the wheel and the balls *k k*, and is held firm to its proper place upon the axle B by screws.

L is the nut on the end of the axle B, to hold the wheel in place, and at the same time answers the double purpose of adjusting the washer *f*.

In the drawings, A represents the framework, which in this machine is made of a bar of steel, U-shaped, as shown in Fig. 5, edges up and down and face *a* turned outward.

B represents the driving-axle journaled in boxes B', which are secured to frame A in any usual and secure manner. From the rear cross-piece of frame A, I extend a brace, A', in which the driving-axle B is journaled at its center and between its elbow-crank B² B². This, as the axle is light, is to prevent it from springing under great pressure.

C C represent the two extension pedal-levers. These levers are pivoted at their rear ends to the cross-bar at point *c'*, and bear on their front ends a foot-rest, *c''*. This foot-rest is so constructed as to hold the foot in place, and is pivoted at its center to the upper edge and to the front end of lever C by means of ears *c'*, that are turned down on either side of the lever. (See Fig. 2.)

D D are connecting-arms, in one end of which the wrists of elbow-crank B² are secured, while the other ends are secured to extension pedal-levers C, about their middle, at point *b''*. These arms D D are made in two parts, each piece consisting of a flat thin bar of metal, and having corresponding holes, *d*, passing transversely through each, that they may be made longer or shorter, and are secured to each other by bolts and nuts *b'*. The levers C are also made of the same shaped bar, and also have corresponding holes, *d*, and are secured together by means of bolts and nuts *b'*. The holes *d* in the levers C are in front of the point

b^2 . Thus it will be seen that the levers are adjustable, and may be so regulated as to fit a short or long person.

E E are foot-rests secured to the inside of frame A, near its front end, that may be used when the machine is descending an inclined plane.

F is a corrugated foot-step for mounting the machine.

G is a bar, to which the front wheel, G' , is attached. This front wheel is capable of turning to the right or left, and is operated by a rod and handle, H, or in any proper manner.

I I are light elliptic springs, secured to frame A at point i . These springs are indicated by dotted lines on Fig. 1, and it will be seen that they are a sufficient distance in front of the driving-axle to throw the weight sufficiently forward to prevent the tricycle from being thrown backward in ascending a grade or in passing over any elevation or striking a stick or stone.

K K braces to prevent the seat K' from riding back when pressure is put upon the pedals C C, and are perpendicular, that the seat may move up and down freely on the springs I I.

As will be seen by reference to Fig. 2, the frame A is turned down just at the front edge of seat K' , so that the legs and feet work above and in front of it. Thus it will be seen that my tricycle may be easily mounted, and in case of accident of any kind the feet and legs are free and the rider may get out at once.

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

1. In a tricycle-frame, A, having extension G, adapted to carry front wheel, G' , step F, foot-rests E E, and bar A' , secured to the rear cross-piece of the frame, and extending forward to

axle B, in combination with driving-axle B, journaled at its middle in the front end of bar A' , and at either end in a socket attached to frame A at point B' , with extension pedal-levers C C, bearing on their front ends foot-rests c^2 , and being pivoted at their rear ends, $c' c'$, to the rear cross-bar of the frame A, with extension connecting-arms D D, one end of which is pivoted to the pedals C C at their centers, and their other ends swiveled around the wrist of crank B^2 of driving-axle B, all adapted to revolve said axle and drive the tricycle forward, substantially as shown and described, and for the purposes set forth.

2. In a tricycle, the combination of the frame A, having bars A' and G, extension-pedals C C, and extension connecting-arms D D, adapted to rotate driving-axle B, with a ball-socket having balls $l l$ and $k k$, loose washer d' , working between the balls l and k , and washer f , secured to socket by screws or bolts attached to frame A at point B' , with driving-axle, either end working in said ball-socket, all substantially as shown and described, and for the purposes set forth.

3. In a tricycle, as above described, the combination of seat K' with springs I I, attached to the frame A and the bottom of the seat at point i , and rod K, its lower end bolted to the frame A, and its upper end standing perpendicular and bearing against the back of said seat to prevent it from bearing backward while under pressure from the feet, all substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

MONTRAVILLE COOPER.

Witnesses:

R. N. LOWRANCE,
JNO. G. BOYER.