

(No Model.)

E. A. DEAN.  
ICE VELOCIPEDE.

No. 564,306.

Patented July 21, 1896.

Fig. 1.

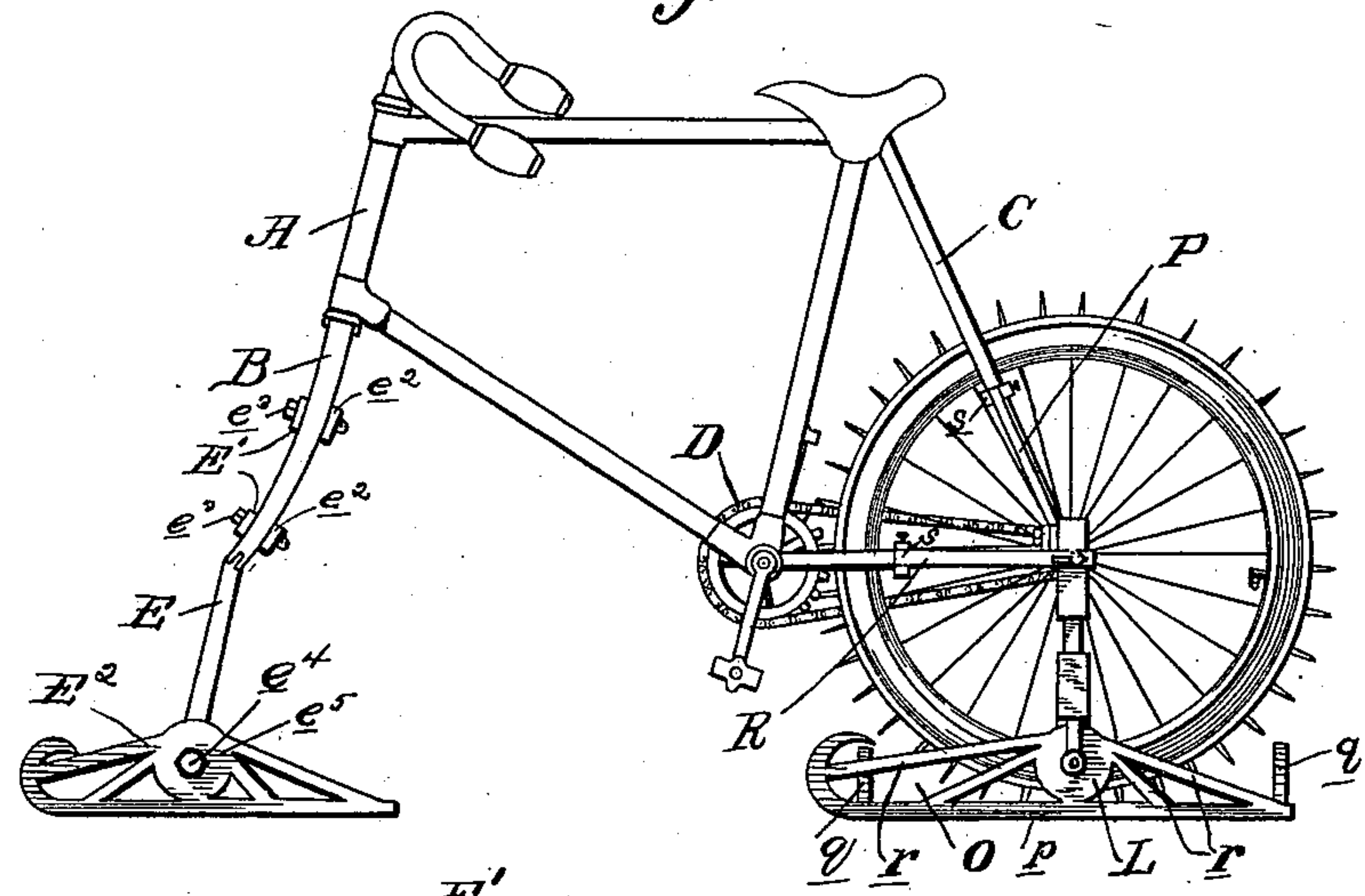


Fig. 2.

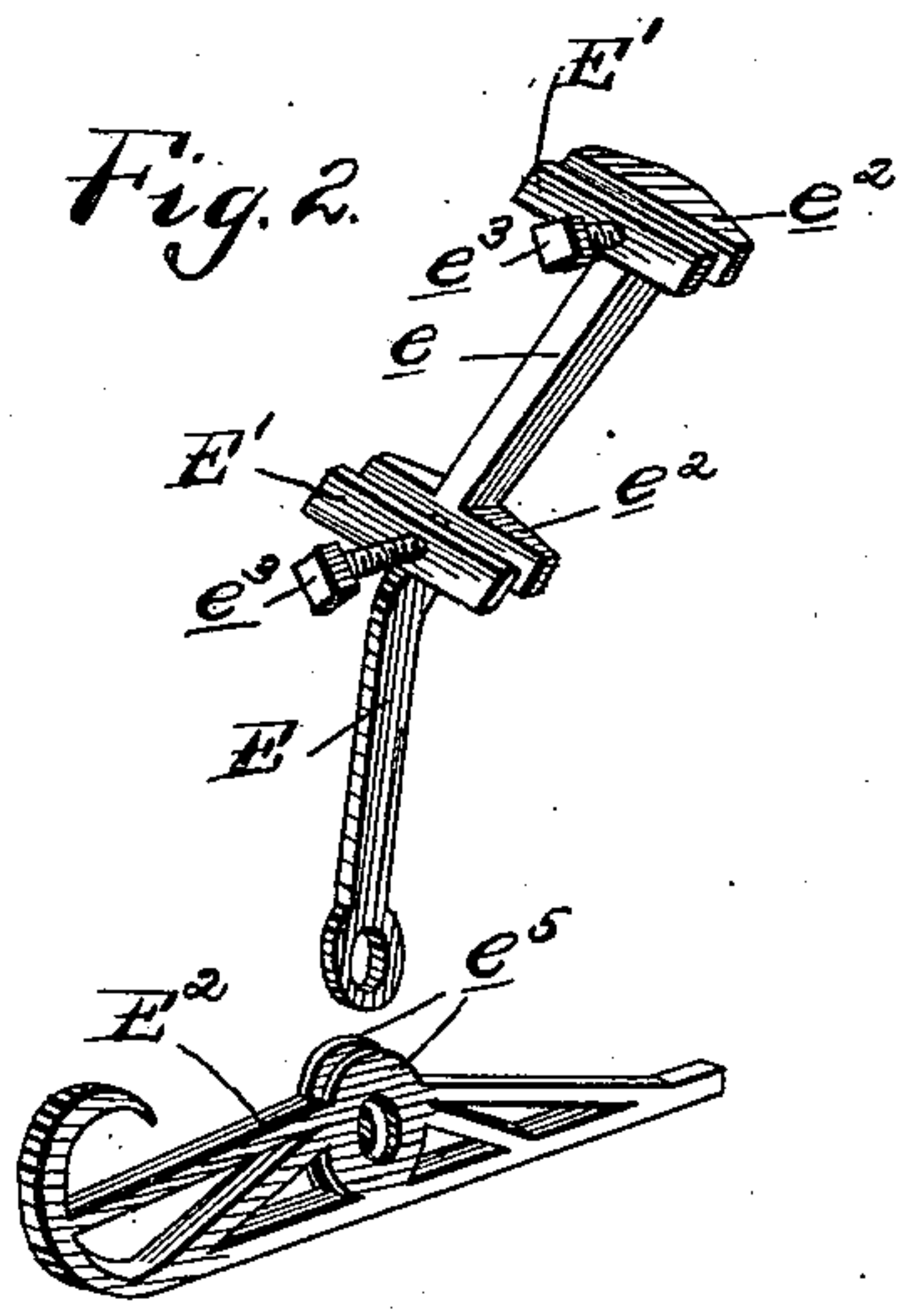


Fig. 3.

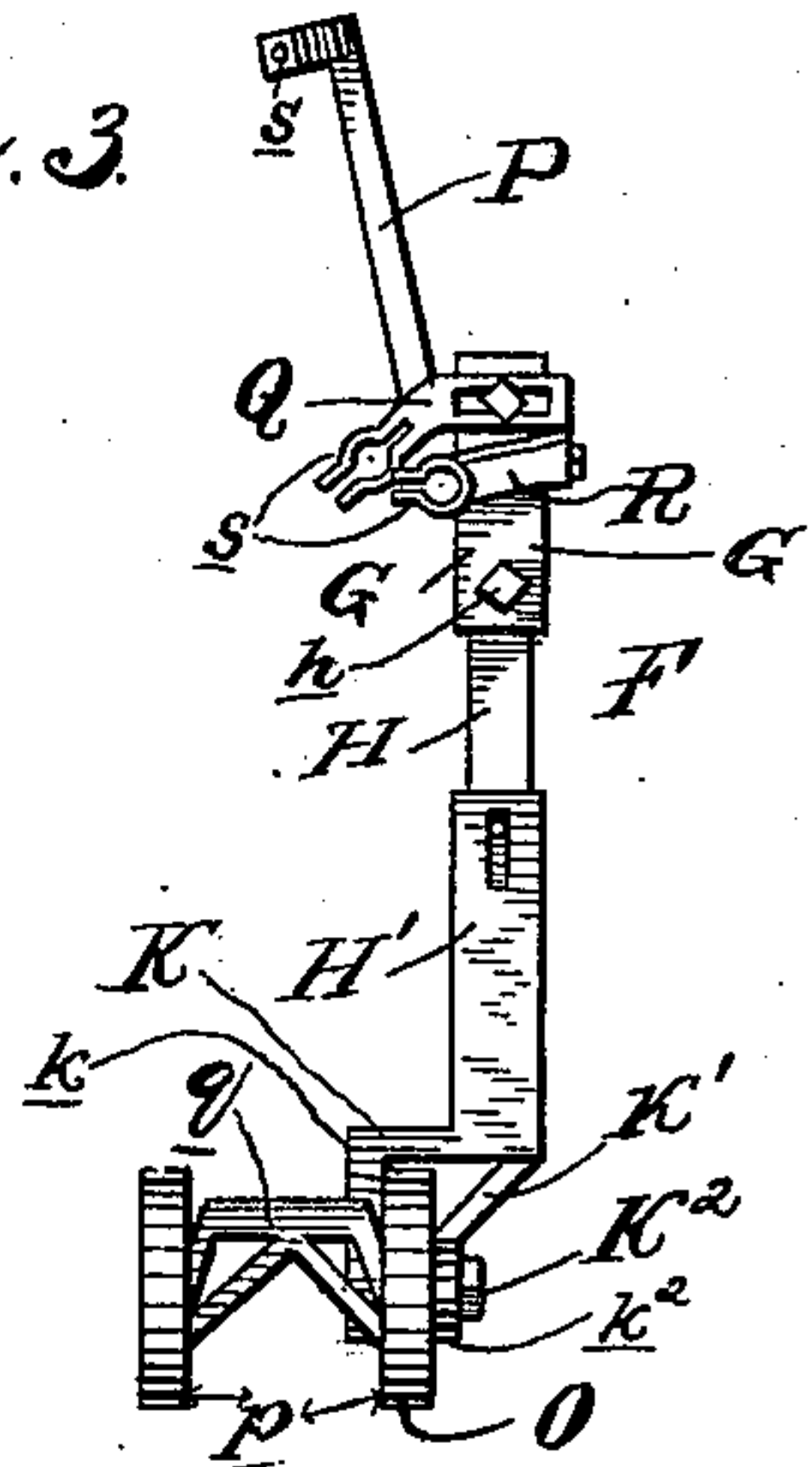
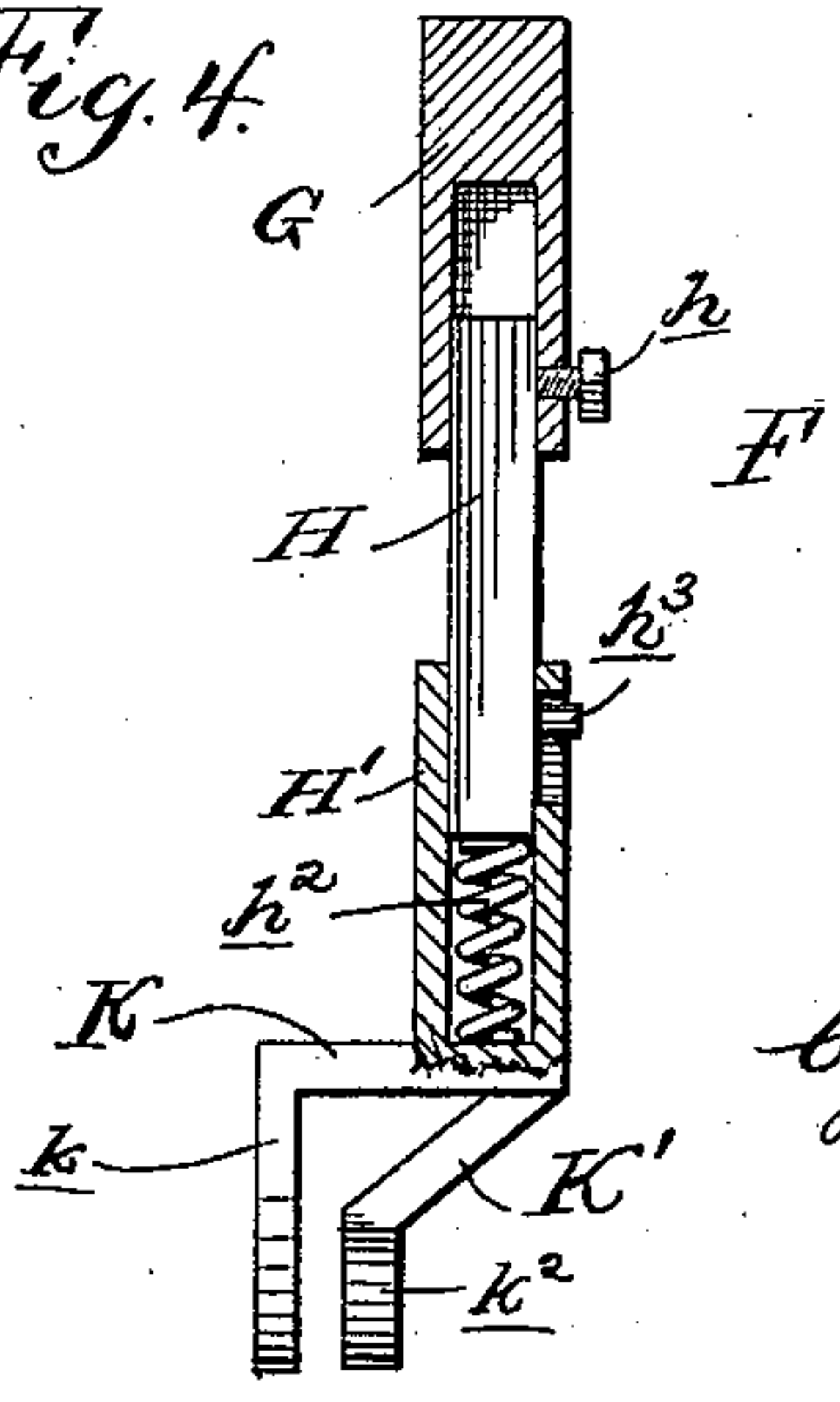


Fig. 4.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## ICE-VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 564,306, dated July 21, 1896.

Application filed December 14, 1895. Serial No. 572,151. (No model.)

*To all whom it may concern:*

Be it known that I, EMMET A. DEAN, a citizen of the United States, residing at Clear Lake, in the county of Polk and State of Wisconsin, have invented certain new and useful Improvements in Ice-Velocipedes; 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.

This invention relates to an improvement in ice-velocipedes; and it consists in the construction and arrangement of parts hereinafter described, and definitely pointed out in the claims.

While I have entitled my invention "ice-velocipede," it is, however, in its nature an attachment to the ordinary safety-bicycle, whereby the same can be readily converted into a crank-propelling sled.

The object of the invention is to provide an improved detachable sled attachment for safety-bicycles which can be quickly applied and adjusted, and which will be simple in construction.

The objects of the invention are attained by the construction illustrated in the accompanying drawings, wherein like letters of reference designate corresponding parts in the several views, and in which—

Figure 1 is a side elevation of a machine with the attachment applied. Fig. 2 is a detail view of the front attachment. Fig. 3 is a front elevation of the rear attachment. Fig. 4 is a sectional elevation of the rear standard.

In the drawings, A designates the steering-head of an ordinary safety-bicycle; B, the front forks; C, the rear forks, and D the gearing.

My forward runner I conveniently and preferably attach to the forks of the front wheel in the following manner: After removing the front wheel I place a standard E between the forks and secure the same in place by forming an inclining upper section, (section  $e$ ,) the inclination of which corresponds with that of the forks. On the rear side of this inclined section are cross-cleats  $e^2$ , overlapping the rear edges of the forks.

$E'$  designates binding-plates spanning the front of the forks and through which the

bolts  $e^3$  pass into the standard. By tightening the bolts the cleats  $e^2$  are drawn onto the forks and the standard rigidly held in place. By this mode of attachment any desired vertical adjustment can be had.

$E^2$  designates the forward sled, which is suitably braced and to which the lower end of the standard is pivoted, as at  $e^4$ , between two hubs or disks  $e^5$ , rigid on runners, and to which the braces are secured.

The rear runner-section comprises a single standard, as distinguished from the known form of standards, one on each side of the wheel. This standard F consists, conveniently, of three sections G H H'. The upper section G is partly tubular, and in the same the part H is inserted and held in adjusted positions by a set-screw  $h$ . The lower end of the section H fits in a socket in the upper end of the section H' and rests on a strong coil-spring  $h^2$ , located in the base of the socket. The part H is conveniently rectangular in cross-section and the sockets correspond in shape. Independent turning of the members is thus prevented.

The spring  $h^2$  normally forces the member H up against a stop lug or bolt  $h^3$  on the socket of H'. By this construction the length of the standard can be varied and a cushion-support is formed, which also serves to elevate the wheel from the surface when the rider has dismounted and is pushing the machine.

The lower end of section H' has a laterally-offset foot K, from which extends the vertical tongue  $k$ .

K' designates an inclined brace extending down obliquely toward the tongue  $k$ , and has a bearing  $k^2$  in its lower end. Between the tongue  $k$  and the bearing  $k^2$  is placed a disk-hub L, the same being pivotally supported on the bolt K<sup>2</sup>, passing centrally therethrough and through the bearing  $k^2$  and tongue  $k$ .

The hub L is rigidly secured on the sled O, which latter consists of two parallel runners  $p$ , united at front and rear by the truss-braces  $q$ . Each runner is braced by the diagonal braces  $r$ , extending back to and secured to the hub-plates.

The space between the runners is sufficient to accommodate the wheel-rim, which latter is conveniently provided with any of the known tooth-bands.



To attach the standard to the wheel-frame, I conveniently employ the braces P Q R, each connected to the upper section by set-screws which pass through elongated slots in the ends of the braces, so that the braces may be adjusted both pivotally and longitudinally. The outer ends of the braces are connected to the rear fork and longitudinal brace by suitable binding-clips s, or in any other desirable manner.

By the above-described construction the device can be adjusted without interfering with the gearing.

While I have described special constructions, I desire it understood that I do not limit myself to such, as many minor changes can be made without departing from the nature and principle of my invention.

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

1. In an ice-velocipede, the combination with the frame, of a detachable rear runner, and a front runner consisting of a standard fitted between the forks having projections engaging the forks, plates spanning the forks

at front and rear, and means comprising bolts passing through the plates and standards for binding the parts together, substantially as described.

2. In an ice-velocipede, the combination with a frame, of a front runner, and a detachable rear runner comprising a sectional standard, a yielding connection between the sections, and runners pivoted to the lower end of the standard, substantially as described.

3. In an ice-velocipede, the combination with a frame, of a front runner, and a rear runner comprising a standard formed in sections, means for securing the standard to the frame, an adjustable connection between two of the sections, a spring interposed between two of the sections, a foot on the lower section, and double runners connected with the foot, substantially as described.

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

EMMET A. DEAN.

Witnesses:

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LURA M. DEAN.