

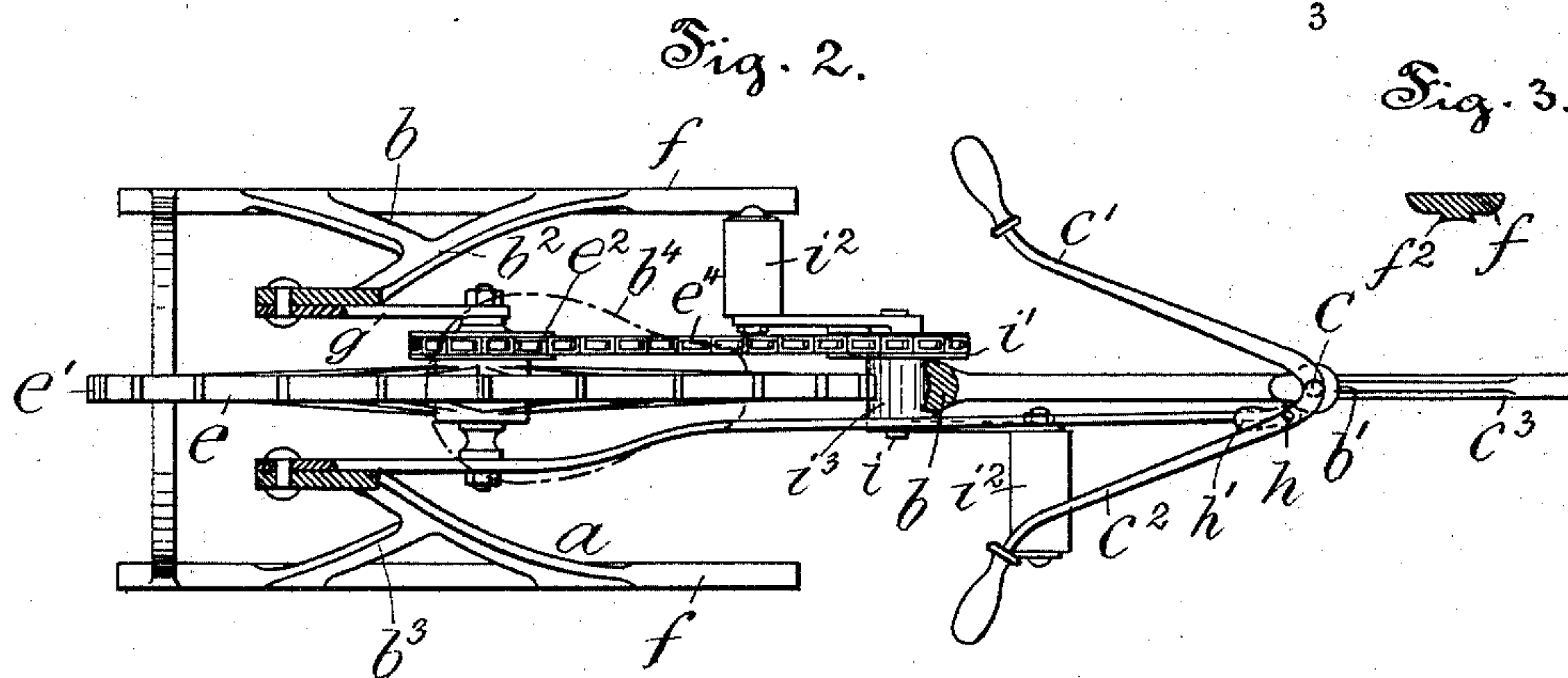
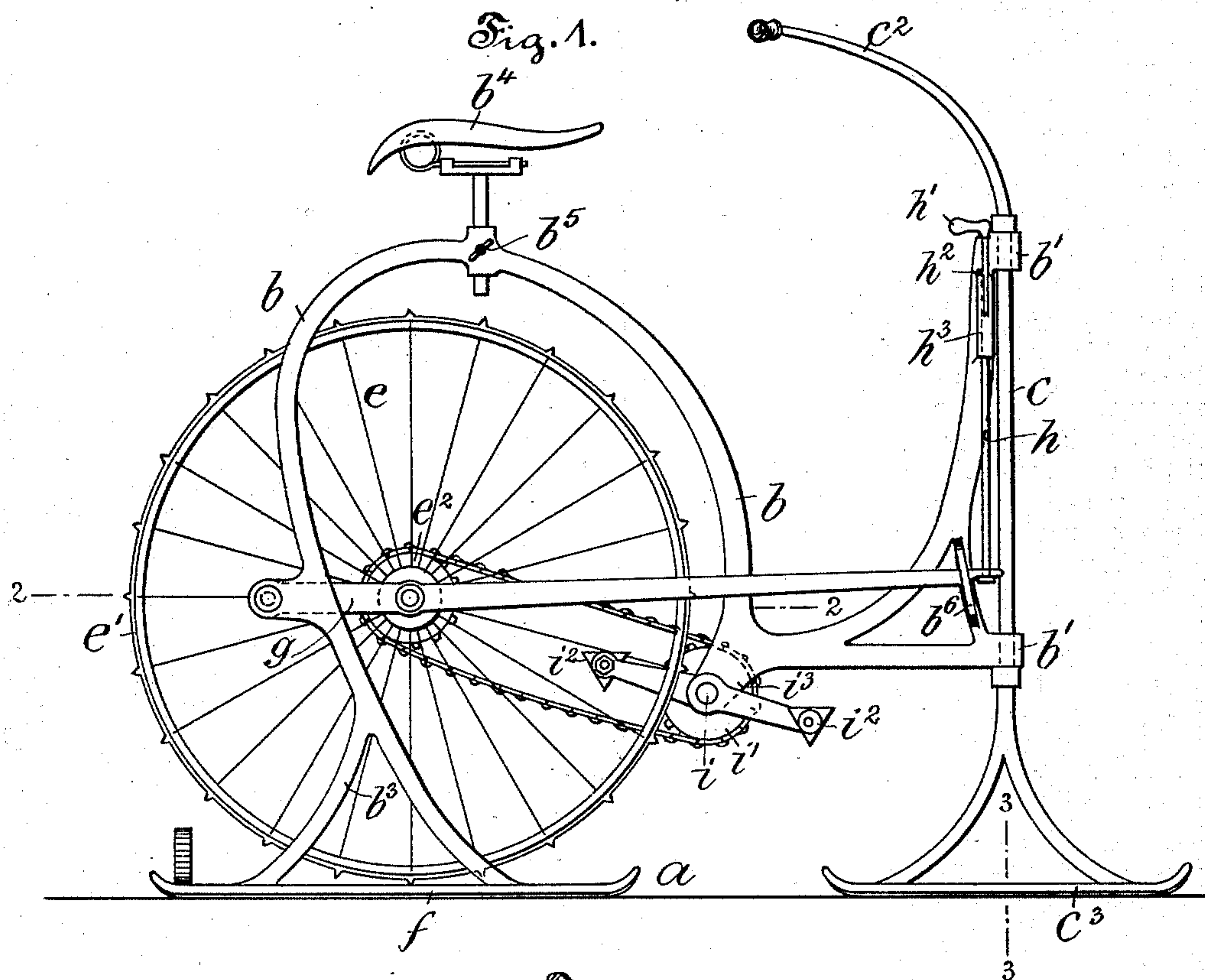
(No Model.)

W. GUETHLER & F. GELLHAUS.

ICE VELOCIPED.

No. 485,844.

Patented Nov. 8, 1892.



Witnesses:  
Kerran B. B. B.  
Thomas M. Smith.

Inventors:  
William Guethler & Frank Gellhaus

by *J. Walter Douglass.*  
att'y.



# UNITED STATES PATENT OFFICE.

WILLIAM GUETHLER AND FRANK GELLHAUS, OF PHILADELPHIA, PENNSYLVANIA; SAID GUETHLER ASSIGNOR TO WILHELM NEILSEN, OF SAME PLACE.

## ICE-VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 485,844, dated November 8, 1892.

Application filed February 23, 1892. Serial No. 422,547. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM GUETHLER and FRANK GELLHAUS, both citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have jointly invented certain new and useful Improvements in Ice-Velocipedes, of which the following is a specification.

The present invention has relation to ice-velocipedes, and more particularly, first, to the form and construction of the body or sled portion; second, to the arrangement and operation of the driving-wheel and its propelling mechanism, and, third, to certain details of construction of the driving-wheel and its accessories.

The principal objects of our invention are, first, to provide a light, simple, and comparatively-inexpensive ice-velocipede having a body or sled portion adapted to accommodate either a man or a woman and having the driving-wheel and propelling mechanism adapted for operation in such manner that the force with which the roughened tread of the driving-wheel is brought into contact with ice or snow is proportional to the power required to drive the velocipede, so that the roughened tread of the driving-wheel is prevented from slipping upon the ice or snow; second, to provide simple means for lifting the driving-wheel out of contact with snow or ice and then locking the same in such position, and, third, to construct the runners or skates of the body or sled portion in such manner that they are adapted to travel over either ice or snow.

Our invention consists of an ice-velocipede comprising a bifurcated backbone provided with a steering-head and having the center portion thereof curved upward to accommodate the driving-wheel, runners connected with the steering-head and with the respective bifurcations of the backbone, a saddle at the summit of the curved portion of the backbone, a driving-wheel having its axis disposed intermediate of the bifurcations and steering-head and supported by a swinging frame, a pedal-shaft journaled to the back-

bone and located beneath the axis of the driving-wheel, and a sprocket-chain and its accessories for operating said driving-wheel.

Our invention consists of an ice-velocipede provided with a swinging frame having a driving-wheel journaled thereto, a pedal-shaft located in front of and below the axis of the driving-wheel, a sprocket-chain and its accessories interposed between the driving-wheel and pedal-shaft, a rod connected with the swinging frame for elevating the driving-wheel, and a bayonet connection for locking the rod, and thereby supporting the driving-wheel in an elevated position; and our invention further consists of the improvements hereinafter described and claimed.

The nature and objects of our invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is an elevation of an ice-velocipede embodying features of our invention. Fig. 2 is a top or plan view of the same, showing a section on the line 2 2 of Fig. 1; and Fig. 3 is a transverse section of one of the runners drawn to an enlarged scale and taken on the line 3 3 of Fig. 1.

In the drawings, *a* is the body or sled portion of an ice-velocipede. This sled portion *a* comprises a backbone *b*, provided at the front thereof with sockets *b'* for supporting a steering-head *c* and curved upward at or near the center thereof to accommodate the driving-wheel *e*. The rear portion of the backbone *b* is bifurcated, and the respective bifurcations *b<sup>2</sup>* and *b<sup>3</sup>* thereof straddle the driving-wheel *e* and are provided with runners *f*, hereinafter more fully described. The summit of the upwardly-curved portion of the backbone *b* is provided with a seat or saddle *b<sup>4</sup>*, that may be adjusted upward or downward by means of the set-screw *b<sup>5</sup>* in order to accommodate different riders. The upper extremity of the steering-head *c* is provided with handles *c'* and *c<sup>2</sup>*, curved rearwardly into easy reach of the rider, and the lower extremity of the steering-head *c* is provided with a pilot-runner *c<sup>3</sup>*.



The mechanism for propelling the sled or body portion of the velocipede will now be described.

The driving-wheel  $e$  is provided with a roughened tread  $e'$  and with a sprocket-wheel  $e^2$ . The respective extremities of the axis of the driving-wheel  $e$  are journaled in a swinging frame  $g$ , pivotally connected at its rear end with the respective bifurcations  $b'$  and  $b^2$  of the backbone  $b$ . The front portion of the swinging frame  $g$  moves in a strap  $b^6$ , connected with the front portion of the backbone  $b$ .

$h$  is a link connected at one extremity with the front portion of the swinging frame  $g$  and provided at the other extremity thereof with a handle  $h'$ . A pin  $h^2$ , projecting radially from the link  $h$ , and the slotted sleeve  $h^3$  is connected with the backbone to form a bayonet-joint, by means of which the swinging frame  $g$  is locked in an elevated position when the pin  $h^2$  is in the position shown in Fig. 1, and is afforded a freedom of motion when the pin  $h^2$  is turned into alignment with the groove of the sleeve  $h^3$ .

$i$  is a pedal-shaft provided with a sprocket-wheel  $i'$  and with pedals  $i^2$ . This pedal-shaft  $i$  is journaled in a lug  $i^3$ , depending from the backbone  $b$ , and is located nearer to the runners than the axis of the driving-wheel, the object being to cause the tight side of the sprocket-chain  $e^4$  to draw the roughened periphery of the driving-wheel into contact with the ice or snow whenever power is applied to the pedals.

It may be remarked that the force with which the periphery of the driving-wheel is pressed upon the ice or snow is proportioned to the power exerted upon the pedals, so that slipping of the driving-wheel is obviated. Moreover, the peculiar formation of the backbone  $b$  and the position of the pedal-shaft and the steering-head form a space  $x$ , adapted to accommodate a woman rider.

The runners are made concave in order to travel freely over ice and are provided with flanges projecting laterally from their shanks  $f^2$  in order to adapt the runners of the vehicle to travel on snow. It will thus be observed that the hereinabove-described velocipede is adapted for use on either snow or ice.

The mode of operation of the velocipede hereinabove-described is as follows: When the velocipede is not in use or is being propelled downhill by gravity or by its own momentum, the swinging frame is locked in an elevated position, as shown, for instance, in Fig. 1, so that the periphery of the driving-wheel will be held out of contact with the ice or snow. When the velocipede is being propelled by a rider seated upon the saddle, the pin  $h^2$  is turned into alignment with the slot in the sleeve  $h^3$ , so that the frame  $g$  is afforded a freedom of swinging movement. However, the force exerted upon the pedal-shaft  $i$  by the feet of the rider causes the sprocket-chain  $e^4$  not only to rotate the driving-wheel  $e$ , but

also to depress the swinging frame  $g$  and force the roughened tread into the ice or snow over which the velocipede is being propelled or is traveling.

It may be remarked that the hereinabove-described ice-velocipede is guided by means of the handles  $c'$  and  $c^2$  and steering-head  $c$  in the usual or in any other preferred manner.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An ice-velocipede comprising a bifurcated backbone provided with a steering-head and having the center portion thereof curved upward to accommodate the driving-wheel, runners connected with the steering-head and with the respective bifurcations of the backbone, a saddle at the summit of the curved portion of the backbone, a driving-wheel having its axis disposed intermediate of said bifurcations and steering-head, a swinging frame for supporting the axis of the driving-wheel, a pedal-shaft journaled to the backbone and located beneath and in front of the axis of the driving-wheel, and a sprocket-chain and its accessories for operating said driving-wheel, substantially as and for the purposes set forth.

2. In an ice-velocipede, a swinging frame having a driving-wheel journaled thereto, a pedal-shaft journaled to a backbone in front of and below the axis of the driving-wheel, a sprocket-chain, sprocket-wheels connected with the driving-wheel and pedal-shafts, a link connected with the swinging frame for elevating the driving-wheel, and a bayonet-joint connected with said backbone and link and adapted to lock said link, and thereby support said driving-wheel in an elevated position, substantially as and for the purposes set forth.

3. An ice-velocipede provided with a bifurcated backbone having a steering-head and having the center portion thereof curved upward to accommodate the driving-wheel, concave runners having lateral flanges projecting from the shanks thereof and said runners connected with the steering-head and with the bifurcations of the backbone, an adjustable saddle supported at the summit of the backbone, a swinging frame carrying the driving-wheel, a pedal-shaft located in front of and below the axis of the driving-wheel, a sprocket-chain, sprocket-wheels connected with the driving-wheel and pedal-shafts, a link for actuating said swinging frame, and a bayonet-joint connected with said backbone and link and adapted to lock said link, and thereby support said driving-wheel in an elevated position, substantially as and for the purposes set forth.

4. An ice-velocipede provided with a swinging frame carrying the driving-wheel, a link connected with said frame for elevating the wheel, a pin on said link, and a slotted sleeve embracing said link and attached to the back-



bone and said pin and sleeve forming a bayonet-joint for locking the frame in an elevated position, substantially as and for the purposes set forth.

- 5 5. An ice-velocipede comprising a bifurcated backbone provided with a steering-head and having the center portion thereof curved upward to accommodate the driving-wheel, runners connected with the steering-head and  
10 with the respective bifurcations of the backbone, a saddle at the summit of the curved portion of the backbone, a swinging frame journaled to said bifurcations and extending into proximity with the steering-head, a link  
15 accessible to the rider for elevating said swinging frame, a driving-wheel journaled to

the swinging frame and having its axis disposed intermediate of the bifurcations and steering-head, a pedal-shaft journaled to the backbone and located beneath and in front 20 of the axis of the driving-wheel, and a sprocket-chain and its accessories for operating said driving-wheel, substantially as and for the purposes set forth.

In witness whereof we have hereunto set our 25 signatures in the presence of two subscribing witnesses.

WILLIAM GUETHLER.  
FRANK GELLHAUS.

Witnesses:

THOMAS M. SMITH,  
RICHARD C. MAXWELL.