

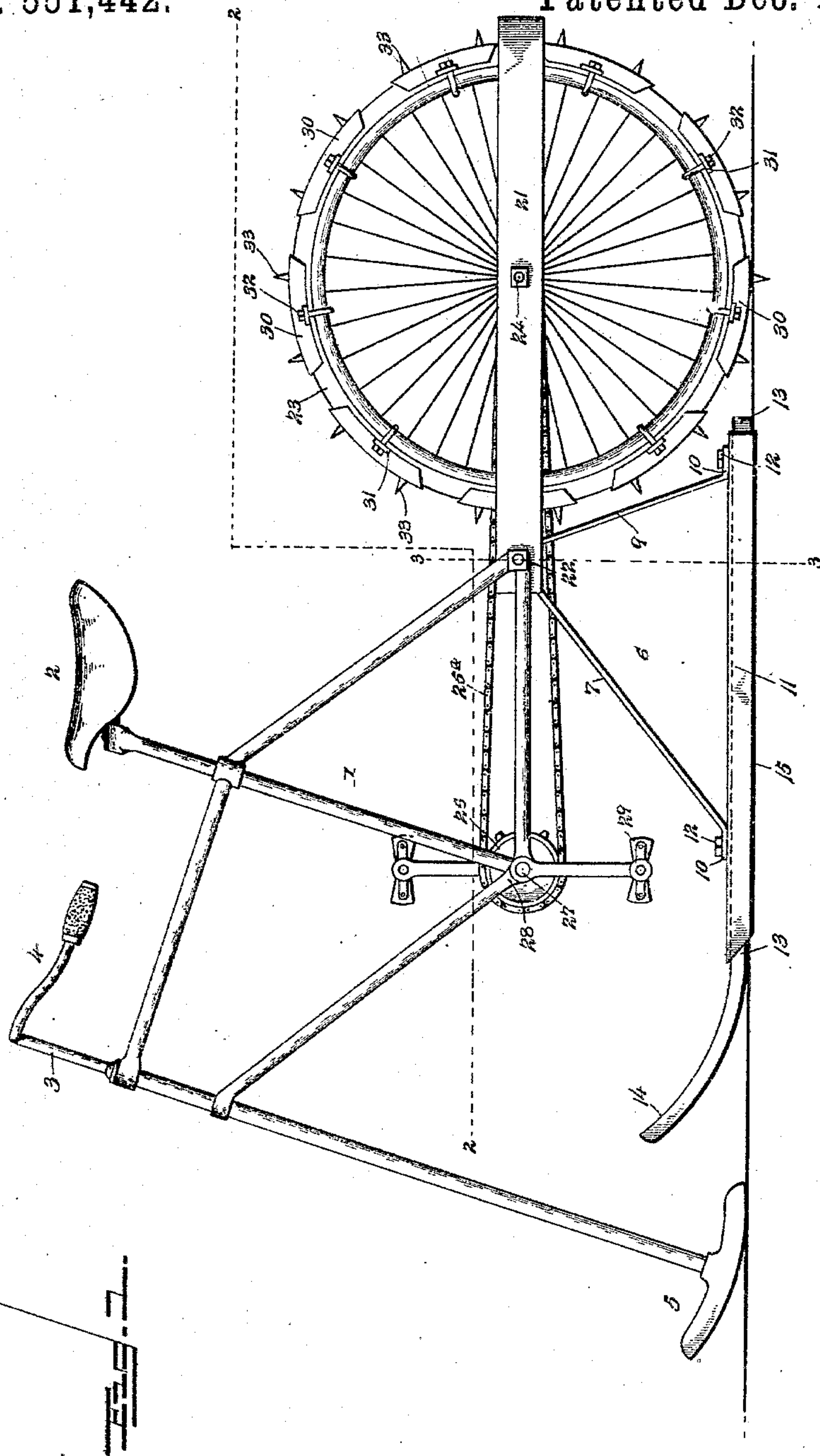
(No Model.)

2 Sheets—Sheet 1.

F. J. KORFF.  
ICE VELOCIPEDE.

No. 551,442.

Patented Dec. 17, 1895.



Inventor

Francis J. Korff

Witnesses

C. H. Stewart  
D. P. Hallbauer

By his Attorneys,

C. A. Snow & Co.

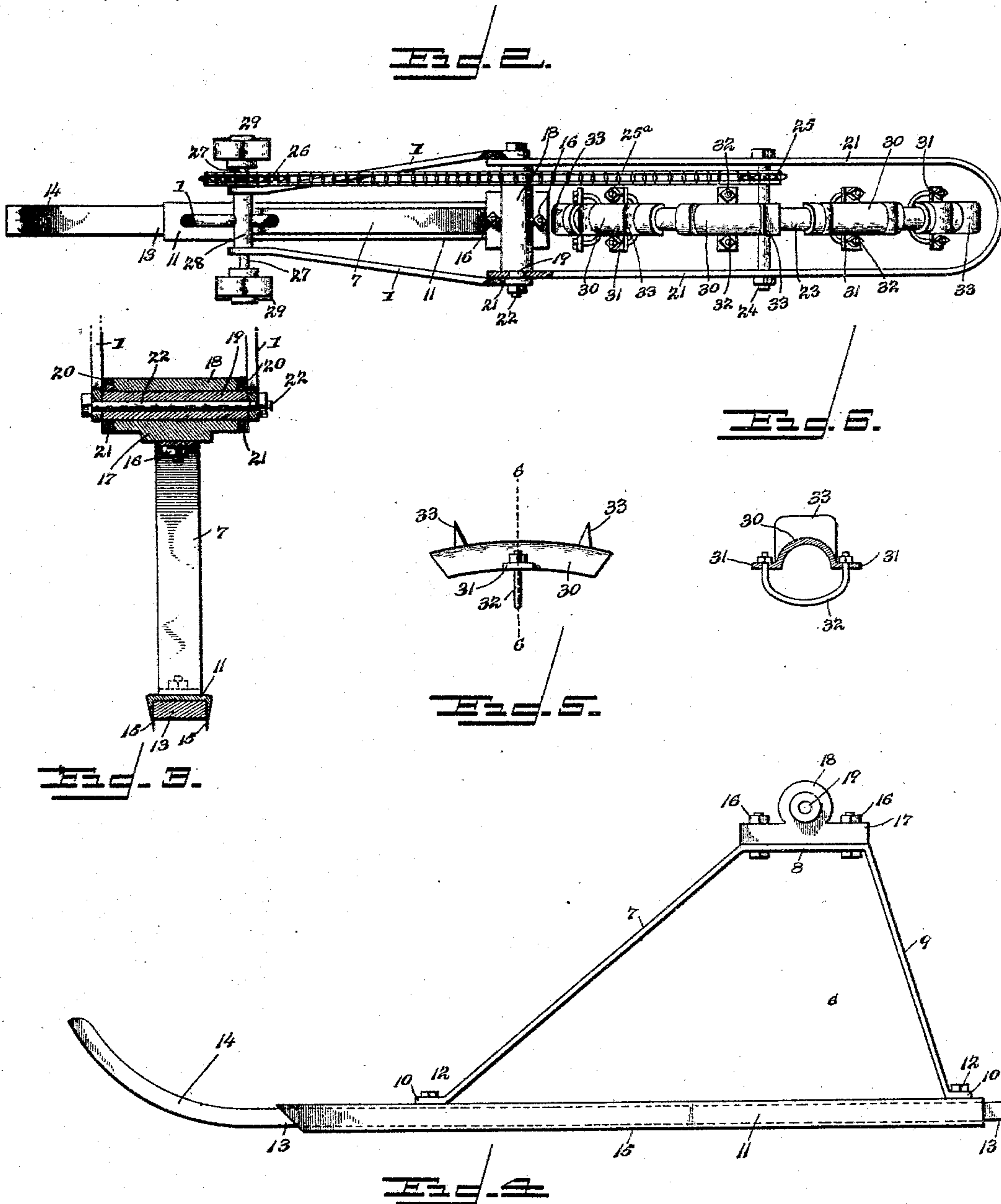
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# UNITED STATES PATENT OFFICE.

FRANCIS J. KORFF, OF ST. JOHN'S, MICHIGAN.

## ICE-VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 551,442, dated December 17, 1895.

Application filed December 15, 1894. Serial No. 531,954. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS J. KORFF, a citizen of the United States, residing at St. John's, in the county of Clinton and State of Michigan, have invented a new and useful Ice-Velocipede, of which the following is a specification.

This invention relates to ice-velocipedes; and it has for its object to provide a machine of this character involving the use of some of the parts of an ordinary safety-bicycle, whereby an ordinary safety-bicycle can be easily and readily converted into an ice-velocipede for winter cycling on snow and ice, by the use of certain new and useful attachments as contemplated by the present invention.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a side elevation of an ice-velocipede constructed in accordance with this invention. Fig. 2 is a sectional plan view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail sectional view on the line 3 3 of Fig. 1. Fig. 4 is an enlarged detail elevation of the runner attachment disconnected from the main frame. Fig. 5 is a detail elevation of one of the detachable spur-plates for the driving-wheel. Fig. 6 is a detail sectional view on the line 6 6 of Fig. 5.

Referring to the accompanying drawings, 1 designates the main frame of the machine, which in the present invention is designed to be the frame of an ordinary safety-bicycle which is made of tubular material to give it the necessary lightness, and in the drawings the frame 1 is illustrated as being what is commonly known as a "diamond" frame, and carries the usual seat 2, and at its front end the turning handle-rod 3, at the upper end of which is arranged the usual handle-bar 4, which provides for turning the rod 3 to steer or guide the machine.

In constructing the herein-described machine, or in other words converting an ordinary safety-bicycle into an ice-velocipede constructed in accordance with this invention, the front and rear wheels of the bicycle are removed, and in place of the front wheel a

suitable guide-runner 5 may be attached to the lower end of the handle-bar 3 to run on the ground and provide means for properly steering or guiding the machine, and the rear end of the main frame 1 is designed to be supported for travel over snowy and icy ground on the main runner attachment 6. The main runner attachment 6 consists of a knee-frame 7, provided with a flat top portion 8, and opposite standard portions 9, having lower flanged ends 10 that are bolted to the upper side of an inverted-U-shaped runner-plate 11, by means of the fastening-bolts 12, which also pass through a steel runner-shoe 13 that is fitted within the inverted-U-shaped runner-plate 11 of the runner attachment.

The steel runner-shoe 13 is longer than the runner-plate 11 and is provided with a front upwardly-curved end 14, that provides for the easy running of the runner over uneven surfaces or other obstacles, and the opposite side portions of the runner-plate within which the runner-shoe is secured are provided with lower pointed edges 15, that project below the plane of the runner-shoe 13, to secure a grip in the snow or ice on which the machine is used to prevent the runner from slipping sidewise.

The flat top portion 8 of the knee-frame of the runner attachment has bolted thereon by means of the bolts 16 a top plate 17, which is provided with an integral spacing-box 18, that snugly receives therein a metal sleeve 19, that is longer than the spacing-box and projects beyond both ends thereof, and the opposite projecting ends of the sleeve 19 are adapted to loosely fit in the opposite perforations 20 formed in the opposite front ends of the U-shaped self-adjusting wheel-frame 21, which is extended rearwardly from the rear extremity of the frame 1. A coupling-bolt 22 passes through the metal sleeve 19, the perforated ends of the self-adjusting wheel-frame, and the rear frame-bars of the main frame 1, and when the said bolt 22 is tightened up the rear frame-bars of the frame 1 are secured tight against the ends of the metal sleeve 19, and thereby not only serves to securely connect the runner attachment to the main frame, but also pivotally secures the self-adjusting wheel-frame in position on the projecting ends of the metal sleeve, so as to allow the said wheel-frame to freely adjust itself up and



down in following the surface on which the machine is propelled.

The self-adjusting wheel-frame 21 extends to the rear of the main frame 1 and the runner attachment and accommodates therein the drive-wheel 23, which is one of the ordinary wheels of the bicycle that is converted into the herein-described velocipede. The drive-wheel 23 is mounted on the journal-bolt 24, that is passed through the opposite sides of the frame 21 at a point intermediate of its ends, and said drive-wheel 23 carries at one side of its hub the usual chain-wheel 25, over which passes the elongated drive-chain 25<sup>a</sup>, that is driven from the drive sprocket-wheel 26, carried upon one end of the usual crank-shaft 27, journaled in the bearing 28 at the lower side of the frame 1, and carrying upon its opposite ends the pedals 29 for the feet of the operator, so that the machine can be propelled in substantially the same way as an ordinary bicycle.

In order to prevent the rear drive-wheel 23 from slipping the same is adapted to have detachably secured thereto a series of spur-plates 30. The spur-plates 30 are semicircular in cross-section to snugly embrace the tire of the wheel, and are provided at their opposite side edges with the bolt-flanges 31, to which are connected the ends of the U-shaped bolts 32, which embrace the inner side of the rim of the wheel to provide for detachably securing the spur-plates on the tire. The said spur-plates 30 are provided on their outer sides with the integral transverse sharpened spur-flanges 33, that secure a grip for the wheel 23 on the snow or ice, or slippery road, on which the velocipede is used.

The spur-plates for the drive-wheel, the self-adjusting wheel-frame, and the runner-frame may be readily adjusted in position and quite as readily removed, so that an ordinary safety-bicycle can be quickly converted into an ice-velocipede, and vice versa, and it will be understood that changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In an ice velocipede, the combination of the main frame, a runner attachment connected with the rear end of said frame and

comprising a knee-frame having opposite standard portions, an inverted U-shaped runner plate having opposite pointed lower side edges, an elongated runner shoe fitted within said runner plate and of a less width than the opposite sides of the plate, and fastening bolts passed through the standard portions of the knee-frame, the runner plate, and the runner shoe, a wheel-frame connected with said main frame and carrying a drive wheel arranged in rear of the runner attachment, and pedal-operated mechanism for turning the wheel, substantially as set forth.

2. In an ice velocipede, the combination of a main frame carrying a front steering device and having spaced rear frame bars, a runner attachment provided at the top with a horizontal spacing box, a metal sleeve fitted in said spacing box and projecting beyond both ends of the same, a U-shaped self-adjusting wheel frame extended rearwardly from the rear extremity of the rear frame and provided with opposite perforated front ends loosely engaging over the opposite projecting ends of the metal sleeve, said perforated front ends of the wheel and also the projecting ends of the metal sleeve being adapted to be arranged between the spaced rear frame bars of said main frame, a single coupling bolt passed through the metal sleeve and bolted to the rear frame bars of the main frame to clamp the latter against the projecting ends of said sleeve, a drive wheel mounted within said wheel frame, and means for turning said wheel, substantially as set forth.

3. In an ice velocipede, the combination of a main frame, a runner attachment connected with the rear end of said frame, a self adjusting wheel frame also connected with the rear end of the main frame and carrying a tired drive wheel, a series of spaced semi-circular spur plates detachably fitted on the tire of said wheel and provided with integral transversely extending sharpened spur flanges, and bolt flanges at the opposite side edges thereof, and U-shaped bolts embracing the inner side of the rim of the wheel and connected to the bolt flanges of said spur plates, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRANCIS J. KORFF.

Witnesses:

CHARLES M. MERRILL,  
H. F. WATERS.