

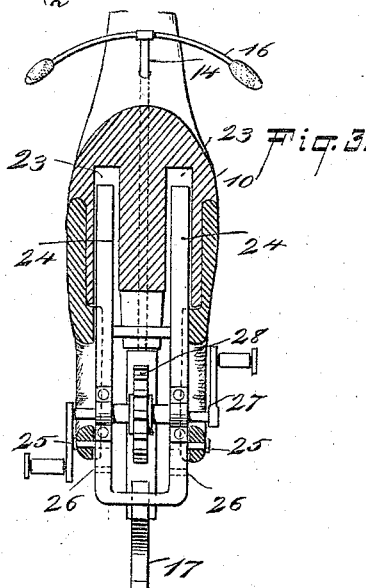
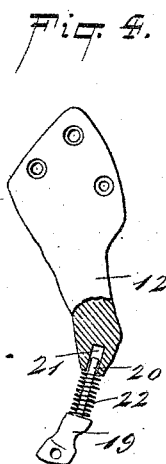
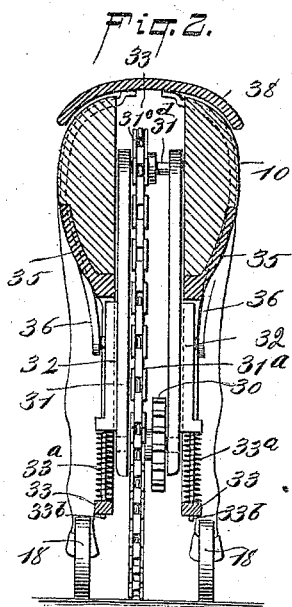
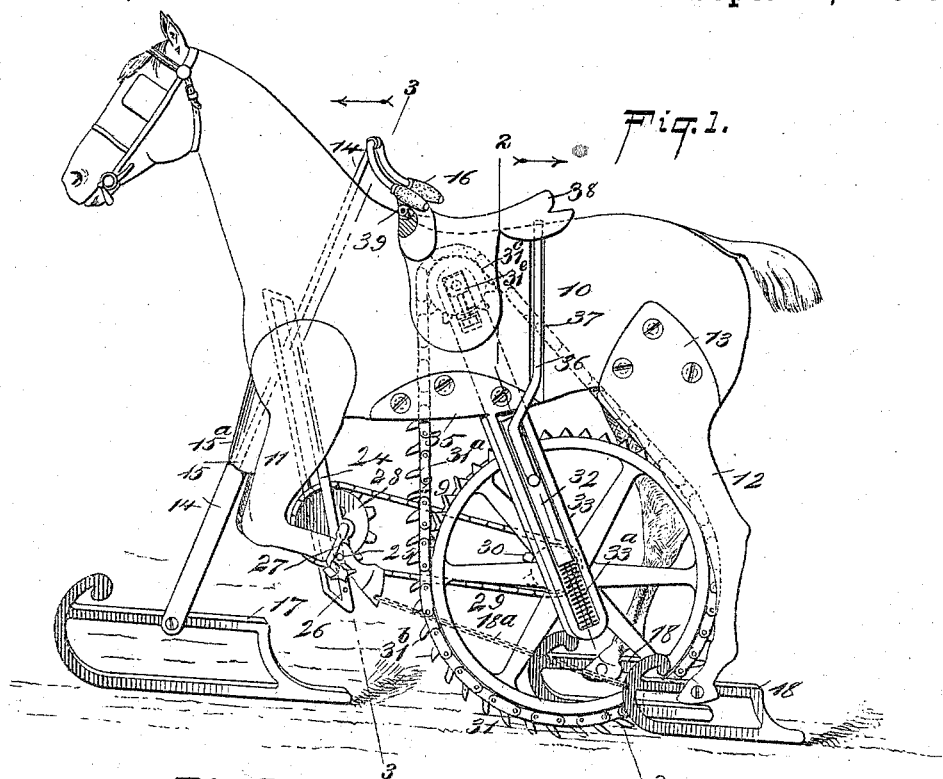
(No Model.)

2 Sheets—Sheet 1.

S. YOUNG.
ICE VELOCIPEDE.

No. 526,210.

Patented Sept. 18, 1894.



WITNESSES:

William Goebel.
C. Sedgwick

INVENTOR

S. Young
BY
Munn & Co.
ATTORNEYS.

(No Model.)

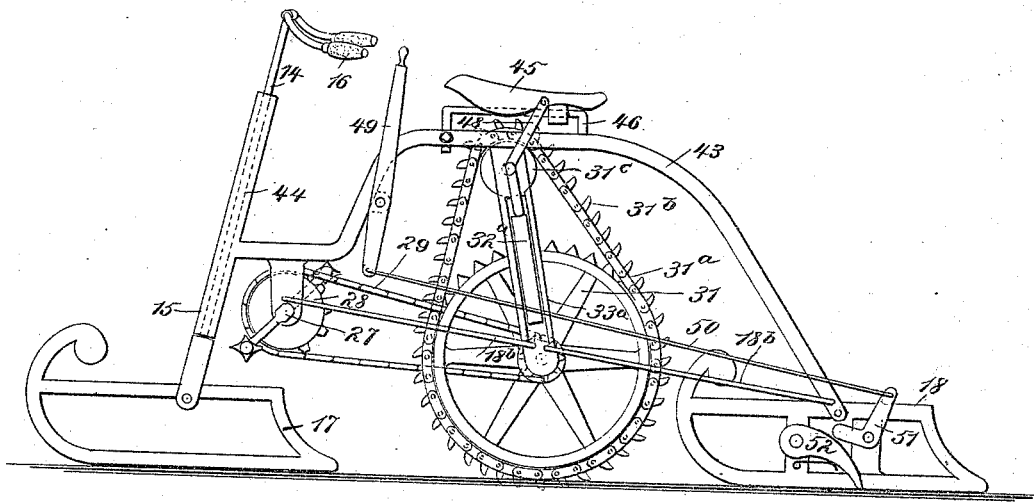
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Fig. 5.



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UNITED STATES PATENT OFFICE.

SAMUEL YOUNG, OF ONTONAGON, MICHIGAN, ASSIGNOR OF ONE-THIRD TO
MICHAEL A. POWERS, OF SAME PLACE.

ICE-VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 526,210, dated September 18, 1894.

Application filed January 19, 1894. Serial No. 497,405. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL YOUNG, of Ontonagon, in the county of Ontonagon and State of Michigan, have invented a new and Improved Velocipede, of which the following is a full, clear, and exact description.

My invention relates to improvements in velocipedes; and the object of my invention is to produce a simple, durable, light and easily operated machine, which may be adapted to run on snow and ice.

To these ends my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the machine embodying my invention. Fig. 2 is a cross section on the line 2—2 of Fig. 1. Fig. 3 is a cross section on the line 3—3 of Fig. 1. Fig. 4 is a detail side elevation, partly in section, of one of the hind legs of the machine; and Fig. 5 is a side elevation of a modified form of the machine, and provided with a body substantially like that of an ordinary safety bicycle.

The machine is provided with a body which may be of any approved kind or shape, but which I prefer to make in the shape of a horse, as illustrated in Fig. 1, and the body is provided with front and hind legs 11 and 12, the former being preferably curved, as in the act of leaping, and the hind legs are detachable, as shown at 13 in the drawings. The front legs being bent, as shown, form convenient hangers for the pedal shaft, and the rear legs support the rear end of the body.

Projecting upward through the front portion of the body is the steering rod 14 which is shouldered, as shown at 15, near the front, lower portion of the body, this shoulder turning on a suitable bearing thimble 15^a. The upper end of the steering rod is provided with a handle bar 16, of substantially the usual kind, and the lower end of the rod is secured to a runner 17 which carries the front end of the machine, and runners 18 support the rear end of the machine, these runners

being arranged parallel with each other and secured to the hind legs of the body.

If desired the hind legs 12 may be constructed as shown in Fig. 4, where the foot 19 of each leg is provided with an upwardly extending rod 20 which projects into a recess 21 in the leg, and a spring 22 is coiled around the rod 20 and serves as a cushion for the leg. In this manner the body is supported on springs, so that it rides easily.

The front portion of the body is recessed in the under side, as shown at 23 in Fig. 3, and this part of the body contains a vertically adjustable U-shaped hanger 24, the arms of which project into the recesses 23, and this hanger is secured by means of screws 25 to the front legs 11 of the body, and the hanger is provided with a series of holes 26 to receive the screws and thus permit the hanger to be adjusted.

The frame 24 supports the pedal shaft 27, which is mounted in suitable boxes thereon and is provided with the ordinary pedals and also with a sprocket wheel 28 on which the driving chain 29 runs, this chain extending backward over a sprocket wheel 30 connected with a large sprocket wheel 31, which is journaled in slides 32, these moving vertically in the slide frames 33 and projecting upward into a recess 34 in the body of the machine. The sprocket wheel 31 comes into close proximity with the ground, and it carries a chain 31^a having spurs 31^b thereon, which are adapted to contact with the snow or ice and thus drive the machine forward. This chain 31^a runs over a sprocket wheel 31^c which is carried by a shaft 31^d journaled in the upper ends of the slides 32, and the shaft 31^d is mounted in vertically adjustable boxes 31^e, see Fig. 1, so that the slack of the chain may be taken up. This chain 31^a serves to drive the machine, as specified, and it will be seen that all the snow and ice will be shaken out of it so that it cannot clog, the operation being further facilitated by the passing of the links of the chain over the teeth of the wheel.

The slides 32 rest on springs 33^a and are provided with suitable guide rods 33^b which project downward through the bottoms of the slide frames 33. The springs support the slides and a portion of the saddle, as described be-

low, thus affording an easy seat for the rider. The slide frames are carried by a slotted clip 35, which is fastened to the under side of the body 10, being countersunk in the body so as to be flush with the sides thereof, as shown clearly in Fig. 2.

Connected with the slides 32 are rods 36, which extend upward on opposite sides of the body 10, lying preferably in grooves 37, and these rods have their upper ends arranged beneath the saddle 38 which is substantially like an ordinary riding saddle, except that it is more rigid and it rides on the back of the body 10, its front end being hinged to the body, as shown at 39.

It will be seen that a person seated on the saddle 38 may conveniently grasp the handle bar and steer the machine and that, by turning the pedal shaft with his feet in the usual way, the spur wheel 31 is turned and the machine driven. To enable the machine to run steadily and straight ahead, chains 18^a are used to steady the rear runners, these extending from the runners to the front legs 11. Instead of having the body in the form of a horse or other animal, a frame 43 as shown in Fig. 5 may be used, which may be of any approved construction and has a suitable sleeve 44 at its front end to serve as a bearing for the steering rod or fork 14. In this case the spur wheel 31 is used in substantially the manner described above, being supported in slides 32^a moving in a guide frame or slide frame 33 which is suspended from the frame or body 43, and the saddle 45 is arranged above the slide frame and on top of the frame 43, being supported on rods 46 which are vertically adjustable and are held by a setscrew 47. The saddle is also partially supported on the rods 48 which connect with the slides 32^a, in substantially the manner already described.

The frame 43 is mounted, at its front end, on a single runner 17, and at its rear end on a similar runner 18, substantially like the runners already described, and these runners, as well as those used in the construction shown in Fig. 1, are ground sharp so as to run smoothly and not slow. The frame is braced by rods 18^b running from the lower, rear end of the frame to the lower end of the hanger 33, and also from the said hanger to the front portion of the frame. The frame of the machine shown in Fig. 5, is provided with the spur chain 31^a, arranged as specified, and the machine may be driven like an ordinary safety bicycle and steered in the same manner.

I have shown the machine in Fig. 5 provided with a brake, and the machine illustrated in Fig. 1 may be provided with a similar brake if desired. A brake lever 49 is used, which is fulcrumed on one side of the frame 43 and extends upward to within easy reach of the saddle, its lower end being connected by a rod 50 with a bell crank 51 which is fulcrumed on the rear runner 18 and has one arm

lying on the spur brake 52, which is also fulcrumed on the runner and is normally pressed up by a spring 53. When the brake is to be applied, the upper end of the lever 49 is pulled back, thus drawing forward the rod 50 and the upper end of the bell crank 51, which acting on the spur brake 52, throws the latter into contact with the snow or ice, thus checking the speed of the machine.

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

1. In a velocipede, the combination with a body, supported upon runners, of sprocket wheels mounted one above the other in supports carried by the body between the runners, the lower sprocket wheel being a large one, a chain passing around the sprocket wheels and provided with spurs, a pedal shaft mounted in the forward part of the body, and gearing between the pedal shaft and the large sprocket wheel, substantially as described.

2. In a velocipede, the combination with a body supported on runners, of a sprocket wheel mounted in a hanger on the forward part of the body, a large sprocket wheel mounted in yielding bearings in rear of the first named sprocket wheel, a small sprocket wheel connected with the large sprocket wheel, a chain passing around said small sprocket wheel and the sprocket wheel at the forward part of the body, a sprocket wheel above the large sprocket wheel, and a chain having spurs thereon and passing around the large sprocket wheel and the sprocket wheel above the same, substantially as described.

3. In a velocipede, the combination with a body supported on runners, and a driving mechanism, of a saddle on the body, spring pressed slides, and rods connected with the slides and upon which the saddle rests, substantially as described.

4. In a velocipede, the combination with a body supported on runners, of slide frames depending from the body, spring pressed slides in the said frames, a sprocket wheel mounted in the lower ends of the slides, a sprocket wheel mounted in the upper ends of the said slides, a chain passing around said sprocket wheels, and provided with spurs, and an operating mechanism, substantially as described.

5. In a velocipede, the combination with a body supported on runners, of slide frames depending from the body, spring pressed slides in the said frames, sprocket wheels mounted in the said slides, a chain passing around the sprocket wheels and provided with spurs, an operating mechanism, a saddle on the body, and rods secured to the slides and upon which the saddle is supported, substantially as described.

6. In a velocipede, the combination with a body in the shape of a horse and supported in front on a single runner and at the rear on two runners, of slide frames depending

from the rear part of the body, spring pressed slides in the frames, a large sprocket wheel mounted in the lower ends of the slides, a small sprocket wheel mounted in the upper ends of the slides, a chain passing around the sprocket wheels and provided with spurs, a sprocket wheel secured to the large sprocket wheel, a hanger at the front of the body, a pedal shaft mounted in the said hanger, a sprocket wheel on the shaft, and a chain passing around the said sprocket wheel and the sprocket wheel secured to the said large sprocket wheel, substantially as described.

7. A velocipede, comprising a body in the shape of a horse, the front legs being curved as shown, a steering rod mounted in the front portion of the body, a runner on the lower end of the rod, a runner on each hind leg, a hanger secured to the front legs, a pedal shaft

mounted in the hanger and provided with a sprocket wheel, slide frames in rear of the hanger, spring pressed slides in the frames, a large sprocket wheel in the lower ends of the slides, a sprocket wheel in the upper ends of the slides, a chain provided with spurs passing around the sprocket wheels, a sprocket wheel secured to the large sprocket wheel, a chain passing around the said sprocket wheel and the sprocket wheel of the pedal shaft, a saddle on the body and rods connected to the slides and upon which the saddle is supported, substantially as herein shown and described.

SAMUEL YOUNG.

Witnesses:

JAMES M. HARNIG,
ASA A. PARKER.