

(No Model.)

W. S. BURGESS.
SLEIGH VELOCIPED.

No. 550,819.

Patented Dec. 3, 1895.

Fig. 1.

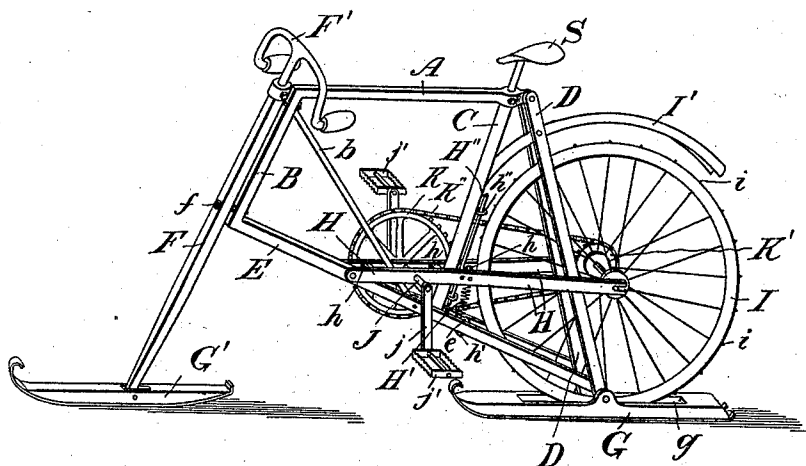
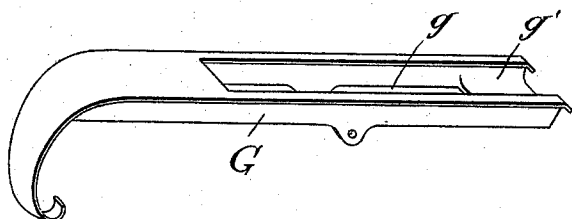


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM S. BURGESS, OF THREE RIVERS, CANADA.

SLEIGH-VELOCIPED.

SPECIFICATION forming part of Letters Patent No. 550,819, dated December 3, 1895.

Application filed February 4, 1895. Serial No. 537,190. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. BURGESS, of Three Rivers, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Sleigh-Velocipedes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part hereof.

My invention, which will be hereinafter fully set forth and claimed, relates to velocipedes adapted to be propelled on snow or ice.

The object of my invention is a sleigh of the velocipede and more particularly of the bicycle type and propelled by pedals and gear operating a driving-wheel.

Figure 1 is a perspective view of my improved sleigh-velocipede. Fig. 2 is a separate perspective view of the back runner seen from below.

My improved sleigh-velocipede consists, essentially, of a frame, the lower and extreme points of which are mounted on runners, the slanting front leg being hinged to the rear portion and provided with steering-handles, while the rear portion is provided with saddle, and of driving-gear consisting of a spiked wheel journaled in flexibly-connected arms and actuated by pedals, sprocket-wheels, and chain.

The main and rear portion of the frame consists of an approximately-horizontal top bar A, a short downwardly and forwardly slanting front bar B, rigidly connected to the front end of the bar A, a bar C, approximately parallel to the bar B and rigidly connected to the rear end of the top bar, a double downwardly-diverging and rearwardly-sloping bar or bars D D, having their upper ends secured to the joint of the top bar and bar C, extending down to the rear runner and adapted to straddle the driving-wheel, and a sloping bottom bar E, connecting the lower ends of the front bar, intermediate bar C, and back bars D, its rear end being split and forked to meet the two ends of the back bars. A brace *b* extends from the joint of the top and front bars to about midway of the sloping bottom bar E, near to its connection with the bar C. To the joint of the bars A, C, and D the saddle S is secured. To the front bar B is hinged by eye-bolts *f* or other suitable connections the front

leg F, parallel to the front bar B, and to the upper end of which is secured the steering-handle F', while to its lower end is pivoted a runner G', so that it may play in a vertical plane and adapt itself to the level and unevenness of the surface upon which it has to slide. A runner G is also pivoted to the lower ends of the back bar D, also adapted to play in a vertical plane. This runner is made of sufficient width to admit of a wide longitudinal slot *g* in the center, in which the rim of the driving-wheel may move freely. Forward of this slot the sole or face of the runner is of its full width, but at the rear the slot is made continuous in the shape of a groove *g'*, so that while the surface above it is left solid the lower one is in two strips and from the front end of the slot appears in the shape of a fork.

Two bars H, approximately horizontal when in their normal position, are pivoted at their forward ends to the bottom bar E side by side and one on each side of said bar and about midway between the front bar B and the intermediate bar C, passing clear outside of the latter and the rear bars D to a point about vertically above the pivot-point of the rear runner G. These bars are united with connecting-blocks in several places in their forward portion, such as *h h h*, thus making it practically one solid forked piece, which is adapted to swing freely on its pivotal connection with the bottom bar E. Said bar H has its movement limited, however, by a spring H', secured to the rear connecting-block *h* and to a connecting-block *e* in the bottom bar, through which latter the shank of the spring passes and is secured below by a nut *h'* for adjustment, drawing the said bar downward. A short rod H'' is also pivoted in the fork at the rear of and close to the intermediate bar C and is guided in a pair of staples or eyes *h''*, secured to the latter. As the forked bar H moves up and down, the rod H'', bearing in the eyes *h''*, moves up and down in the latter.

In the fork of the bar H and to the rear end of the same is journaled the spiked driving-wheel I. It may be of any desired construction, but having spikes *i* on its rim. The lower part of said wheel passes in the slot *g* of the runner G and bears upon the ground. Above the upper part extends a segmental

guard I', secured to the intermediate bar C and passing between and being secured to the bars D and protecting the rider from the spikes of the wheel. In the bar H, forward of the bar C, is also journaled the crank-axle J, with outside cranks *j* and pedals *j'*. Said axle has secured upon it the sprocket-wheel K outside of the bars H. The hub of the driving-wheel I has secured to it the sprocket-pinion K', and the two sprocket-wheels K and K' are connected by an endless chain K'', passing from inside of the wide rear end of the fork H to the outside of the narrower front end, where the sprocket-wheel K is situated, and is thus parallel to the longitudinal axis of the frame.

It will be noted that the weight of the rider is nearly vertical above the driving-wheel and that the center of the latter is vertically above the pivot of the back runner; also, that the bar or arms supporting the driving-wheel have an elastic supporting connection with the frame and that this connection is adjustable. This is effected by the spring H'. Should it be desired that the driving-wheel press harder on the roadway, the thumb-screw *h'* is tightened. If less pressure be wanted, the spring is slackened. In like manner the wheel will readily yield upwardly against the pressure of the spring, should it meet with any obstruction not encountered by the rear runner, independently of the frame A B C D E.

To promote smoothness of travel, the back runner is grooved at the rear, so that any un-

evenness made by the spikes of the driving-wheel remain untouched by the runner.

I claim as my invention—

1. In a sleigh-velocipede, the combination of a frame having downwardly, outwardly and rearwardly sloping double back bars, a downwardly and forwardly sloping intermediate bar and a rearwardly and downwardly sloping bottom bar forked to meet the double ends of the back bars, transversely connected horizontal bars or arms pivoted to said bottom bar and projecting rearwardly, a spiked driving wheel journaled in the rear end of said arms, a rod parallel to the intermediate bar secured to said arms and staples or eyes on said intermediate bar in which said rod is adapted to bear, substantially as set forth.

2. In a runner of a sleigh-velocipede, the combination with a bar with upturned front end having a broad running face, a wide groove leaving only a narrow margin at each side and extending from the rear end to within some distance of the point at which the front is turned up and a slot in the forward part of said groove adapted to admit the rim of a wheel and bearings at the upper edge adapted for pivotal connection to the double ends of a frame or legs, substantially as set forth.

In testimony whereof I have signed in the presence of the undersigned witnesses.

WM. S. BURGESS.

Witnesses:

A. TROWSSE,
B. HARVEY.