

UNITED STATES PATENT OFFICE.

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SLED.

SPECIFICATION forming part of Letters Patent No. 469,227, dated February 23, 1892.

Application filed September 7, 1891. Serial No. 404,976. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. BOUSE, a citizen of the United States, and a resident of Lorain, county of Lorain, State of Ohio, have
5 invented certain new and useful Improvements in Self-Propelling Sleds, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains
10 to make and use the same.

My invention relates to improvements in self-propelling sleds, the objects being to provide an easily propelled and guided vehicle for ice or snow; and it consists in the combination and arrangement of parts and construction of details, as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the drawings, Figure 1 shows a perspective view of my invention. Fig. 2 shows sectional views of runners, and Fig. 3 shows a sectional view of wheel. Fig. 4 shows a view of wheel-fork connection. Fig. 5 shows a rear elevation of vehicle. Fig. 5^a is a detail.

25 In the drawings, A is the main frame, separated in the rear in the two portions of the fork A'. The extremities of this fork are also separated in forks *a* to form a bearing for the spindles *a'*, to which the spokes *a²* of the runners B are secured. It will be seen that the frame A arches upward, but descends at its forward end, and with an upward curve is attached to the vertical spindle-bearing C, through which the steering-spindle D is inserted.
35 A suitable shoulder *d* on this spindle supports the frame A, and immediately below this point the vertical spindle forks to receive the spindle *d'*, to which the spokes *d²* of the guiding-runner D' are secured. A vertical sleeve at E, near the union of the fork with the frame A, supports the seat-spindle, which is vertically adjustable thereon to suit the height of the rider upon the seat.

45 F is the propelling-wheel, placed vertically between the sides of the fork A'. This wheel is supported upon the arms F' of the auxiliary fork, which is pivoted at its inner extremity at F² upon the standard-sleeve E. Chain gearing G connects the sprocket-wheel F³ upon the axis F⁴, connected with the crank, F⁵, operated by pedals *f*, attached to the main

frame A in such a position that they can be readily operated from the seat with the sprocket-wheel F⁶ upon the wheel-axis. The necessity of pivoting the wheel-axle supports
55 to the frame A will be seen in the changing depth to which the wheel will fall in passing over rough ground or in deep snows. The point of attachment of these supports at F² will be seen to be somewhat above the crank,
60 center at F⁴, the effect of which will be to tend to pull down the wheel F and keep the points in its surface in engagement with the snow or ice over which the vehicle passes. To augment this force and insure a close engagement, springs G' connect the wheel-axle supports to the extremities of the fork A', which
65 constantly tend to pull down the wheel and prevent slipping.

The sectional view of the wheel-rim is
70 shown distinctly in Fig. 3, where F is the rim of sheet metal, folded on its meeting edges, so as to secure the hardened points H, which may be either brazed or riveted between the edges, as desired.

75 The section of the runners is shown in Fig. 2, where *d²* are the spokes, inserted in the upper edge of the folded metal runner, and finally riveted or pinned, as shown. Either of the forms may be used.

80 On either side of the front or steering wheel are small sprocket-wheels I, pivoted to the double arm J, which is pivoted upon the axis of the runner. This arm also projects in front of the axis, and the arm I and wheels
85 are kept elevated by pressure upon the rod K, which passes up the handle-bar and is engaged by the hand-lever L, pivoted at *l*, which elevates or depresses the rod K, which is supported suitably in bearings *k*.

90 Springs *m* may be employed to force downward the wheels when the rod K is released.

The function of this device will be seen to be to afford a grip for the front runner for turning in smooth places. For such use the
95 wheels are permitted to fall upon the ice to prevent lateral movement by sliding.

In place of springs the extremity bearing the wheels may be weighted to accomplish the same purpose.

100 A step O is shown attached to the side of the frame to ascend into the seat.

Other slight modifications or additions may be made without altering the spirit of my invention.

In order to assist the pivotal bearing F^2 in supporting the fork vertically, the vertical plates R are secured to the inner sides of the forks A' , and rollers P are pivoted at p on the outer sides of the fork F' in such a position as to engage the plates and prevent friction in raising or lowering the wheel.

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

1. In a self-propelling sled, a hollow arched supporting-frame for an adjustable seat forked in the rear and provided with pedals and chain spindle-wheel, an auxiliary supporting-frame for the propelling-wheel, located within the fork of the main frame near its intersection with the fork, a sleeve for the steering-spindle at the forward extremity of the frame, a spindle passing through said frame and provided with a shoulder upon which said frame rests, a forked lower extremity, a runner pivotally connected to said extremity by means of wire spokes and sleeve, and runners pivotally connected with the forked extremities of the main fork of the frame, and springs connecting the auxiliary frame with the forks of the main frame, substantially as described.

2. In a self-propelling sled, a main frame A , curved in the form of an arc and forked at one extremity to admit a propelling-wheel within the fork, an auxiliary frame pivoted to the main frame and to the wheel-axis, a sprocket-wheel on the axle and a similar wheel and pedals on the main frame, a chain connecting the wheels, a seat vertically adjustable upon the frame, a steering-spindle pass-

ing through the front of the frame A and forked at its lower end, a sleeve pivoted in said fork to which the spokes of a runner are attached, and small wheels upon the bar pivoted upon the sleeve to removably touch the ice at either side of the runner, substantially as described.

3. In a self-propelling sled, substantially as described, a vertical steering-spindle provided with arms at its upper extremity and handles, a fork at the lower end to which a runner is pivotally connected by means of a sleeve and spokes, a bar pivoted upon the sleeve and projecting both rearward and forward, the rearward projection being provided with two sprocket-wheels separated so as to fall on either side of the pivot-runner, with means for raising the wheels when not in use, consisting of a rod supported upon the vertical steering-spindle and a hand-lever upon the handle-bar adapted to engage the end of the rod, as and for the purpose set forth.

4. In a self-propelling sled, a main frame A , curved in the form of an arc and forked at one extremity to admit a propelling-wheel within the fork, an auxiliary frame pivoted to the main frame and to the wheel-axis, vertical plates on the inner sides of the main fork, and rollers engaging said vertical plates and pivoted on the auxiliary frame, a sprocket-wheel on the main frame with pedals on the axis of the wheel, a similar wheel on the driving-wheel axis, and a chain connecting said sprocket-wheels, substantially as described.

WILLIAM G. BOUSE.

Witnesses:

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