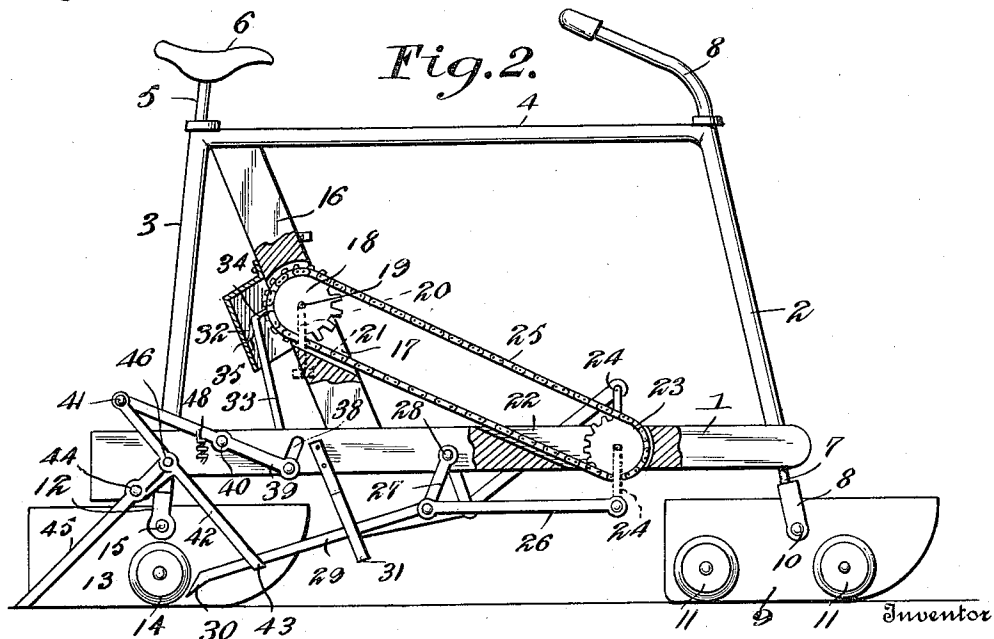
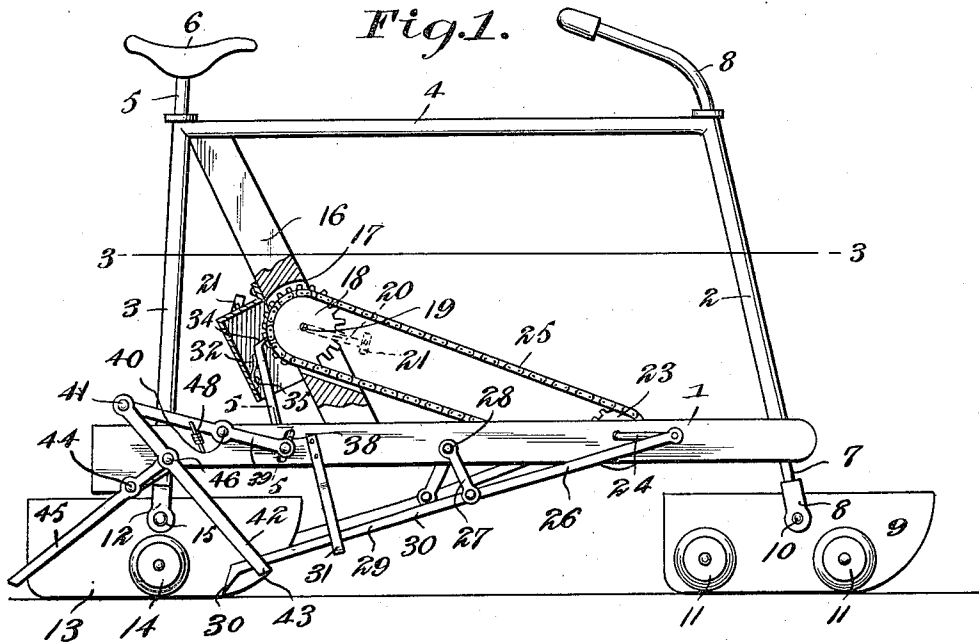


W. S. MOTSAO.  
SLEIGH CYCLE.  
APPLICATION FILED FEB. 2, 1915.

1,173,676.

Patented Feb. 29, 1916.  
2 SHEETS—SHEET 1.



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Witnesses

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Fig. 3.

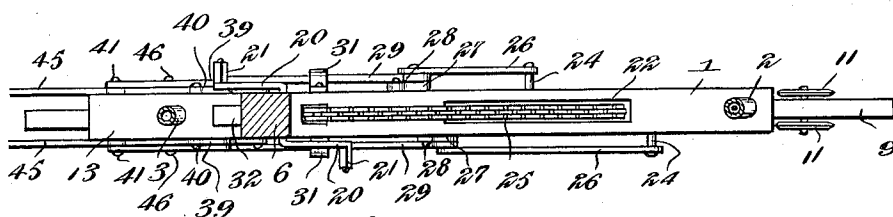


Fig. 4.

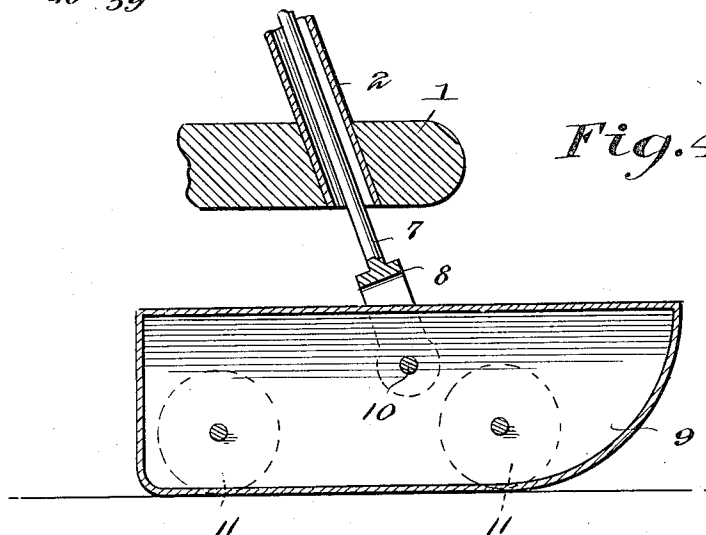
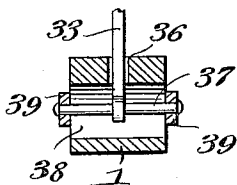


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM S. MOTSGO, OF BROAD MOUNTAIN, PENNSYLVANIA.

## SLEIGH-CYCLE.

1,173,676.

Specification of Letters Patent.

Patented Feb. 29, 1916.

Application filed February 2, 1915. Serial No. 5,648.

*To all whom it may concern:*

Be it known that I, WILLIAM S. MOTSGO, a citizen of the United States, residing at Broad Mountain, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Sleigh-Cycles, of which the following is a specification.

This invention relates to new and useful improvements in sleigh cycles, and has for its primary object to provide a device of this character in which means is provided for engagement with the road surface to propel the vehicle therealong.

A further object of the invention is to provide means operated by the pedals to apply a road engaging brake to retard the movement of the vehicle.

A further object of the invention is to provide suitable propelling means by operation of which the rider is permitted to coast at will.

Referring to the drawings; Figure 1 is a side elevation partly in section of the sleigh cycle showing the propelling mechanism in engagement with the road; Fig. 2 is a similar view showing the propelling mechanism out of engagement with the road and the brake mechanism applied; Fig. 3 is a top plan view; Fig. 4 is a detail view showing the means for mounting the front sleigh, and Fig. 5 is a sectional view taken on the line 5-5 of Fig. 1.

Referring more particularly to the drawings, the invention comprises a frame which consists of a lower horizontal member 1, vertically extending members 2 and 3, and an upper horizontal member 4 connecting said members 2 and 3. That part of the frame comprising the members 2, 3 and 4 is preferably formed of tubular members rigidly connected together, the tubular member 3 being adapted to receive the seat post 5 which carries the seat 6, and the member 2 being adapted to form a housing for the rod 7 upon the upper end of which is carried a pair of handle bars 8.

The lower end of the rod 7 is connected to a yoke 8 which in turn embraces the front sled member 9 and is pivotally secured thereto as at 10. The front sled is provided with oppositely arranged road engaging wheels 11, there being a forward pair and a rear pair as shown in Figs. 1, 2 and 4. These wheels are for the purpose of preventing sidewise skidding of the front sled 9.

As shown at 12 the lower end of the member 3 is provided with a yoke which embraces the upper edge of the rear sled 13 and is pivotally secured thereto as at 15. This sled is also provided with a pair of rollers 14 to prevent sidewise skidding thereof.

A diagonally extending brace 16 connects the frame members 1 and 4, and carried by said brace and mounted in a recess thereof is a sprocket wheel 18, said wheel being rotatably mounted in the recess 17 by means of the shaft 19, the opposite ends of which are provided with cranks 20 upon the free end of each of which is secured a pedal 21.

The frame member 1 is provided with a recess 22 and in said recess is mounted for rotation a crank wheel 23 the crank wheel 23 having rigidly secured thereto a pair of oppositely disposed cranks 24.

A chain 25 passes around the sprocket 18 and engages with sprocket teeth formed on the periphery of crank wheel 23 and forms the means for driving the crank wheel 23 from the sprocket 18 which in turn is rotated by the operator through the medium of the pedals 21.

Pivotally connected to each of the cranks 24 and extending rearwardly of the machine are pitmen 26 the rear end of each of which is pivotally connected to a depending link 27 which in turn is pivoted at its upper end as at 28 to the frame member 1. Extending rearwardly from the depending link 27 is a tractor or road engaging element 29 which has its rearward extremity bent angularly to its body portion to form a road engaging prong 30. This link 29 is pivoted at its forward end to the depending link 27.

Depending from the frame member 1 and rigidly secured thereto is a support 31 which acts to support the tractor members 29 in perfect longitudinal alinement.

It is to be understood that the above described mechanism is duplicated on the side of the machine opposite to the side shown in the drawings, and owing to the relative arrangement of the cranks 24 said mechanisms operate oppositely to each other.

Secured to the brace member 16 is a housing 32, and depending from said housing is a pawl 33 the upper extremity of which is formed with a sprocket engaging member 34 said member being retained in engagement with the sprocket 18 by means of the

spring 35 carried by the rear wall of the housing 32.

As shown in Fig. 5 the lower end of the pawl 33 passes through a recess 36 in the frame member 1 and is pivotally secured to a transverse rod 37 which is movable vertically in a slot 38 in the frame member 1. Extending rearwardly and upwardly from the transverse rod 37 are the rock arms 39 which are pivoted as at 40, said pivot being arranged at a point midway the extremities of the rock arm 39. Pivotally secured as at 41 to the rear end of each of the rock arms 39 is a depending lever 42 the lower end of which is bent to form a hook 43 the purpose of which will be hereinafter set forth.

Pivotally secured at a point intermediate their ends to the frame member 1 as at 44 are the road engaging brake elements 45, they being pivoted at their upper ends to the levers 42 as shown at 46.

Secured at one end to the frame member 1 and at the other end to the rock arm 39 at a point behind its pivot 40 is a spring 48 which tends to pull the rear end of the rock arm 39 downwardly to hold the brakes 45 normally out of engagement with the road surface.

Having thus described the invention the operation is as follows: A rider seated on the seat 6 rotates the sprocket wheel 18 by means of the pedals 21 and cranks 20, and through the medium of the chain 25 rotates the crank wheel 23. Upon rotation of the crank wheel 23 the pitmen 26 reciprocate forwardly and rearwardly, and when the same are moving forwardly the road engaging members 30 drag along the road surface offering little resistance to the forward movement of the vehicle. When the pitmen 26 move in a rearward direction the members 30 are caused to engage the road surface thus forcing the vehicle forward therealong. When it is desired to coast, the operator merely stops pedaling whereupon the operating parts will remain at rest. To apply the brakes the operator exerts backward pressure upon the pedals 21 whereupon the sprocket 18 owing to its engagement with the pawl 33 forces the same downwardly rocking the arm 39 on its pivot 40 against the tension of spring 48 thus elevating the rear end of the rock arm 39. This elevation of the rear end of the rock arm 39 lifts the levers 42 to raise the elements 30 out of engagement with the road surface, and upon the lifting of the levers 42 the brake members 45 are moved about their pivot 44 into engagement with the road surface as shown in Fig. 2.

Having thus described my invention what I claim as new, and desire to protect by Letters Patent is:

1. In a sleigh cycle, the combination with sprocket operated ground engaging elements for propelling said cycle; of a brake mechanism comprising a ground engaging brake element adapted to be moved into and out of contact with the ground, means normally holding said brake element out of contact with the ground, and means connecting said brake element and said ground engaging propelling elements governed by the movement of said sprocket in a reverse direction for engaging and disengaging the brake and propelling elements respectively with the ground.

2. A sleigh cycle comprising a frame having a sprocket operated ground engaging propelling element secured thereto; in combination with a brake mechanism comprising a ground engaging brake element pivoted to said frame, a lever pivoted intermediate its ends to one end of said brake element and provided at one end with a hook for engaging said propelling element, a rock arm pivoted intermediate its ends to said frame and connected at one end to the opposite end of said lever, means normally holding the latter end of said rock arm depressed to lift said brake element out of engagement with the ground, and a pawl connected at one end with the opposite end of said rock arm and engaging said sprocket at its opposite end, whereby movement of said sprocket in a reversed direction will move said rock arm against the tension of said rock arm depressing means.

3. A cycle sleigh comprising a frame having a sprocket operated propelling mechanism; in combination with a brake mechanism, said brake mechanism comprising a brake element pivoted to said frame and adapted to be moved to engage or disengage the ground at one end, a lever pivoted to the opposite end of said element, a rock arm pivoted intermediate its ends to said frame and connected at one end to the adjacent end of said lever, means for normally holding said rock arm and lever end in the depressed position, and a pawl pivoted to the opposite end of said rock arm and in engagement with said sprocket to slide over the teeth thereof when the latter is rotating in propelling direction.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM S. MOTSAGO.

Witnesses:

JOHN J. CONNORS,  
JAMES L. CUMMINGS.