G. J. GODIN.

WHEEL ATTACHMENT FOR SLEIGHS OR SLEDS.

APPLICATION FILED JUNE 13, 1921.

1,419,558.

Patented June 13, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

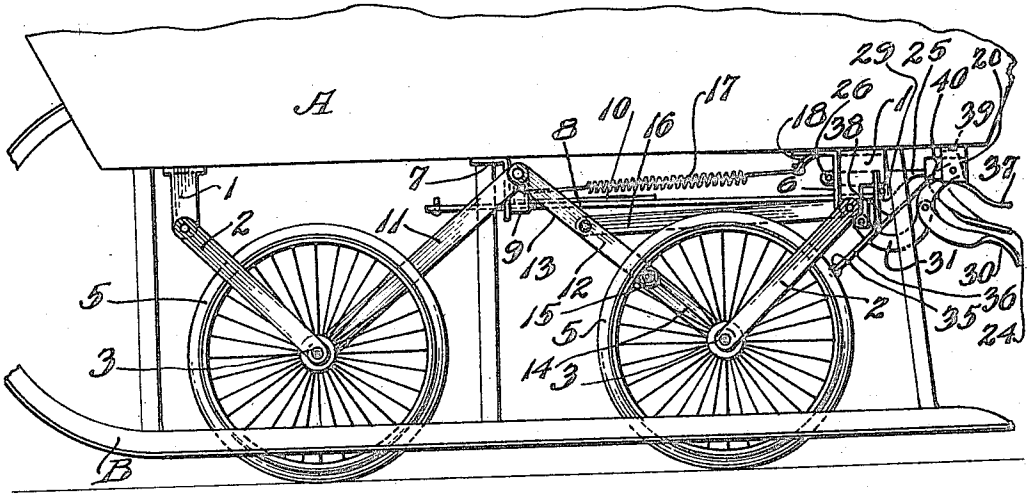
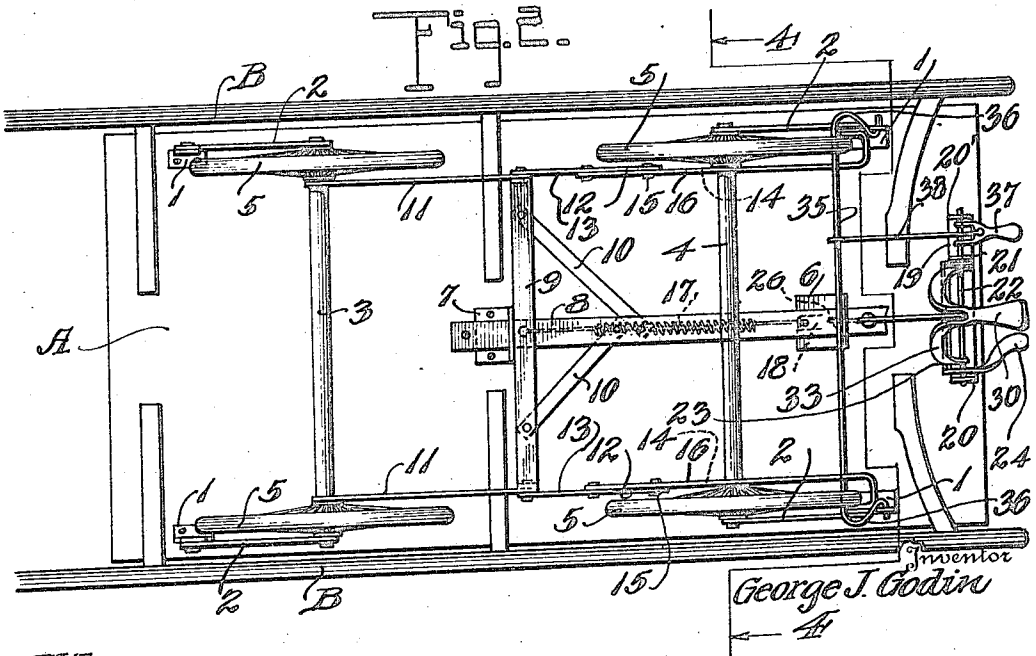


Fig. 2.



Inventor

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2 SHEETS—SHEET 2.

Fig. 3.

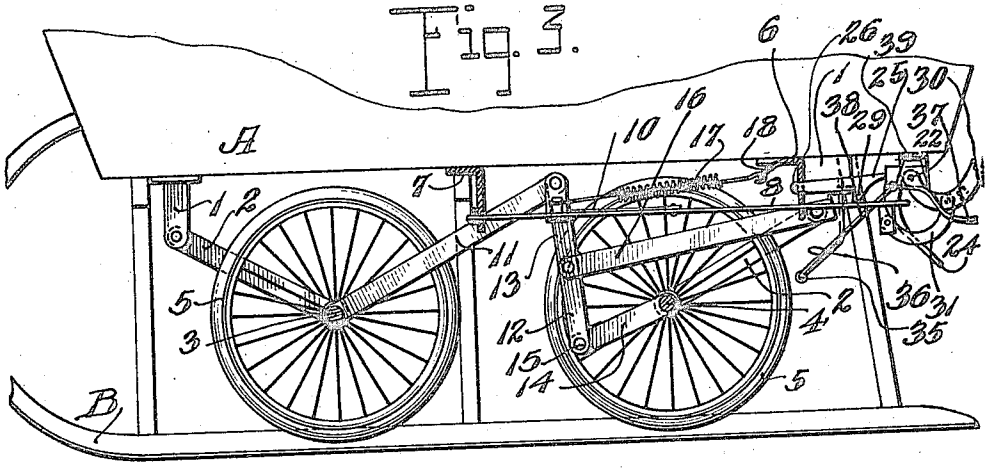


Fig. 4.

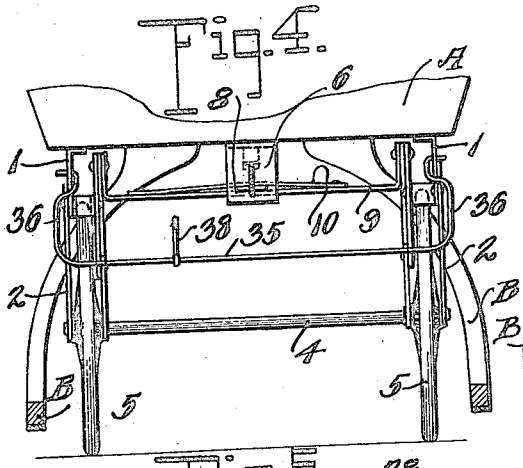


Fig. 5.

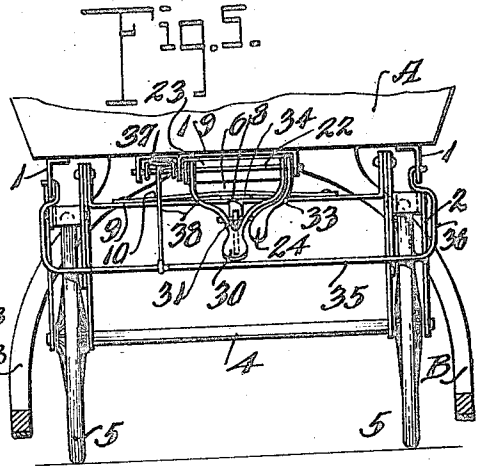


Fig. 6.

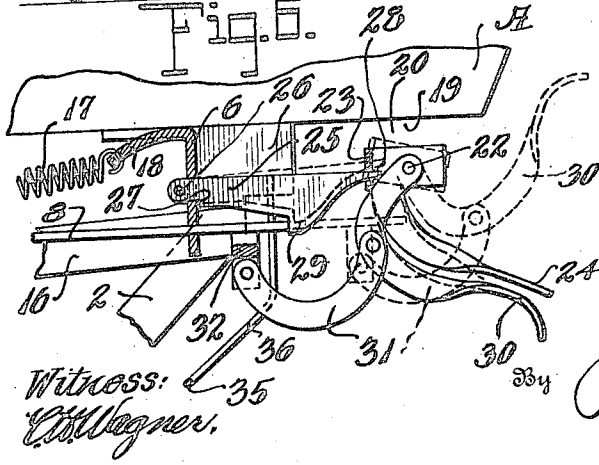
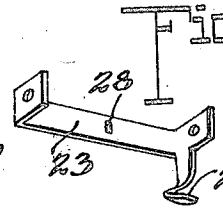


Fig. 7.



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UNITED STATES PATENT OFFICE.

GEORGE J. GODIN, OF ROCHESTER, NEW HAMPSHIRE.

WHEEL ATTACHMENT FOR SLEIGHS OR SLEDS.

1,419,558. Specification of Letters Patent. Patented June 13, 1922.

Application filed June 13, 1921. Serial No. 477,099.

To all whom it may concern:

Be it known that I, GEORGE J. GODIN, a citizen of the United States, residing at Rochester, in the county of Strafford and State of New Hampshire, have invented certain new and useful Improvements in Wheel Attachments for Sleighs or Sleds, of which the following is a specification.

My invention relates particularly to children's sleighs or sleds and has for its primary object to provide a wheel attachment therefor whereby the same may be quickly converted into a wheeled vehicle when passing over swept sidewalks or the like.

Another object of the invention is to provide a device of the above character which is inexpensive to manufacture, easy to install on any sleigh or sled without modification of the latter, and easy to manipulate.

While I have indicated that my invention is primarily for use on children's sleighs or sleds, it is to be understood that it may also be applied to invalids' rocking chairs and the like.

These and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be hereinafter specifically described and claimed.

Reference will now be had to the acccompanying drawings forming a part of this specification, wherein:

Figure 1 is a side elevation of a sleigh showing my wheel attachment applied thereto and the wheels in operative position.

Figure 2 is a bottom plan view of the construction shown in Figure 1.

Figure 3 is a side elevational view similar to Figure 1 but showing the wheels in inoperative position.

Figure 4 is a vertical transverse sectional view taken on the line 4—4 of Figure 2 and looking in the direction of the arrows.

Figure 5 is a rear elevation of the construction shown in Figure 1.

Figure 6 is a fragmentary view partly in section and on an enlarged scale showing the latch mechanism and operating pedals.

Figure 7 is a detail view of the latch actuating device.

Throughout the following detailed description and on the several figures of the drawing, similar parts are referred to by like reference characters.

Referring to the drawings, the reference character A represents the body of a child's sleigh and B the runners thereof.

Attached to the bottom of the sleigh body are four brackets 1 to which are pivotally connected at one end the links 2. The other ends of the links 2 are pivotally connected to the ends of the front and rear axles 3 and 4 upon which are journaled the wheels 5. Also secured to the bottom of the sleigh body along the longitudinal axis thereof are spaced brackets 6 and 7 each having a depending slotted arm.

Slidably mounted in the slots of the depending arms of the brackets 6 and 7 is a member 8. Fixed to the front end portion of the sliding member 8 in rear of the depending arm of the bracket 7 is a transverse member 9, and connected to the members 8 and 9 are the diagonal brace members 10. The members 8, 9 and 10 form a rigid frame which is slidable longitudinally of the bottom of the sleigh body.

The ends of the member 9 are turned upwardly at right angles thereto and pivotally connected to these upturned ends at one end are the links 11 having their opposite ends pivotally engaged with the front axle 3. Also pivotally connected at one end to the upstanding ends of the member 9 are the toggles 12 which have their opposite ends pivotally engaged with the rear axle 4. Each toggle 12 comprises links 13 and 14 pivotally jointed at 15. Links 16 are pivotally connected at one end to the depending arms of the rear pair of brackets 1 by the same pivot pins which connect the ends of the rear links 2 to these arms and the links 16 are pivotally connected at their opposite ends to the links 13 of the toggle 12 intermediate the ends of the latter links. A coil spring 17 is connected at one end to a lug 18 depending from the bracket 6 and at its other end to the front end portion of the sliding member 8.

Secured to the under-side of the sleigh body at the rear end thereof is the transversely extended elongated bracket 19 having its ends 20 and 20′ bent downwardly at right angles thereto and also having an intermediate downwardly extending arm 21. Fixed in the arms 20 and 20′ and 21 is a

pivot rod 22 and pivoted on the rod 22 between the arms 20 and 21 is a latch operating member 23 shown in detail in Figure 7. The latch operating member comprises a narrow strip of metal having its ends bent at right angles thereto and perforated to receive the pivot rod 22. Integral with one end of the strip is a pedal member 24.

A latch member 25 has one end projecting through a vertical slot in the depending arm of the bracket 6. A pin 26 extending through this end of the member holds the member against rearward movement while the shoulder 27 prevents forward movement thereof. The member 25 extends rearwardly from the depending arm of the bracket 6 and has its rear end pointed and extending through a perforation 28 in the latch operating member 23 intermediate the ends of the latter. The latch member 25 is provided intermediate its ends with a depending shoulder 29 adapted to engage behind the rear end of the sliding member 8 to hold the wheels 5 in lowered position as to be hereinafter explained.

For operating the sliding member 8 to lower the wheels to operative position a pedal member 30 is provided pivoted upon the rod 22 between the depending arms 20 and 21 and connected by a link 31 to a lug 32 depending from the member 8. The pedal member 30 is bifurcated at one end and the arms 33 thereof are perforated at their ends to receive the pivot rod 22. A pin 34 extends between the arms 33 near the tread portion of the pedal member 30 and one end of the link 31 is pivoted upon this pin.

A brake rod 35 extends transversely of the rear of the sleigh in position to engage the peripheries of the rear wheels 5. The brake rod 35 has its end portion 36 bent at right angles thereto and pivoted in the depending arms of the rear pair of brackets 1. An operating pedal 37 for the brake rod is pivoted upon the rod 22 between the depending arms 20′ and 21 of the bracket 19 and a link 38 connects the pedal 37 with the brake rod 35. The pedal 37 has an edge 39 which engages the bracket 19 to hold the pedal raised and the brake rod out of engagement with the wheels and another edge 40 for cooperation with the bracket 19 to hold the pedal depressed and the brake in engagement with the wheels.

The operation of the device is as follows: The normal position of the wheels is shown in Figure 3 in which they are shown raised out of contact with the ground. When it is desired to lower the wheels to operative position the operator places his foot upon the pedal 29 and depresses the same causing the member 8 to slide forwardly in the depending slotted arms of the brackets 6 and 7 and carry with it the rigidly connected member 9. The forward movement of the member 9 forces the links 11 which are connected to the axle 3 forwardly and causes the axle 3 to move forwardly and downwardly due to the link connection 2 between the axle 3 and the depending arms of the front pair of brackets 1. At the same time the forward movement of the member 9 also causes the links 13 of the toggles 12 to swing in an anti-clockwise direction about their pivotal connections with the link 16, thus straightening the toggles 12 and lowering the rear pair of wheels 5. When the sliding member 8 has moved forwardly to a position to bring its rear end in front of the depending shoulder 29 of the latch member 25 said shoulder drops behind the rear end of the sliding member 8 and holds the latter in operative position. This position of the sliding member 8 and latch member 25 is shown in Figure 6. By reference to this figure it will be noted that the latch operating member 23 tends to rotate by gravity in an anti-clockwise direction so that when the sliding member 8 is moved forwardly by means of the foot pedal 30 the latch member 25 will automatically engage the sliding member 8. When it is desired to move the wheels to inoperative or raised position the operator will place his foot in such position as to engage both the pedal 24 of the latch operating member 23 and the pedal 29. He will then depress the pedal 24 to raise the latch member 25 and release the sliding member 8. When the sliding member 8 is thus released the tension of the spring 17 and the weight of the sleigh will cooperate to raise the wheels to inoperative position. In order to prevent the jar resulting from the sudden raising of the wheels the operator will bear upon the pedal 29 with his foot permitting it to rise slowly, thus retarding the upward movement of the wheels.

While I have described the members 12 as toggles, it will be noted that the links 2 and 11 which connect the front axle 3 to the front pair of brackets 1 and to the upturned end of the member 9 are also in the nature of toggles, so that really both front and rear axles are suspended from the sleigh by toggles and the raising and lowering of the wheels is accomplished by a braking or straightening movement of these toggles.

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

1. The combination with a sleigh, of front and rear axles therefor, a pair of wheels carried by each axle, a hanger for each axle pivotally connected thereto at one end and at the opposite end to the sleigh, a member mounted for reciprocation in fixed bearings beneath the sleigh body, means connecting said reciprocating member with said axles whereby to raise and lower said wheels upon

movement of said member in opposite directions, means for moving said reciprocating member in said opposite directions, and latch means for engaging said reciprocating member to hold the wheels in lowered position.

2. The combination with a sleigh, of front and rear wheel supports shiftably connected to the sleigh, connecting means intermediate the front and rear wheel supports operable to move the latter to and from operative position, and actuating means connected with the connecting means intermediate said wheel supports whereby to shift said connecting means to cause the wheel supports to move toward each other into one of the positions aforesaid.

3. The combination with a sleigh, of front and rear wheel supports swingingly connected to the sleigh, jointed connecting means intermediate said wheel supports, and actuating means connected to said jointed means for shifting the latter to swing the wheel supports to and from operative position.

4. The combination with a sleigh, of front and rear wheel supports swingingly connected to said sleigh, a toggle connecting means intermediate the wheel supports for sustaining said supports in operative and inoperative position, lever means connected to said toggle means and operable to break the joint for shifting the wheel supports into elevated inoperative position.

5. The combination with a sleigh, of front and rear axles therefor, a pair of wheels carried by each axle, means for suspending each axle from the under-side of the sleigh body comprising a pair of links pivotally connected at one end to the opposite ends of the axle and pivotally connected at the opposite end to the sleigh, a member mounted for reciprocation in fixed bearings beneath the sleigh body, means connecting said reciprocating member with said axles whereby to raise and lower said wheels upon movement of said member in opposite directions, comprising a link pivotally connected at one end to the front axle and at its opposite end to said reciprocating member, and a toggle pivotally connected at one end to the rear axle and at its opposite end to said reciprocating member, and means for moving said reciprocating member in opposite directions.

6. The combination with a sleigh, of front and rear axles therefor, a pair of wheels carried by each axle, a hanger for connecting each axle with the sleigh for rocking movement in a vertical plane while maintaining parallelism with the under-side of the sleigh body, a member mounted for reciprocation in fixed bearings beneath the sleigh body, means connecting said reciprocating member with said axles whereby to raise and lower said wheels upon movement of said member in opposite directions, means for positively moving said member in one direction to lower the wheels, a latch adapted to automatically engage said member to hold the wheels lowered, and means for operating said latch to release said member.

7. The combination with a sleigh, of front and rear axles therefor, a pair of wheels carried by each axle, means for suspending each axle from the under-side of the sleigh body, comprising a pair of links pivotally connected at one end to the opposite ends of the axle and pivotally connected at the opposite end to the sleigh, a member mounted for reciprocation in fixed bearings beneath the sleigh body and longitudinally thereof, a member fixed to said reciprocating member and extending transversely of the sleigh body, a pair of links pivoted at one end to the opposite ends of said transverse member and at the opposite end to the front axle, a pair of toggles pivotally connected at one end to the opposite ends of said transverse member and at the opposite end to the rear axle, a link for each toggle pivotally connected at one end to one member of the toggle and at its opposite end to the sleigh, and means for moving said reciprocating member in opposite directions.

8. The combination with a sleigh, of front and rear axles therefor, a pair of wheels carried by each axle, a hanger for connecting each axle with the sleigh and permitting the wheels to be raised and lowered with respect to the sleigh body, a member mounted for reciprocation in fixed bearings beneath the sleigh body, means connecting said reciprocating member with said axles whereby to raise and lower said wheels upon movement of said member in opposite directions, a bracket mounted beneath the rear end of the sleigh body, a foot-pedal pivoted to said bracket and operatively connected to said reciprocating member whereby to positively move said reciprocating member in one direction to lower the wheels, means for moving said reciprocating member in the opposite direction to raise the wheels, a latch adapted to automatically engage said reciprocating member to hold said wheels lowered, a latch operating member whereby to release said reciprocating member from said latch pivotally connected to said bracket in position to be engaged by the foot simultaneously with said foot-pedal whereby an operator is enabled to release said reciprocating member from said latch and at the same time prevent the sudden raising of the wheels by engagement of his foot with the foot pedal.

In testimony whereof I affix my signature.

GEORGE J. GODIN.