Nov. 27, 1923. 1,475,877

J. G. REGAN

SLED

Filed Nov. 18, 1921 2 Sheets-Sheet 1

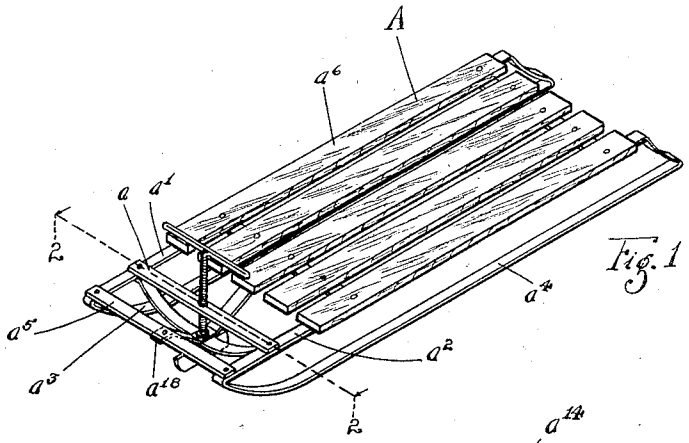


Fig. 1

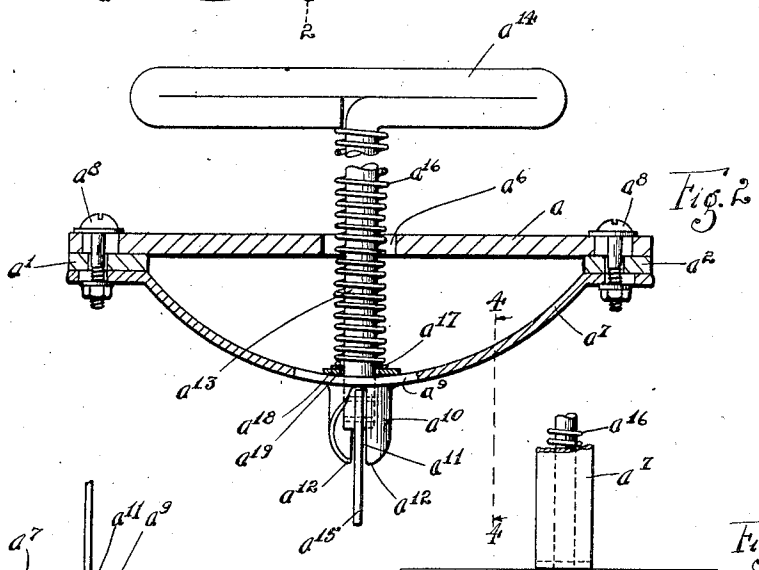


Fig. 2

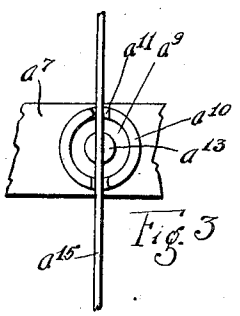


Fig. 3

Fig. 4

Inventor

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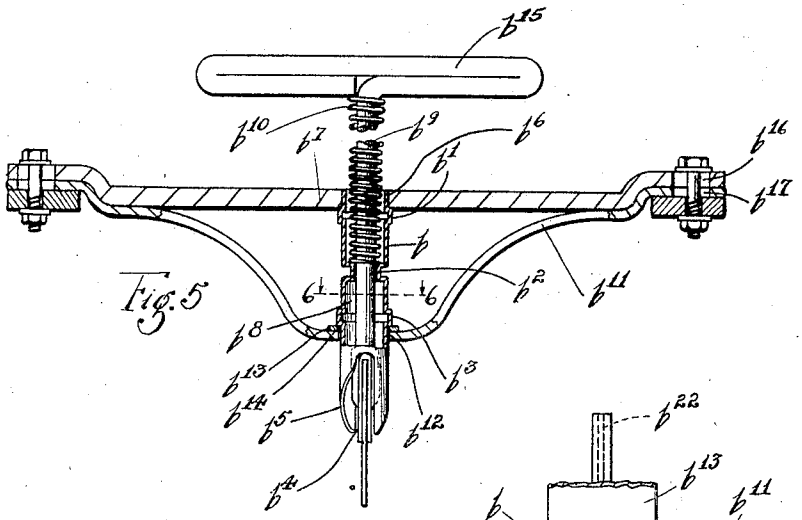


Fig. 5

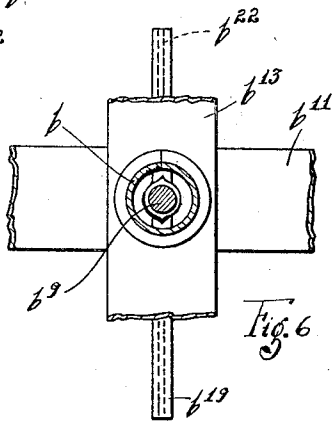


Fig. 6

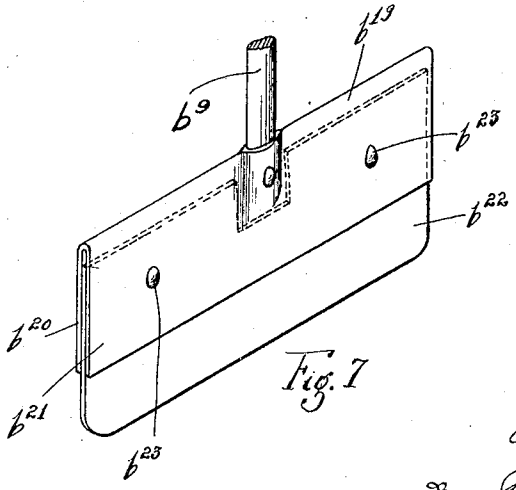


Fig. 7

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Patented Nov. 27, 1923. 1,475,877

UNITED STATES PATENT OFFICE.

JOHN G. REGAN, OF NEWPORT, KENTUCKY.

SLED.

Application filed November 18, 1921. Serial No. 516,009.

To all whom it may concern:

Be it known that I, JOHN G. REGAN, a citizen of the United States of America, and resident of Newport, in the county of Campbell and State of Kentucky, have invented a new and useful Improvement in Sleds, of which the following is a specification.

An object of my invention is to provide a steering device for sleds, which will automatically resume an inoperative position when released from the influence of the operator.

Another object of my invention is to provide a device of the type referred to, wherein the steering member or rudder will automatically assume a position in alignment with the normal line of motion of a sled when the rudder is out of control of an operator.

Another object is to provide a device that is simple and efficient in construction, and operation.

These and other objects are attained by the means described herein and disclosed in the accompanying drawing in which:

Fig. 1 is a perspective view of a sled, having mounted upon it a steering device embodying my invention.

Fig. 2, is an enlarged sectional view in line 2—2 of Fig. 1.

Fig. 3, is an inverted plan view of a rudder and its mounting means, all of which form details of my invention.

Fig. 4, is a sectional view in line 4—4 of Fig. 2.

Fig. 5, is a sectional view similar to Fig. 2, showing a modified construction.

Fig. 6, is an enlarged sectional view on line 6—6 of Fig. 5.

Fig. 7, is an enlarged perspective of a rudder and its mounting, all of which form details of my invention.

My invention comprises a bar a, which may be mounted upon the body supports a' and a^2, one each of which supports is mounted at the opposite sides of the sled A, and part of which supports are bent upon themselves to form runners a^3 and a^4. The supports a' and a^2, may be secured upon one another in spaced relation by any suitable means such as cross members a^5. Suitable slats all form the body or bed of the sled. The bar a has a central slot or perforation a^6 the axis of which slot extends in a substantially vertical plane. A band a^7 is mounted upon the supports a' and a^2 and extends transversely of the sled below the bar a. The bar and the band are secured upon these supports a' and a^2 by any suitable means such as bolts a^8. The band a^7 has a bore a^9 in alignment with the slot a^6 in the bar a. A sleeve or tube a^{10} is formed on the lower side of the band concentric with the bore a^9. A slot a^{11} is formed diametrically through the tube, said slot extending longitudinally of the sled. The lower ends of the tube sections are cut away along spiral lines extending about the tube in a common direction wherefore the noses a^{12} formed upon the two halves of the tube are disposed diametrically opposite one another. A shaft a^{13} extends reciprocally through the bores in the bar and the band, its opposite ends projecting above the bar and below the band. The upper end of the shaft has a handle a^{14} formed upon it, and the lower end of the shaft has mounted upon it a rudder a^{15} which may enter the slots formed in the sleeve. A brace a^{18} may have its opposite ends secured upon the cross member a^5 and upon the body of the sled and have formed in it a slot a^{19} through which the shaft a^{13} may extend. A spring a^{16} is mounted upon the shaft a^{13} and its opposite ends abut the handle a^{14} and a washer or collar a^{17} in engagement upon the upper surface of the brace a^{18}.

Although I have shown the bar a with a slot a^6 of a size sufficient to permit the spring a^{16} to extend through, it is readily apparent that a collar may be mounted upon the shaft a^{13} below the bar a, upon which collar the upper end of the spring may engage, thereby giving to the shaft the additional support incident to a reduced bore a^6, the walls of which bore will support the shaft.

In the modification shown in Figs. 5 and 6, the sleeve b is formed from a flat plate, which has been stamped so as to provide the ribs or lugs b', b^2, and b^3, and has notches b^4, cut in its one end, which, when the plate is given a cylindrical form, provide the spiral faces b^5. The sleeve extends into the slot b^6 formed in the bar b^7, and the lug b' abuts the bar. The lug b^2 extends into the way b^8 extending thru the cylinder, and serves as a bearing for the shaft b^9 and as an abutment for the spring b^{10}. The band b^{11} has a bore b^{12} and the brace b^{13} has a bore b^{14} thru which bores the lower end of the sleeve may be inserted. The lug b^3 limits the extent to which the sleeve may

extend thru the band and brace, wherefore this structure provides a firm support for the lower end of the sleeve and precludes separation of the sleeve from the several other elements. The bar may be depressed to permit the handle b^{15} to lie below the body or bed of the sled when the rudder is in its operative position. The band is given a structure such that the progress of the sled will not be impeded because of the band engaging the snow for any extended distance. The slots b^{16} and b^{17} in the bar and band respectively permit mounting of the device on sleds of varying widths.

The lower end of the shaft b^9 carries an apron b^{19} of a substantially U shape, between the arms b^{20} and b^{21} of which the rudder b^{22} may be inserted. The apron is riveted to the shaft and the rudder is riveted to the apron, wherefore the rudder can be readily replaced by knocking out the rivets b^{23}.

In the operation of my device an operator would bear down upon the handle a^{14} so as to disengage the rudder from the sleeve wherefore the rudder is brought in contact with the snow or the way over which the sled is traveling. By manipulating the rudder the sled may be guided in its path. When the pressure on the handle is released, the spring will elevate the rudder and bring it into engagement with the sleeve. The lower spiral ends of the sleeve will cause the rudder to turn upon its axis so that it will assume a position in the slot a^{11} in alignment with the normal line of movement of the sled, thereby offering no resistance to the sled's passage over the snow.

What I claim is:

1. The combination of a sled, a cross bar, a band spaced from the cross bar, the bar and band having aligned vertical bores, a shaft mounted reciprocally in the bores, a rudder on the lower end of the shaft, a handle on the upper end of the shaft, a spring mounted on the shaft, the opposite ends of the spring abutting the band and the handle, and a slotted sleeve having a bore in alignment with the bores in the band and bar, the slot in the sleeve extending longitudinally of the sled and in which the rudder is adapted to seat.

2. The combination of a sled, a cross bar, a band spaced from the cross bar, the bar and band having aligned vertical bores, a shaft mounted reciprocally in the bores, a rudder on the lower end of the shaft, a handle on the upper end of the shaft, a spring mounted on the shaft, the opposite ends of the spring abutting the band and the handle, and a slotted sleeve having a bore in alignment with the bores in the band and bar, the slot in the sleeve extending longitudinally of the sled and in which the rudder is adapted to seat, the sleeve having spiral lower ends extending in a common direction from the slot in the tube.

In testimony whereof, I have hereunto subscribed my name this 15th day of November, 1921.

JOHN G. REGAN.