A. ROLEY.

SLED.

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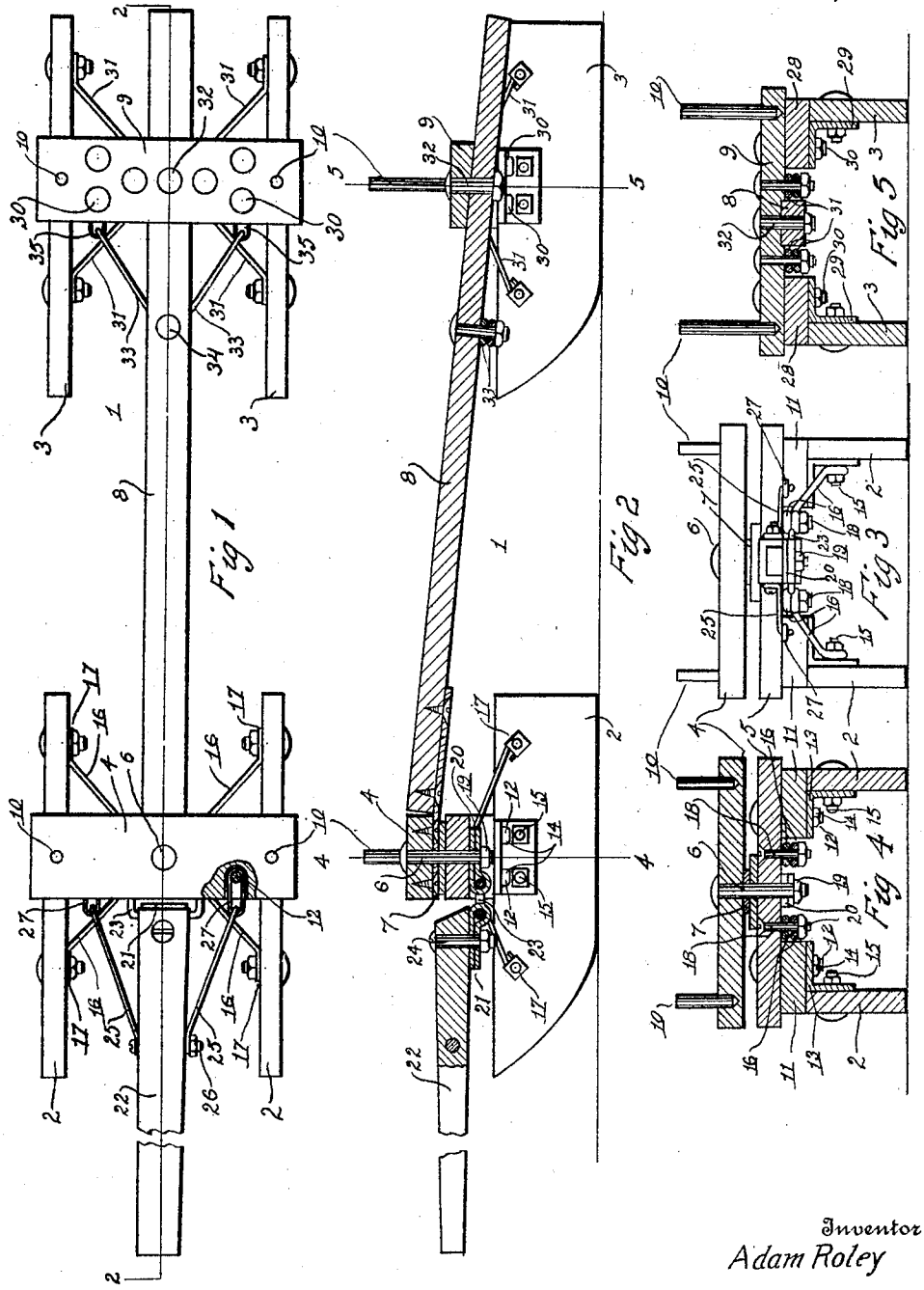


Fig 1

Fig 2

Fig 3

Fig 4

Fig 5

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To all whom it may concern:

Be it known that ADAM ROLEY, a citizen of the United States, residing at Basil, in the county of Fairfield and State of Ohio, has invented certain new and useful Improvements in Sleds, of which the following is a specification.

This invention relates to improvements in sleds, and has particular reference to that class of sleds commonly termed bob sleds.

The object of the invention is to provide a sled of this character which shall be simple in construction yet characterized by its general strength and durability.

Another object resides in a sled of the aforesaid description wherein improved means have been provided for bracing and supporting the runners thereof, so that the latter will be capable of receiving the many complex stresses imparted thereto without liability of becoming broken or out of order.

A further object of the invention rests in the manner of connecting the tongue structure of the sled to the bolster frame, in order that said tongue will be permitted to oscillate in desired directions without binding or engaging adjacent stationary parts, and to construct the connecting elements of said tongue in an efficient and thoroughly braced manner to prevent disorder between the working parts thereof.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the novel features of construction, combination of elements and arrangement of parts, hereinafter to be fully described and to have the scope thereof pointed out in the appended claims.

In the accompanying drawing, forming a part of the specification, and in which similar characters of reference denote like and corresponding parts,

Figure 1 is a top plan view of the improved bob sled comprising the present invention,

Figure 2 is a vertical longitudinal sectional view taken along the line 2—2 of Figure 1,

Figure 3 is a front elevation of the forward portion of the sled,

Figure 4 is a transverse vertical section taken along the plane disclosed by the line 4—4 of Figure 2, and

Figure 5 is a similar view taken along the line 5—5 of Figure 2.

Referring more particularly to the features of the invention, as they have been exemplified in the accompanying drawing the numeral 1 designates the improved bob sled in its entirety. This sled is formed to comprise a forwardly situated set of transversely spaced parallel runners 2, and a similar set of rearwardly situated runners 3. Located above the runners 2 is a transversely extending front bolster 4, beneath which is pivotally mounted a parallel beam 5, a king bolt 6 being disposed to centrally pass through aligning openings formed in both the bolster and beam to effect the pivotal mounting of the latter. A metallic wear plate 7 is secured, in this instance, to the underface of the bolster 4 in order to receive such wear as is incident to the turning of the elements about the king bolt 6. Also secured to the plate 7 is a forward end of a reach member 8, which latter being disposed to extend longitudinally of the sled 1 and has its rear end suitably connected with a rear bolster 9, to which the runners 3 are connected. Load sustaining standards 10 project vertically upward from both of said bolsters and serve to retain the matter carried by the sled against displacement, or if desired a suitable body structure, not shown, may be supported by these standards.

In order to securely unite the runners 2 with the beam 5, the latter is provided with depending spaced blocks 11 through which pairs of vertically disposed bolts 12 are adapted to pass so that the blocks may be firmly secured to the underface of the beam. These bolts 12 are also arranged to pass through a pair of angle members 13, and nuts 14 are threaded upon the ends of said bolts, so that the beam 5, its blocks 11 and the members 13 may be securely united in a rigidly assembled condition. The vertical sides of the members 13 are arranged to engage with the inner sides of the runners 2 and securing devices 15, in this instance bolts, are disposed to pass through said runners and through the co-operating portions of said angle members in order that the runners may be substantially connected with the beam structure 5. By virtue of this construction, means have been provided for effecting a homogeneous union between the runners 2 and the associated beam structure so that the various lateral stresses to which the runners will be placed will be amply provided for and undue fracture between parts

precluded. However, in order to strengthen the outer portions of the runners 2, and to relieve the angle members 13 of the burden of absorbing the runner stresses, the invention contemplates the provision of angularly disposed truss members 16. These members have their outer ends secured as at 17 to the adjacent ends of the runners 2. The inner ends of said rods extend or terminate contiguous to the central portion of the beam 5, and bolts 18 are employed to pass through the meeting extremities of these truss members and to rigidly unite the same to said beam. Through this manner of connecting the front runners to the beam an exceptionally strong and substantial construction is provided, in view of the fact that said runners will be fully braced against lateral pressures.

Carried by the lower end of the king bolt 6 and confined between its securing nut 19 and the underface of the beam 5 is a clevis 20, and a similar co-operating clevis 21 is secured to the inner end of a tongue structure 22, a link 23 being utilized in this instance to pass through the eyes formed in said clevises so that the tongue structure will be permitted to oscillate vertically, in order that the same will assume positions best adapted for draft purposes. A bolt 24 may be employed to connect the clevis 21 with the tongue 22. The inner end of the tongue 22 is adapted preferably to lie on a plane substantially below the front bolster 4, so that the pivoting of the front runners will take place about a relatively extended arc without binding occurring between the end of the tongue and adjacent portions of the bolster 4. This construction is particularly desirable in the execution of relatively sharp turns. To brace the tongue structure against lateral stresses and to enable the draft power to be directly applied to the runners 2 without passing through the clevises 20 and 21, use is made of a pair of braces 25, which have their forward ends secured to the tongue by means of a transverse bolt 26, and the rear ends of these braces 25 are connected with links 27, which are rigidly carried by the beam 5, said links being preferably secured to the beam 5 by means of the bolts 12, so that the latter may be usefully employed in the dual capacity of uniting the blocks 11 with said beam and also for rigidly retaining the links 27 in such positions as to receive the draft power transmitted thereto through the braces 25.

The reach member 8 extends rearwardly of the sled and is arranged, in this instance to pass under the rear bolster 9, whereby rearwardly directed inclination found in sleds of this character will be provided. The rear runners 3 are connected with the bolster 9 in approximately the same manner as is employed in connecting the front runners with the beam 5. Therefore, the bolster 9 has its underface provided with depending blocks 28, to which are secured angle members 29, which correspond in utility and construction to the angle members 13. These angle members 29 are bolted as at 30 to the blocks 28 and to the inner faces of the runners 3. Angularly disposed truss members 31 are also connected with the ends of the runners 3 and with the bolster 9, these latter members functioning, as the members 16 to substantially brace the runners 3 and to securely unite the same in unison with the bolster 9. A vertically disposed bolt 32 passes centrally through the bolster 9 and through the adjacent portion of the reach member 8, thereby serving to secure said bolster and its associated parts in connection with the reach member. This relationship between said bolster and the reach member may be of an adjustable nature if desired. To relieve the bolt 32 of draft strains, use is made of a pair of links 33, which have their forward ends connected with a bolt 34 carried by the reach member, the rear ends of the links 33 being disposed to engage with eyes 35 rigidly carried by the bolster 9. Said eyes are preferably retained in position by means of the bolts 30 which are employed to unite the block 28 and the angle members 29 to the underside of the bolster 9. The links 33 further function to prevent oscillation or pivotal movement of the bolster 9 about the rear end of the member 8, in order that the rear runners will follow the general course of movement of the sled as a whole.

From the foregoing description, taken in connection with the accompanying drawing, it will be apparent that there is provided a sled of the character stated which possesses exceptional strength and improved features of construction which insure the long life of the sled. Through the manner described for connecting the runners of the sled with their associated frames the possibility of the runners collapsing or buckling under the influence of lateral stresses is avoided and in this manner one of the common weaknesses, hitherto found in sleds of this class eliminated. In view of the foregoing it is thought that the operation, construction and advantages of the invention will be clearly perceived by those versed in the art, and therefore a more extended explanation has been accordingly omitted.

What I claim is:

1. In a bob-sled, a bolster, a cross bar disposed beneath said bolster, a pivotal connection intermediately of the length of said cross bar for connecting the latter with said bolster, blocks fixed to the under and outer portions of said cross bar, angle brackets having their horizontal legs secured to said blocks, a pair of spaced parallel and ver-

tically arranged runners secured to the vertical legs of said brackets, and rigid outwardly diverging brace rods having their inner ends connected with said cross bar and their outer ends connected with said runners at points spaced from said angle brackets.

2. In a bob sled, a cross bar, blocks fixed to the under and outer portions of said cross bar, angle brackets having their horizontal legs secured to said blocks, a pair of spaced parallel and vertically arranged runners secured to the vertical legs of said brackets, and outwardly diverging brace rods having their inner ends connected with said cross bar and their outer ends connected with said runners at points spaced longitudinally from said angle brackets.

3. In a bob sled, a bolster, a cross bar disposed beneath said bolster and pivotally connected therewith, blocks carried by the under and outer portions of said bolster, fixed angle brackets secured to said blocks, spaced runners connected with said angle brackets, brace rods between said runner and said cross bar, a pivotally mounted tongue connected with said cross bar, and braces between said tongue and said cross bar.

4. In a bob sled, a bolster, a cross bar underlying said bolster, a king bolt passing through the intermediate portions of said cross bar and bolster and serving to pivotally unite the same, a tongue, a plate having an eye formed therein secured to the under portion of said cross bar by said king bolt, a second plate secured to the inner end of said tongue and having an eye formed therein, and a link arranged to pass through the eyes provided in said plates for pivotally connecting the tongue to said cross bar.

In testimony whereof I affix my signature.

ADAM ROLEY.