

J. STEVENS.

Sleigh.

No. 45,874.

Patented Jan. 10, 1865.

Fig 1

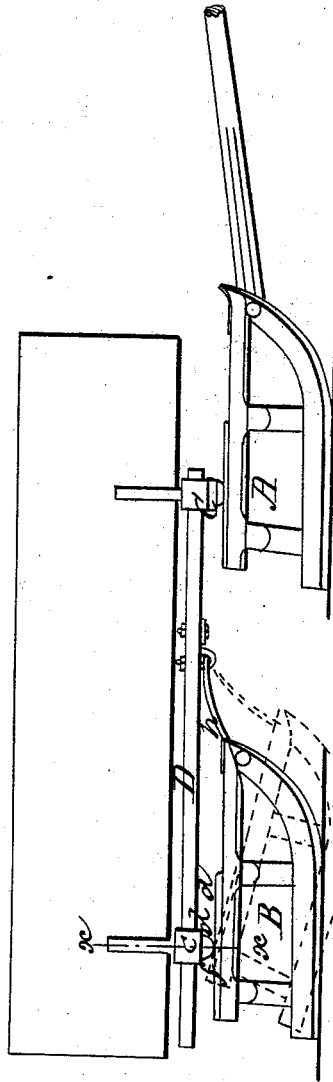


Fig 2.

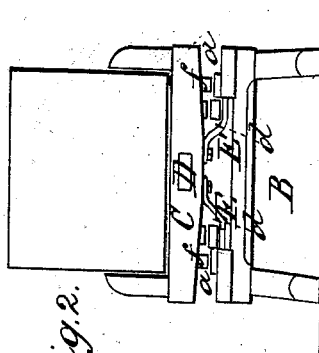


Fig 3

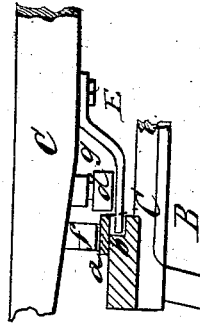


Fig 4



Witnesses:

Jno L Judson
Chas H Spencer

Inventor:

Judd Stevens,
By J Fraser & Co,
Atty

UNITED STATES PATENT OFFICE.

JUDD STEVENS, OF MARENGO, NEW YORK.

IMPROVEMENT IN SLEDS.

Specification forming part of Letters Patent No. 45,874, dated January 10, 1865.

To all whom it may concern:

Be it known that I, JUDD STEVENS, of Marengo, in the county of Wayne and State of New York, have invented a new and useful Improvement in Sleds; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a side elevation of my improved sled; Fig. 2, a rear elevation; Fig. 3, a cross-section in the plane of line *x x*, Fig. 1, showing the arrangement of the rollers and the bearing that connects the rear bolster with the rear runners; Fig. 4, an end view of the bearing that connects the rear bolster with the runner.

Like letters of reference indicate corresponding parts in all the figures.

My improvement relates to that kind of sled known as "bob-sled," in which two "bobs," or independent sleds, are connected in a suitable manner to support the load and still have some degree of independent action in each, to adapt themselves to inequalities in the road and the various circumstances under which they are used.

A number of different devices have already been invented to render such a sled more effective in use, the principal one being to give the rear bob a free and easy action, to adapt itself to the irregularities and sinuosities of the surface over which it passes, to allow it to move forward and back under the load it supports—as, for instance, in plunging forward into a ditch, or in sliding back, as in passing over a stick or obstruction. The greatest difficulty to overcome in producing such an effect is to suitably and safely connect the the bolster from the bob, and to obviate the great friction that arises from the moving of the bob under the load.

It is the object of my invention to obviate this difficulty by the means hereinafter described.

As represented in the drawings, A B are two ordinary bobs, having each a bolster, C, connected by a reach, D. The front bolster is connected with its bob by the ordinary bolt, but the rear one is connected with its bob in a peculiar manner. Each side of the rear bob, B, is provided with a flat bar, *a*, forming a way of suitable length, beneath which is form-

ed a depression, *b*, Fig. 3, nearly or quite its whole extent, so that the way shall project or overhang the depression. Within this depression fits a rounded bearing, *c*, of a bent bar, E, substantially of the form shown, and secured at the opposite end to the under side of the bolster. This bent bar supports a horizontal friction-roller, *d*, which rests against the inner edge of the way *a*. I prefer to secure the shaft *g* of the roller *d* firmly in the bolster, and also at the lower extremity to the end of the bar E, so that each will form a mutual brace to the other, and save the necessity of additional braces. The rear bolster, C, is also provided at opposite ends with a vertical friction-roller, *f*, that rests on top the way *a*, as clearly shown. The rear bob is connected with the reach by means of a jointed draft-rod, *h*, as usual.

The operation of this device, as above described, is obvious. The rear bob, by its universal action, is enabled to adjust itself to any irregularities of the surface over which it passes—for instance, suppose it pass over a stick or small obstruction in the road, the front end will rise at first, and then, as it passes the center of gravity, that end will plunge forward and the rear end will rise; or, in passing a ditch, the same forward plunge is produced. It is obvious that in thus adapting itself to the irregularity of the surface the bob has a tendency to move bodily forward or back under the load, and if this load is heavy, there is a very great amount of friction to overcome. By the employment of the friction-rollers *d f* this friction is overcome in a very great degree, and the bob adapts itself to the path without difficulty and with great ease. This is of the utmost importance, for it is the only practicable manner of making the bobs operative in the manner described.

A sled has already been in use in which a T-formed slide is used to connect the bolster with the way or bar of the bob, the design being to hold the parts in connection and at the same time allow the sliding movement of the bob. The friction is so excessive, however, that the device will not work, and the effect is to soon strain and disconnect the parts.

While I thus obviate the friction, I at the same time hold the bolster in firm connection with the way *a* of the bob by means of the rounded bearing *c* of the bar E, which bearing

rests and slides in the depression *b* beneath the way. It will at once be seen that this will retain the parts in connection under all circumstances, while the bearing, being rounded, as shown in Figs. 3 and 4, will allow the vertical turning adjustment of the bob around it, in going over an incline, to be accomplished most easily. This is of the greatest importance. If the end of the bar *E* were left square the bob could not easily turn or oscillate, and the consequence would be that the device would soon be useless.

This special construction and arrangement—viz., the friction-rollers *d* *f* and the rounded bearing *c* fitting under the way *a*—I believe to be original with myself. It is obvious that a single roller, *f*, on each end of the bolster, having a flange on the inside that would shut down past the edge of the way *a*, might be used, and produce a similar effect to the two rollers *f* *d*.

I do not claim simply connecting the rear bolster with the bob in such a manner that said bob is allowed a free movement to adapt itself to the irregularities of the surface, as

I am aware that the same has been before known; but I am not aware that the bolster has been connected with the bob in the manner and by the means I employ in order to allow the bob to turn more freely and to obviate the friction; therefore,

What I claim as my invention, and desire to secure by Letters Patent, is—

Connecting the bolster *C* with the way *a* by means of the rounded bearing *c*, fitting in the depression *b*, for the purpose of allowing a free turning or oscillatory movement of the bob, and employing the friction-rollers *d* *f* to obviate the friction in the end movement of the bob in adapting itself to an irregular surface, the whole arranged, combined, and operating substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JUDD STEVENS.

Witnesses:

PETER LEVENS,

C. B. STEVENS.