(No Model.)

2 Sheets—Sheet 1.

E. C. SCHROEDER.

BOB SLEIGH.

No. 265,155. Patented Sept. 26, 1882.

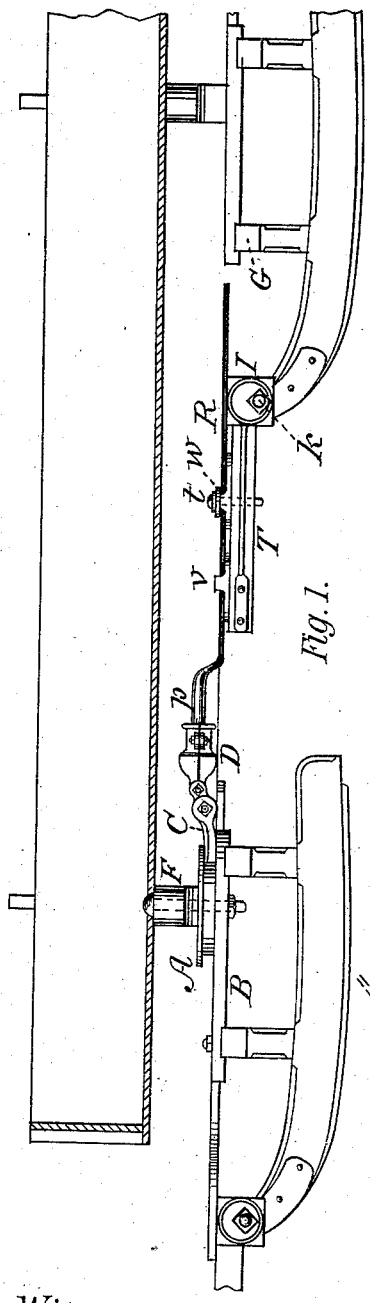

Fig. 1.

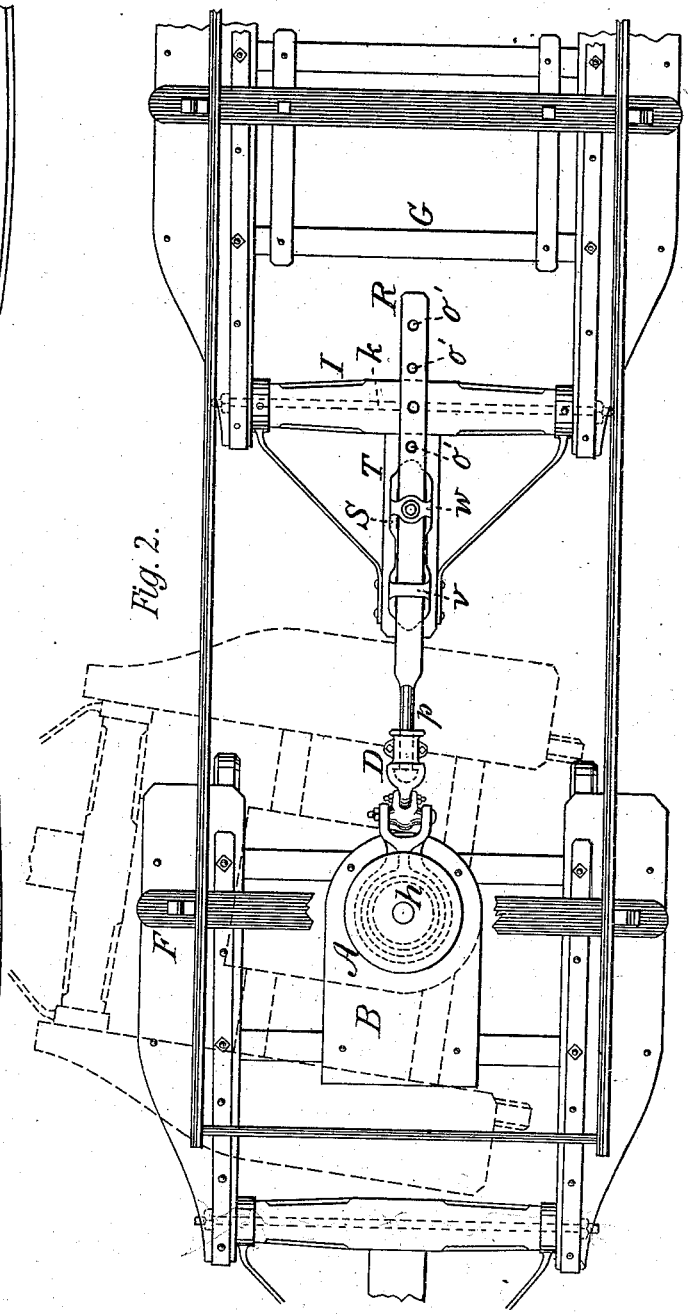

Fig. 2.

Witnesses:

Fred. Artos

Frederick W. Tuerk Jr.

Inventor:

Ernest Charles Schroeder.

(No Model.) 2 Sheets—Sheet 2.

E. C. SCHROEDER.

BOB SLEIGH.

No. 265,155. Patented Sept. 26, 1882.

Fig. 3.

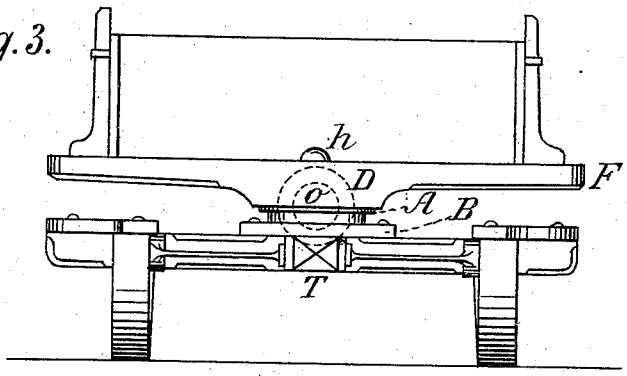

Fig. 5.

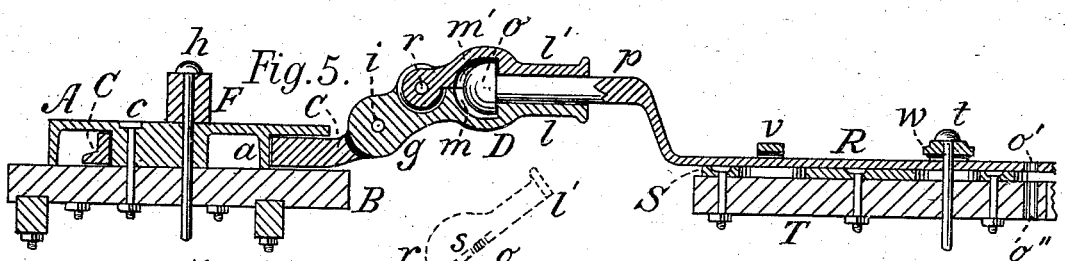

Fig. 6.

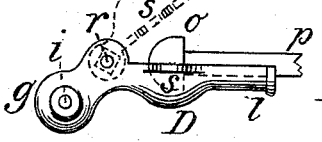

Fig. 4.

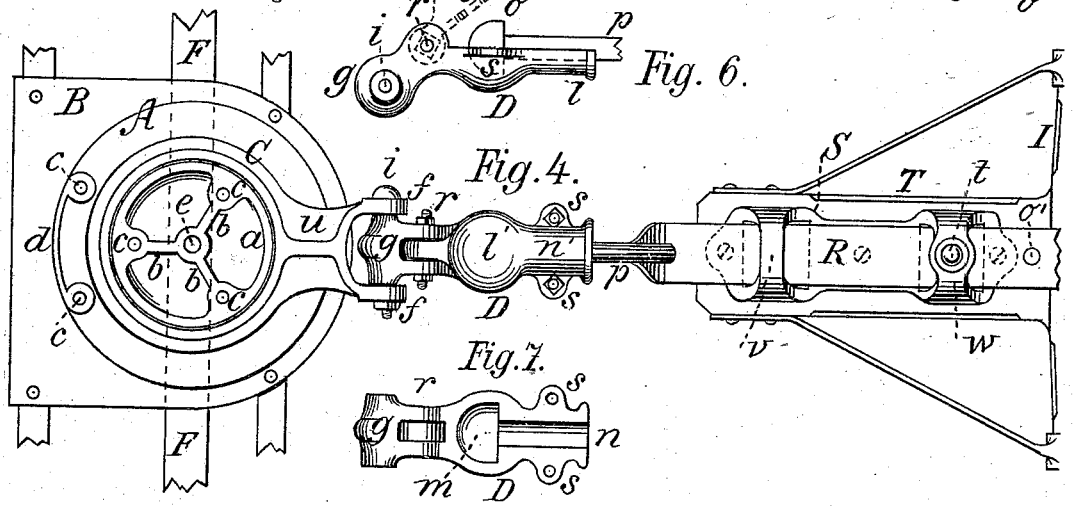

Fig. 7.

Witnesses:

Fred. Artos

Frederick W. Tuerk Jr.

Inventor:

Ernest Charles Schroeder

UNITED STATES PATENT OFFICE.

ERNEST C. SCHROEDER, OF ITASCA, ILLINOIS.

BOB-SLEIGH.

SPECIFICATION forming part of Letters Patent No. 265,155, dated September 26, 1882.

Application filed May 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, ERNEST C. SCHROEDER, of Itasca, in the county of Du Page and State of Illinois, have invented new and useful Improvements in Bob-Sleighs, of which the following is a specification.

My invention relates to improvements in couplings for bob-sleighs; and the objects of my improvements are to provide for the independent movements of the bobs in riding grades, to prevent springing or breaking of the connecting parts, and to render the coupling strong and effective in allowing free movements to the bobs in every direction.

The several matters of improvement will be specifically pointed out in the claims, and may be briefly stated to consist in a ball or collar and socket joint coupling adapted for flexure and rocking movement, to accommodate the bobs to inequalities in the surface, and to resist shocks from obstructions.

Referring to the accompanying drawings, Figure 1 represents a side elevation of a bob-sleigh and coupling device embracing my invention; Fig. 2, a top view of the same, the bottom of the body being shown removed; Fig. 3, a front view; Fig. 4, a top view of the coupling on an enlarged scale; Fig. 5, vertical longitudinal section of the same; Fig. 6, the box for the ball-and-socket joint, showing cap-section in dotted lines opened to receive the ball; and Fig. 7 shows a top view of the lower section of this box.

The front bob revolves horizontally in changing direction upon a flanged bolster-plate, through which the bolt passes which secures the bolster F to the stool B of the bob.

The rear bob has a front pivoted bar, I, to which a short tongue, T, is rigidly attached, by which the rear bob is connected to the coupling device.

The bolster-plate A has a flat top, upon which the front bolster, F, proper rests, and both are secured to the stool B of the front bob by a king-bolt, *h*, upon which the bob and its bolster-plate turn. The bolster-plate has a vertical ring-flange, *a*, projecting from its under side, and is secured by bolts *c* to the stool, which is bolted to the bob-beams. A ring-collar, C, fits over the vertical flange *a* of the bolster-plate, between the latter and the stool, and has an arm, *u*, which terminates in a forked coupling end, *f*, Fig. 4, extending over the bob-stool and rising above the top of the bolster-plate, as shown in Fig. 5.

The tongue T of the rear bob has bolted to its upper sides a shoe, S, formed with guide-loops *v w*, within which the flat end R of a coupling is inserted and secured by a bolt, *t*, passing through one of the guide-loops and the tongue. The flattened end of the coupling has holes *o'*, and the tongue has corresponding holes, *o''*, through which the bolt *t* passes for the purpose of allowing of the adjustment of the rear bob in its relation to the front bob as may be desired.

The cross-bar I is secured to the front ends of the rear bob by a pin, *k*, and forms the joint-connection of the tongue with the rear bob.

The coupling R is bent upward in front of the rear bob, and is formed with a horizontal cylindrical part, *p*, terminating in a ball or collar, *o*, about on a level with the upper end of the arm *u* of the bolster-plate ring-collar. The bobs are coupled by these two devices at their raised ends by means of a coupling-box, D, which is formed with a spherical or partly-spherical chamber to receive the ball or collar *o*, a tubular extension to receive the cylindrical part *p* of the coupling R, and a cross-head, *g*, to form a joint-connection with the arm *u* of ring-collar C of the bolster-plate. The elevated position of the coupling gives clearance for the turning of the front bob upon the king-bolt, as shown by dotted lines in Fig. 2. The coupling-box is preferably made in two sections, *l l'*, each section having a matching recess forming a chamber, *m m'*, and semi-tubular parts *n n'*, hinged together by a pin, *r*, and secured together at the tubular extension by lugs and screws *s s* (shown in Fig. 4) upon the ball or shoulder and cylindrical part of the coupling R to form the shoulder and socket-coupling. This construction forms a durable and convenient means of coupling the bobs with freedom to rock sidewise independently of each other, while the joint-connection I of the rear bob and the joint-connection *i* of the coupling-box allow of the free vertical movements of the bobs independently of each other. The box-coupling forms a universal-joint connection with the joints of the tongue and of the collar-ring, and prevents the binding and straining of the coupling. I have

shown the ball as flattened and the chamber of the coupling-box of corresponding form to give a flat or shoulder bearing to what I have called the "ball-and-socket joint;" but such joint, while providing for the rocking movements of the coupled parts D R upon each other independently or both together, also provides for a slight horizontal movement of the coupling ball or shoulder within its socket to relieve the shock upon the rear bob coupling connections, as shown in Fig. 5. The coupling parts C D R have no lateral flexure upon each, but are held rigidly in line, leaving the bobs free to rock and have vertical movements.

I claim—

1. The combination, substantially herein described, of the front bob provided with the flanged bolster-plate, and the rear bob provided with the coupling R, terminating in a cylindrical neck, and a head or shoulder, with an intermediate chambered box-coupling, D, and the ring-collar C *f*, the several parts being connected to allow of the rolling and vertical movements of the bobs, as specified.

2. In combination, the flanged bolster-plate A *a*, the ring-collar C, having a forked arm, *u f*, the box-coupling D, having the cross-head *g*, the tubular extension and the intermediate chamber, *n n'*, and the coupling R, having the cylindrical neck *p*, and the head or shoulder *o*, whereby to form a coupling for the bobs of a sleigh, substantially as described, for the purpose specified.

3. The coupling-box D, formed with a cross-head, *g*, and provided with a hinged top section secured to the base section, forming the chamber *m m'*, and the tubular extension *n n'*, in combination with the coupling R *p o*, the ring-collar C, and the front and rear bobs, all constructed substantially as described, for the purpose specified.

4. In combination, in a bob-sleigh, the cross-head tubular chambered coupling-box D, the bolster-plate A, having the depending ring-flange *a*, the ring-collar C, having the forked arm *u f*, the coupling R, having a cylindrical neck, *p*, the head *o*, and a flat shank, with the rear bob, having tongue T, provided with a looped shoe, S, and the coupling-bolt *t*, all constructed and connected substantially as herein set forth.

ERNEST CHARLES SCHROEDER.

Witnesses:

LOUIS SCHROEDER,

CARL AUGUST FRANZEN.