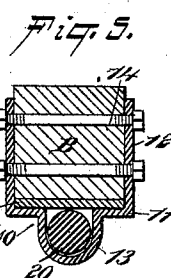
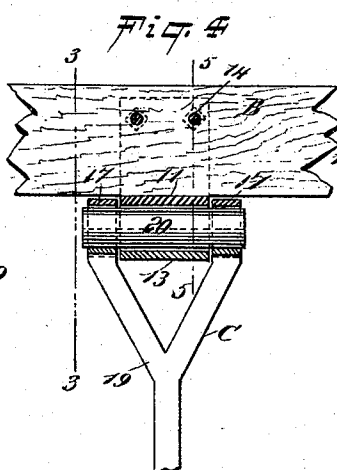
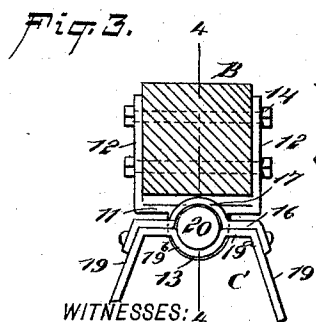
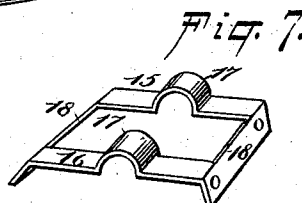
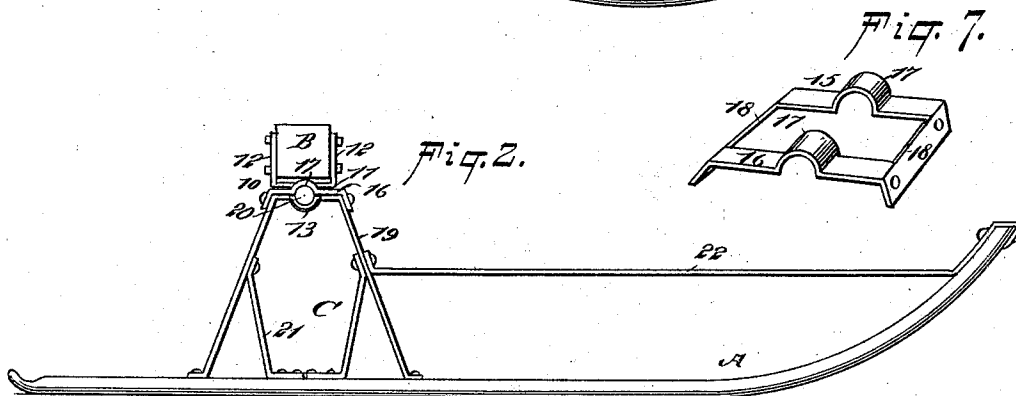
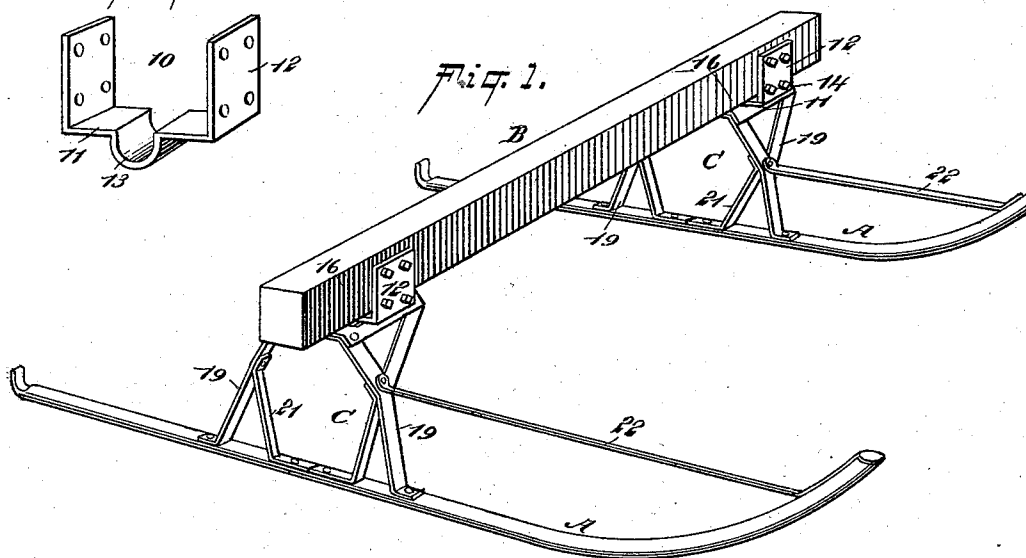
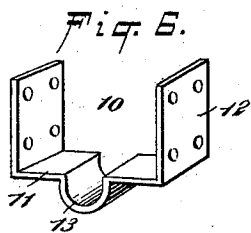


(No Model.)

H. L. EASTMAN.
BOB SLEIGH.

No. 542,557.

Patented July 9, 1895.



WITNESSES: 4

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UNITED STATES PATENT OFFICE.

HARVEY L. EASTMAN, OF WAHPETON, NORTH DAKOTA.

BOB-SLEIGH

SPECIFICATION forming part of Letters Patent No. 542,557, dated July 9, 1895.

Application filed February 6, 1895. Serial No. 537,488. (No model.)

To all whom it may concern:

Be it known that I, HARVEY L. EASTMAN, of Wahpeton, in the county of Richland and State of North Dakota, have invented a new and useful Improvement in Bob-Sleighs, of which the following is a full, clear, and exact description.

My invention relates to an improvement in bob-sleighs, and the object of the invention is to improve upon the construction of the sleigh illustrated in the patent granted to S. C. Paulson October 2, 1894, No. 526,938, the improvements being such that the attachment of the knees to the bolster will be much stronger than in the above-alluded-to construction, a knee being secured which can be manufactured by automatic machinery and made of wrought metal, thus adding to its cheapness as well as its strength, and whereby the runners will have much freer oscillatory movement on the bolster, since each runner has an oscillatory movement independent of the other.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of one set of runners having the improvement applied thereto. Fig. 2 is a side elevation of one of the said runners. Fig. 3 is a transverse section through one of the bolsters, the said section being taken on the line 3 3 of Fig. 4, the said Fig. 3 likewise illustrating a partial side elevation of one of the knees. Fig. 4 is a longitudinal section through a knee and its pivot-joint, the said section being taken on the line 4 4 of Fig. 3. Fig. 5 is a transverse section through the bolster and pivot of a knee, the said section being taken on the line 5 5 of Fig. 4. Fig. 6 is a detail perspective view of the bolster-plate containing the socket; and Fig. 7 is a perspective view of what may be termed the "knee-plate," which is also formed with sockets.

In carrying out the invention the runners A of each set are connected through the me-

dium of a bolster B and knees C, and the forward and rear sets of runners are connected in the usual manner. Each runner has a rocking or oscillatory movement upon the bolster with which it is connected; but the improvement lies primarily in the construction of the knee and the manner in which it is connected with the bolster. To that end the bolster-plate 10 is employed, which is shown in detail in Fig. 6, and comprises, preferably, a horizontal or body section 11 and vertical end sections or members 12, the bottom or body member being provided at its center with a transverse depression 13, forming in the said bottom a semicircular socket. A plate thus formed is secured at or near each end on the bolster B, the bottom or body of the plate engaging with the bottom of the bolster, which is protected by a wear-plate 10^a, while the end members or sections 12 engage with its sides and are secured thereto by means of bolts 14 or their equivalents.

What may be termed the "knee-plate" or "knee-socket plate" is shown in detail in Fig. 7, and comprises two side bars 15 and 16, in each of which side bars, at or near the center, a semicircular cavity 17 is produced, forming a socket, and the convexed faces of the said sockets are their upper faces, while the ends of the side bars 15 and 16 of the plate are bent downward and outward and are connected by end bars 18. Thus it will be observed that the sockets 17 of the knee-plates are faced the reverse of the sockets in the bolster-plate 10.

Each knee is made from a single piece of metal and consists of two continuous substantially Y-shaped standards, the said standards having commonly an inclination in direction of each other at their upper ends, the said ends being the bifurcated portions of the standards, as is best shown in Fig. 1, and the upper ends of opposing members of the forks are connected by cross-bars 19^a, as shown in Fig. 3, in which upwardly-facing semicircular sockets 19^b are made. The upper portion of each knee is secured by means of bolts or otherwise to the end bars 18 of the aforesaid knee-plates, and in placing the knee-plates they are located beneath the bolster, as shown in Figs. 3 and 4, the depressed or socket sections 13 of the bolster-plates forming the bol-

ster-sockets being located between the side bars of the knee-plate containing the sockets 17, and a pintle or short shaft 20 is journaled in the socket-section 13 of each bolster-plate, while the socket-section 17 of each knee-plate rests upon this pintle or shaft, and end journals for the pintle are completed by causing the sockets 19^b in the upper portions of the knees to register with the socket-sections 17 of the knee-plates. In this manner it is evident that a durable and economic rocking connection is obtained between the knees of the sleigh and the bolster with which said knees are to be connected, and that while each runner will have free vertical movement its side movement will be prevented by reason of the interlocking connection between the bolster and the knee-plates.

Braces 21 are made to connect the two standards or members 19 of the knee, and said braces, as are likewise the knee-standard sections, are bolted or otherwise attached to the runners, while the forward knee-standard sections are connected with the ends of the runners by means of tie-rods 22.

The braces 21 may, if desired, be made of a single piece, so as to form a substantially U-shaped brace.

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

1. The combination, with a bolster, of runners mounted for independent oscillatory movement, each mounting comprising knee standards, a plate provided with sockets se-

cured upon the knee standards, a plate located between the sockets of the knee standards and attached to the bolster, the bolster plate being likewise provided with a socket shaped reversely to the sockets in the knee plates, and a pintle having bearing in the said sockets, substantially as shown and described.

2. The combination, with a bolster, of runners mounted for independent oscillatory movement, each mounting comprising a plate attached to the bolster and provided with a socket therein, knee plates located at each side of the bolster plate, each knee plate being provided with a socket having a reverse curve to that of the bolster plate, and knees formed in one piece, comprising connected bifurcated standards, the said knees being attached to the knee plates and likewise to the runners, as and for the purpose set forth.

3. The combination with the runners, and a bolster, of a plate secured to the bolster and provided with a socket, knees secured to the runners on opposite sides of the bolster and having forked upper ends, the upper ends of the opposing members of the knees being connected by the plates having sockets therein, a plate secured to the knees and provided with spaced sockets shaped reversely to the socket of the bolster plate, and a pintle in said sockets, substantially as described.

HARVEY L. EASTMAN.

Witnesses:

W. E. PURCELL,
CHAS. E. WOLFE.