

SLED BRAKE.

975,904.

Patented Nov. 15, 1910.

Witnesses

C. Walker.
James B. Mansfield

Inventor

Johannes Struve

By

Chancery & Lowell
Attorneys

UNITED STATES PATENT OFFICE.

JOHANNES STRUVE, OF PEQUOT, MINNESOTA.

SLED-BRAKE.

975,904.

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To all whom it may concern:

Be it known that I, JOHANNES STRUVE, of Pequot, in the county of Crow Wing and State of Minnesota, have invented certain new and useful Improvements in Sled-Brakes; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel brake for sleds, sleighs and the like—being particularly designed for use on bob-sleds; and the invention will be clearly understood from the following description of the brake illustrated in the accompanying drawings which form part of this specification and in which—

Figure 1 is a plan view of part of the brake devices as applied to a bob-sled. Fig. 2 is an enlarged sectional view thereof. Fig. 3 is a detail view.

The invention is illustrated as applied to a conventional form of bob-sled, but is applicable to various styles of sleighs or sleds. As shown the brake comprises a spud-bolt 1 arranged to operate through a hole or slot *a* in one of the runners A of the sled. This slot is inclined backwardly so that the spud-bolt will project forwardly, and the inclination of the slot may be varied according to the thickness of the runner; I preferably incline it rearwardly at an angle of about 45 degrees.

When the spud-bolt is projected through the slot and below the runner as indicated in Fig. 2 the brake is applied, as the end of the spud-bolt will cut into the hard snow, ice or ground under the runner, and very effectively and quickly check the forward movement of the sled.

The lower portion of the spud-bolt 1 is guided in the slot *a* in the runner, and the upper end of the bolt is reduced, and is guided in an opening in a cross-bar 2^a attached to the upper end of rearwardly inclined bars 2, bolted or otherwise secured to the runner as indicated in the drawings; and a spring 1^b is interposed between a shoulder 1^c on the spud-bolt and the cross-bar 2^a, such spring normally acting to project the lower end of the spud-bolt below the runner, as in Fig. 2. The spud-bolt however is normally held in raised position (Fig. 3) by suitable means, which as shown may comprise a slotted wedge block 3 which is slidably mounted on a metal plate 3^a on top

of the runner, and guided between the side bars 2; the upper surface of this wedge block 3 is beveled downwardly and rearwardly, and is adapted to engage rollers 1^e attached to the ends of a pin 1^f transfixing spud-bolt 1 as shown, so that when this wedge block is moved rearwardly it will force and hold the spud-bolt upward out of braking position, as shown in dotted lines in Fig. 2. A spring 3^c is arranged to draw the wedge block forward—when permitted—so as to allow the spud-bolt to be projected by this spring 1^b. The forward movement of the wedge block may be limited by a stop 3^e on the plate 3^a as shown.

All these parts above described may be, if desired, inclosed in a metallic casing 3^h, attached to the runner as indicated in Fig. 2, so as to protect such parts from ice and snow; and hard oil or grease can be placed in this casing and on plate 3^a so as to lessen friction between the fixed and movable parts.

The wedge block 3 may be held in retracted position by any suitable means so as to normally keep the spud-bolt raised and the brake inoperative while the sled is moving. As shown in Fig. 1 a wire cord 4 is attached to the rear end of the wedge block 3 and then led through a sheave 4^a on the sled to and through an eye 4^b attached to the bolster D adjacent the king-bolt C and the forward end of the wire cord 4 may be connected to a sliding bolt 6 which extends through eyes 6^a attached to the double tree E on the tongue B of the sled. A stout spring 6^c may be interposed between a collar 6^d on the bolt 6 and the rear eye 6^a and will act to normally project bolt 6 forward and draw cord 4 forward so as to keep the wedge 3 retracted in position to hold the spud-bolt 1 raised as indicated in dotted lines in Fig. 2. A rod 5 may be attached to the forward end of bolt 6 as indicated in Fig. 1 and extend forward along the tongue B and be connected with the neck yoke F so that when the draft animals are harnessed to the sled, if they hold back the pull on the yoke will draw the rod 5 backward and through its connection with bolt 6 compress spring 6^c releasing cord 4 and the spring 3^c will then pull the wedge block 3 forward and allow the spud-bolt to project and stop the sled, as shown in Fig. 2. With this construction the brake will not ordinarily be applied when the sleigh is running

easily or coasting down a gentle decline; but I do not restrict my invention to the particular means shown for keeping the spud-bolt normally retracted.

5 A rope or wire cord 7 may be attached to the forward end of the slide block 3 (Figs. 1 and 2) and led through a guide 7^a to a guide 7^b on the bolster adjacent the king-bolt C, and thence through a guide 7^c on the
10 tongue adjacent the swingle-tree up to the sled body to a point within convenient reach of the driver, so that the driver by pulling on cord 7 can retract the wedge block 4, against the action of the spring 6^c, and per-
15 mit the spud-bolt to be projected, should he desire to apply the brake at any time, or should the brakes fail to act automatically when the horses hold back.

Having described my invention what I
20 claim is:

1. In a sled brake, the combination of a spud-bolt attached to the sled runner, a spring for projecting this bolt through the runner into engagement with the ground,
25 means for normally retracting the bolt, and means for releasing the bolt.

2. In a sled brake, the combination of a runner, an inclined spud-bolt connected thereto, a spring for projecting the spud-
30 bolt, a wedge block for retracting the spud-bolt, and means for moving the wedge block.

3. In a sled brake, the combination of a runner, an inclined spud-bolt extending therethrough, a spring for projecting the
35 spud-bolt, a wedge block for retracting the spud-bolt, and means mediatey connected with the neck-yoke whereby the spud-bolt is released when the team holds back.

4. In a sled brake, the combination of a
40 runner, a spud-bolt extending therethrough,

a spring for projecting the spud-bolt, a wedge block for retracting the spud-bolt, and means for causing the wedge block to release the spud-bolt when the brake is to be applied.

45 5. In combination with a sled runner, a spud-bolt, a spring for projecting the spud-bolt, a wedge block for retracting the spud-bolt, a spring for retracting the wedge block, and a more powerful spring and connections
50 for causing the wedge block to retract the spud-bolt, and devices for overcoming the latter spring when the brake is to be applied.

6. In a sled brake, the combination of a runner, a spud-bolt extending therethrough,
55 means for projecting the spud-bolt, a wedge block for retracting the spud-bolt, a spring for retracting the wedge block to permit the spud-bolt to be lowered, and means connected with the neck yoke for permitting
60 the wedge block to be retracted when the team holds back.

7. In combination with a sled runner, a rearwardly inclined spud-bolt extending
65 therethrough, a spring for projecting the spud-bolt, a wedge block for retracting the spud-bolt, a spring for retracting the wedge block, a more powerful spring and connections for causing the wedge block to retract
70 the spud-bolt, and devices connected with the yoke for overcoming the latter spring when the team holds back.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JOHANNES STRUVE.

Witnesses:

W. H. CLOUD,

F. O. THOMPSON.