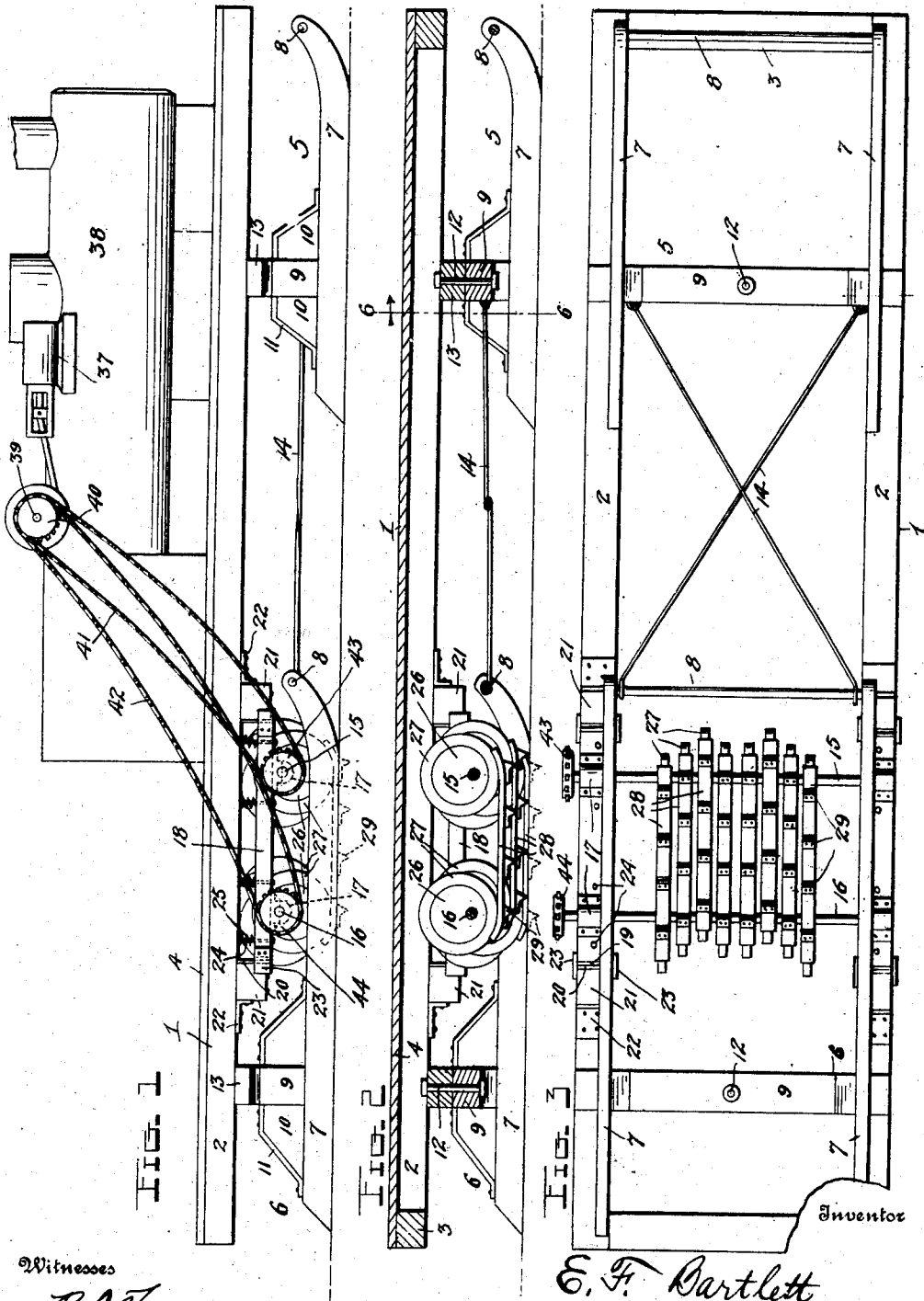


No. 865,289.

PATENTED SEPT. 3, 1907.

E. F. BARTLETT.
SELF PROPELLED SLED.
APPLICATION FILED JAN. 18, 1907.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 4

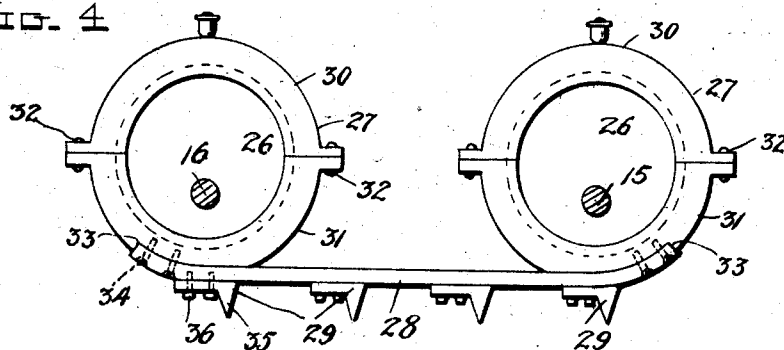


FIG. 5

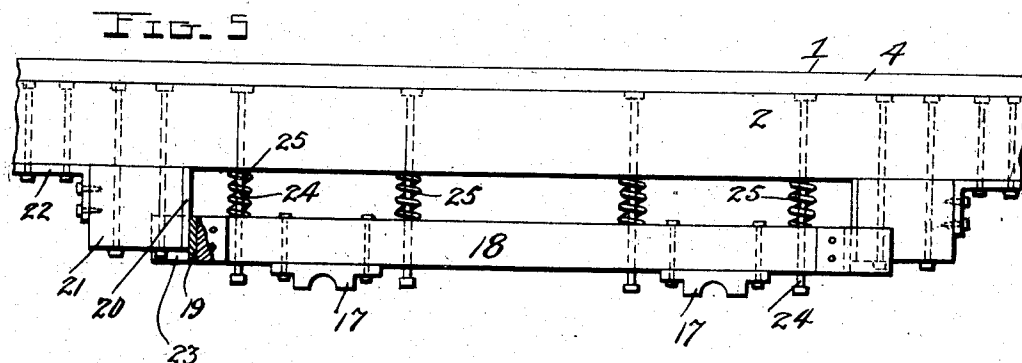
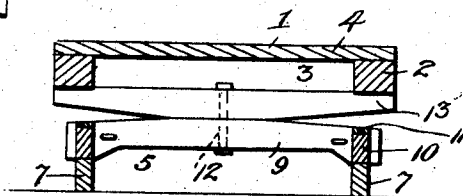


FIG. 6



Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD F. BARTLETT, OF HOULTON, MAINE.

SELF-PROPELLED SLED.

No. 865,289.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed January 18, 1907. Serial No. 352,954.

To all whom it may concern:

Be it known that I, EDWARD F. BARTLETT, a citizen of the United States, residing at Houlton, in the county of Aroostook and State of Maine, have invented certain new and useful Improvements in Self-Propelled Sleds, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in self-propelled sleds and more particularly to those adapted for use in hauling logs and other heavy loads.

The object of the invention is to provide a sled of this character with a simple and practical, propelling mechanism which will be durable in use and very effective in operation.

Further objects and advantages of the invention, as well as the structural features by means of which these objects are attained, will be made clear by an examination of the following specification, taken in connection with the accompanying drawings, in which, Figure 1 is a side elevation of my improved sled; Fig. 2 is a vertical, longitudinal section through the same, the boiler and engine being omitted; Fig. 3 is a bottom, plan view; Fig. 4 is a detail view of two of the eccentrics and their connecting bar or plate; Fig. 5 is a detail view of the bearings for the eccentric carrying shafts; and Fig. 6 is a detail, vertical, cross section, taken on the plane indicated by the line 6—6 in Fig. 2.

Referring to the drawings by numeral 1 denotes the body or platform of my improved sled, which is in the form of a rectangular frame consisting of longitudinal beams 2 connected by end beams 3 and by a flooring 4. The body or platform 1 is supported by front and rear sleds 5, 6 each of which consists of a pair of runners 7 connected at their upturned, forward ends by a cross bar 8, and adjacent to their rear ends by a cross beam 9. The latter have their ends secured upon the tops of the runners 7 by blocks 10 and angular, metal straps 11. Arranged centrally in each of the cross beams 9 is a vertically-disposed pivot 12 which also passes through rocker-bars or beams 13 arranged above the beams 9 and secured to the bottom edges of the longitudinal, side beams 2. By reason of this construction each of the sleds is pivoted to swing in a horizontal plane for the purpose of steering the machine; and they are caused to swing together by crossed chains, cables or similar connections 14, as clearly shown in Fig. 3 of the drawings. No steering mechanism is illustrated, but it will be understood that any suitable mechanism may be provided for swinging the front sled 5 and thus steering the machine.

The improved propelling mechanism, as here shown, comprises two transversely-arranged shafts 15 and 16, which are mounted in suitable bearings 17 secured upon the undersides of two longitudinally-extending

beams 18 arranged immediately beneath the side beams 2 and mounted for vertical sliding movement. The beams 18 have secured upon their ends metal wear plates 19 which slidably engage similar wear plates 20 secured upon blocks 21 which latter are in turn secured upon the bottom faces of the beams 2 and braced by angular, metal straps 22, as clearly shown in Figs. 1 and 3 of the drawings.

Secured upon the opposite side faces of the beams 18 at their ends are vertically-arranged, metal, guide plates 23 which engage the opposite sides of the blocks 21 to guide the beams 18 in their vertical, sliding movement. Depending from the beams 2 and extending through openings in the beams 18 are guide bolts 24. These bolts are surrounded by coil springs 25 which are confined between the bottom faces of the beams 2, 2 and the top faces of the beams 18 and serve to force the latter downwardly for a purpose presently explained. Secured upon the intermediate portions of the shafts 15, 16 are series of eccentrics 26 which carry eccentric straps 27. The eccentrics and their straps on the two shafts are arranged in longitudinal alinement and are connected by flat, metal bars 28 provided upon their bottom faces with calks or spurs 29. The bars 28 are adapted to engage the snow or ice over which the machine travels and to serve as steppers or feet for propelling the machine and the calks are provided upon them to prevent their slipping when in contact with the snow or ice. While any number of eccentrics and hence steppers or feet 28, may be provided, I preferably employ eight eccentrics on each shaft and arrange four of them on each side of the center of said shaft. The eccentrics are so keyed that each pair on each side of the machine is a quarter of a revolution in advance of its next adjacent one, hence there will always be one of the bars 28 on each side of the machine in contact with the surface over which the machine travels. This arrangement will cause the machine to be evenly and continuously propelled. Each of the eccentric straps consists of an upper section 30 and a lower section 31 connected, as shown at 32. The upper sections of each pair carries an oil cup and the lower sections are connected by the bars 28. The latter have their ends engaged with seats 33 in the sections 31 of the eccentric straps and secured therein by set screws 34. Each of the corks 29 has a point 35 and an extension which is bolted, as at 36 upon the bar 28.

While any suitable power may be provided for propelling the machine, I preferably employ two steam engines 37 mounted upon the opposite sides of a horizontal boiler 38 arranged upon the platform 1. The engines are connected to a crank shaft 39 which carries sprocket wheels 40 adapted to be connected by sprocket chains 41, 42 to sprocket wheels 43, 44 secured upon

the projecting ends of the shafts 15, 16. The chains 41, 42 are sufficiently slack to allow for the vertical movement of the beams 18.

The operation of the machine will be readily understood from the foregoing description taken in connection with the accompanying drawing and the following brief statement. When the engines 37 are in motion, the chains 41, 42 will rotate the eccentric shafts 15, 16 and the latter will, through the eccentrics 26 and their straps 27, alternately raise and lower the bars or feet 28 so as to propel the machine forwardly. When it is desired to move the machine rearwardly the engines are reversed. The engines may also be reversed when it is desired to brake the movement of the machine in going down grade.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A machine of the character described comprising a body, runners for supporting the same, a yieldably mounted frame upon said body, shafts mounted in said frame, eccentrics upon said shafts, eccentric straps upon said eccentrics, stepping bars connecting said eccentric straps, and means for rotating said shafts.

2. A machine of the character described comprising a body, runners for supporting the same, a frame mounted for vertical sliding movement upon said body, springs for forcing said frame downwardly, shafts mounted upon said frame, eccentrics upon said shafts, eccentric straps upon

said eccentrics, stepping bars connecting said eccentric straps, and means for rotating said shafts.

3. A machine of the character described comprising a body, runners for supporting the same, a frame mounted for vertical sliding movement upon said body, springs for forcing said frame downwardly, shafts mounted upon said frame, eccentrics upon said shafts, eccentric straps upon said eccentrics, stepping bars connecting said eccentric straps, a motor upon said body, sprocket wheels upon said motor and said shafts, and sprocket chains connecting said sprocket wheels, substantially as shown and described.

4. A machine of the character described comprising a platform, rocker beams connected thereto, front and rear sleds each comprising runners connected by cross beams, pivots connecting the cross beams of said runners and said rocker-bars, crossed connections between the front and rear sleds, a guide upon said platform, longitudinal beams slidably engaged with said guides, guide bolts depending from said platform and extending through said longitudinal beams, springs upon said guide bolts between said beams and said platform, bearings upon said longitudinal beams, transverse shafts journaled in said bearings, eccentrics upon said shafts, eccentric straps upon said eccentrics, stepping bars connecting said eccentric straps and provided with calks, and means upon said platform for rotating said shafts, substantially as shown and described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

EDWARD F. BARTLETT.

Witnesses:

EDGAR HAMM,

D. CLARENCE LIBBY.