O. T. BEKKERUS.

ROTARY SNOWPLOW.

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1,393,935. Patented Oct. 18, 1921.

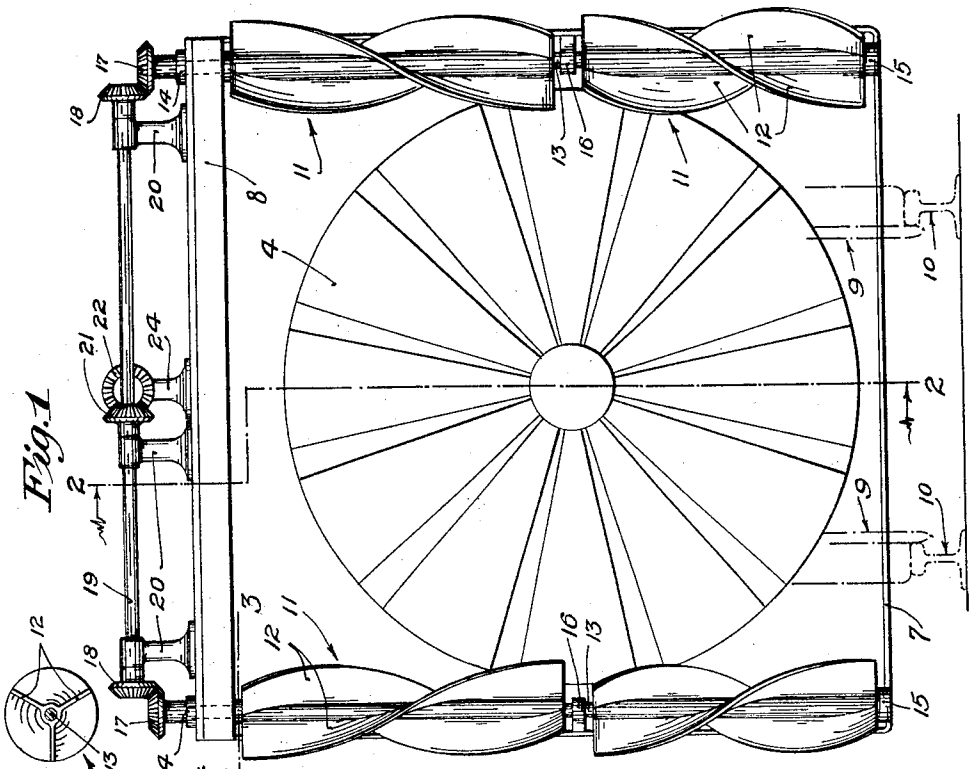


Fig. 1

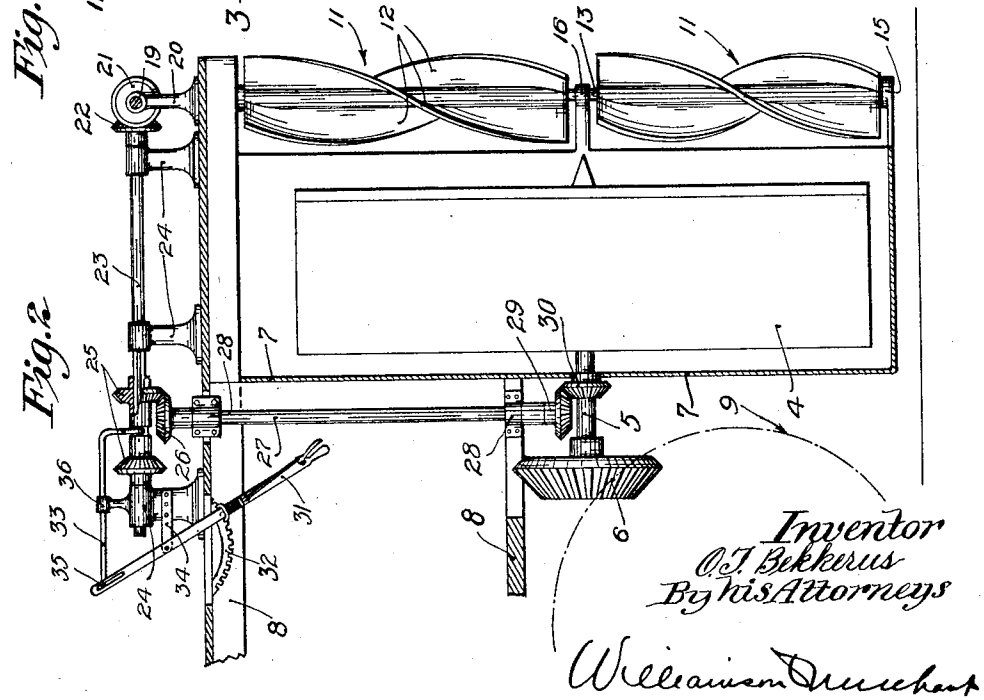


Fig. 2

Fig. 3

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ROTARY SNOWPLOW.

1,393,935. Specification of Letters Patent. Patented Oct. 18, 1921.

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To all whom it may concern:

Be it known that I, OLE T. BEKKERUS, a citizen of the United States, residing at Hurdsfield, in the county of Wells and State of North Dakota, have invented certain new and useful Improvements in Rotary Snowplows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in rotary snow plows, and has for its object to provide the same with rotary vertical cutters for forming the walls of a cut.

To the above end, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:—

Figure 1 is a front elevation of a rotary snow plow having the invention incorporated therein, some parts being shown by means of broken lines;

Fig. 2 is a view partly in side elevation and partly in longitudinal vertical section taken on the line 2—2 of Fig. 1; and

Fig. 3 is a detail view principally in plan with some parts sectioned on the line 3—3 of Fig. 1.

The rotary snow plow illustrated is of the well known type which may be driven, at will, in either direction, depending on which side of the cut the snow is to be discharged. Said rotary snow plow is indicated as an entirety by the numeral 4, with the exception of its driving shaft 5, to the inner end of which is secured a large bevel gear 6. For the purpose of this case, it is not thought necessary to illustrate the motive power with connections with the bevel gear 6 for driving the snow plow, or the reversing mechanism therefor, as the same is well understood. The casing 7, in which the rotary snow plow 4 is mounted, is secured to the front end of a car body 8, the truck wheels 9 of which rest on a track 10. The parts thus far described may be of the standard or any desired construction.

Referring now in detail to the invention, there is located at each side of the rotary snow plow 4 a vertical rotary cutter 11 having, as shown, three spiral blades 12 secured to a shaft 13. The upper ends of the shafts 13 are journaled in bearings 14 in the top of the car body 8 and the lower ends thereof are journaled in bearings 15 secured to the casing 7. To hold the shafts 13 in true vertical positions during strain placed thereon by the cutters, the blades 12 are made in upper and lower sections axially spaced to permit said shafts to be journaled in intermediate bearings 16 on the casing 7.

The following connections and reversing mechanism are provided for driving the rotary cutters 11 in a constant direction from the shaft 5 or to cause the same to remain idle in respect thereto, to wit:—

Keyed to the upper ends of the cutter shafts 13 are bevel gears 17 which mesh with bevel gears 18 on the outer ends of a transverse shaft 19 journaled in bearings 20 on the top of the car body 8. To the intermediate portion of the shaft 19 is secured for rotation therewith a bevel gear 21 which meshes with a bevel gear 22 keyed to the outer end of a longitudinally extended shaft 23 journaled in bearings 24 on the top of the car body 8. A pair of sleeve-connected reversing bevel gears 25 are keyed to the shaft 23 for rotation therewith but with freedom for axial sliding movement thereon. These reversing gears 25 are arranged to alternately mesh with a bevel gear 26 secured to the upper end of a vertical shaft 27 journaled in bearings 28 on the car body 8. The shaft 27 is constantly driven with the rotary snow plow by means of a bevel gear 29 secured to the lower end thereof and meshing with a bevel gear 30 keyed to the shaft 5.

The reversing gears 25 are moved into and out of mesh with the gear 26, or moved into a neutral position and secured in different set positions by a latch lever 31 having a cooperating lock segment 32 and a shipper rod 33. The latch lever 31, which extends downward through the top of the car body 8, is intermediately fulcrumed on a bracket 34 secured to the rear bearing 24, and the lock segment 32 is secured to the top of the car body 8. One end of the shipper rod 33 is attached to the upper end of the latch lever 31 by a slot and pin connection 35, and its other end is bifurcated and the prongs thereof mounted in an annular groove formed in the sleeve which connects the reversing gears 25. The shipper rod 33 is slidably mounted in a bearing 36 on the rear bearing 24.

As previously stated, the rotary snow plow may be driven in either direction depending on which side of the cut the snow is to be discharged, but the rotary cutters 11 must be driven from the shaft 5 in a constant direction so as to throw the snow inward toward the center of the track. Hence, it is necessary to provide the reversing gears 25 for transmitting motion from the shaft 27 in a constant direction to the rotary cutters 11.

What I claim is:—

1. In a rotary snow plow having a central rotary snow engaging member mounted on a horizontal axis, a vertical shaft located at each side of and in front of said member, and cutters carried and driven by said shafts.

2. In a rotary snow plow having a vertical rotary snow engaging member, a rotary cutter having a vertical axis located at the side of said central member disposed at each side of said member and directly in front of the same, and extending substantially the length of the diameter of said member.

3. In a rotary snow plow having a central rotary snow engaging member mounted on a horizontal axis, a central driving shaft therefor, a vertical shaft located at each side of and in front of said member, cutters carried by and driven by said shafts, and a common driving means for said shafts connected to and driven by said central shaft, and said means being reversible.

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

OLE T. BEKKERUS.

Witnesses:
A. T. GILTNER,
A. U. JACKSON.