

Dec. 29, 1936.

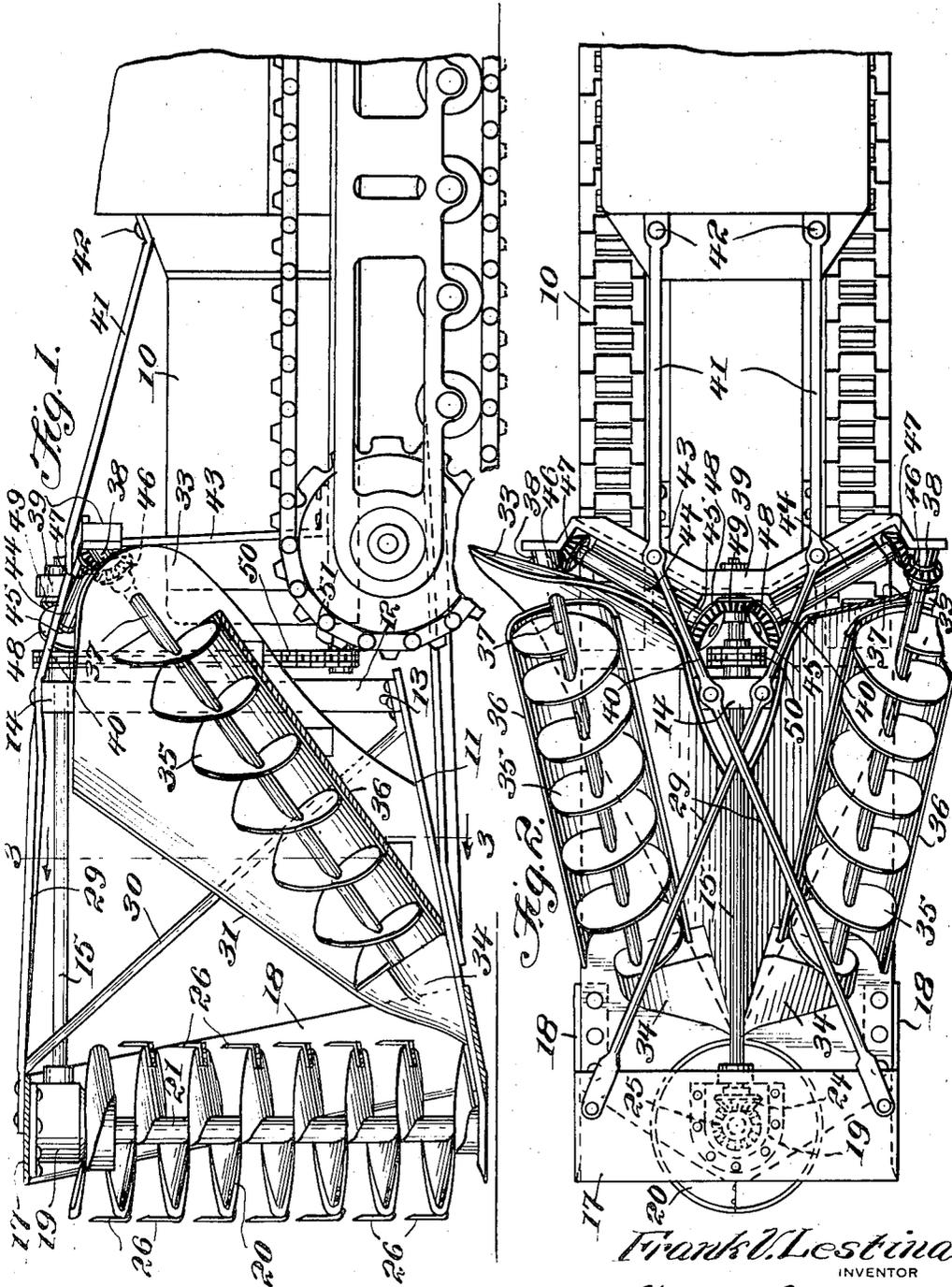
F. V. LESTINA

2,066,207

SNOW PLOW

Filed July 30, 1936

2 Sheets-Sheet 1



WITNESS *J. L. Wright*

Frank V. Lestina
INVENTOR
By *Victor J. Evans & Co.*
ATTORNEYS

Dec. 29, 1936.

F. V. LESTINA

2,066,207

SNOW PLOW

Filed July 30, 1936

2 Sheets-Sheet 2

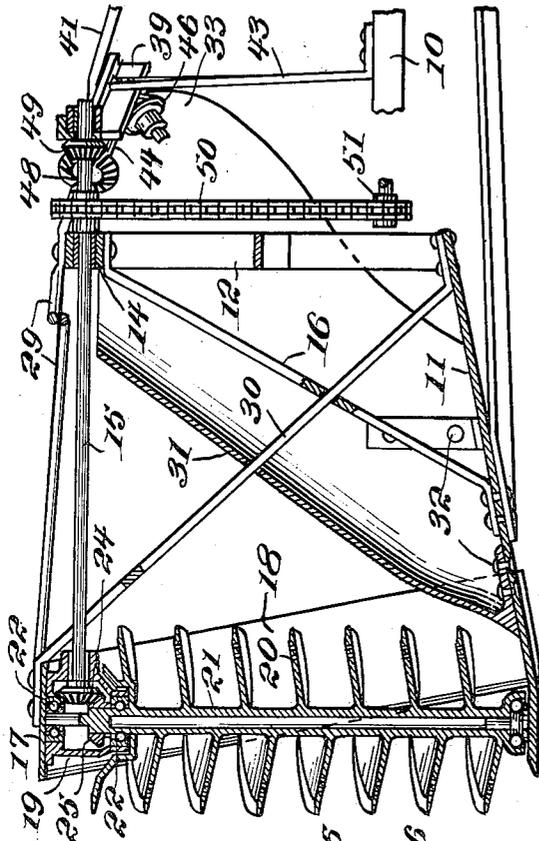


Fig. 4.



Fig. 7.



Fig. 9.

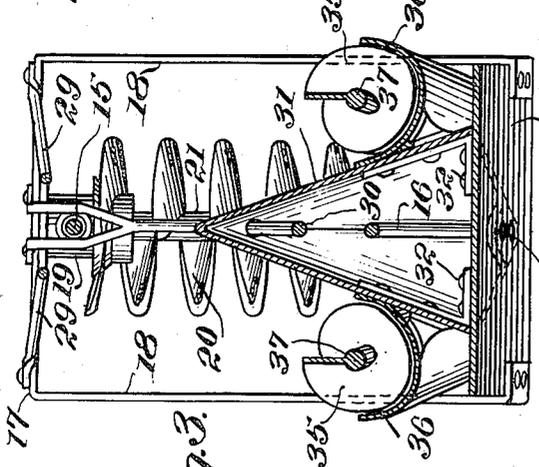


Fig. 3.

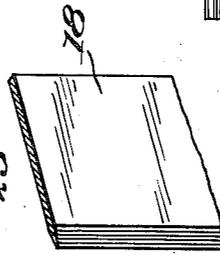


Fig. 6.

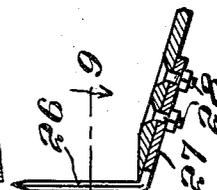


Fig. 8.

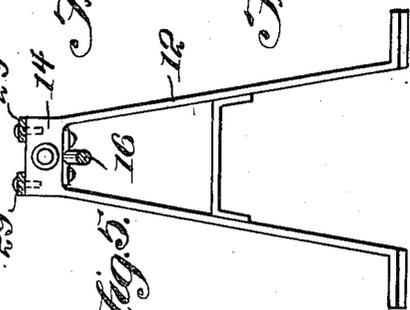


Fig. 5.

WITNESSES: J. L. Wright

Frank V. Lestina
 INVENTOR
 BY Victor J. Evans & Co.
 ATTORNEYS

UNITED STATES PATENT OFFICE

2,066,207

SNOW PLOW

Frank V. Lestina, Monona, Iowa

Application July 30, 1936, Serial No. 93,495

2 Claims. (Cl. 37-43)

This invention relates to snow plows and has for an object to provide a snow plow having a vertical spiral cutter and having diverging screw carriers on opposite sides of a deflector in rear of the cutter adapted to remove the snow dislodged by the cutter and deflect it rearwardly and to the sides of the tractor or other motor vehicle to which the snow plow may be applied.

A further object is to provide a simplified snow plow the moving parts of which may be power driven from a suitable shaft on the tractor or other motor vehicle and which will be formed of a few strong simple and durable parts, which will be easy to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts herein-after fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a side elevation of a snow plow constructed in accordance with the invention and applied to a caterpillar tractor.

Figure 2 is a plan view of the snow plow and tractor shown in Figure 1.

Figure 3 is a vertical sectional view taken on the line 3-3 of Figure 1 looking in the direction of the arrowheads.

Figure 4 is a longitudinal sectional view of the snow plow.

Figure 5 is a detail elevation of the rear supporting bracket of the snow plow.

Figure 6 is a detail perspective view of the bottom cutting blade.

Figure 7 is a fragmentary detail elevation of one of the screw carriers.

Figure 8 is a detail sectional view showing one of the knife blades on the front vertical cutter.

Figure 9 is a cross sectional view taken on the line 9-9 of Figure 8 looking in the direction of the arrowheads.

Referring now to the drawings in which like characters of reference designate similar parts in the various views, 10 designates a conventional Caterpillar tractor, to which the snow plow is illustrated as being applied.

The snow plow comprises a bottom plate 11, which is inclined upwardly from front to rear, as shown best in Figure 4. A rear A-shaped

bracket 12, shown in elevation in Figure 5, has the leg bolted at the bottom to the base plate as shown at 13 in Figure 1. A bearing box 14 is mounted on top of the bracket to journal the rear end of a power shaft 15. The bracket is braced by a diagonal brace 16 which extends from the base plate to the top of the bracket.

A substantially rectangular frame 17 is mounted on the front of the bottom plate and has the sides 18 sloped rearwardly as best shown in Figure 1. The bottom of the frame may be secured to the base plate in any preferred manner and the top of the frame is provided on the underneath sides with a gear case 19, best shown in Figures 1 and 4, in which the forward end of the power shaft 15 is journaled.

A vertical screw cutter 20 has the shaft 21 thereof journaled in ball bearings 22 and 23 mounted respectively in the gear case and on the base plate. The power shaft 15 is geared to the shaft of the cutter by bevel gears 24 and 25. The spiral blade of the cutter is equipped at diametrically opposite points with upstanding knives 26 having angularly directed lower ends 27 bolted as shown at 28 in Figure 8, to the spiral blade of the rotary cutter.

A pair of cross braces 29, best shown in Figure 2, are bolted at the front ends to the top of the front supporting frame 17 and are bolted at the rear ends to the bearing box 14 of the rear A-shaped bracket 12 to rigidly secure these parts in place. A diagonal brace bar 30, best shown in Figure 1, is connected at the upper end to the top of the front supporting frame and is connected at the rear end to the rear portion of the base plate to further rigidly anchor the front supporting frame in place. This brace bar intersects the beforementioned brace bar 16 which braces the rear A-shaped bracket 12, as best shown in Figure 4.

A deflector 31 of substantially inverted V-shaped cross section, as best shown in Figure 3, is bolted to the base plate, as shown at 32 in Figure 4, the sides of the deflector gradually increasing in height from front to rear, as best shown in the last named figure. The lateral edges of the deflector at the rear upper end are curved outwardly to provide wings 33 which deflect the snow laterally from the rear end of the snow plow.

The bottom front end of the deflector is provided with spaced bearing boxes 34, as best shown in Figures 1 and 2, which receive the lower ends of screw carriers 35 which are mounted in respective troughs 36 fixed to the deflector, and

extending upwardly toward the rear of the deflector. The carriers diverge from each other and are adapted to lift the snow dislodged by the front vertical cutter and carry it upwardly and rearwardly to the wings 33 which as heretofore mentioned deflect the snow outwardly beyond the sides of the snow plow.

As best shown in Figure 2, the upper ends of the shafts 37 of the screw carriers are journaled in suitable bearings 38 formed in an irregular shaped cross bar 39 which is mounted at the upper rear end of the snow plow by means of extensions 40 of the diagonal brace bars 29, these extensions being continued rearwardly as shown at 41 and bolted as shown at 42 to any convenient part of the tractor. The cross bar 39 is also secured to the tractor by upright brace bars 43, as best shown in Figure 1.

As also best shown in Figure 2 the cross bar 39 is equipped with sleeves 44 in which are journaled stub shafts 45 the outer ends of which are geared to the shafts 37 of the screw or worm carriers, by means of meshing bevel gears 46 and 47. The inner ends of the stub shafts 45 are geared to the power shaft 15 through the instrumentality of bevel gears 48 which mesh with a common bevel gear 49 on the power shaft. A chain drive 50 connects the power shaft 15 with any suitable power driven gear 51 on the tractor to simultaneously drive the vertical cutter 20 and both screw carriers 35, as best shown in Figure 4.

In operation as the snow plow is pushed for-

wardly by the Caterpillar tractor on the roadway the vertical rotary cutter will dislodge and break up the snow which, as the snow plow advances, will be deflected by the deflector 31 into the troughs 36 and carried upwardly and rearwardly by the screw carriers 35 to the wings 33 which deflect the snow in endless streams laterally toward the sides of the roadway.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. In a snow plow, a cutter having spirally arranged vertical blades, screw carriers diverging upwardly and rearwardly from the bottom of the cutter, an arched deflector in rear of the cutter supporting the carriers, and means for simultaneously rotating the cutter and the carriers.

2. In a snow plow, a base plate, a vertical spiral cutter on the front of the plate, upstanding knives on the spiral body of the cutter, diverging screw carriers extending obliquely upward from the base plate in rear of the cutter, a deflector on the base plate supporting the carriers and gradually increasing in height and width from the cutter to the rear end of the base plate, troughs on the deflector housing the carriers, and means for simultaneously rotating the cutter and the carriers.

FRANK V. LESTINA.