April 20, 1948. R. B. BOURNE ET AL 2,440,166

ELEVATING MECHANISM FOR SNOW PLOWS

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Fig. 1.

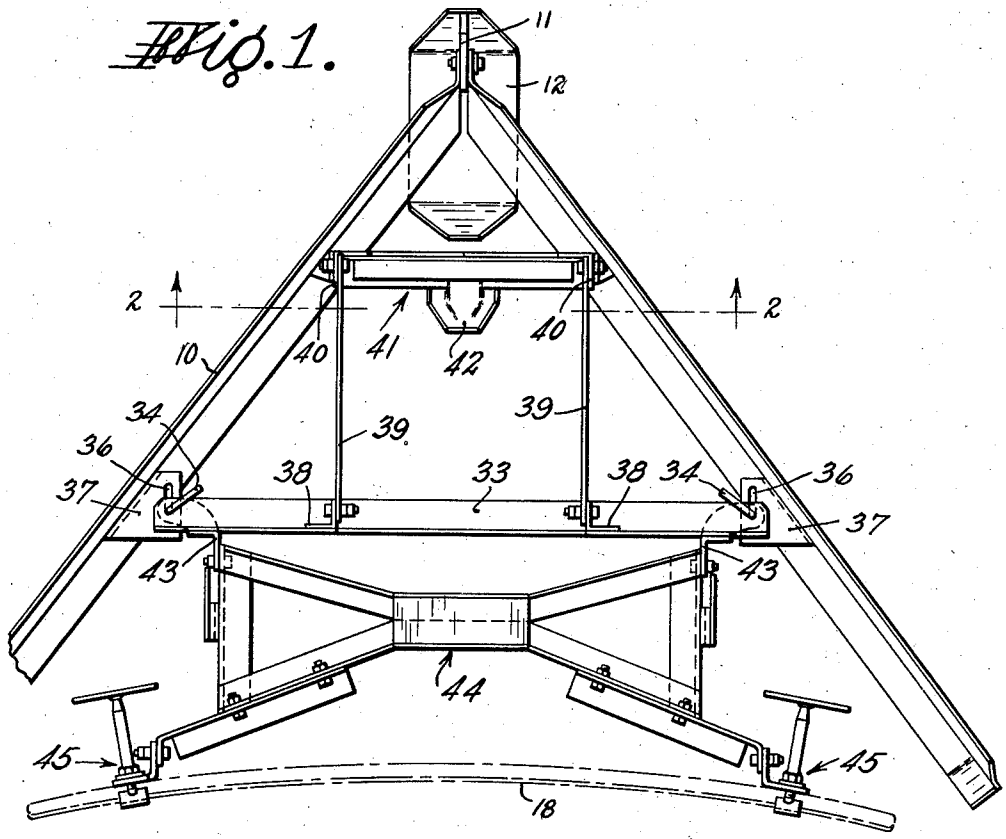
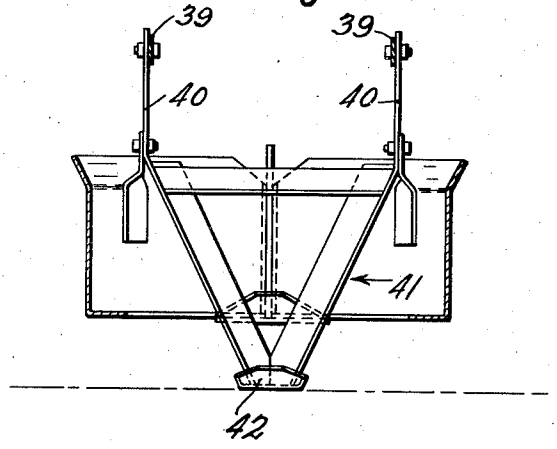


Fig. 2.



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Fig. 3.

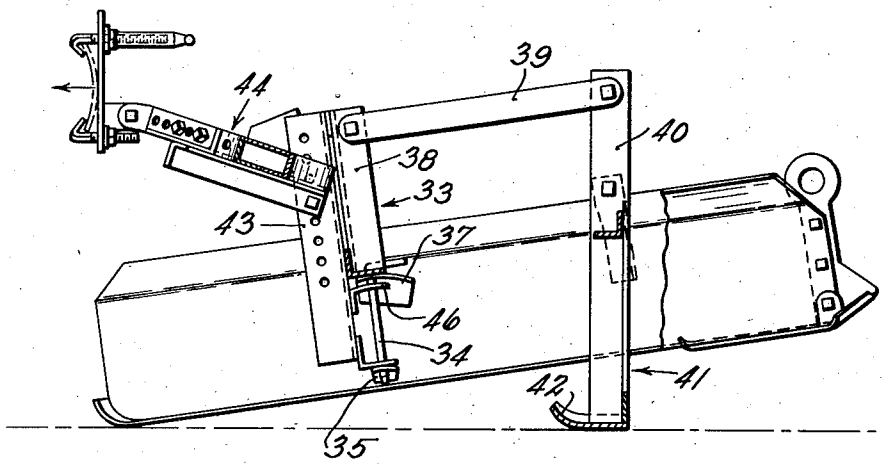


Fig. 4.

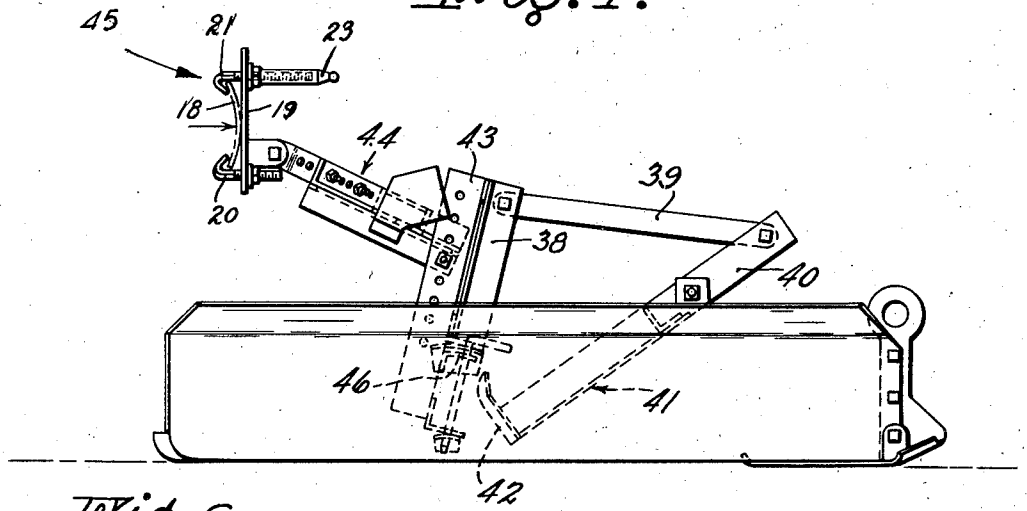


Fig. 6.

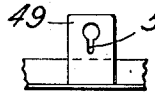
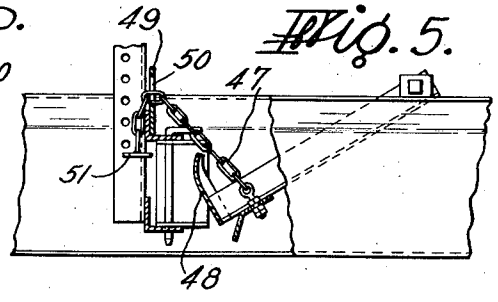


Fig. 5.



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2,440,166

ELEVATING MECHANISM FOR SNOWPLOWS

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Application May 20, 1946, Serial No. 670,876

2 Claims. (Cl. 37—44)

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This invention relates to snowplows, particularly such as are intended for attachment to automobiles of the pleasure type. In the operation of this type of plow, as in clearing snow from driveways or other confined spaces, it is frequently necessary to back the car to make an approach to uncleared surfaces. It is the object of the invention to provide simple and automatic mechanism for elevating the plow when the car is moved backwards in order to prevent snow being scraped up and lodged between the car and plow. While the invention will be described in connection with a plow of V shape certain features may be used with a single blade plow.

Referring to the drawings,

Fig. 1 is a plan view showing the elevator actuated positively by the direction of thrust exerted by the car;

Fig. 2 is a rear elevation of the elevator of Fig. 1, taken on line 2—2 of that figure;

Fig. 3 is a side elevation, partly broken away, of the mechanism of Fig. 1 showing the elevator in active position;

Fig. 4 is a similar view with the elevator in inactive position;

Fig. 5 is a detail of a further modification, and

Fig. 6 is a detail thereof.

The plow shown in the various figures has been described and claimed in a copending application of Hiram H. Maxim et al. Serial No. 670,874, filed May 20, 1946, and will be described here only briefly. This plow comprises a pair of moldboards 10 bolted at their front ends to a plate 11 and to a dished shoe 12 which guides the V-shaped plow structure over obstructions. Cross braces 33 are held removably to brackets 35, 37 on the moldboards by pins 34, and to vertical angle irons 43 bolted to these crosspieces is pivoted a trussed strut frame 44 slanting upwardly and rearwardly toward the automobile bumper 18. A pair of bumper clamps 45 (Fig. 4) each having a plate 19 and a pair of hook bolts 20, 21, the latter of which passes through a slot in the plate and is tightened by a handled nut 23, are pivoted at the rear of the strut frame. Pushing force from the bumper is thus directed downwardly and forwardly to keep the plow seated on the ground in operation.

On backing the car it is desirable to elevate the front end of the plow in order to avoid scraping up a large amount of snow between it and the car which would be difficult to dispose of. For this purpose the crossbrace structure 33 is secured by a pin 34 passing through a hole in a lower

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bracket 35 and through a slot 36 in an upper bracket 37. The crossbrace may thus rock back and forth around the lower bracket as pivot. Uprights 38 secured to the crossbrace are connected by pivoted links 39 to extensions 40 of a pivoted frame 41 carrying a shoe 42. Vertical angle irons 43 on the crossbrace connect it pivotally to the strut frame 44 at any desired height, the frame 44 being pivotally connected to bumper clamps 45 as described above.

The operation will be clear from Figs. 3 and 4. During forward movement of the car and plow the thrust of the strut frame 44 tilts the crossbrace forwardly until the pin 34 strikes the forward end of slot 36. This tilting operates through links 39 to swing the shoe carrying frame 41 out of contact with the ground as in Fig. 4. When the motion of the car is reversed the frame is swung reversely and the shoe lowered to elevate the front end of the plow as in Fig. 3. In order to prevent the crossbrace structure riding upwardly on its pin an abutment 46 is secured to the uprights 43 in position to underlie the upper bracket 37. It is obvious that the single shoe shown could be replaced by a plurality of shoes.

In Fig. 5 is shown a modification of the means for limiting the shoe in its forward movement relative to the plow. A chain 47 is here attached at its forward end to the shoe 48 and at its rear end to a suitable bracket or support 49 secured to the plow structure. If desired the support may be provided with a narrow slot 50 fitting between the chain links so that the chain may readily be shortened to hold the shoe in inactive position. The free end of a chain may be provided with a cross piece 51 serving as a handle or as a stop.

We claim:

1. In a snowplow, a pair of moldboards in V-formation, a support pivoted between the moldboards adjacent the apex of the V, a shoe carried by the support at a distance from the pivot greater than the distance of the pivot from the lower surface of the moldboards, means connecting the plow with the bumper of an automobile and having a lost motion connection with the plow, and means connecting said means with the support to rock the same in a direction to remove the shoe from contact with the ground when the plow is being pushed forwardly and to tilt the support to elevate the front of the plow upon the shoe when the plow is pulled rearwardly.

2. In a snowplow, a pair of moldboards in V-formation, a support pivoted between the moldboards adjacent the apex of the V, a shoe carried

by the support at a distance from the pivot greater than the distance of the pivot from the lower surface of the moldboard, an extension of said support above the pivot, a crossbrace between the moldboards supported thereon for limited rocking motion in a direction toward and away from the front of the plow, means connecting the crossbrace to the bumper of an automobile, an extension upwardly from said crossbrace, and means connecting said two extensions to swing the support rearwardly to remove the shoe from contact with the ground when the plow is pushed forwardly and to tilt the support to elevate the front of the plow upon the shoe when the plow is pulled rearwardly.

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