

Feb. 15, 1955

R. McANENY
TRACTOR CONSTRUCTION

2,702,212

Filed Nov. 10, 1949

3 Sheets-Sheet 1

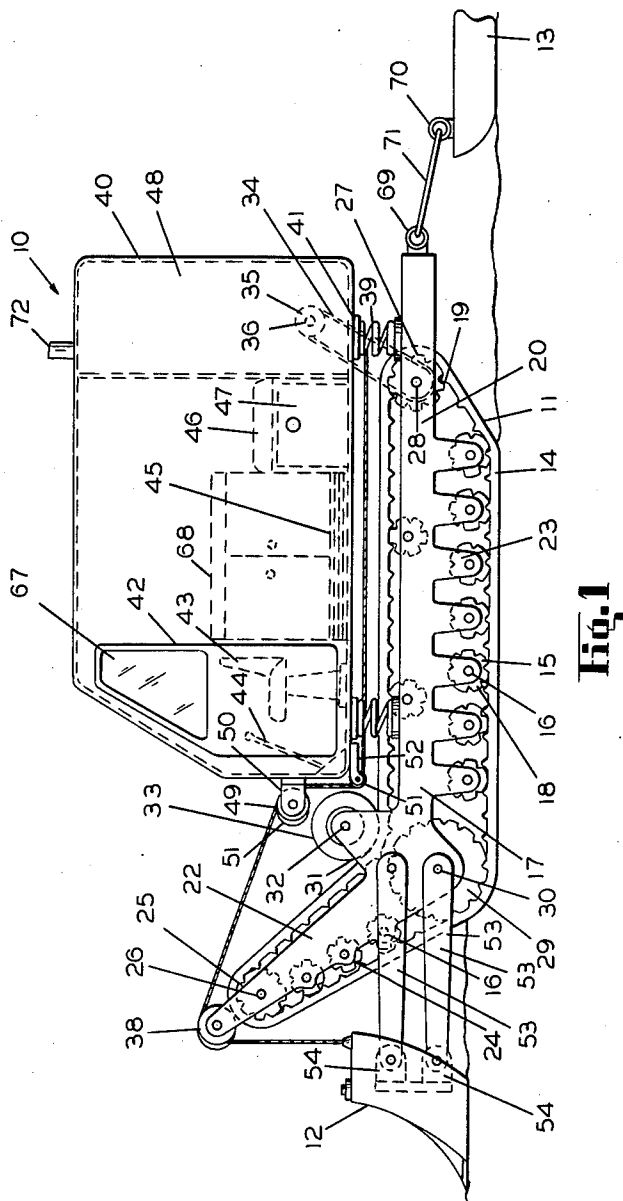


Fig. 1

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3 Sheets-Sheet 2

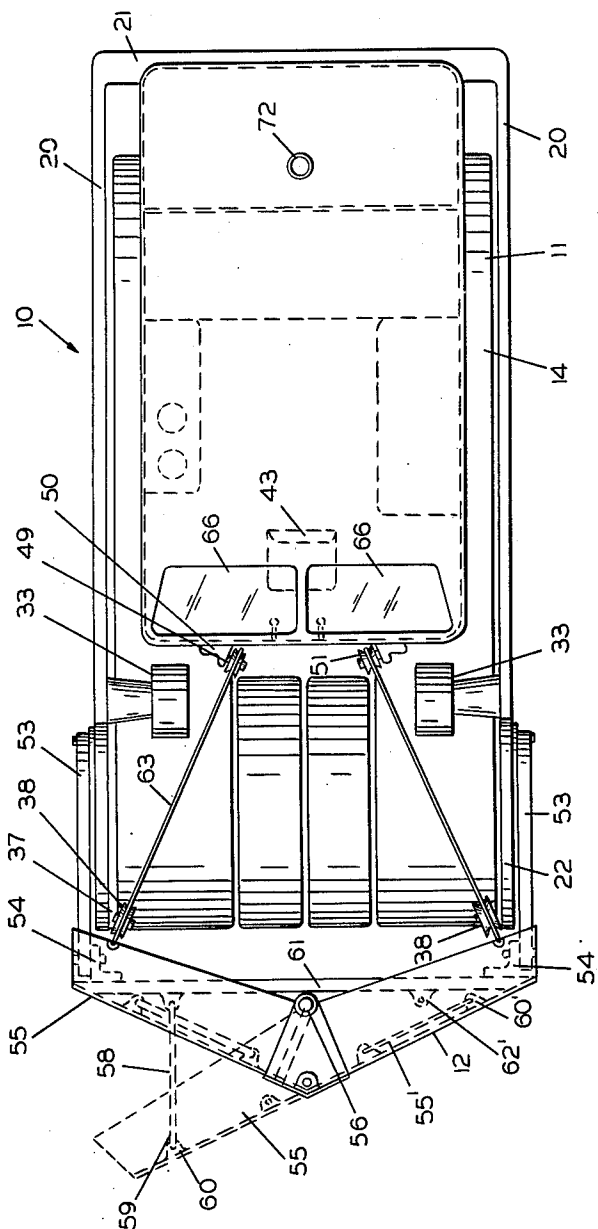


Fig. 2

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3 Sheets-Sheet 3

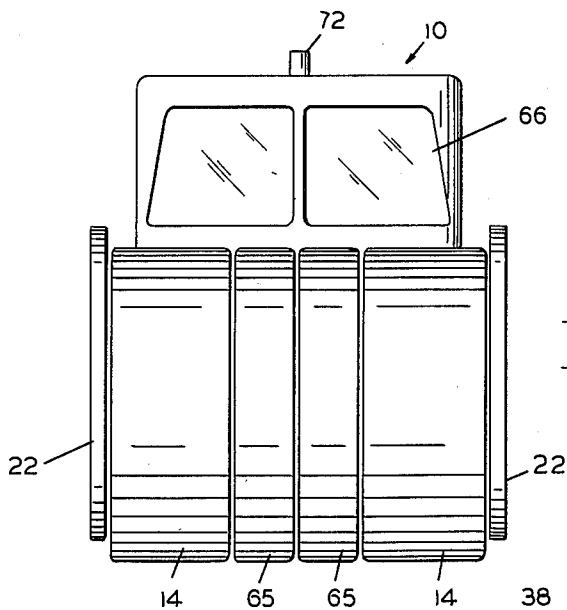


Fig. 3

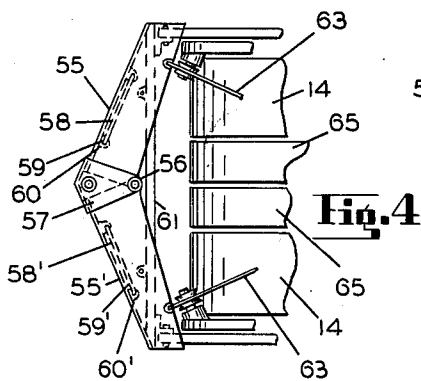


Fig. 4

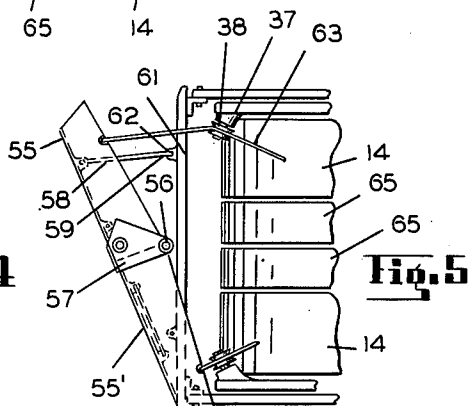


Fig. 5

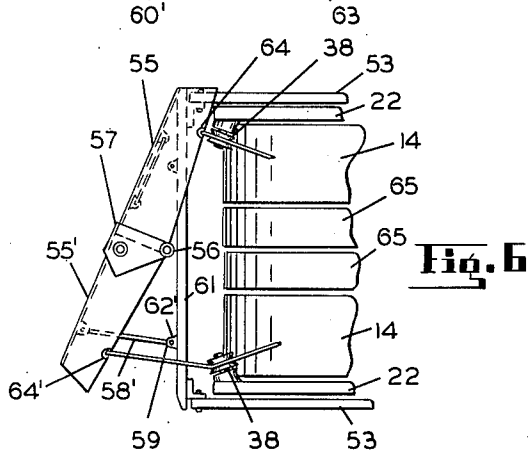


Fig. 6

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TRACTOR CONSTRUCTION

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1 Claim. (Cl. 305—9)

This invention relates to apparatus for snow removal and more particularly is directed to an apparatus of a traction construction, including actual snow removal devices which are adjustable.

An object of this invention is to provide a combined snow plowing device and a traction device, whereby the snow plow may be adjusted to remove snow from the path of the traction device, but leaving sufficient snow in the path pursued by the traction device so that additional sleds pulled by the traction device can easily transverse along the path.

Another object of this invention is to provide a self contained snow removing apparatus comprising snow plow, adjustable and hingedly mounted with respect to a traction device, with the traction device including a traction unit including separable traction belts and a pair of traction rollers arranged between the belts and at the forward position of the traction device. Mounted above the traction belts and to the rear of the rollers is an enclosed cabin for accommodating various items such as the operator's cab, fuel tank, prime mover, etc.

The operation of the device as referred to in the foregoing contemplates overcoming many of the hazardous conditions usually found in communities where the snow fall is extremely heavy and where the distribution and disposal of supplies is of paramount importance. Therefore it is contemplated to provide a snow removal and traction device which may be used to progress through heavily snowed in areas, hilly and otherwise. The snow plow itself may be adjusted to remove a goodly amount of snow but leaving a sufficient amount for providing easy travel, in a well defined path, for supply sleds drawn by the traction device itself. The plow is adjustable to push the snow to both sides in the conventional manner, or maybe adjusted to push the snow either to one side or the other. The importance of providing a device which may push the snow away on either side lies in the fact, that if the device is proceeding over hilly country or where the contour of the country is such that steep ascents or traverse along the side of a hill becomes necessary, the plow may be adjusted to push the snow downwardly and away and not directly forward of the traction device as it is proceeding, for instance, up a hill. The purpose of the device is usefully served when the snow is so heavy that a large amount of snow may be removed to permit the traction device pulling supply trains to crawl through the path left by the plow. The front rollers, which revolve in the forward position only of the traction device, have the utility to scale banks or obstructions, and leave a level road for the supply train.

With the above and other objects in view which will appear as the description proceeds, the invention consists of the novel construction, adaptation, combination and arrangement of parts hereinafter described and claimed. These objects are accomplished by devices illustrated in the accompanying drawings wherein:

Figure 1 is a side elevational view of the apparatus embodying the invention,

Figure 2 is a top plan view of the invention and showing the plow in an adjusted position in dotted lines.

Figure 3 is a front view of the invention.

Figure 4 is a fragmentary top view of the invention showing one position of the plow.

Figure 5 is a view similar to Figure 4 but showing the plow in a different adjusted position, and

Figure 6 is another view similar to Figure 4 and showing the plow adjusted to still another position.

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Referring to the drawings, throughout which like reference numerals indicate like parts, the numeral 10 designates the apparatus as a whole and comprises the assembled traction device 11, the plow 12, and a part of a supply sled 13.

The traction device includes a pair of traction belts 14 disposed over and around pulleys or wheels 15, mounted on shafts 16, journaled in a chassis 17. Each of the wheels 15 has teeth 18 arranged in spaced relation on their periphery, for engagement with equally spaced tooth like members 19 on the inside surface of the traction belts 14.

The chassis 17 comprises side members 20 joined by end member 21 at the rear, and raised at 22 at the forward ends at a substantial angle with respect to the rear side members 20. Integrally formed with side members 20 are a plurality of depending flange members 23 which are perforated to receive the shafts 16 with the forward ends at 22 provided with other flange members 24 also perforated to receive similar shafts 16. It will be noticed that the flanges 24 are much smaller than flanges 23 for constructional purposes.

An enlarged wheel or roller 25 is rotatably mounted on a shaft 26 connecting the forward ends 22 over which the belts 14 pass with a roller 27 of similar size mounted on a shaft 28, connecting the members 20 adjacent the end member 21. A third roller 29 of larger diameters than any of the previously mentioned wheels or rollers is mounted on shaft 30 which also connects the members 20 at approximately the point where the ends 22 are disposed upwardly at an angle.

Attention is directed to the fact that all of these rollers are provided with spaced toothed portions along their periphery for cooperating with the sections 19 in the belts.

A flange 31 of substantial size is formed integral with each member 20 adjacent the base of members 22, and are apertured for receiving shafts 32 upon which a pair of idler rollers 33 are mounted.

The shaft 28 provides space for including a driving connection for the drive belt 34 which is connected to the pulley 35 mounted on shaft 36 of a prime mover, not shown.

The extreme ends of members 22 are provided with supports 37 upon which are rotatably mounted pulleys 38.

Heavy coil springs 39 are strategically spaced intermediate the chassis 17 and a body 40. These springs may rest in any suitable supports 41 of sufficient size to retain the base of the springs.

The body 40 is enclosed and because of the nature of use of the device may be of sufficient size to include an operator's cab 42, seat 43, actuating lever 44, heater 45, bed 46, fuel tank 47, and motor room 48.

A pair of pulleys 49 are supported on protruding member 50 secured to the front of the body cab with a pair of pulley members 51 secured to supports 52 attached to the bottom of the body in a forward position.

Extending outwardly and forwardly from members 22 are longitudinal arms 53, a pair of which are each hingedly mounted on each member 22 and have their free ends equipped with supports 54 which in turn support the plow 12.

The plow 12 comprises two independent and separable sections designated by the numerals 55 and 55' having their centrally disposed ends at one corner hingedly mounted at 56 and having their adjacent ends so arranged that upon hinged movement these centrally disposed ends are scissorlike in operation. A plate 57 is disposed over the top of the hinged section 56 so that regardless of the hinged movement, the opening, resulting from the movement of the sections 55 and 55' will always remain covered.

Secured to each section 55 and 55' and hingedly mounted thereon are arms 58 and 58' respectively having their free ends 59 and 59' respectively free to engage brackets 60 and 60' when in the position as shown in Figure 4 or arranged to engage the end support 61 which in turn is connected to the sections 55 and 55' of the plow 12 and incidently form a mount for the supports 54.

When it is desired to arrange the plow 12 to assume

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the position of Figure 5, the free end 59 of arm 58 is swiveled in the bracket 60 and used as a lever to push section 55 outwardly on its hinged end whereby the free end 59 is temporarily locked in a bracket 62, one end of which is secured to end support 61. When it is desired to arrange the plow 12 to assume the position of Figure 6, the free end 59' instead of 59 of arm 58', is swiveled in the bracket 60' and used as a lever to push section 55' outwardly on its hinged end whereby the free end 59' is temporarily locked in a bracket 62', one end of which is secured to end support 61.

Plow adjusting cables 63 are secured to the top of each section 55 and 55' at points designated as 64 and 64'. Each cable is drawn over a pulley 38 and a roller 49, pulley 51 and extends to a point near the rear of body 40 where it may be connected to the operating mechanism associated with the prime mover. Essentially the manner of exerting or lessening tension on the cables is solely for the purpose of raising or lowering the plow 12 vertically, to adjust the height of the plow with respect to the belts 14 for the purpose of removing snow but leaving a sufficient amount for the belts 14 and supply sled 13 to transverse over easily and without undue obstruction.

Referring to Figure 3 it will be noticed that belts 14 are spaced by a pair of circular front sections 65 which only serve to fill out the space between the belts 14 and have tractor threads similar to those appearing on the outside surface of belts 14. These sections 65 revolve in the front area only and are independent of the chassis 17 and members 22 and 20.

The cab 42 includes the usual windshield 66 and window 67. Included also in the body 40 is a stove 68.

The supply sled 13 may be connected to the tractor through the medium of coupling devices 69 and 70 joined together by a cable or bar 71. An exhaust vent 72 may be disposed immediately above the motor room 48.

In operation, the plow 12, or more specifically, the sections 55 or 55' may be arranged as illustrated in Figures 4, 5 or 6, dependent upon the contour of the region over which the tractor is moving and as explained heretofore in the specification. The operator in the cab may raise the plow 12 to any desired level by actuating the mechanism for drawing the cables and then through the prime mover 48, drive belt 34 and toothed wheel 27 cause movement of the tractor belts 14.

It will thus be seen that there is provided a device for snow removal and tractor device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

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As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

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

A tractor vehicle comprising a chassis consisting of side members rigidly connected together in spaced parallel relation, the forward ends of said side members being upwardly inclined in a forward direction, each side member having an upstanding flange at the juncture of said forward ends and said side members, an idler roller mounted on each flange, a pair of gear wheels rotatably mounted inwardly of the forward ends of the side members, a pair of gear wheels rotatably mounted between said side members inwardly of the rear end thereof, a pair of gear wheels rotatably mounted between said side members of greater diameter than said previously mentioned gear wheels and positioned in alignment with said idler rollers but spaced therefrom, each of said side members having a plurality of depending flanges, a gear wheel rotatably mounted on said flanges and a tractor belt in operative engagement with said gear wheels, the upper surface of said belt passing beneath and in contact with said idler roller, and means for driving the gear wheel at the rear end of said side members.

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