July 24, 1951

E. M. TUCKER

2,561,716

SNOW TRACTOR

Filed Jan. 23, 1946

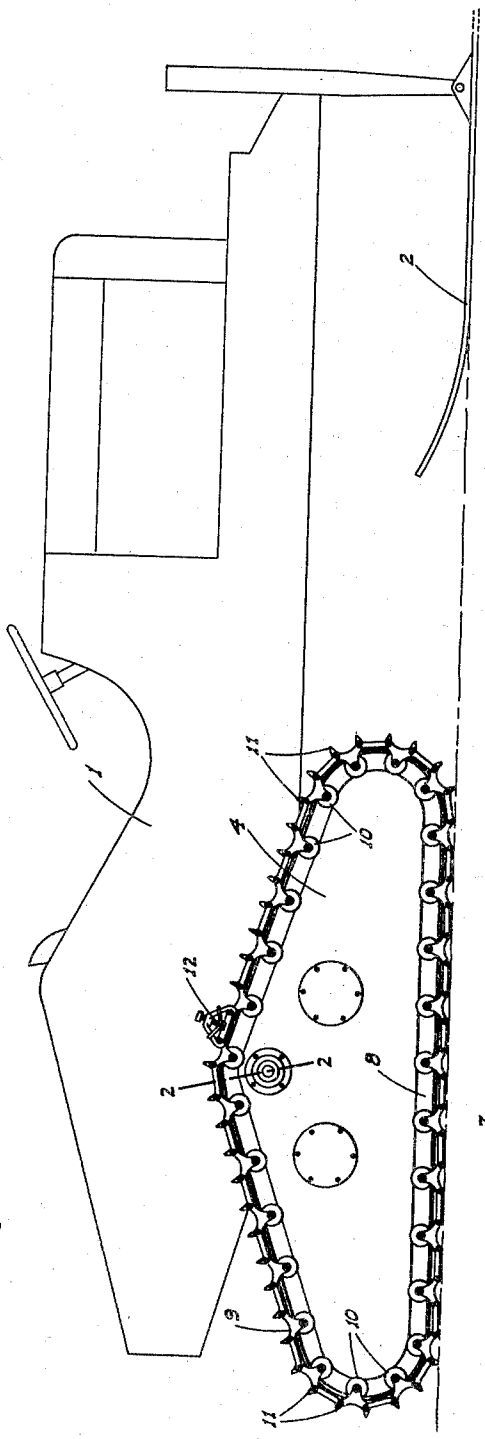


Fig. 1

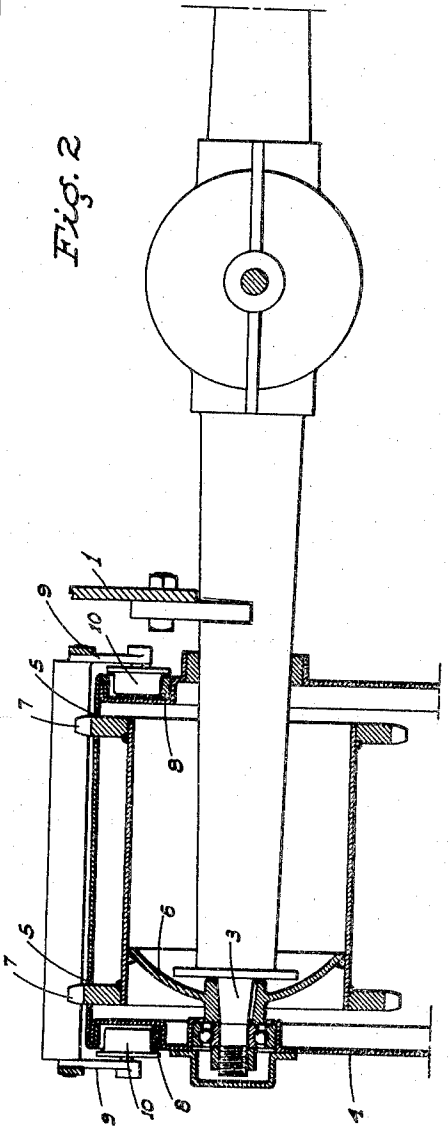


Fig. 2

INVENTOR

E. M. Tucker

BY

ATTORNEYS

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SNOW TRACTOR

Emmitt M. Tucker, Grass Valley, Calif., assignor to Tucker and Sons, Grass Valley, Calif., a corporation

Application January 23, 1946, Serial No. 642,892

2 Claims. (Cl. 180—5)

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This invention relates to tractor type vehicles for use in transporting persons and material over snow covered areas where ordinary vehicular traffic is impossible.

The present invention constitutes an improvement over that type of snow tractor shown in my issued Patent No. 2,341,000.

One of the primary essentials in a snow tractor is that there shall be as few moving parts as possible. This is for the reason that in travelling through the snow, the snow tends to pack into the mechanism and often freezes, and in so doing tends to break any relatively movable parts due to the strain imposed thereon by the frozen snow.

In my previous patent the endless driving track element moved at each end over a pair of movable discs which were supported by the main supporting pontoon of the vehicle and had movement relative thereto. The present invention contemplates the elimination of these movable discs and the substitution therefor of a new and improved type of supporting pontoon and continuous track element about which the endless driving element moves—thus reducing the number of movable parts and the possibility of breakage.

A further object of the invention is to produce a practical device and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Figure 1 is a side elevation of my improved snow tractor showing the vehicle body in outline and my improved type of supporting and driving element mounted thereon.

Figure 2 is a fragmentary sectional view taken on a line 2—2 of Fig. 1.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 designates generally the vehicle body which in the present instance is illustrated as being supported at the front end by pivoted ski elements 2 which may be of any form adaptable to this type of vehicle.

My improved supporting and driving element includes a drive shaft 3 suitably mounted in the vehicle body 1 and which will be connected in any conventional manner with a prime mover such as a gasoline engine or the like carried in the body 1 but which, being conventional, is not shown in the drawings.

The numeral 4 designates a supporting frame

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or pontoon which is shown in the drawings as being of elongated form and substantially rectangular in cross section. This member 4 is hollow and substantially enclosed on all sides except at the upper side wherein is provided a pair of slots 5 for a purpose which will presently appear.

The shaft 3 projects through the pontoon 4 at a point therein and is suitably journaled in the side walls of said pontoon in any desired manner as shown by Fig. 2. Suitably fixed to said shaft is a driving disc or hub 6 on which are one or more sprocket wheels 7 which project a short distance through the slots 5. Formed about or attached to the sides of the pontoon 4 adjacent the peripheral edge thereof are continuous and endless channel tracks 8.

The endless driving traction element 9, which may be made up in any form of linked-together ground engaging elements, is provided on its inner side with a plurality of rollers 10. These rollers 10 engage and travel the endless tracks 8.

In the present instance the element 9 includes a plurality of cross bars 11 which are linked together and are supported by the links and rollers 10. The endless element 9 is driven about the pontoon through the action of the sprockets 7 which engage these bars 11 and with the rotation of the drive shaft 3, drive the element 9 about the pontoon 4, which in turn imparts motion to the vehicle body 1.

It will be seen that the element 4 with the tracks 8 forms a unitary and rigid support for the endless driving member 9 with no relatively movable parts therein as shown in the previous patent in which rotatable discs were mounted at the end of the supporting pontoon and about which the endless element moves. In the former type of mechanism the element 9 could be adjusted to its proper taut position by adjustment of the discs. With such a unitary and solid structure as presented by the pontoon 4 and the tracks 8 in the present application, such a type of adjustment for the endless element 9 is not possible. However, I have provided for this contingency and may effect a tightening of the element 9 through the medium of a chain tightener 12 which may be used to bend the links of the element 9 and thus shorten the over-all length of such element in a manner taught by my pending application for patent, filed July 2, 1945, Serial No. 602,806, now abandoned, in which an element like that shown by the numeral 12 is shown and described in detail and its manner of use fully illustrated.

From the foregoing description it will be apparent that I have materially simplified and improved the supporting and driving element of my previous patent and eliminated many moving parts and minimized the chances of breakage of the operating parts of the tractor.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful and upon which Letters Patent is desired:

1. A snow tractor including a vehicle body, a supporting and driving means for said body, such means including a driving shaft mounted on such body, a supporting pontoon, such pontoon being enclosed on all sides except at a point adjacent the top thereof where it is provided with a longitudinal slot, the outer end of the shaft being journaled in the sides of said pontoon, a continuous and endless track disposed about and being rigid with each side of the pontoon adjacent the peripheral edge thereof, an endless driven element comprising ground engaging cross bars spanning the outer periphery of the pontoon from edge to edge thereof, such bars being linked together at their outer ends at both sides of the pontoon, rollers journaled on each set of the links and supported by and operable over one of the tracks, a sprocket wheel on the shaft within the pontoon, the teeth of such sprocket wheel projecting through said slot and engageable with the bars spanning the periphery of the pontoon.

2. A snow tractor including a vehicle body, a supporting and driving means for said body, such means comprising a driving shaft mounted on such body, a supporting pontoon, such pontoon being enclosed on all sides except at a point adjacent the top thereof at which point it is provided with a longitudinal slot, the outer end of the shaft being journaled in the sides of the pontoon, each side of the pontoon being formed with a continuous, endless channel adjacent the peripheral edge thereof, the inner side of each channel providing an endless continuous trackway, an endless driven element comprising ground engaging cross bars spanning the outer periphery of the pontoon from edge to edge thereof, such bars being linked together at their outer ends at both sides of the pontoon, rollers journaled on each set of the links and projecting into the adjacent channel and being supported by and operable over the trackway in such channel, a sprocket wheel on the shaft within the pontoon, the teeth of such wheel projecting through said slot and being engageable with the bars spanning the outer periphery of the pontoon.

EMMITT M. TUCKER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,127,501	Palm	Feb. 9, 1915
1,404,052	Palm	Jan. 17, 1922
1,545,264	Logan	July 7, 1925
1,907,236	Bellerive	May 2, 1933
2,341,000	Tucker et al.	Feb. 8, 1944
2,378,111	Tucker et al.	June 12, 1945