

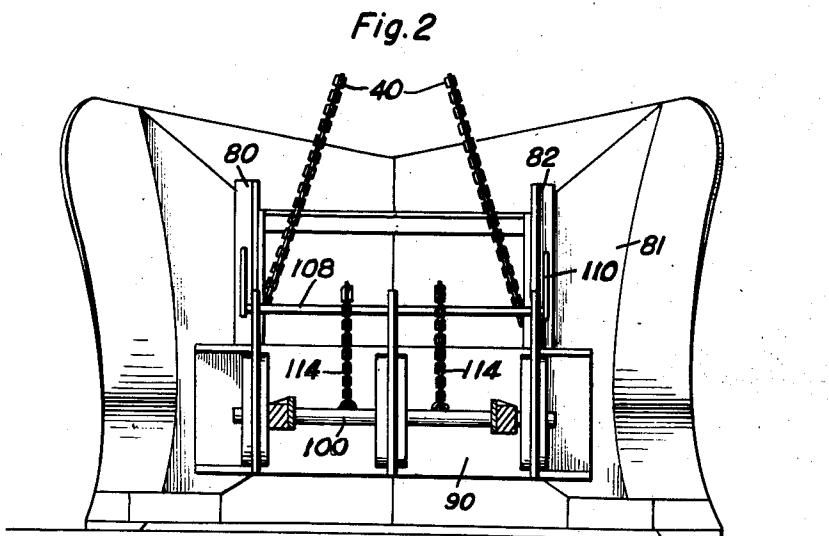
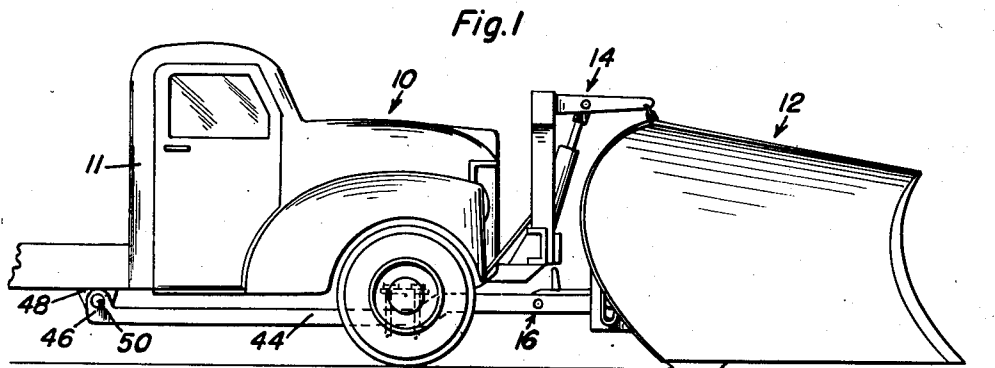
June 16, 1953

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SNOWPLOW ATTACHMENT

2,642,294

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3 Sheets-Sheet 1



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Fig. 3

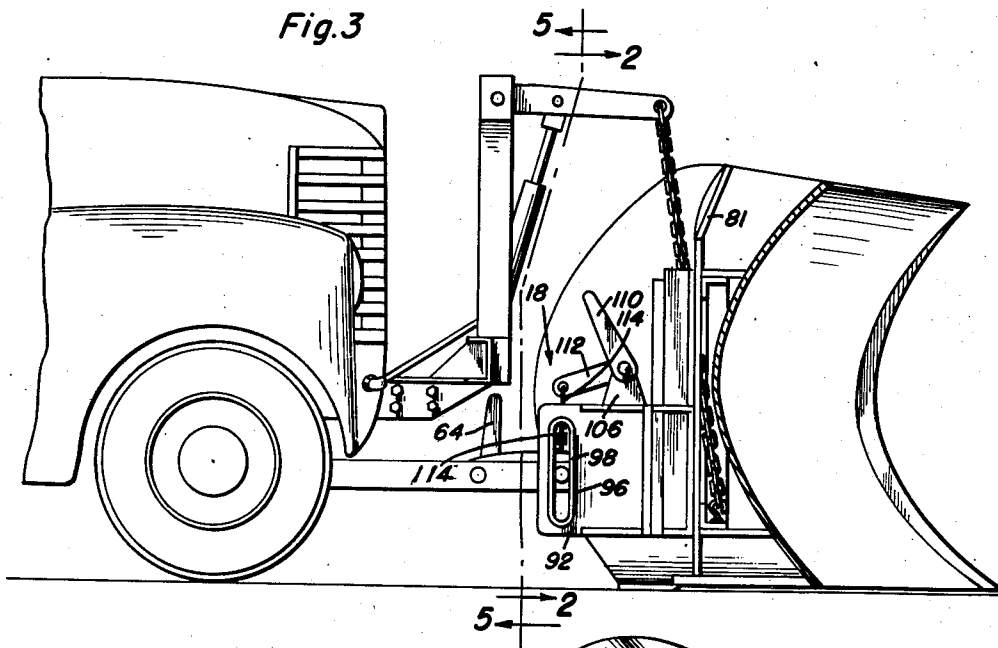
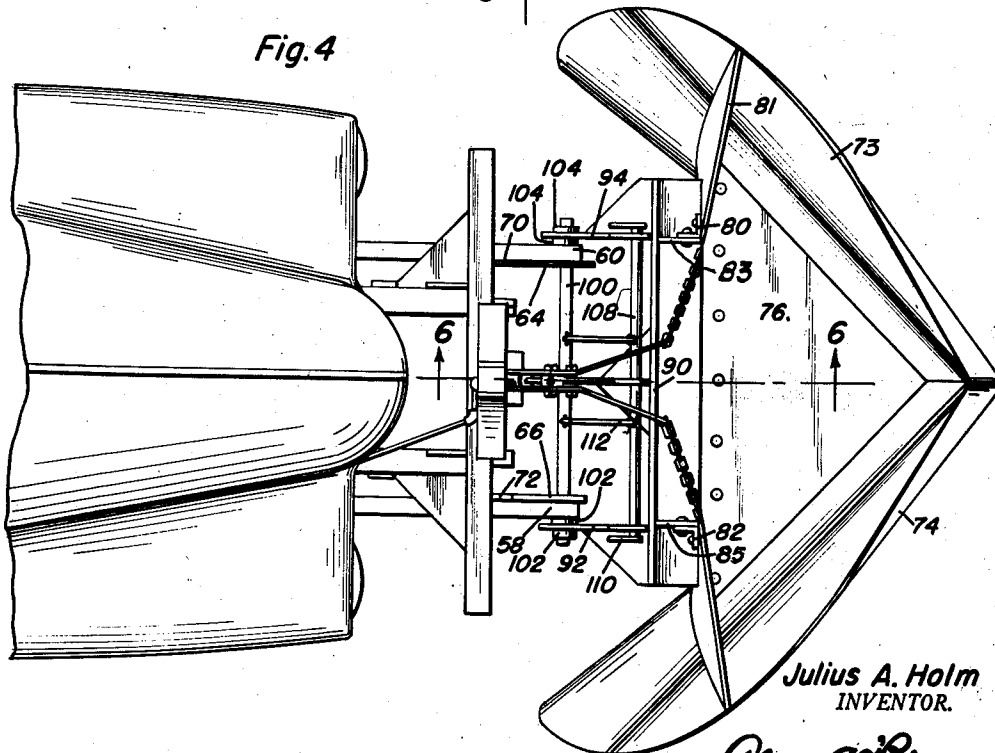


Fig. 4



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Fig. 5

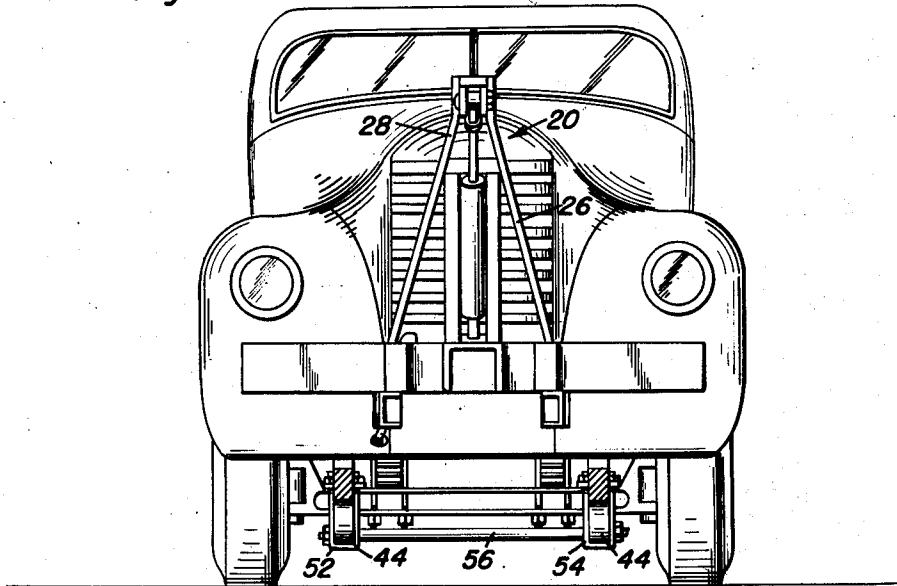
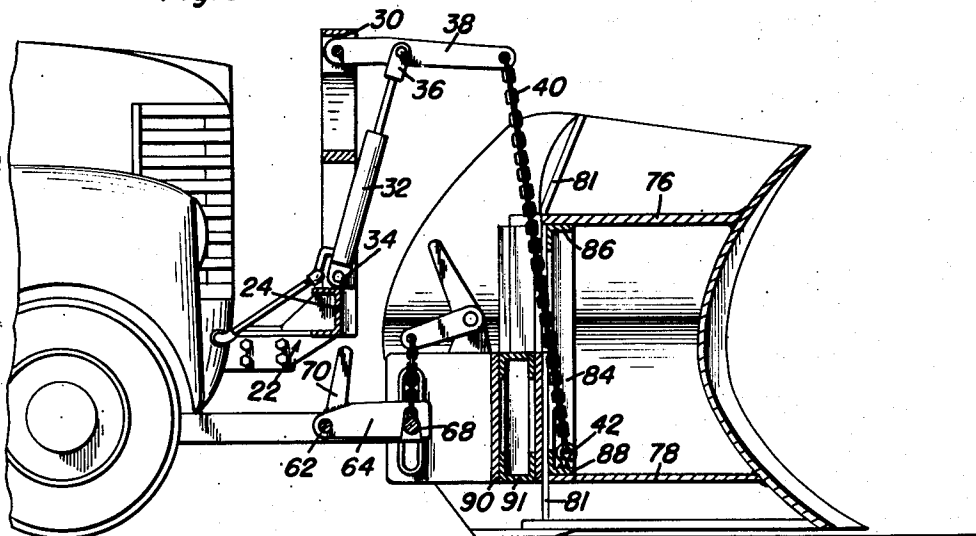


Fig. 6



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UNITED STATES PATENT OFFICE

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SNOWPLOW ATTACHMENT

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2 Claims. (Cl. 280—33.13)

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The present invention relates to improvements in snow plow attachments and more particularly to the means whereby a snow plow attachment may be readily attached to the front end of a truck or the like for plowing.

An object of the present invention is to provide a novel connecting means for snow plow attachments whereby the same may be readily attached or detached from a push frame means mounted on the underside of a truck.

Another object of the present invention is to provide a novel connection between a snow plow attachment and a truck wherein a shaft is transversely mounted on the plow means for vertical reciprocation in response to a manually actuated means in order that the shaft may be aligned with the bifurcations in the front end of the push frame means mounted on the underside of the truck, a pair of latching elements being pivotally mounted on the push frame means for engagement with the shaft when it is positioned within the bifurcations in order that they may be releasably maintained therein, thereby connecting the plow means for movement with the truck.

Still another object of the present invention is to provide a novel means for attaching a snow plow to a truck which requires but little change to the truck to adapt it for snow plowing.

A further object of the present invention is to provide a snow plow attachment which is simple in construction, economical of manufacture, readily assembled and of general superiority.

Various other objects and advantages will become apparent from the detailed description to follow. The best form in which I have contemplated applying my invention is clearly illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevational view of a truck with the snow plow attachment mounted thereon and showing the manner in which the push bar means are mounted on the underside of the truck;

Figure 2 is a rear elevational view of the snow plow attachment;

Figure 3 is a side elevational view of the snow plow attachment mounted on the front end of the truck with parts in section;

Figure 4 is a top plan view of the present invention;

Figure 5 is a vertical transverse sectional view taken substantially along the plane of line 5—5 of Figure 3; and

Figure 6 is a vertical longitudinal sectional view taken substantially along the plane of line 6—6 of Figure 4.

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Referring more particularly to the drawings, wherein like numerals designate like parts throughout, the numeral 10 designates generally a truck to which the snow plow attachment 12 is attached, the numeral 14 designates generally the lifting means for the snow plow attachment 12, the numeral 16 designates generally the push frame means which is mounted on the underside of the truck 10 to which the snow plow attachment 12 is attached, the numeral 18 designates generally the means for attaching the snow plow attachment 12 to the push frame means 16.

The truck 10 is provided with an A-frame 20 which is substantially of conventional form and forms no part of the present invention. A supporting bracket 22 is secured to the front end of the truck 10 and has a channel iron member 24 transversely disposed thereon. The upwardly extending A-frame 20 is comprised of a pair of bars 26 and 28 which are joined at their upper ends to form a bearing portion 30. A fluid actuating cylinder 32 is pivotally mounted at its lower end between the A-frame at 34 and has its plunger end 36 connected to an intermediate point of the lever 38 which is pivotally mounted between the bearing portion 30 of the A-frame 20. The outer end of the lever 38 is provided with a chain 40 which has its lower free ends adapted to be connected to a pair of eye hooks 42 on the snow plow means 12. It will thus be seen that the means 14 may be actuated to raise and lower the chain 40 and the snow plow means 12 to be hereinafter described.

The means to which the snow plow attachment 12 is attached comprises the push frame 16 which will now be described. The push frame 16 is formed of a pair of elongated bars 44 which have their rear ends formed with offset portions 46. A pair of brackets 48 are secured to the frame of the truck 10 immediately behind the cab 11 and on the underside of the truck. The offset portions 46 are pivotally attached to the brackets 48 by means of the shaft 50.

Intermediate portions of the bars 44 are supported by the front wheel axle as will readily be seen from Figure 5. A pair of U-shaped bolts 52 and 54 pass over the axle and are attached to the bars 44 joined by a crossbar 56.

The forward ends of the push bars 44 are bifurcated at 58 and 60 for a purpose to be hereinafter described. Each of the forward ends of the push bars 44 is connected by a shaft 62 and a pair of latch elements 64 and 66 are secured to the shaft 62 for pivoting therewith. The latch elements 64 and 66 are provided with notched

portions 68 which are adapted to be in alignment with the bifurcations in the outer ends of the push bars 44 when in one position. A pair of lever arms 70 and 72 are fixedly secured to the end portions of the shaft 62 for effecting pivoting movement thereof, thereby pivoting the latch elements 64 and 66 to and from alignment with the bifurcations 58 and 60 on the push bars 44.

The snow plow attachment 12 is provided with a pair of curved plow plates 73 and 74 providing a V-type plow. The plow plates 73 and 74 are joined by a pair of V-shaped plates 76 and 78 to which are attached a pair of upstanding angle irons 80 and 82. Angle irons 84, which are vertically extending, are also secured to the inner faces of the plow plates 76 and 78, and a pair of angle iron elements 86 and 88 connect the tops of the upright angle irons 84 and are secured to the underside of the plate 76 and the upperside of the plate 78 to form a substantially rectangular rigidifying means. An eye hook 42 is secured to either end of the angle iron 88 and is adapted to receive the lower ends of the chain 40 as hereinabove described.

A transversely extending arcuated plate 81 connects the plow plates 73 and 74 and is attached to the base edges of the plates 76 and 78 and angle irons 84, 86 and 88. The angle irons 80 and 82 are in turn secured to the back side of the plate 81 and have upstanding bars 83 and 85 secured thereto.

A transversely disposed plate 90 is secured to the plow means 12 behind the angle iron elements 80 and 82, and a hollow rectangular frame 91 formed of a plurality of channel iron elements is positioned between the plate 90 and angle iron elements 80 and 82 to rigidify the structure. The plate 90 is provided with a pair of outstanding plates 92 and 94 which are disposed adjacent the ends thereof in parallel relation. Each of the plates 92 and 94 is provided with an elongated slot 96 which is formed with a thickened lip portion 98 encircling the slot. The slots 96 are in upstanding relation and are adapted to slidably receive the ends of a shaft 100 which is held from transverse displacement by means of the annular rings 102 and 104. Each of the plates 92 and 94 is provided with an upstanding ear 106 and a shaft 108 is rotatably disposed in the ears 106. The shaft 108 is provided with a plurality of lever arms 110 and 112, the arms 110 being provided for manual pivoting movement of the shaft 108 and the lever arms 112 having chains 114 connected thereto with their lower extremities attached to the shaft 100 for vertical reciprocation thereon in response to pivoting movement of the lever arms 112. Thus it will be seen that the shaft 100 may be vertically adjusted for positioning in alignment with bifurcations 58 and 60 on the push bars 44.

In view of the foregoing, it will readily be seen that when it is desired that the snow plow attachment 12 be attached to the truck 10, the truck is driven to a position immediately behind the snow plow attachment with the forward ends of the push frame means 16 being juxtaposed

to the shaft 100. The shaft 100 is then vertically adjusted by manipulation of the lever arms 110 and the truck is then moved forwardly until the bifurcations engage the shaft 100. The hand lever 70 is then pivoted so that the latch elements 64, 66 pivot downwardly with the notch 68 engaging the shaft 100 to retain it within the bifurcations in the forward ends of the push bars 44. The snow plow attachment 12 is now securely mounted for movement with the truck 10. Of course, the lower ends of the chain 40 are connected to the eye hooks 42 so that the snow plow attachment may be raised and lowered in response to actuation by the fluid pressure means 14.

In view of the foregoing, it is believed that a device has been provided which will accomplish all of the objects hereinabove set forth. Of course, certain modifications may be made and mechanical equivalents substituted for the individual means of the present invention, and I desire to be limited only to the scope of the claims hereinafter appended.

Having described the invention, what is claimed as new is:

1. A hitch for attaching a snow plow to a tractor comprising a pair of pusher bars adapted to be attached to the tractor to extend forwardly therefrom in laterally spaced relation and having forwardly opening bifurcated ends, a pair of rearwardly extending vertically slotted plates rigidly attached to the snow plow and spaced apart to straddle said bifurcated ends, a cross shaft vertically adjustable in said slots for horizontal alignment with said bifurcated ends to be entered into the same, latch devices on said bars for retaining said shaft in said bifurcated ends, and manually operative devices carried by said plates for adjusting said shaft vertically.

2. A hitch according to claim 1, said last-named devices comprising a transverse rock shaft pivoted on said plates, lever arms on said rock shaft adjacent opposite ends of the vertically adjustable shaft, flexible connections between said lever arms and opposite ends of the vertically adjustable shaft, and a handle on at least one of said lever arms for operating the same to rock said shaft.

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