

[54] SWATHER ATTACHMENT FOR BI-DIRECTIONAL TRACTOR

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[21] Appl. No.: 520,095

[22] Filed: May 7, 1990

[30] Foreign Application Priority Data

Jul. 10, 1989 [CA] Canada 605193

[51] Int. Cl.⁵ A01B 73/00

[52] U.S. Cl. 56/228; 56/16.3; 172/285; 280/412

[58] Field of Search 56/14.9, 15.5, 16.3, 56/192, 218, 228; 172/324, 318, 248, 285, 677; 280/412, 413

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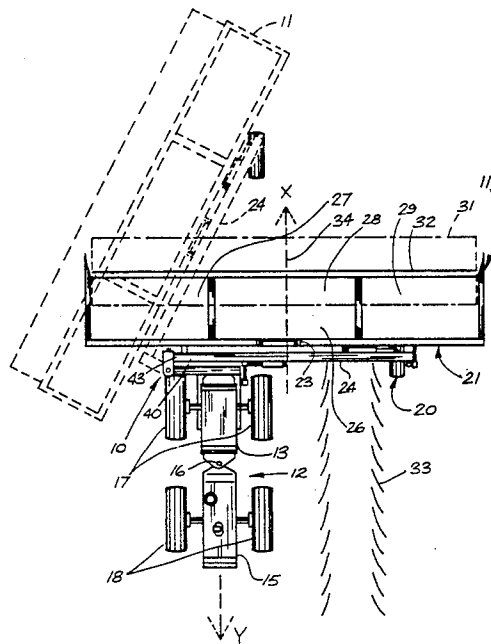
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[57] ABSTRACT

A mounting structure for attaching an elongated swather head to a tractor of the bi-directional type, the structure mounting the head in front of the tractor in a swathing direction of travel and accommodating swinging movement of the head to a trailing transport mode behind the tractor when travelling in a direction opposite to the swathing direction. The mounting structure is carried by the tractor which, in the operational mode of the swather, is disposed to one side of the center-line of the swather head. The mounting structure includes members for securement to the tractor and an elongated support member projecting transversely across the front of the tractor to the side of the tractor opposite to the center-line of the swather head. The head has a rear frame member which extends parallel to the head behind an intermediate portion thereof and is carried at one end by a hinge connection to the support member at the side of the tractor opposite to the center-line of the swather head. The hinge connection permits pivoting of the frame member of the swather head about a substantially vertical axis for accommodating the swinging movement of the swather head to a trailing transport mode. A lock is associated with the frame and support members for selectively holding the frame member against the swinging movement when used in the swathing operation.

11 Claims, 3 Drawing Sheets



H&S Mfg. Co., Inc.
v. Oxbo Int'l Co.
IPR2016-00950

H&S Mfg Co., Inc.
Exhibit 1017

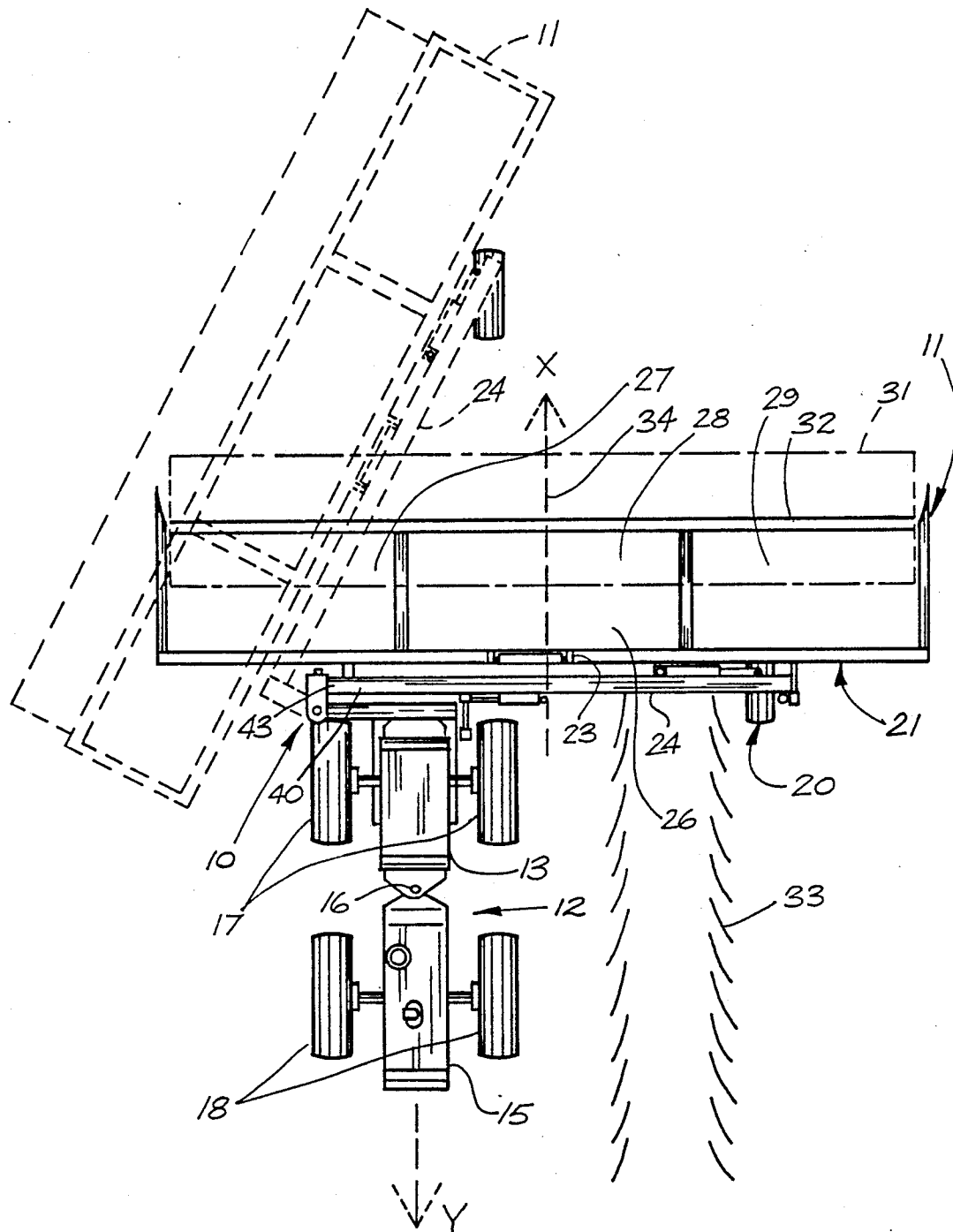
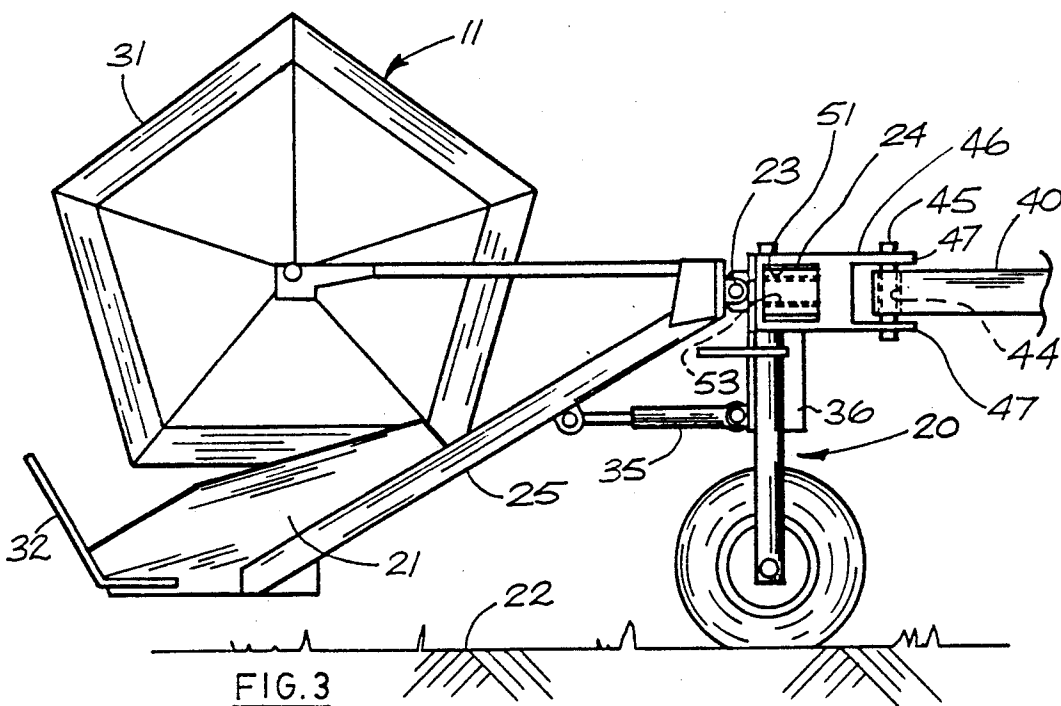
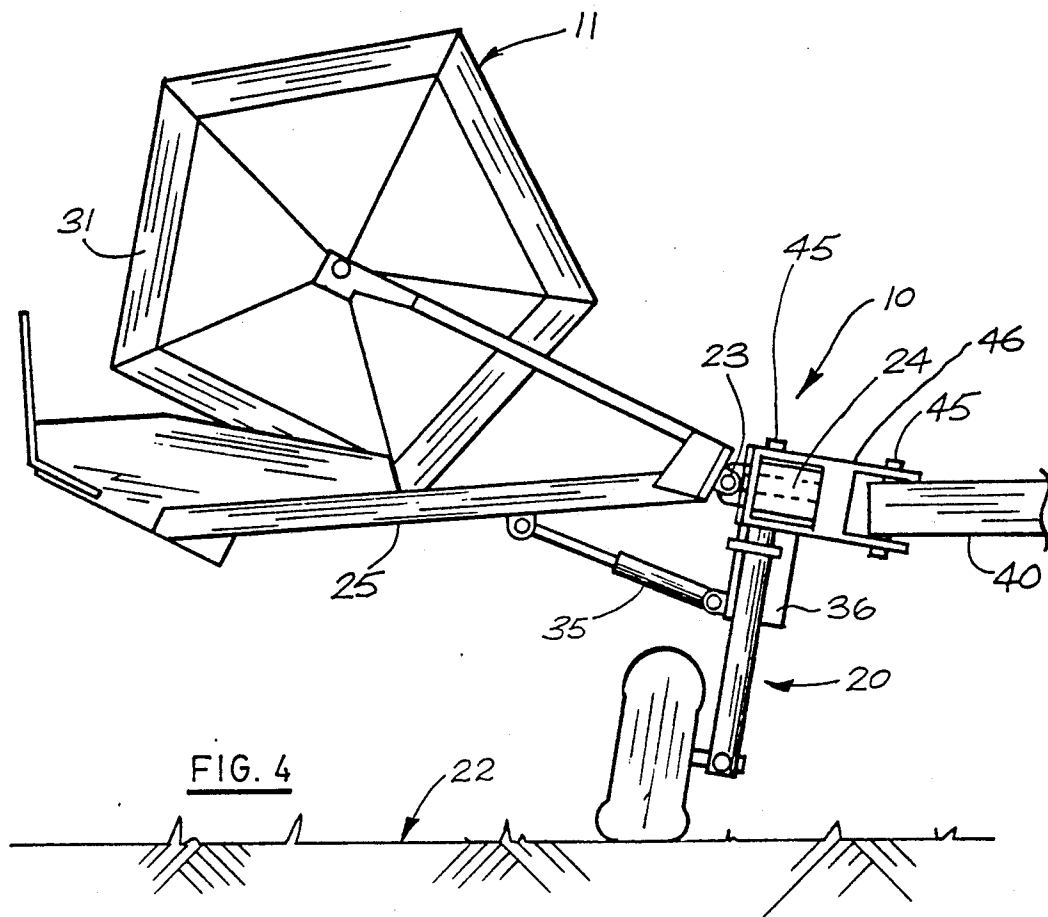
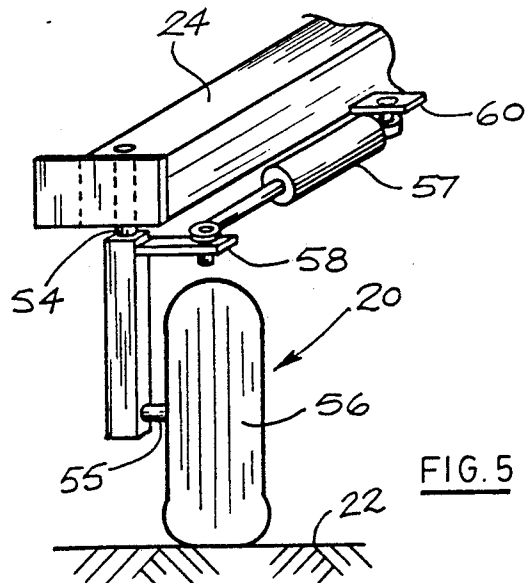
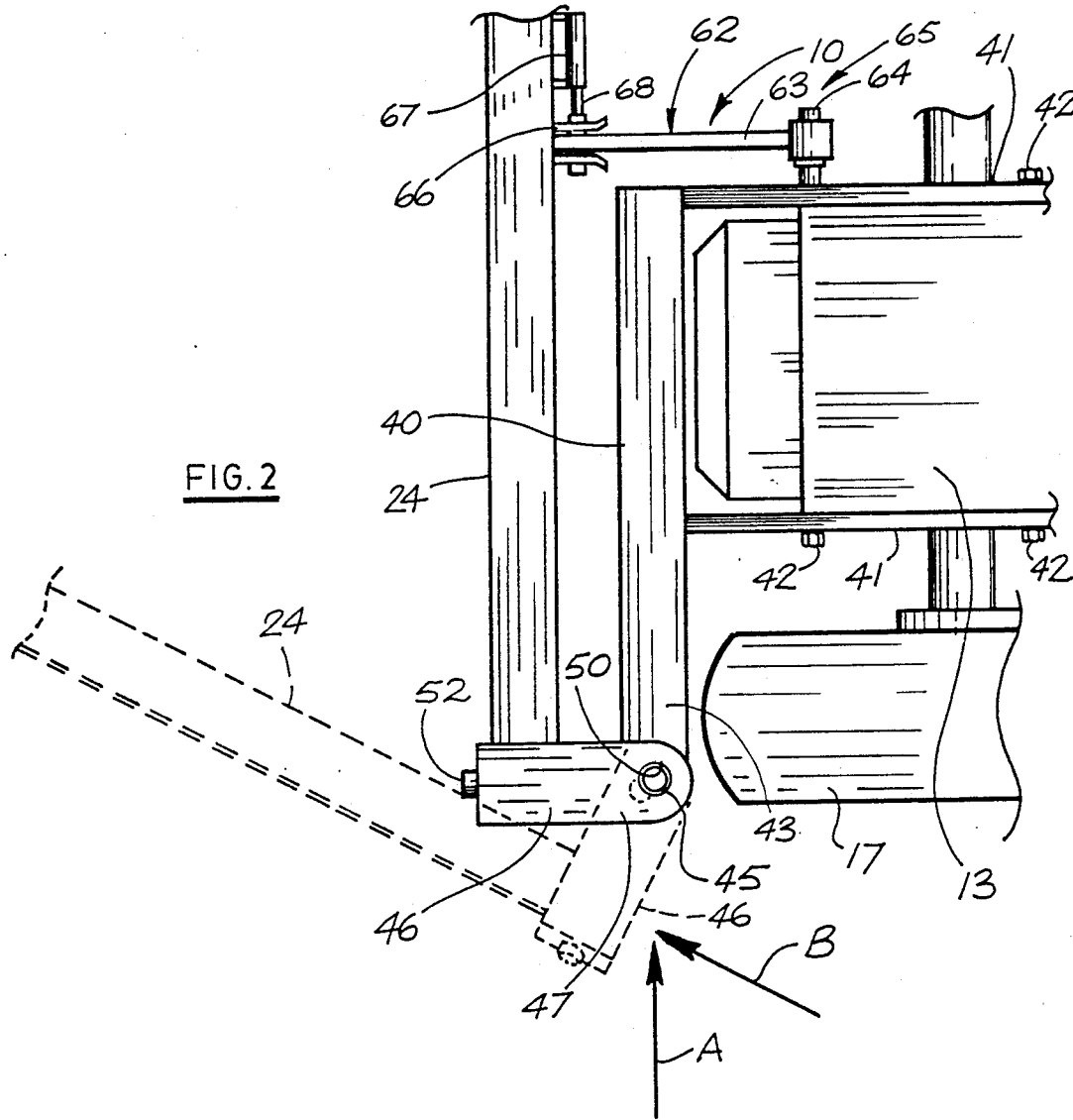


FIG.1





SWATHER ATTACHMENT FOR BI-DIRECTIONAL TRACTOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a swather mounting structure for attaching an elongated swather head to a tractor, and more particularly, to a structure for mounting a swather head on a tractor of the bi-directional type for swathing as the tractor travels in one direction and for drawing the swather in a trailing transport mode when the tractor is driven in the opposite direction.

2. Description of the Prior Art

Swathers and other mower type machines were for a number of years normally designed to be drawn behind conventional farm tractors. There has also been developed combines which are, of course, self-propelled and have either a mower or pick-up head. Swathing machines are also available which may include one or more swathing heads and are self-propelled, such as of the type shown in applicant's Canadian Patent No. 1,183,355, granted Mar. 5, 1985. While large swathing machines of the type shown in applicant's Canadian Patent are preferable for custom operators or for very large agricultural operations, there is still a significant requirement for swathers, which may harvest a considerably narrower swath per pass, but are less expensive and can be used with the conventional tractor used for other purposes on farms. Accordingly, there have been developed swathers which include a structure permitting one or more swather heads to be mounted directly on the tractor, such an arrangement having characteristics which allow for more efficient handling than the older tractor drawn type. The tractor mounted structures have also permitted development of swathers which include more than one head so has to provide a wider swath and include features which allow at least one of the heads to be maneuvered to a transport position. In such a position, the equipment has less width than when in the normal swathing condition so that road travel is possible. Tractor mounted structures of this type are shown in U.S. Pat. No. 4,658,572, issued Apr. 21, 1987, and U.S. Pat. No. 4,768,334, issued Sept. 6, 1988, both granted to Gregory J. Honey and Glenn R. Honey, and assigned to the present assignee, and Canadian Patent No. 1,210,936, granted Sept. 9, 1986, and also assigned to the present assignee.

Tractors of the bi-directional type are now preferred by many farmers, at least for some operations, the most common of such bi-directional tractors being of a centre articulation design, wherein the operators cab is at one end and includes a swivel platform to permit the operator's seat and all of the surrounding control mechanisms to assume two oppositely facing positions. In this type of tractor, the power unit is at the other end on the opposite side of the centre articulation. Although some swather mounting structures have been developed for use in attaching swather heads directly on bi-directional tractors, because of the different driving characteristics, operating features comparable to those experienced on conventional tractors have not been readily achieved.

Moreover, in swathing crops it is preferable to have the option of laying the windrow in different locations behind the swather head, and accordingly, it is common for the transverse conveyor on the swather table behind the sickle bar to have drive means which allows it to travel in either direction, or to be even made up of two

or three sections, the drives of which are individually controlled so as to deliver two windrows simultaneously at transversely spaced locations behind the head. Whether one or two windrows are laid depends, of course, on the thickness of the crop. It is preferably to be able to lay a windrow at a location spaced from either end of the head so that the outside windrow is not laid at the very edge of the field on the first swath, or the inside windrow is not laid against the uncut crop so as to interfere with the next swath. Also if the windrow from a swather head mounted in front of the tractor is delivered centrally of the width of the head, the windrow can be disturbed or damaged by the tractor which is conventionally mounted substantially on the centre-line of the swather, particularly if the crop is one, such as canola which leaves a very bulky windrow.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a structure for the attachment to a bi-directional type tractor of an elongated swather head with the head extending transversely in front of the tractor in a swathing direction of travel, and accommodating swinging movement of said head to a trailing transport mode behind the tractor when travelling in a direction opposite to the swathing direction.

It is an object of another aspect of the invention to provide a structure for mounting an elongated swather head on a body of a tractor of the bi-directional type, and wherein the structure mounts the head in a direction extending transversely in front of the tractor in a swathing direction of travel and with the tractor being disposed in an off-set position to one side of a centre-line of the swather.

In one form of the present invention, there is provided a structure including an elongated support member having means for securement to the tractor and extending transversely across in front of the tractor, the head having a rear frame member extending parallel to the head behind an intermediation portion thereof, with hinge means at one end of the frame member and connecting the frame member to the support member for permitting swinging movement of the frame member about a substantially vertical axis. A connection means is provided between the support member and the frame member at a location spaced transversely from the hinge means for holding the frame member against the swinging movement. The connection means includes a latching means for selective disconnection of the connecting means so that the frame member can swing about the substantially vertical axis, thereby permitting movement of the head to the transport mode.

According to another aspect of the invention, there is provided a structure for mounting a swather at the front of the tractor with the tractor being disposed in an off-set position to one side of a centre-line of the swather and including a tractor mounted frame portion. The tractor mounted frame has means for securement to the tractor and includes a transversely extending support member in front of the tractor. The head includes a rear frame member extending parallel to the head behind an intermediation portion thereof. Hinge means at one end of the frame member connects the frame member to the support member, the hinge means permitting pivoting of the frame member about a substantially vertical axis for accommodating swinging movement of the head to a trailing transport mode behind the

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