

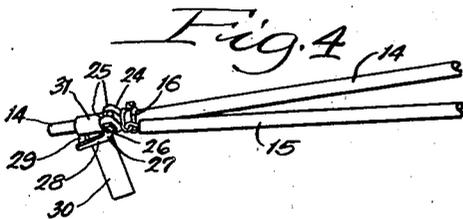
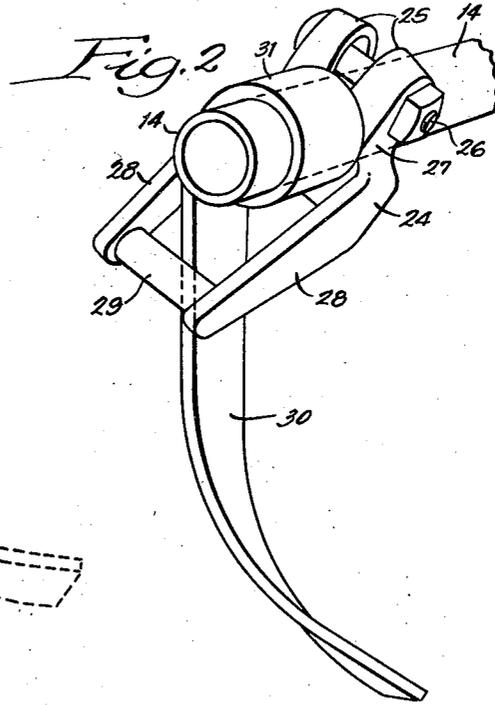
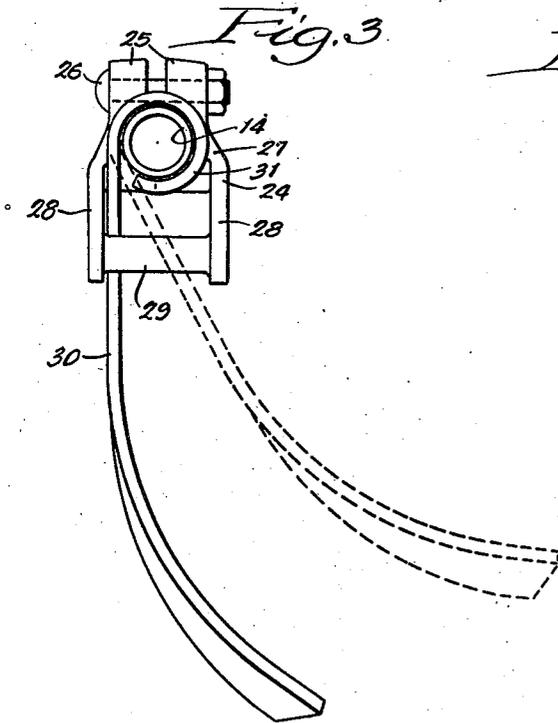
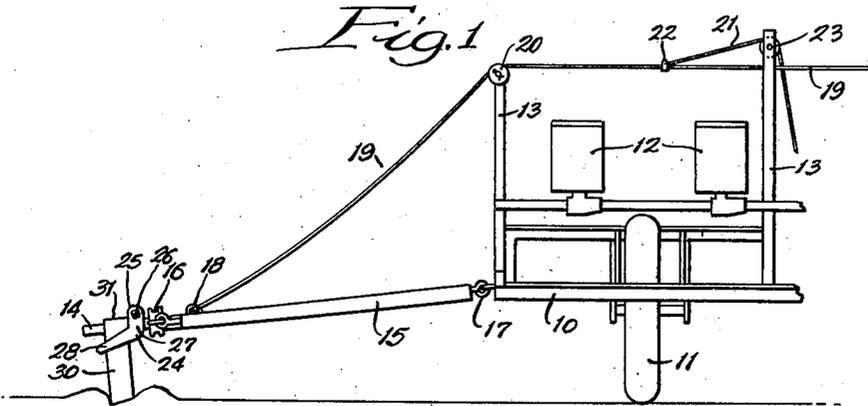
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MARKER FOR PLANTERS

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MARKER FOR PLANTERS

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8 Claims. (Cl. 97—230)

This invention relates to a marker for planters. More specifically, it relates to a marker construction in which the ground-engaging and furrow-making element is constructed for maximum flexibility on turns.

In the use of markers for planters, particularly in tractor operation, generally an independent marker is used on each side of the tractor. The marker and its carrying structure are not always raised to inoperative position at the moment the turn is started. As the operative marker is always on the unplanted side, the turns are always made in the direction of the ground-engaging marker. As the tractor is of a comparatively short wheel base, the marker extending laterally from the tractor actually moves rearwardly during the turn. With the conventional disk marker or the scraper or shovel type of marker, there is a tendency for the marker to be pushed into the ground and cause undesirable throwing up of the soil or digging of holes. The present invention relates to a marker construction in which the furrow-making element is mounted for a folding-up movement when moved in a rearward direction and which also is shaped to ride the surface of the soil without making a furrow when moved in a rearward direction. The principal object, therefore, of the present invention is to provide an improved furrow-making element for a marker device for planters.

In the drawing:

Figure 1 is a diagrammatic drawing showing a portion of a planter with the furrow-marking structure of the invention embodied therein;

Figure 2 is a perspective of the outward end of the marker structure with the furrow-making element in operating position;

Figure 3 is an end view of the marker structure, showing in full lines the furrow-forming element in operating position and in dotted lines the position the element takes when the marker structure is moved rearwardly; and

Figure 4 is a perspective, showing the furrow-forming end of the marker structure illustrating the brace bar for holding the marker in extended position.

In Figure 1 of the drawing, a planter structure having a frame structure 10 and a ground-engaging wheel 11, is diagrammatically illustrated to show the manner in which the marker structure of the invention may be used. Said planter also shows a pair of seed cans 12 and uprights 13 for supporting the marker raising and lowering element.

The structure for supporting the marker in-

cludes one member 14 in the form of a hollow pipe and a diagonal brace pipe 15 connected to the pipe 14 by a clamp 16. Both of the pipes are connected to the frame structure 10 of the planter by flexible connections in the form of eyes and loops, one of which is illustrated at 17 in Figure 1. A connecting eye 18 on the pipe 14 provides means for connecting a flexible marker raising and lowering element 19. Said element passes over a pulley 20 and across to the other side of the planter. A second flexible element 21, which may be a chain, rope, or cable, is connected to the element 19 at 22 extending over a pulley 23 and downwardly where it may be connected to any suitable lifting and lowering means.

A bracket member 24 is clamped near the outer end of the pipe 14 by means of two spaced upwardly extending ears 25 and a bolt 26. Said member, in addition to a body portion 27 surrounding the pipe, includes outwardly and downwardly projecting extensions 28, which are spaced from each other and connected at their outer ends by a transverse portion 29.

A marking element 30 formed of high carbon steel, similar to spring steel, is provided at its upper end with a cylinder portion 31, which forms a journal for pivotally mounting the element on the projecting end of the pipe 14. The element projects downwardly through the space formed between the extensions 28 on the bracket member 24. The transverse portion 29 on said bracket member engages the outer edge portion of the element 30 and holds it against endwise movement on the pipe. There is sufficient space both lengthwise of the shaft 14 and between the extensions 28 to allow free movement of the element 30. Said element is fitted loosely on the pipe, as indicated by the space shown in Figure 3, so that it will under no conditions bind or become tight on the pipe.

The lower end of the element 30 is curved forwardly in the direction of travel of the machine and twisted about 90° with respect to a vertical axis to provide an efficient furrow-forming means. As indicated in Figure 1, the lower end of the element 30 provides a sharp shallow furrow which gives a distinct mark for following by the planter on the return trip across the field.

Figure 3 in dotted lines shows the element 30 pivoted about the shaft 14. It will be noted that this movement raises the lower extremity of the element and also lessens the angle of the contacting surface with respect to the ground, if the element is moved in a rearward direction. It will be understood, therefore, that when the

planter is turned at the end of the row causing rearward swinging movement of the marker structure, the element 30 is free to ride over the ground without any digging action. As the element 30 swings rearwardly, the flexible lifting means will usually entirely support the marker structure whereby there is little pressure on the ground. This added to the curved engaging surface prevents any digging in or piling up of dirt during the preliminary turning operation which may result before the marker structure is lifted.

It is to be understood that applicant has shown and described only a preferred embodiment of his improved loosely mounted marking element, and that all modifications falling within the scope of the appended claims are contemplated as a part of the invention.

What is claimed is:

1. In combination with a planter marker structure mounted for floating movement, an extension carried by the marker structure, a downwardly extending marker element pivoted on said structure, said element being curved at its lower end forwardly in the direction of operation of the planter to provide a furrow opener, and means with an abutment to limit the rearward movement of said element and to permit forward movement to reduce the ground-engaging pressure of the marker element when the marker structure is moved in a rearward direction.

2. In combination with a planter marker structure mounted for floating movement, an extension, a downwardly extending marker element pivoted on said structure, and means provided with an abutment to hold said element against endwise movement, to limit the rearward movement of said element, and to permit forward movement to reduce ground-engaging pressure of the marker element when the marker structure is moved in a rearward direction.

3. In combination with a planter marker structure mounted for floating movement, an extension carried by the marker structure, a downwardly extending marker element pivoted on said structure, and means provided with an abutment to limit the rearward movement of said element and to permit forward movement to reduce the ground-engaging pressure of the marker element when the marker structure is moved in a rearward direction.

4. In combination with a marker structure for planters mounted for floating movement, a cylindrical extension carried by the marker structure, a downwardly extending marker element pivoted on said structure, said element being curved at its lower end forwardly in the direction of operation of the planter to provide a furrow opener, and a bracket on said extension provided with means to retain the element on the extension and with abutment means to limit the rearward movement of said element and to permit forward movement.

5. A marking structure adapted to be connected to a planter on an axis extending in the direction of operation, comprising a frame structure including a cylindrical lateral extension, a bracket member mounted on said extension, and a downwardly extending marking element having a cylindrical bearing portion fitted over the extension, said element being formed to abut a portion of the bracket member to hold the element against movement in a rearward direction

during operation of the planter in a forward direction and to permit the marker element to swing opposite the direction of movement a limited distance when the marker structure is moved in a rearward direction.

6. A marking structure adapted to be connected to a planter on an axis extending in the direction of operation, comprising a frame structure including a laterally extending pipe, a bracket member mounted on said pipe, said bracket member having a downwardly and laterally extending portion provided with an opening therethrough and a marking element consisting of a flat metal member having a cylindrical bearing portion fitted over the pipe, and a portion extending downwardly through the opening formed in the securing bracket, said element being adapted to abut a portion of the bracket member to hold the member against movement in a rearward direction during operation of the planter in a forward direction, and said opening providing means to permit the marker element to swing opposite the direction of movement when the marker structure is moved in a rearward direction.

7. A marking structure adapted to be connected to a planter on an axis extending in the direction of operation, comprising a frame structure including a laterally extending pipe, a bracket member mounted on said pipe, said bracket member having a downwardly and laterally extending portion provided with an opening therethrough, and a marking element consisting of a flat metal member having a cylindrical bearing portion fitted over the pipe, and a portion extending downwardly through the opening formed in the securing bracket and forwardly to provide a furrow opener, said element being adapted to abut a portion of the bracket member to hold the member against movement in a rearward direction during operation of the planter in a forward direction, and said opening providing means to permit the marker element to swing opposite the direction of movement when the marker structure is moved in a rearward direction.

8. A marking structure adapted to be connected to a planter on an axis extending in the direction of operation, comprising a frame structure including a laterally extending pipe, a bracket member mounted on said pipe, said bracket member having a downwardly and laterally extending portion provided with an opening therethrough, and a marking element consisting of a flat metal member having a cylindrical bearing portion fitted over the pipe, and a portion extending downwardly through the opening formed in the securing bracket and forwardly to provide a furrow opener, said element being adapted to abut a portion of the bracket member to hold the member against movement in a rearward direction during operation of the planter in a forward direction, and said opening providing means to permit the marker element to swing opposite the direction of movement when the marker structure is moved in a rearward direction, the forwardly extending portion of said element being curved to provide a ground penetrative action when moved forwardly and to provide a curved ground-engaging shoe when moved rearwardly.

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