United States Patent

Womble

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[54] S-SHAPED STANDARD

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[58] **Field of Search**.....172/551, 573, 574, 575, 602, 172/604; 111/85, 87, 88

[56] **References Cited**

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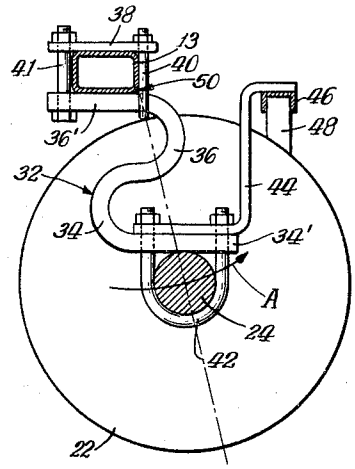
[57] **ABSTRACT**

The use of a resilient standard, or bearing, to support a disc gang from the main frame, with the standard being made of a plurality of curved portions or convolutions, preferably of a reversed "S" shape.

3 Claims, 3 Drawing Figures



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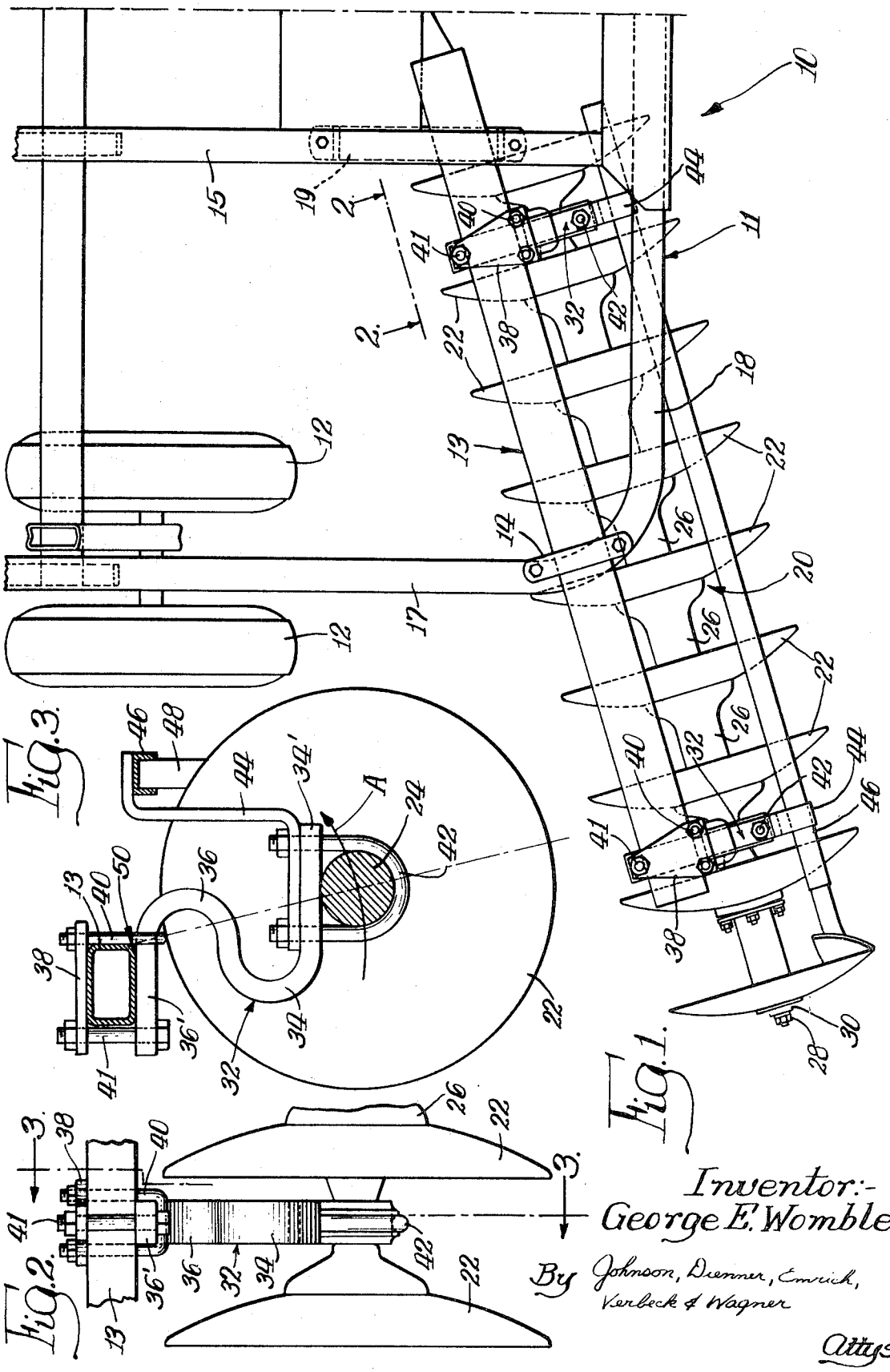

FIG. 1.

FIG. 2.

FIG. 3.

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S-SHAPED STANDARD

BACKGROUND OF THE INVENTION

Heretofore disc gangs have been supported from the main frame in such a manner than when an obstruction like a rock or tree stump is hit by one or more of the discs it tends to lift the entire frame out of the desired plane for discing. Even if the standards, or hangers, have been made resilient, such prior standards, or hangers, have required a rather high silhouette in order that the rising discs not interfere with or strike the main frame. Prior standards or hangers also have the disadvantage of extending rearwardly a considerable distance in order to get the needed resilient action and this limits the number of disc gangs which can be located one behind the other in discing equipment.

It is one object of the present invention to overcome the deficiencies above listed and others of the prior art. The present invention is directed to a resilient standard comprising a plurality of resilient convolutions or curved portions.

In its preferred form the standard, or hanger, or this invention, is generally S-shaped in configuration and is rigidly connected between a rigid frame member and the shaft on which the disc are mounted. It is an object of this invention to so mount the S-shaped standard that it will not tend to collect trash during use of the discing equipment. To that end the lower curved portion of the S-shaped standard is open rearwardly, that is, is open in the direction opposite to the direction of travel of the discing equipment.

It is a further object to so construct and mount the S-shaped standard that when one or more discs meets an obstruction such as a buried rock or stump, the shafts on which the discs are mounted will pivot upwardly and outwardly so as not to dig deeper into the ground where the obstruction is located.

It is a further object to so construct and mount the S-shaped standard that a plurality of shafts bearing discs, that is, disc gangs may be mounted one behind the other without interferring with each other and without unduly lengthening the discing equipment.

Other objects and advantages of the invention will become apparent or be obvious from the following description when taken with the drawings in which,

FIG. 1 fragmentarily shows the discing equipment generally;

FIG. 2 is an enlarged, elevational view taken approximately on line 2—2 of FIG. 1;

FIG. 3 is a sectional view taken approximately on line 3—3 of FIG. 2.

Referring now to the drawings, the discing equipment is indicated generally by the reference numeral 10. The discing equipment comprises a main frame 11 with which are rotatably connected transport wheels 12 (only one pair being shown) which are used to transport the discing equipment and are of a known type.

Associated with the main frame 11 is a rigid frame member, or beam, indicated generally by the reference numeral 13. The rigid frame member 13 is associated with the main frame 11 by having its midportion guided or pivoted by a strap 14 connected with the main frame 11 approximately at the end section of the sidewall portion 17 and the end portion 18 of the main frame 11. The innermost end of the rigid frame member or beam 13 is guided in a strip 19 relative to the central portion 15 of the main frame 11. Although there is illustrated only one rigid frame member or beam 13 a second similar one is frequently used and the two may be connected by their inner ends for concurrent adjustment relative to the main frame 11, but this forms no part of the present invention.

The disc gang, indicated generally by the reference numeral 20 comprises a plurality of discs, such as the discs 22, which are supported on a shaft 24 and maintained in spaced relationship by spools 26 of a known type. Supporting shaft 24 may be

threaded at its outermost, reduced end to receive a nut 28 and washer 30.

The shaft 24 for the disc gang and the discs 22 lie beneath the main frame 11. The shaft 24 is connected to the rigid frame member or beam 13 by two standards, or hangers, which will now be described.

The shaft 24 of the disc gang is secured to the rigid frame member or beam 13 by standards or hangers indicated generally by the reference numeral 32. As shown, the standard 32 comprises a plurality of convolutions or curved portions of which there are two shown in the preferred S-shaped standard illustrated in the drawings. The lower curved portion 34 has its open side directed rearwardly, that is in a direction opposite from that in which the discing equipment 10 will move. Hence any tendency to collect trash in the curved portion 34 will be minimized. Since the upper curved portion 36 of the standard 32 is higher than the portion 34, its open side will not tend to collect trash The upper portion 36 has a flat end portion 36' which may be secured, for example, to the rigid frame member 13 by a pair of U-bolts 40 and a clamping plate 38, or it may be rigidly secured to the frame member 13 by other known means, such as the U-bolt 40 and bolt 41 which passes through the portion 36', for example. The lower portion 34 also has a forward end which is below and slightly rearwardly of the rigid frame member 13 so that upward springing of the standard 32 will not cause an interference between the discs 22 and the rigid frame member, or beam, 13. The standard 32 may be connected to the shaft 24 by a U-bolt 42 or other known means. Each standard may also carry a bracket 44 and a pair of brackets 44 may support a member 46 which carries scraper blades 48, one for each disc, if desired.

The shaft 24 of the disc gang lies below and slightly rearwardly of the rigid frame member or beam 13. If the standard 32 tends to pivot about point 50 as a center, when one or more discs 22 hits and undiscable obstruction, then the shaft and discs will tend to move along the curved line A of FIG. 3 and there will be no interference between the discs 22 and the frame member 13 or the main frame 11 and the discs will not be caused to dig to a greater depth in the earth.

What is claimed is:

1. In discing equipment comprising a main frame having a laterally directed, rigid supporting beam to which the shaft of a gang of discs positioned below the main frame is connected, a pair of spaced S-shaped standards each comprising a spring tempered member having an upper convolution integrally united to an oppositely opening lower convolution, the upper convolution having an upper end portion rigidly connected to the beam by front and rear connection members, the lower convolution having a lower end portion rigidly connected to said gang disc shaft, said rigid connection of the lower end portion of the lower convolution being below and rearwardly of the supporting beam considering the direction in which the discing equipment travels, the shaft and discs pivoting upwardly and rearwardly about said rigid connection of the standard to the supporting beam as a center of rotation when a disc or discs hit an undiscable obstruction so as to avoid interference between the discs and the rigid supporting beam, and the lower convolution opening rearwardly in a direction opposite to the direction of travel of the discing equipment to avoid collection of trash during use of the equipment.

2. In discing equipment, the improvement according to claim 1 wherein at least the rear connection member of the connection members which connect the upper end portion of the S-shaped standards to the beam comprises a U-bolt, the bight of which straddles said upper end portion.

3. In discing equipment, the improvement according to claim 2 wherein the lower end portion of the lower convolution of the S-shaped standards is rigidly connected to the gang disc shaft by a U-bolt which straddles said shaft.

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