

Aug. 14, 1945.

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2,381,973

SAFETY DEVICE FOR DISK PLOW HANGERS

Filed March 19, 1943.

2 Sheets-Sheet 1

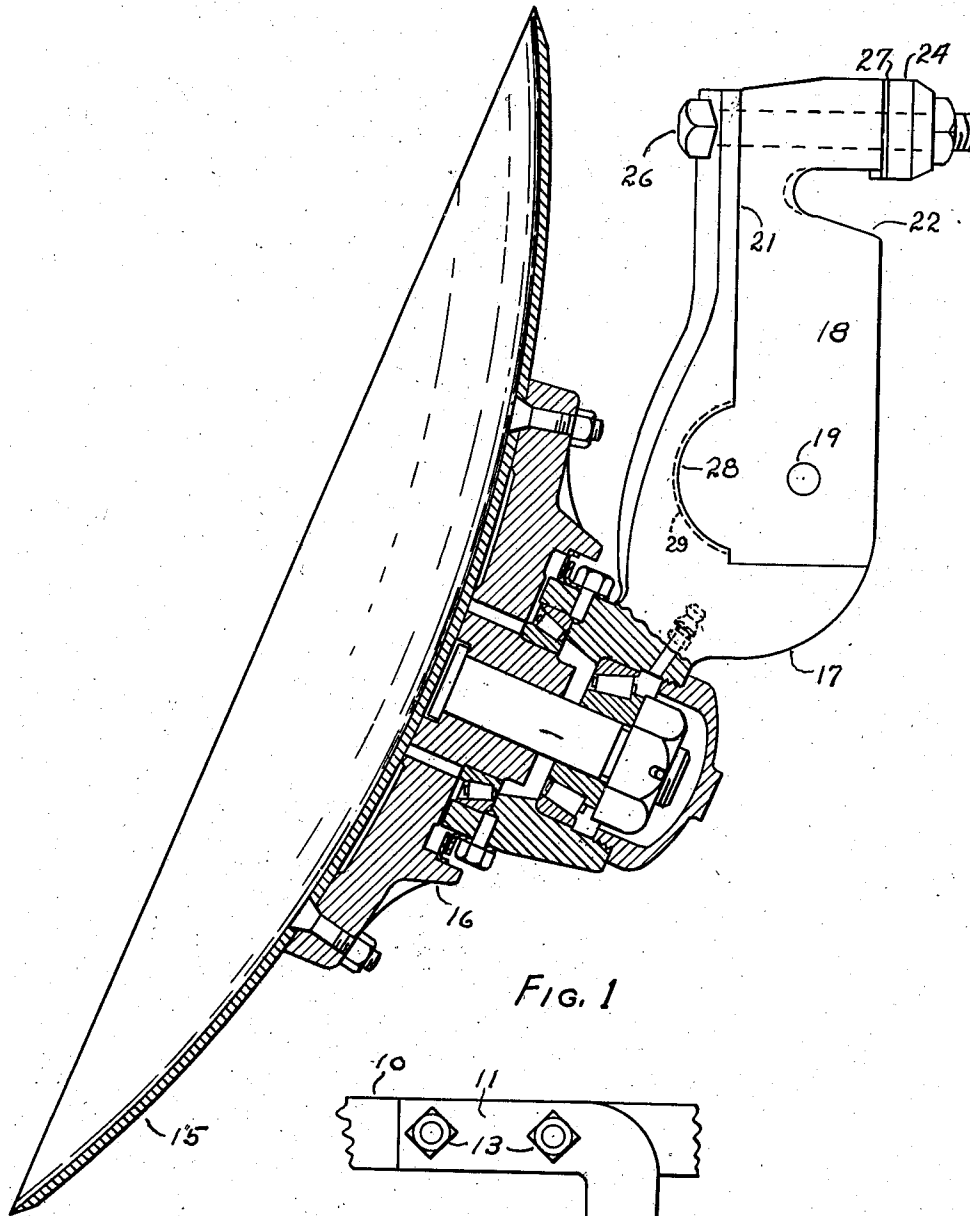


FIG. 1

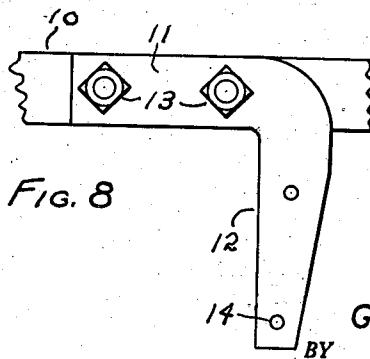


FIG. 8

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2 Sheets-Sheet 2

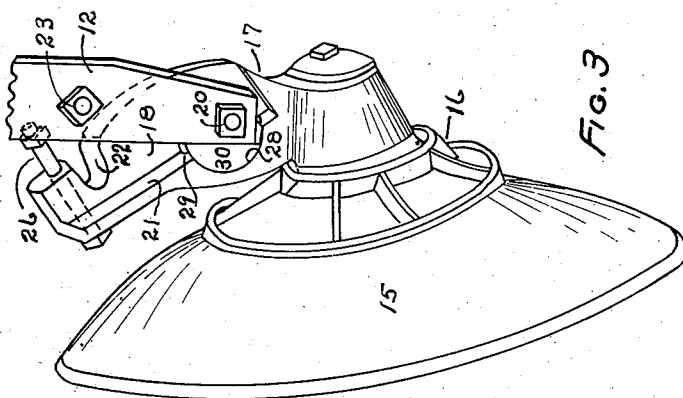


Fig. 3

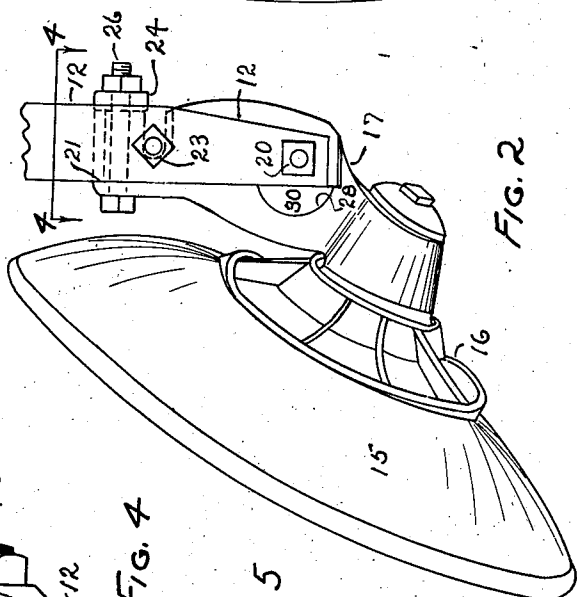


Fig. 2

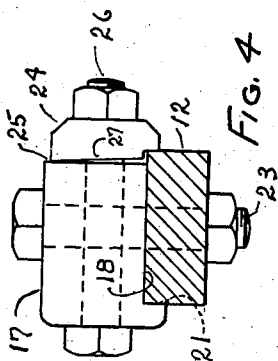


Fig. 4

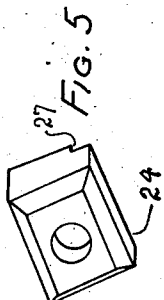


Fig. 5

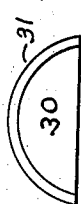


Fig. 6



Fig. 7

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SAFETY DEVICE FOR DISK PLOW HANGERS

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3 Claims. (Cl. 97-185)

The present invention relates to a safety device for disk plows and the like, wherein depending hangers are rigidly secured to the main frame of the device and the disk or earth working means is either rotatably or rigidly secured to a bracket which lies on the side of the depending hanger having a pivotal connection to the bottom of the depending hanger and breakable means at the top of the bracket for holding the bracket into working position on the hanger; the breakable means and pivot being adapted to permit the earth working member to swing back on the pivot and ride over a serious obstruction.

An object of my invention is to provide a breakable block having a known and uniform breaking strength and use this block as a means for holding the earth working member in working position.

A further object of my invention is to pivot a bracket on which the earth working member is mounted to the lower end of the depending hanger by means of a bolt and supply a block which lies on the forward lower edge of the depending hanger, the block having a curved front surface which lies against a raised portion on the bracket, the curve being preferably on a radius with the pivot so the block takes the thrust which would otherwise be taken by the pivot.

Generally stated, an object of my invention is to provide a simple low cost breakable means which will release the earth working member when an immovable obstruction is met.

To these and other useful ends, my invention consists of parts, combinations of parts, or their equivalents, and mode of operation, as hereinafter set forth and claimed and shown in the accompanying drawings in which:

Fig. 1 is an enlarged partially sectioned view of one form of my invention wherein a plow disk is shown rotatably mounted on a bracket.

Fig. 2 is a perspective view of the device as shown in Figure 1 showing the bracket mounted on the depending member and in its working position, the view being taken at a right angle to the side of the depending member.

Fig. 3 is a view of the device shown in Figure 2 in a position after having met an obstruction serious enough to break the breakable block, but taken from a point somewhat in rear of the view point in Fig. 2.

Fig. 4 is a sectional view of the depending member taken on line 4-4 of Figure 2 showing the parts in operating position.

Fig. 5 is a perspective view of the breakable block.

Fig. 6 is an elevational side view of the thrust block.

Fig. 7 is a rear view of the thrust block.

Fig. 8 is a fractional view of the main frame of a disk plow or the like, illustrating the bracket and depending member secured thereto.

As thus illustrated, the main frame of the plow is designated by numeral 10, the upper portion of a hanger is designated by numeral 11 and its depending member is designated by numeral 12, member or plate 11 being rigidly held to member 10 by means of two or more spaced bolts 13. Member 12 is provided with an aperture 14 near its lower end for a purpose which will hereinafter appear.

In Figures 1, 2 and 3, I illustrate a plow disk 15 suitably secured to a bracket 16 which is rotatably mounted on the lower end of a bracket 17 in a manner too well known to require further description.

Bracket 17 is provided with a flat surface 18 which is adapted to lie on the side of member 12 as illustrated in Figures 2, 3 and 4 and having an opening as at 19 which registers with opening 14 in member 12 so these two members may be secured together by means of a pivot bolt 20.

On the forward edge of bracket 17, I provide a flange 21 arranged so when the bracket is in working position (see Figures 2 and 4) at least the upper end of flange 21 lies against the forward edge of member 12.

Near the upper end of bracket 17, I provide a groove 22 and in line with this groove, I position a bolt 23 which is adapted to hold member 12 snugly against surface 18. A breakable block 24 is provided through which a bolt 26 extends and is positioned as shown in Figures 2 and 4. Breakable block 24 is shaped as illustrated in the various figures, one side resting on member 17 as at 25, the other side resting on the rear edge of member 12 as clearly illustrated in Figure 4.

Block 24 is provided with a projection 27 which lies along side member 12 so as to prevent its turning on bolt 26 relative to member 12. When bolt 26 is made taut, member 12 will be held firmly against flange 21 and the device will be in working position as shown in Figures 2 and 4.

Flange 21 near its lower edge is enlarged and cut-away on a curve, preferably on a radius with aperture 19 as at 28 having a small groove 29 at its bottom.

I provide a thrust block 30 with a shape as illustrated in the various figures having a flange 31 which fits loosely in groove 29 so the block

will be held from moving transversely out of position.

Member 30 on its forward side rests against surface 28 and on its rear side against member 12; thus the thrust is not taken by bolt 20 but by block 30. It will be seen that when bracket 17 moves on pivot bolt 20 as an axis, block 30 will turn on surface 28 so all of the thrust is against the block at all times.

Block 24 is preferably a gray-iron casting which has a definite breaking strength, is cheap and easily replaced.

Referring now to Fig. 2, it is assumed that bolt 23 is adjusted so it barely holds members 12 and 17 together. Bolt 20 is not very tightly adjusted so that when the lower portion of disk 15 meets a serious obstruction and the plow continues its forward movement, block 24 may break so the disk and its bracket may assume the position shown in Fig. 3, or whatever position is necessary to cause the disk to ride over the obstruction, thus avoiding breaking some expensive part of the device. It will be understood that member 24 is very inexpensive and that the user will have a number of them on hand as replacements.

Clearly many minor detail changes may be made in the present invention, without departing from the spirit and scope of the appended claims.

Having thus shown and described my invention, I claim:

1. A device of the class described, comprising a frame having a depending member, a bracket having an earth working member secured to its lower end, the upper end being adapted to lie on the side of said depending member, a bolt forming a transverse pivotal connection between the bottom of said depending member and said bracket, a breakable block detachably secured to the upper end of said bracket and at a distance

from said bolt, one side overhanging the rear edge of said depending member and being adapted to hold said bracket in normal operating position, whereby when said earth working member meets a serious obstruction, said block will break and permit said earth working device to swing rearwardly on said bolt as an axis and ride over the obstruction.

2. A device as recited in claim 1 including; a transversely extending projection on said bracket positioned in front of said depending member forming a pocket, a block positioned in said pocket and filling the space therein, the forward edge of the block and the rear edge of the pocket being on a radius with said pivot bolt, whereby the block will take the thrust between said depending member and bracket in various positions of the bracket.

3. A device of the class described, comprising a frame and a plate rigidly secured thereto, said plate having a depending member, a bracket having a disk rotatably mounted on its lower end, said bracket adapted to lie on the side of said depending member, a bolt forming a transverse pivotal connection between the lower end of said depending member and said bracket, a breakable block detachably secured to the upper end of said bracket a distance from said bolt, one side overhanging the rear edge of said depending member and being adapted to normally hold said bracket in operating position, whereby when said disk meets a serious obstruction, said block will break and permit the disk to swing rearwardly and ride over the obstruction, another bolt positioned adjacent said block adapted to slidably hold the upper end of said bracket to said depending member.

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