W. A. BIESENTHAL.

DISK ATTACHMENT FOR CULTIVATORS.

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905,786.

Patented Dec. 1, 1908.

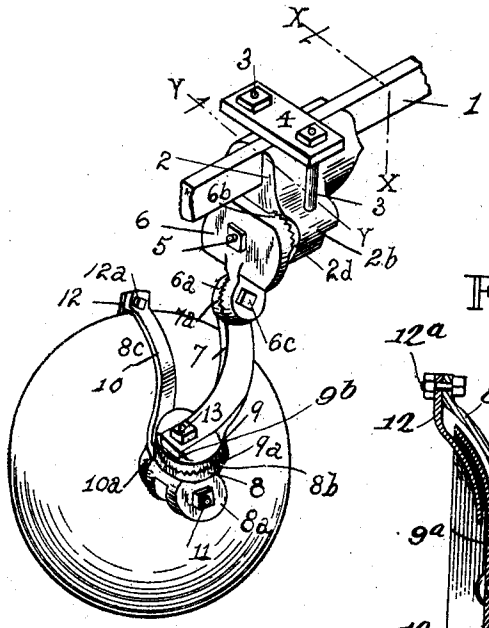


Fig.1.

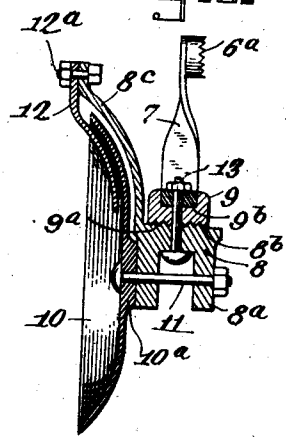


Fig.5.

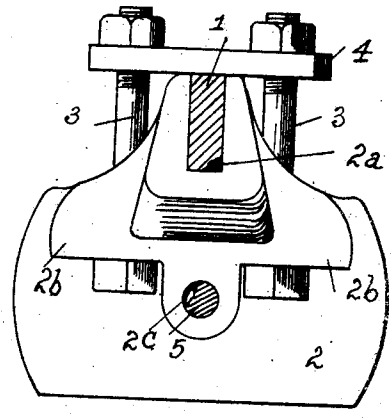


Fig.2.

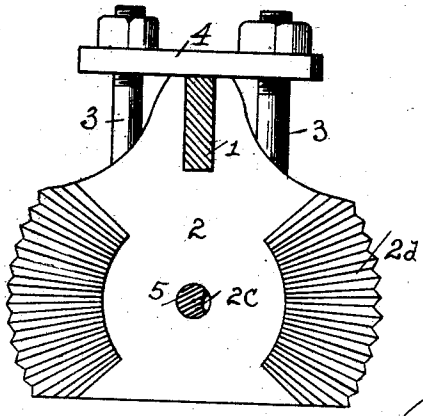


Fig.3.

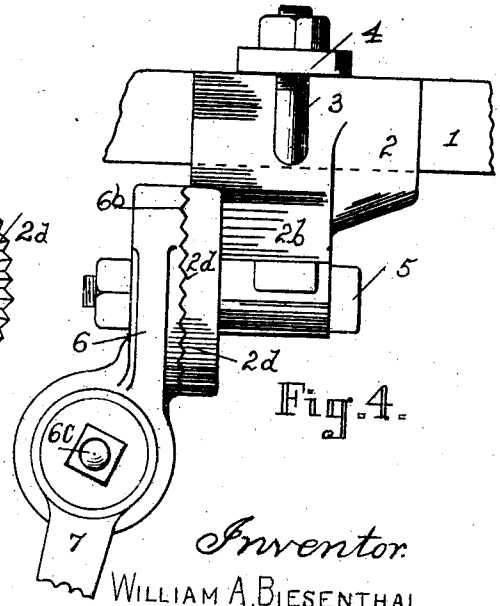


Fig.4.

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DISK ATTACHMENT FOR CULTIVATORS.

No. 905,786. Specification of Letters Patent. Patented Dec. 1, 1908.

Application filed June 24, 1907. Serial No. 380,535.

To all whom it may concern:

Be it known that I, WILLIAM A. BIESENTHAL, a citizen of the United States, residing at Riddle Hill, in the county of Sangamon and State of Illinois, have invented a new and useful Disk Attachment for Cultivators, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use my said invention.

My invention relates to cultivators such as are used in cultivating growing crops in rows, such as corn.

The purpose of my invention is to provide a disk attachment which may be easily connected with and used upon the beams of cultivators such as are in common use, said disk attachment being adjustable to run in various different positions as hereinafter explained and to provide means for keeping the disk clean when in operation.

With these ends in view my invention consists in the novel features of construction and combinations of parts shown in the annexed drawings, to which reference is hereby made; and hereinafter particularly described and finally recited in the claims.

Referring to the drawings, in which similar reference numerals and letters designate like parts in the several views, Figure 1 is a perspective view of the complete device; Fig. 2 is an enlarged, transverse section on the line *x. x.* of Fig. 1; Fig. 3 is an enlarged, transverse section on the line *y. y.* of Fig. 1 and shows the corrugated beam-block in elevation; Fig. 4 is an enlarged side elevation of the beam-block and the disk shank connected therewith; and Fig. 5 is a vertical section through the disk-block and connected parts, taken on the axis of the disk.

The cultivator beam 1 is a steel beam of the usual construction. The beam-block 2 has a longitudinal channel 2^a in which the beam 1 fits and has a long bearing against the side of the beam which prevents transverse rocking of the block on the beam and also has integral enlargements 2^b pierced by holes through which the bolts 3 pass and corrugations 2^d matching corresponding corrugations 6^b on the block 6. The bolts 3 lie entirely outside of the beam 1. A plate 4 extends across the channel 2^a above the block and has holes accommodating the bolts 3. This arrangement of the channeled block 2, the transverse plate 4 and the bolts 3 admits of attaching the block to any of the cultivator beams now in common use, without making any holes through or otherwise impairing the strength of the beam, and admits of setting the block in any desired position on the beam so that the draft may be varied to suit the different conditions of operation or to suit the convenience of the user. A central hole 2^c in the block 2 accommodates a bolt 5 connecting the block 6 with the block 2. The block 6 has corrugations 6^a matching corrugations 7^a on the shank 7, and also has corrugations 6^b matching the corrugations 2^d on the block 2. A bolt 6^c connects the shank 7 with the block 6.

The lower part of the shank 7 is given a quarter turn and fits in a horizontal channel 9^b in the circular block 9.

A practical advantage of the shank 7 having a quarter turn as described is that the shank has a vertical part provided with corrugations 7^a matching the corrugations 6^a of the block 6 and has a horizontal lower part adapted to fit in the horizontal channel 9^b in the upper part of the block 9 so that the block will be held firmly and cannot turn on the shank. This construction admits of the use of a single bolt 13 for connecting together the block 8, the block 9 and the shank 7.

The disk block 8 is approximately circular and has cylindrical downwardly extending members 8^a and corrugations 8^b matching the corrugations 9^a of the block 9. A hub 10^a is secured on the disk 10. A bolt 11 passes horizontally through the members 8^a, the hub 10^a of the disk 10 and through the disk 10 and connects the disk with the block 8 so that the disk will turn on the bolt 11. The block 8 has an integral upwardly extending curved arm 8^c. A scraper blade 12 is connected with the arm 8^c by a bolt 12^a and serves to scrape the dirt from the concave face of the disk. A bolt 13 extends through the block 8, the block 9 and the shank 7 and connects them together.

I will now describe the various adjustments of the disk relative to the beam.

In Fig. 1 I have shown the disk adjusted to run in line with the beam, the beam and the shank being in substantially the same vertical plane. If it be desirable for the disk to run at an angle to the beam, either to the right or to the left, the nut of the bolt 13 will be loosened and the block 8 will be turned horizontally to place the disk in the desired angle relative to the beam, the nut on the

bolt 13 will then be tightened to secure the block in the position in which it is set.

If it be desirable to change the inclination of the disk relative to the vertical plane of the beam the nut of the bolt 5 will be loosened and the block 6 will be turned to the right or the left as the case may be to place the block 6 in such position that the disk will have the desired inclination.

If desirable to vary the width of cut of the disk, the nut of the bolt 13 will be loosened and the block 8 will be turned to set the disk at the angle to make the desired cut, and the nut will then be tightened to secure the parts together.

If it be desirable to change the depth of cut of the disk, the nut of the bolt 6^c will be loosened and the shank 7 will be turned upward or downward as the case may be to place the shank in the position to cause the disk to run at the desired depth, and when the adjustment is made the nut will be tightened to hold the parts in place.

If it be desirable to move the disk longitudinally, relative to the beam, the nuts on the bolts 3 will be loosened and the block 2 will be slid along the beam and placed in the desired position and the nuts on the bolts will then be tightened to secure the block in the position in which it is set.

From the foregoing it will be seen that the attachment is capable of four different adjustments, viz: It may be set in any desired position along the length of the beam; it may be turned to the right or the left to cause the disk to run at a greater or less distance from the row of corn or other crop which is being cultivated; it may be turned at an angle relative to the beam to vary the width of cut of the disk and it may be raised or lowered to change the depth of cut of the disk.

A practical advantage of the construction herein set forth is that the connecting of the disk with the beam, is directly in the line of draft of the beam and transverse strain on the beam is thereby avoided.

The operation of the disk attachment is obvious from the foregoing description.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination of a beam-block having an elongated longitudinal channel adapted to accommodate a polygonal beam, enlargements provided with holes adapted to accommodate bolts outside of and on each side of the beam, a corrugated face, and a central hole in line with the beam; an intermediate block having corrugations matching the corrugations on said beam-block also having an extension provided with corrugations; a shank having a quarter-turn and having at one end corrugations matching the corrugations on the extension of the intermediate block, also having a horizontal part adapted to fit in a channel; a shank-block having a channel adapted to accommodate the horizontal part of said shank, also having corrugations; a disk-block having corrugations matching the corrugations on said shank-block also having an extension adapted to support a scraper; a scraper connected with the standard of said disk-block; a bolt connecting said intermediate block with said beam-block, in the line of travel of the beam; a bolt connecting said shank with the extension of said intermediate block; and a single bolt connecting said disk-block, shank-block and shank.

2. The combination of a quarter-turn shank having at its upper end corrugations adapted to match similar corrugations of a coöperating stationary block; a shank-block having a channel accommodating the horizontal part of said shank; a disk-block provided with an integral member adapted to support a scraper, a scraper secured on said member of said disk-block; and a bolt connecting said disk-block, shank-block and shank.

In witness whereof I have hereunto subscribed my name at Springfield, Illinois, this 15th day of March, 1907.

WILLIAM A. BIESENTHAL.

Witnesses:
SARAH BIESENTHAL,
W. J. AURELIUS.