A. E. DIESEM.

HARROW.

APPLICATION FILED JUNE 13, 1906.

902,279.

Patented Oct. 27, 1908.

2 SHEETS—SHEET 1.

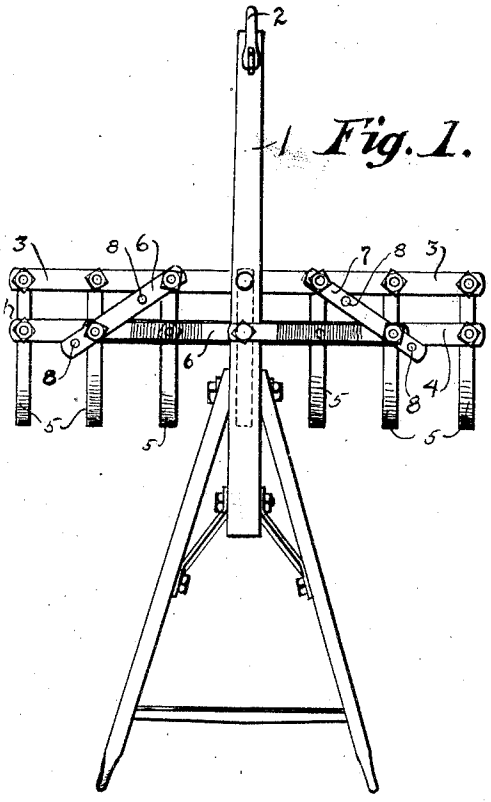


Fig. 1.

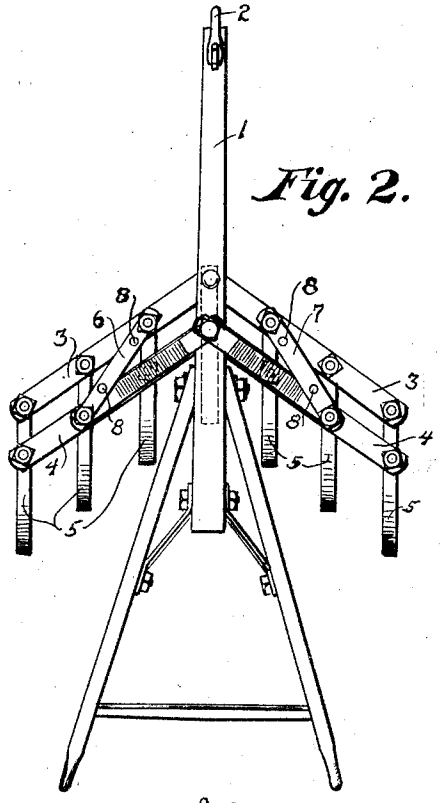


Fig. 2.

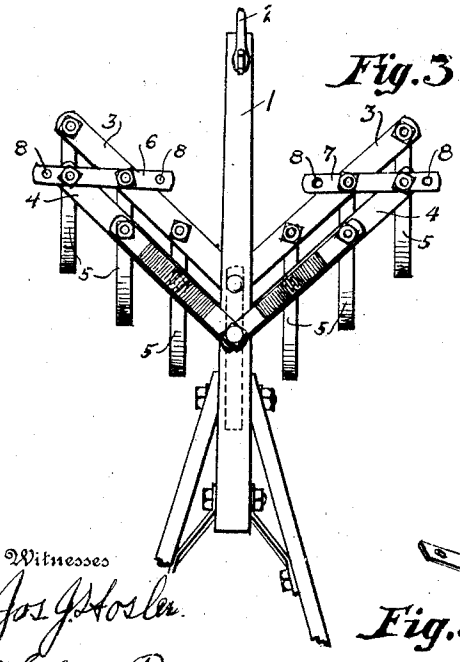


Fig. 3.

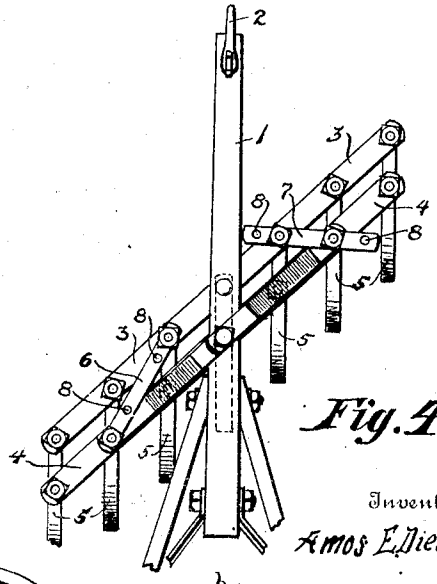


Fig. 4.



Fig. 5.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 6.

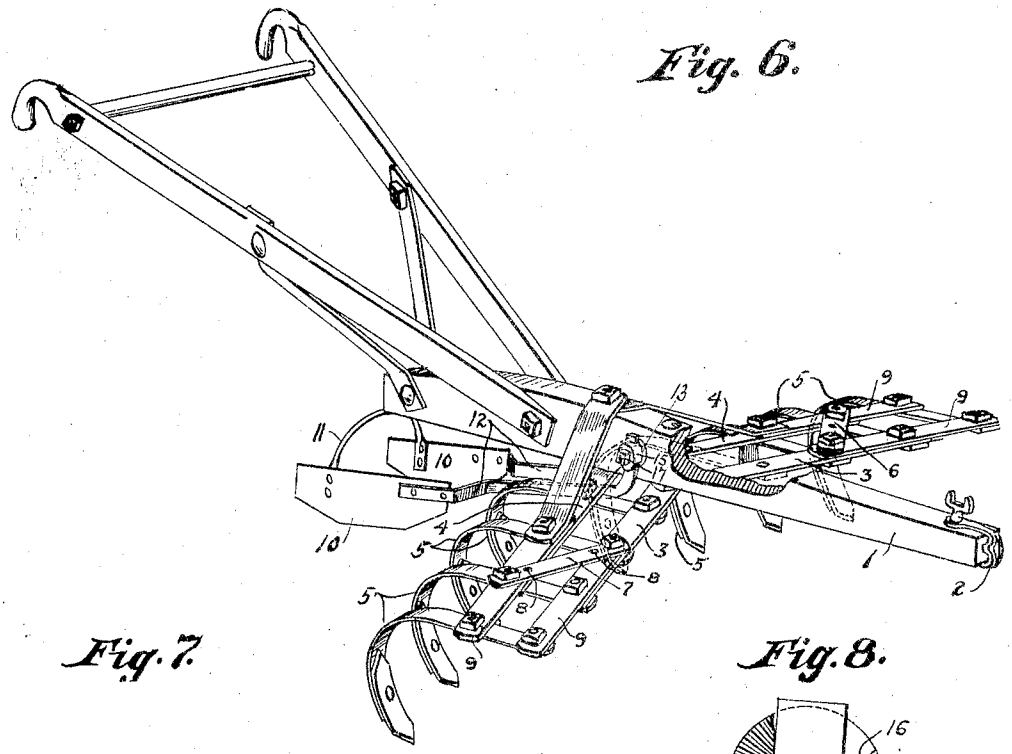


Fig. 7.

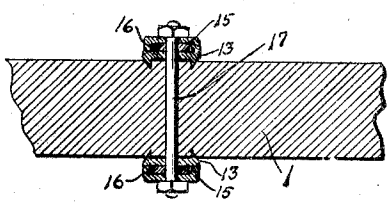


Fig. 8.

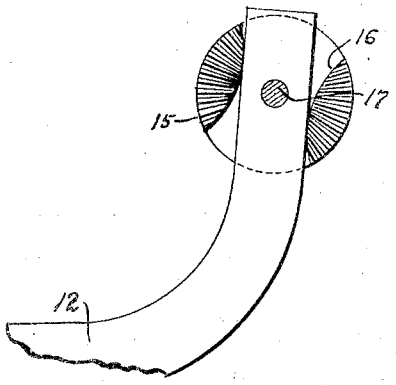


Fig. 10.

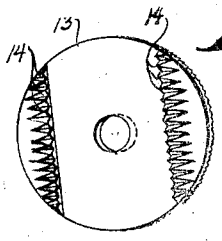
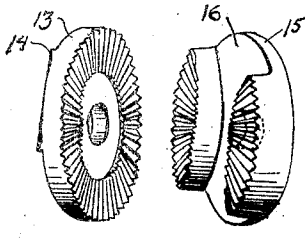


Fig. 9.



Witnesses.

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UNITED STATES PATENT OFFICE.

AMOS E. DIESEM, OF COLUMBUS, OHIO, ASSIGNOR TO THE BUCHER & GIBBS PLOW COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO.

HARROW.

No. 902,279. Specification of Letters Patent. Patented Oct. 27, 1908.

Application filed June 13, 1906. Serial No. 321,433.

To all whom it may concern:

Be it known that I, AMOS E. DIESEM, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Harrows; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, and to the numerals and figures of reference marked thereon, in which—

Figures 1, 2, 3, and 4 are plan or top views of the invention, showing four of the several different adjustments of the tooth-bars and teeth, which may be made and are hereinafter more fully described. Fig. 5 is a detached perspective view of one of the harrow teeth. Fig. 6 is a perspective view of the harrow showing the center tooth removed and connected to the extension bars. Fig. 7 is a longitudinal and horizontal section through a portion of the beam showing the fender arm retaining disks in section and the position of the connecting bolt. Fig. 8 is a view showing a portion of one of the fender arms and a face view of the grooved disk. Fig. 9 is a view of the fender arm holding disks detached from each other. Fig. 10 is a perspective view of one of the beam engaging disks.

The present invention has relation to harrows and cultivators adapted for various kinds of different uses and it consists in the novel arrangement hereinafter described and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 represents the central beam or bar of the main frame, to which is attached a clevis 2, in the usual manner. To the bottom or under side of the beam 1 are pivotally attached the tooth-bars 3 and 4, which tooth-bars are pivotally attached to the beam 1 in such a manner that they can be brought into the various positions illustrated in Figs. 1, 2, 3, 4 and 6 or other positions. To the bars 3 and 4 are pivotally attached the teeth 5. In the drawing the teeth are shown arranged so that there is a center or intermediate tooth and three teeth upon each side of the center or intermediate tooth.

It will be understood that in adjusting the bars 3 and 4 into the various positions it is necessary that the bars remain parallel with reference to each other throughout their entire lengths, owing to the fact that the teeth are pivotally attached to each of the bars by which arrangement there is no and can be no throwing of the teeth out of or at an angle to the line of draft, regardless of the angularity of the bars 3 and 4 with reference to the beam 1. It is important that after the tooth-bars proper are brought into their desired positions they be secured and firmly held in proper parallel position, and in order to so hold the bars, the holding bars 6 and 7 are provided and are so arranged that there can be no relative movement as between the said toothed-bars 3 and the rearward toothed-bars 4. It will be understood that any relative movement as between the bars 3 and 4 would have a tendency to impart what might be termed a vibrating movement or wiggling of the teeth, which would be of considerable degree, owing to the fact that the teeth are extended some distance rearward, thereby permitting or allowing the rear ends of the teeth to move back and forth laterally from and to the line of resistance. In order to provide for thus holding the teeth while permitting adjustment the holding bars 6 and 7 are not attached in any manner to the beam 1, thereby providing a means by which the bars can be held at all times, and under all circumstances, regardless of their adjustment.

When the tooth bars are to be placed at right angles to the beam 1, the bars 6 and 7 are located and connected, as illustrated in Fig. 1, but when the tooth bars are brought into the position shown in Fig. 2, which brings the apexes of the bars 3 and 4 upon the forward edges of said bars at their pivotal points, the bars 6 and 7 are located and connected as illustrated in said Fig. 2. When it is desired to adjust the bars 3 and 4 in the positions illustrated in Fig. 3, which is the reversed position from that shown in Fig. 2, the bars 6 and 7 are attached between their ends and are located at right angles to the beam 1, and are so located for the purpose of, first rigidly holding the tooth-bars so that there can be no relative movement between said bars and, second tensionally holding the tooth-bars.

The bars 6 and 7 are each provided with a

series of apertures 8, which apertures are so spaced that the bars can be arranged as illustrated in the drawings.

In Fig. 4, the tooth-bars are shown brought into alinement with reference to each other, but out of right angles to the beam 1, so that the harrow teeth 5 are all arranged so that each forward tooth acts in advance of the next adjacent rearward tooth, by which arrangement the soil together with any weeds has a tendency to be moved or partially moved laterally during the forward movement of the cultivator proper and in a continuous and singular direction.

For the purpose of providing a means for cultivating wherein it is desired to set the cultivator so that a row of growing corn or other product can be worked upon both sides of the row, the teeth 5 which are near the beam or under the beam are removed, by which arrangement a space is provided between the teeth located laterally at the sides of the beam and the teeth or tooth removed are connected to the extended bars 9, which extended bars are located upon the parallel bars 3 and 4 substantially as shown in Fig. 6. The fender blades 10 are located at the rear of the teeth 5 and are spaced from each other a sufficient distance to allow room for the row of corn or other growing crop and are held in proper spaced relation by means of the arched bar 11 or its equivalent, and the connecting bars 12, which connecting bars are extended forward and connected as hereinafter described. Upon the sides of the beam 1 are fixedly attached the disks 13. For the purpose of preventing the disks from rotating they are provided with the teeth 14, which teeth engage the beam 1. Upon the disks 13 are located the disks 15, which disks are provided with the grooves 16, which grooves are for the purpose of receiving the beam connected ends of the arms 12 as best illustrated in Fig. 8. The walls of the groove 16 are curved and are so curved for the purpose of allowing a limited movement to the arms 12, so that the fender blades 10 are enabled to move up and down a short distance thereby decreasing the danger of breakage. For the purpose of preventing any relative movement between the disks 13 and 15 their abutting faces are serrated, and when said disks are clamped by means of the bolt 17 there can be no relative movement between said disks.

It will be understood that by loosening the bolt 17 the disks 15 can be rotated thereby providing any desired adjustment for the arms 12, and their fender blades 10; and when the desired adjustment has been made the bolt 17 is tightened and the arms 12 together with their fender blades held in the desired adjustment reference being had to a limited movement of the arms 12, and the fender blades 10.

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

1. The combination of a beam, an implement support comprising a pair of bars having a fixed pivotal connection to the beam, and implement-supporting extension bars extending lengthwise of the other bars and shiftable to different distances from the beam.

2. The combination of a beam, a pair of pivoted implement-carrying bars extending to one side of the beam, a second pair of implement-carrying bars extending to the opposite side of the beam and implement-carrying extension bars extending lengthwise of and attached to said second pair of pivoted bars and separated from said beam.

3. The combination of a beam, implement-carrying bars pivotally attached to said beam, implement-carrying extension bars secured to said bars that are pivoted to the beam, the implements being pivotally attached to their respective bars, and link bars secured to the implement-carrying bars.

4. In a harrow of the class described, the combination of a beam, toothed bars pivotally attached to said beam, toothed extension bars secured to the toothed bars pivoted to the beam, and the harrow teeth pivotally attached to the toothed bars and extension bars and link bars secured to said toothed bars, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

AMOS E. DIESEM.

Witnesses:
WALKER B. STEVENS,
A. FLANSBURGH.