

No. 809,150.

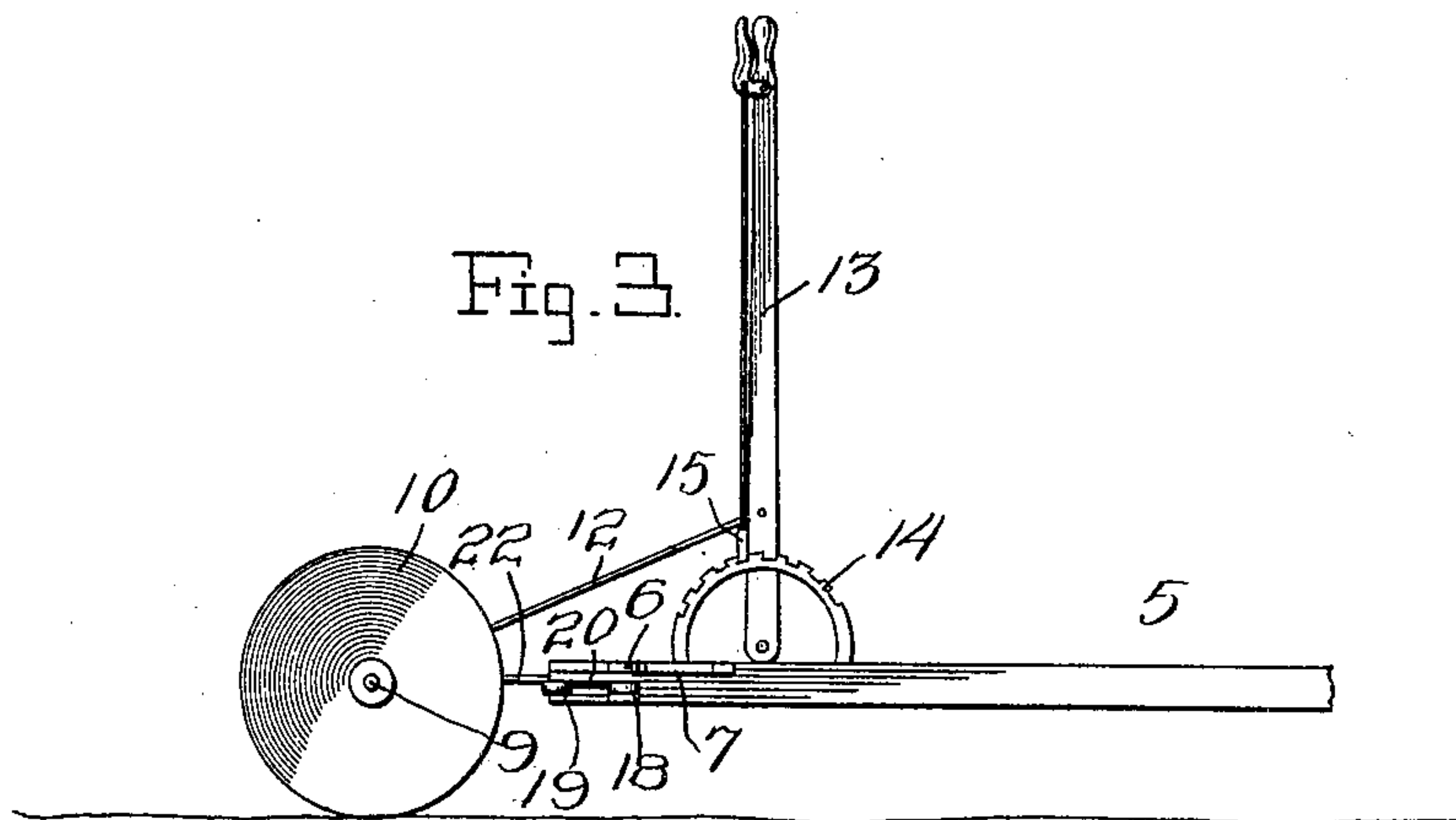
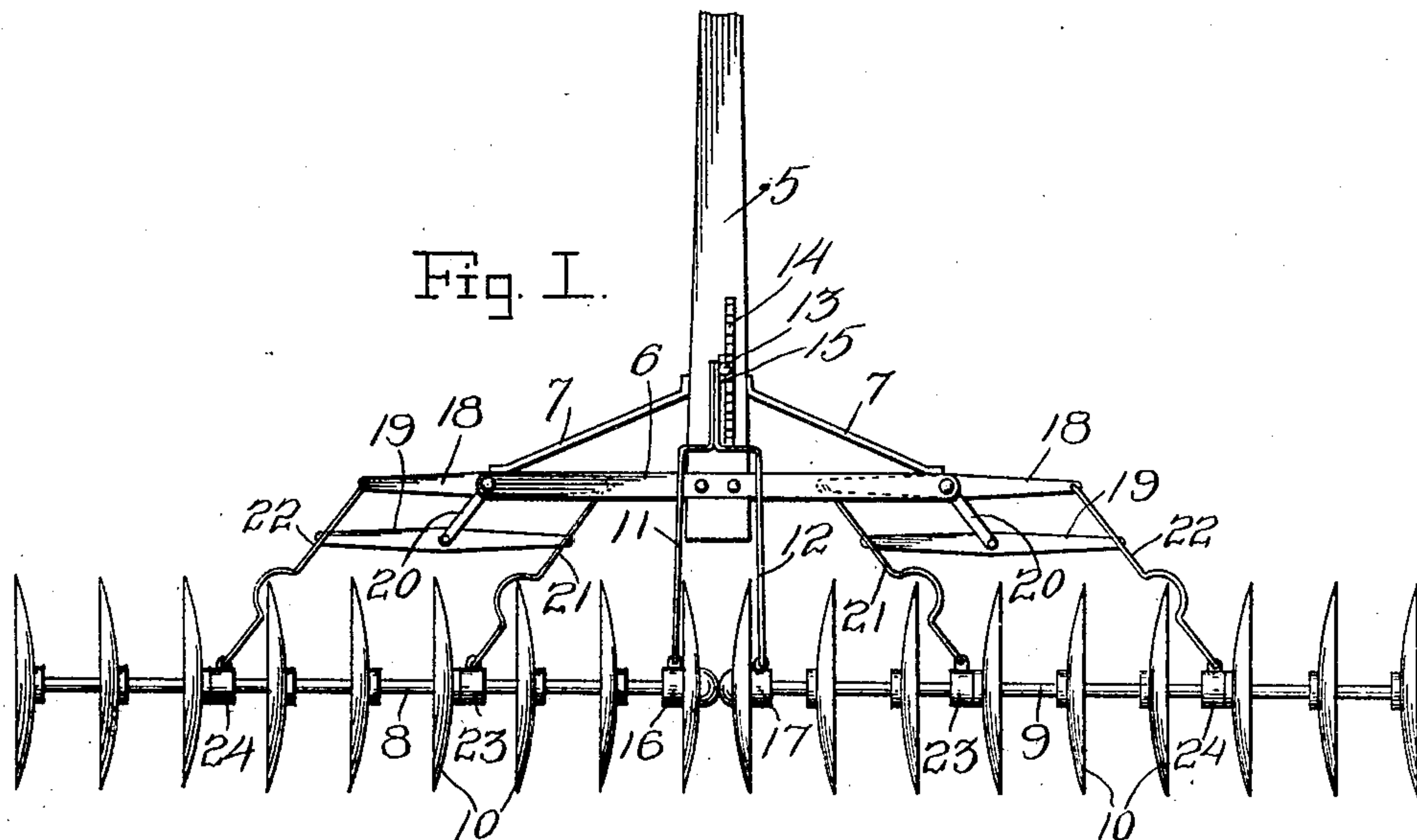
PATENTED JAN. 2, 1906.

G. A. TRUCKENBROD.

HARROW.

APPLICATION FILED APR. 4, 1905.

2 SHEETS—SHEET 1.



Witnesses

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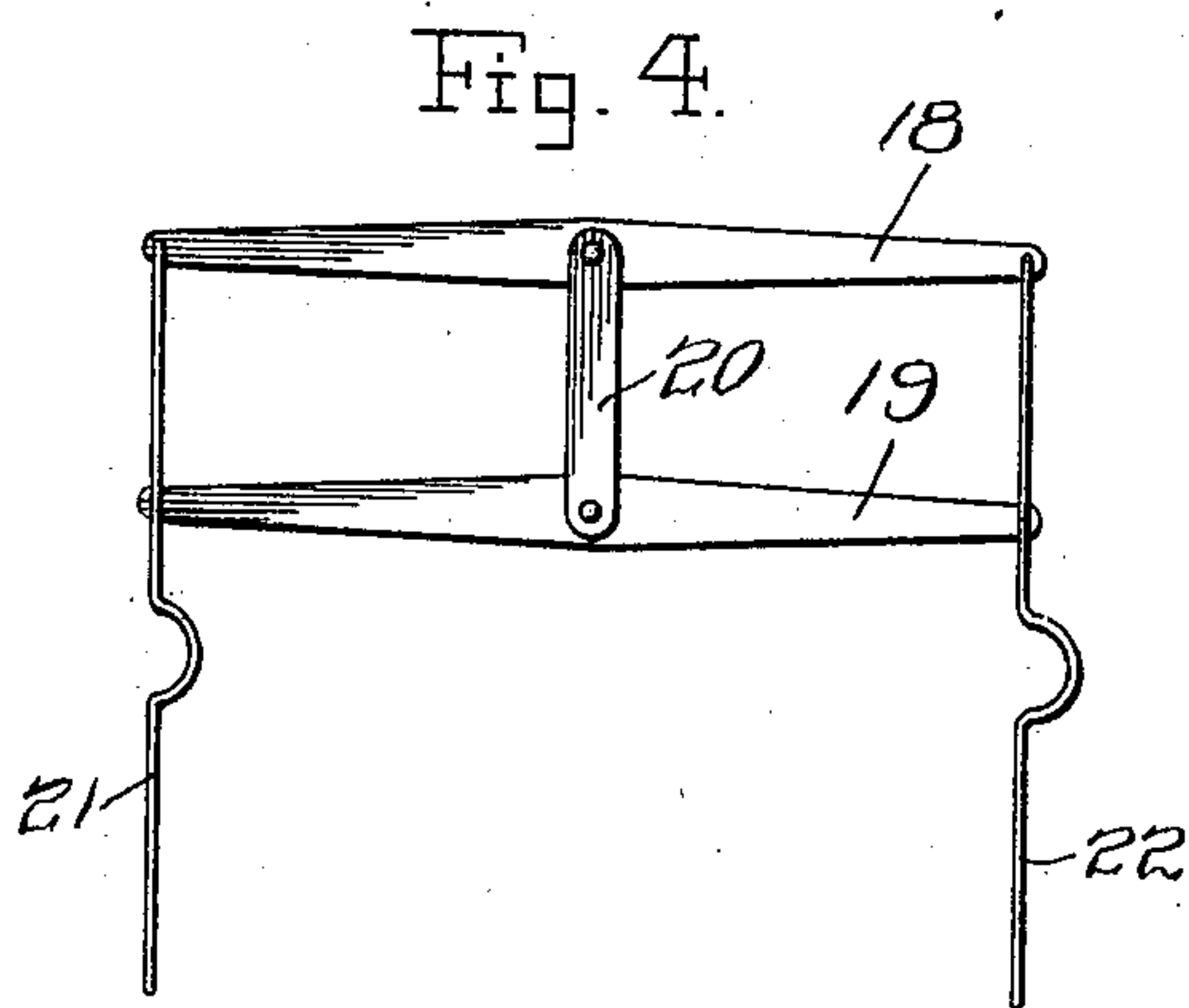
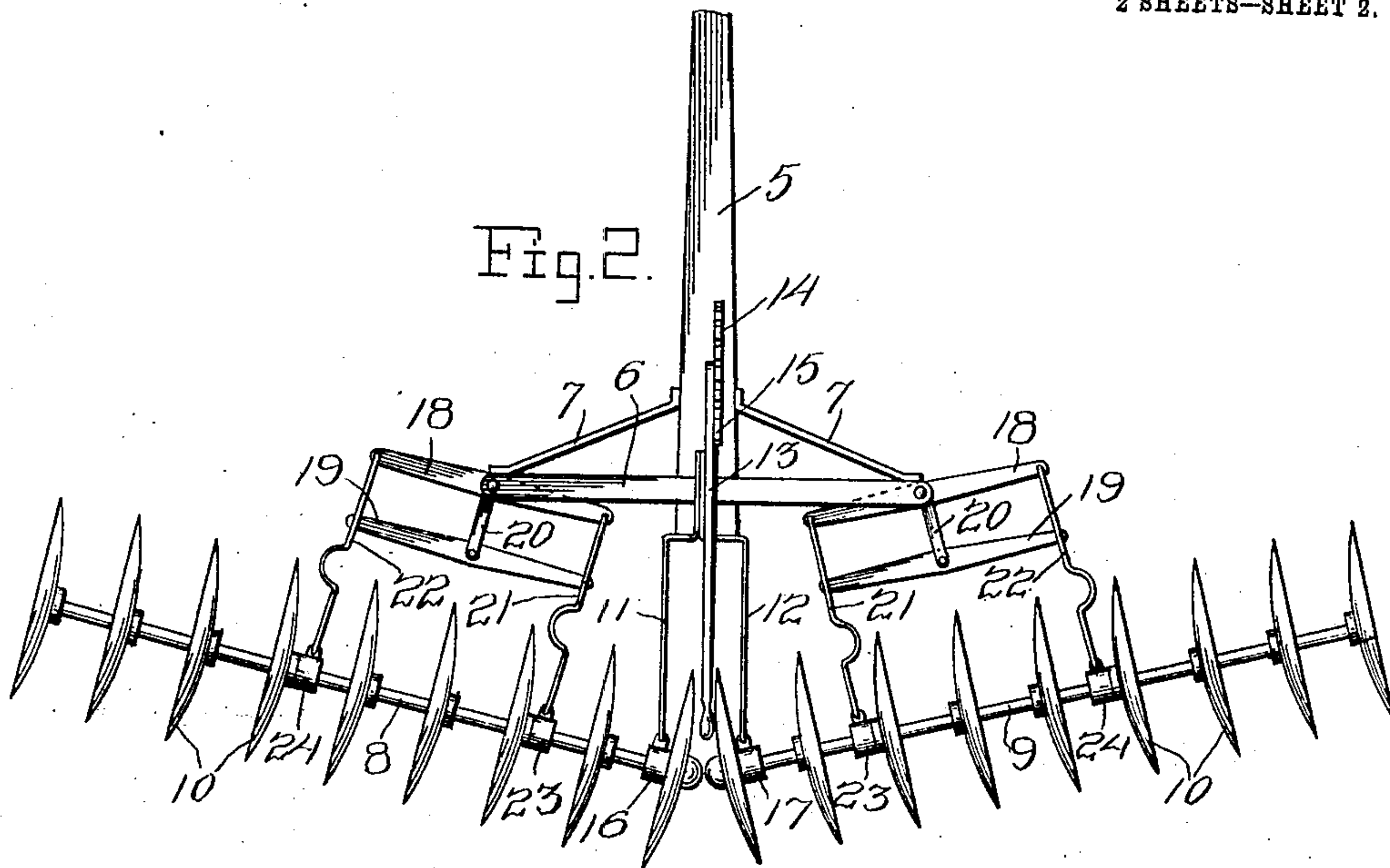
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

GUSTAVOUS A. TRUCKENBROD, OF LAMOILLE, ILLINOIS.

## HARROW.

No. 809,150.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed April 4, 1905. Serial No. 253,814.

*To all whom it may concern:*

Be it known that I, GUSTAVOUS A. TRUCKENBROD, a citizen of the United States, residing at Lamoille, in the county of Bureau, State of Illinois, have invented certain new and useful Improvements in Harrows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to harrows in general, and more particularly to the class of disk harrows, the object of the invention being to provide a construction wherein when the shafts carrying the disks are in such positions as to retard to the greatest degree the progress of the implement the draft on said shafts will be applied at the most economical angle.

Other objects and advantages of the invention have reference to specific details of structure and will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top plan view showing a harrow embodying the present invention, the disk-shafts lying at right angles to the tongue in the positions that they occupy when the implement is to be transported from place to place. Fig. 2 is a view similar to Fig. 1 with the shafts shifted at acute angles to the tongue, so as to diverge forwardly. Fig. 3 is a side elevation of the harrow in the position shown in Fig. 1. Fig. 4 is a detail view showing the truss-frame, from which extend the draft-bars to each disk-shaft.

Referring now to the drawings, there is shown a harrow comprising a tongue 5, having secured transversely thereof a cross-beam 6, which is held at right angles to the tongue by means of the tie-rods 7, attached to the ends of the beam and to the tongue in advance of the beam. The harrow comprises also the two shafts 8 and 9, upon each of which is fixed a series of disks 10, which stand at right angles to the shafts and which disks are slightly concaved in the usual manner and are easily spaced.

Mounted upon the tongue 5 are bars 11 and 12, which are slidable longitudinally of the tongue and are connected with a lever 13 for shifting them, a notched segment 14 being disposed adjacent to the lever and in po-

sition for engagement by the bolt 15 on the lever to hold the latter against swinging movement.

At the rear ends of the bars 11 and 12 are bearings 16 and 17, in which are rotatably mounted the inner ends of the shafts 8 and 9, the bearings 16 and 17 being in the form of boxes which are pivoted to the rear ends of the bars 11 and 12, so that the shafts 8 and 9 may be adjusted to aline, as shown in Fig. 1, or to lie at an angle, as shown in Fig. 2.

The beam 6 comprises spaced plates lying, respectively, above and below the tongue 5, and between the ends of these spaced plates are disposed frames, each of which includes the parallel members 18 and 19, connected intermediate of their ends by the member 20, which is pivoted to them. The same bolt which pivotally connects the members 18 and 20 passes also through the upper and lower plates of the beam 6 and pivotally connects the frame to the beam. Pivoted to the ends of the members 18 and 19 are draft-bars 21 and 22, having bearing-boxes 23 and 24, respectively, pivoted to their rear ends and in which the corresponding disk-shaft is journaled. If then the disk-shafts be in alinement, as shown in Fig. 1, the draft-bars 21 and 22 will be at acute angles thereto and to the beam 6, the members 18 and 19 being parallel with the beam, and if the bars 11 and 12 are shifted rearwardly, so as to cause the disk-shafts to lie at an angle to each other, then the members 18 and 19 will lie at an acute angle to the beam 6 and the draft-bars 21 and 22 will be at right angles to the corresponding disk-shafts, so that they will exert a direct pull on said shaft, it being understood that this is the working angle of the shaft when the resistance offered to the progress of the machine is at its maximum. When the bars 11 and 12 are drawn forwardly, the shafts are moved into alinement and the parts reassume the positions shown in Fig. 1.

What is claimed is—

1. In a harrow, the combination with a tongue, of cross-beams carried by said tongue, shafts, disks carried by the shafts, frames pivoted between the ends of said cross-beams and including each a pair of parallel members, a link connected with said members, draft-rods pivotally connected at the end of the said parallel members and to the said shaft, and means for adjusting the shafts to aline or lie at various angles, the draft-rods



being in position to lie at right angles to their respective shafts when the latter are at a predetermined angle to each other.

2. A harrow comprising a tongue, shafts,  
5 cross-beams carried by said tongue, one of said beams being disposed above and the other of said beams being disposed below said tongue, draft-frames pivoted between the ends of said beams, said frames including  
10 spaced parallel members, a link pivotally connected at its ends to the said members at the point of pivotal connection of the said frame with the said beams, draft-rods having one of their ends pivotally connected to said

parallel members and having their other ends 15 pivotally connected to said shaft, and means for adjusting the said shafts to aline or lie at various angles, the draft-rods being so positioned as to lie parallel to each other at all times and at right angles to their respective 20 shafts when the latter are at a predetermined angle to each other.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAVOUS A. TRUCKENBROD.

Witnesses:

GILBERT FABER,  
J. R. MODS.