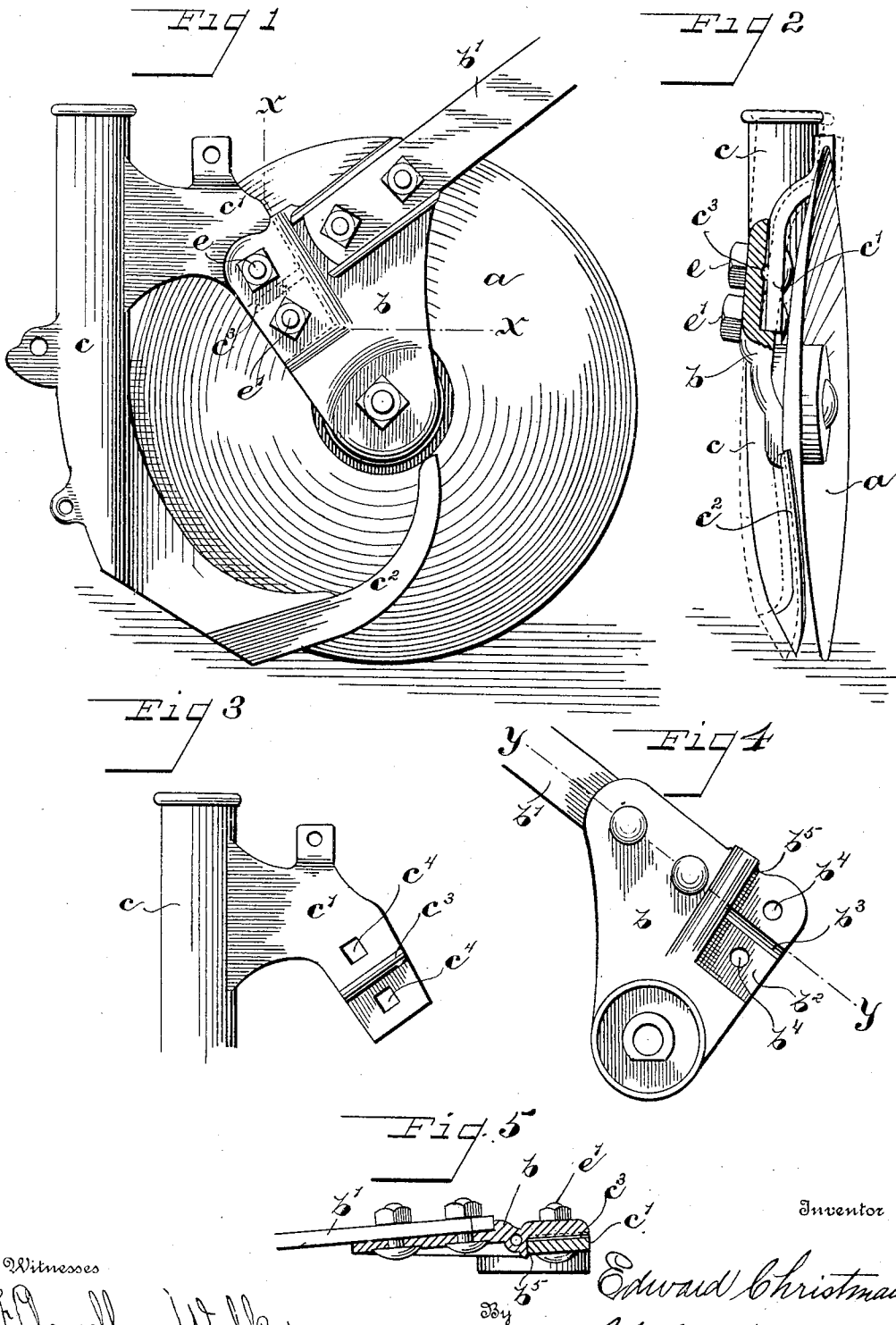


No. 805,262.

PATENTED NOV. 21, 1905.

E. CHRISTMAN.
DISK FURROW OPENER.
APPLICATION FILED DEC. 16, 1904.



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UNITED STATES PATENT OFFICE.

EDWARD CHRISTMAN, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO AMERICAN SEEDING MACHINE COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF NEW JERSEY.

DISK FURROW-OPENER.

No. 805,262.

Specification of Letters Patent.

Patented Nov. 21, 1905.

Application filed December 16, 1904. Serial No. 237,069.

To all whom it may concern:

Be it known that I, EDWARD CHRISTMAN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Disk Furrow-Openers, of which the following is a specification.

My invention relates to improvements in disk furrow-openers for seeding-machines.

The object of my invention is to provide a disk furrow-opener of a construction which will be effectual in operation and also easily assembled and capable of ready adjustment to the work to be performed.

My invention consists in the constructions and combinations of parts hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a disk furrow-opener embodying my invention. Fig. 2 is a sectional view taken on the line $x-x$ in Fig. 1, the disk being shown in full lines. Fig. 3 is a detail of a part of the grain-conduit. Fig. 4 is a detail view of a portion of the main frame and bearing to which the parts in Fig. 3 are to be attached. Fig. 5 is a sectional view on the line $y-y$ of Fig. 4.

Like parts are represented by similar letters of reference in the several views.

In the drawings, a represents the disk, which is of the usual construction, which is mounted upon a suitable support or frame b , attached to a drag-bar b' in the usual manner, by means of which it will be connected to the main frame of the machine. This main frame or support b is provided on one side with a recess b^2 , into which is adapted to be fitted a curved arm c' of the grain-conduit c . The grain-conduit c may be of the usual construction, provided at its lower end with a forwardly-projecting shield or scraper c^2 . The recess b^2 in the frame and the projecting arm c' of the conduit, which fits into said recess, are preferably formed on a line approximately at right angles to the chord of the arc which forms the front edge of the shield or scraper, if the same is formed on a curve, and there is extended transversely across the arm a rib or projection c^3 , which fits in a corresponding depression or groove b^3 in the casing. The parts are firmly connected together by means of bolts e and e' , which pass through suitable openings b^4 and c^4 in the respective

engaging parts. The bearing contact between the arm c' and the main frame or support b is between the transverse rib c^3 and the bottom of the groove b^3 , these parts being so formed as to leave a clearance between the other portions or plain surfaces of the arm and the recess. The recess b^2 , however, has a shoulder b^5 on one edge thereof, against which the edge of the arm is adapted to fit to form a more secure fastening device and to relieve the bolts of the working strains.

It will be seen that by tightening the respective bolts e and e' more or less the conduit c , together with the shield or scraper carried thereby, can be adjusted to the proper position best suited to the work to be performed and when so adjusted can be secured firmly in position and retained there, thus facilitating the work of assembling and also furnishing means by which the parts may readily be adjusted to compensate for wear or for other purposes. The construction also permits the conduit and the shield or scraper to be readily removed or replaced or renewed, if desired.

The construction described, it will be seen, forms a two-part frame adapted to be attached together by means which permit of adjustment of the parts, so as to bring the same in their proper working positions, irrespective of irregularities that may occur in the castings or in the disks.

Having thus described my invention, I claim—

1. In a furrow-opener, a main supporting-frame formed in two parts, a furrow-opening disk mounted on one of said parts, a conduit mounted on the other part, a shield or scraper carried by said conduit, means for varying the inclination of the conduit in its relation with the vertical whereby the shield or scraper will be adjusted in its relation with the furrow-opening disk.

2. In a furrow-opening device, a frame or support formed in two parts, a disk mounted on one of said parts, and a shield or scraper for said disk connected to the other part, means for varying the relative inclination of the said frame parts whereby the shield or scraper will be laterally adjusted in its relation to the disk, substantially as and for the purpose specified.

3. In a furrow-opener, a supporting-frame

formed in two parts, a disk mounted on one of said parts and a shield or scraper for said disk on the other part, a fulcrum on one of said parts, an adjustable fastener on each side of said fulcrum whereby the position of one of the parts may be varied in its relation to the vertical to permit a relative adjustment of the shield and disk, substantially as specified.

4. In a furrow-opener, a supporting-frame in two parts, a disk mounted on one part and a conduit on the other part, a fulcrum or projection on one of said parts adapted to contact with the other part, and adjustable fastening means on each side of said fulcrum whereby the position of the conduit may be adjusted with reference to the disk, substantially as described.

5. In a furrow-opener, a supporting-frame formed in two parts, one of said parts being provided with a recess and the other with an arm to fit in said recess, a transverse bearing between said parts, adjustable fastening means on each side of said transverse bearing, a disk mounted on one of said parts, and a conduit carrying a shield or scraper on the other part, for the purpose specified.

6. In a furrow-opening device, a two-part supporting-frame, a disk mounted on one of said parts, a conduit carrying a shield or scraper on the other part, one of said parts being formed with a recess and the other with an arm fitted into said recess, a transverse

bearing between the respective parts, adjustable fastening devices on each side of said transverse bearing, whereby the conduit may be adjusted with reference to the disk.

7. In a furrow-opening device, a two-part supporting-frame, a disk mounted on one of said parts, a shield or scraper for said disk mounted on the other part, a transverse bearing having a fulcrum between the respective parts of said two-part frame and adjustable fastening means on each side of said transverse bearing whereby said shield or scraper may be adjusted to or from said disk and held in proper relation thereto, substantially as specified.

8. The combination with a main supporting-frame, a disk journaled thereon, a conduit carrying a shield or scraper, an arm on said conduit and a recess in said frame into which said arm is fitted, a rib on one of said parts and a groove in the other part, fastening devices on each side of said rib and groove, and means for adjusting said fastening devices to produce adjustment of said conduit with reference to said disk, substantially as specified.

In testimony whereof I have hereunto set my hand this 12th day of December, A. D. 1904.

EDWARD CHRISTMAN.

Witnesses:

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C. H. ZIRCKEL.