

(No Model.)

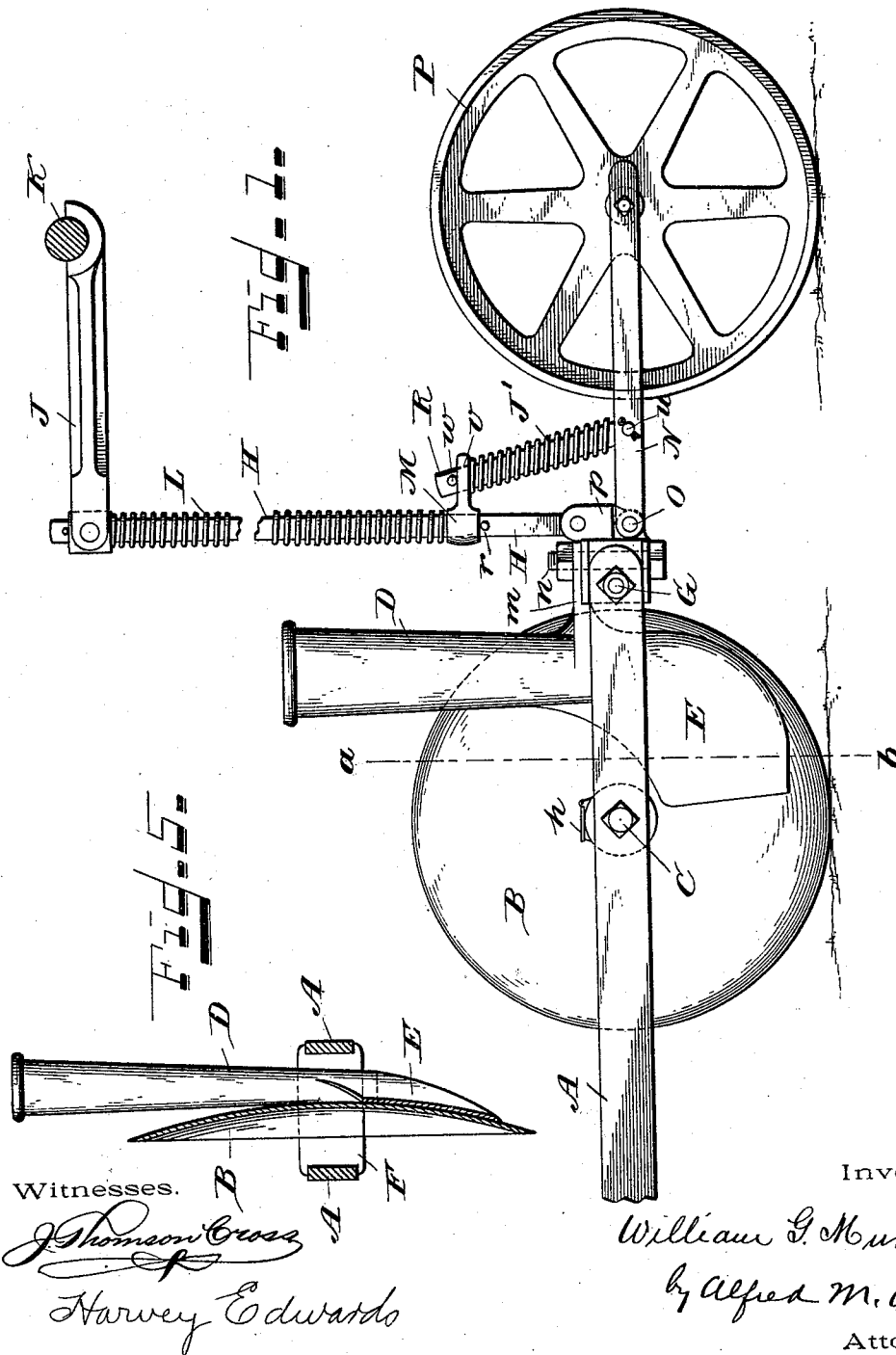
3 Sheets—Sheet 1.

W. G. MUNN.

COMBINED SEEDING MACHINE AND DISK HARROW.

No. 581,030.

Patented Apr. 20, 1897.



Witnesses.

Thomson & Cross
Harvey Edwards

Inventor.

William G. Munn
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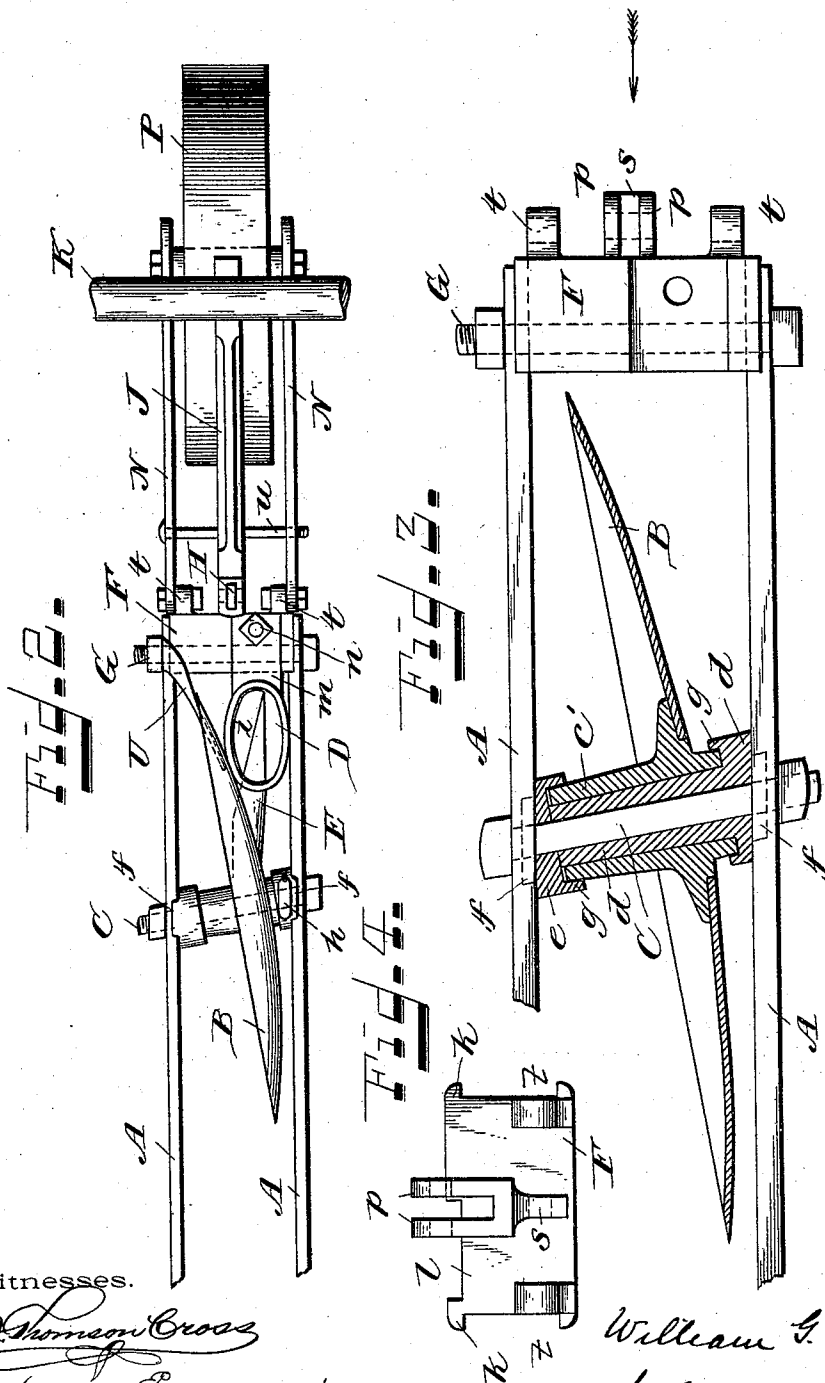
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J. Morgan Cross
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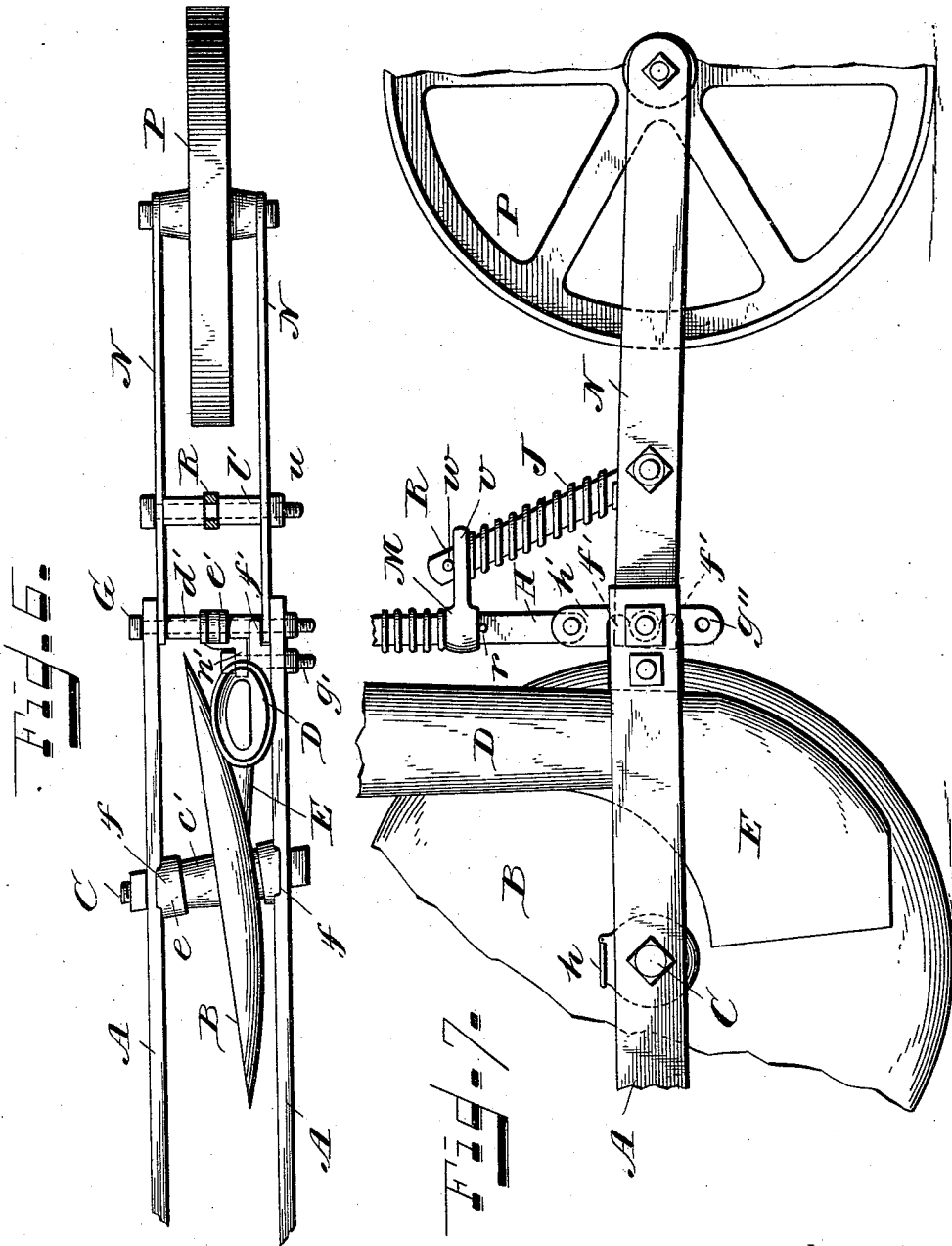
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Johnson Cross
H. Gates Edwards

Inventor.

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UNITED STATES PATENT OFFICE.

WILLIAM G. MUNN, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE
BRENNAN & CO. SOUTHWESTERN AGRICULTURAL WORKS, OF SAME
PLACE.

COMBINED SEEDING-MACHINE AND DISK HARROW.

SPECIFICATION forming part of Letters Patent No. 581,030, dated April 20, 1897.

Application filed July 18, 1896. Serial No. 599,631. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. MUNN, a citizen of the United States, residing at Louisville, county of Jefferson, and State of Kentucky, have invented certain new and useful Improvements in a Combined Seeding-Machine and Disk Harrow, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to improvements in grain-drills in which furrow-opening disks are employed to open a furrow for the grain, and it has particular relation to those certain novel and useful constructions and arrangements of parts, to be hereinafter particularly pointed out and claimed, whereby the machine may be readily and easily adapted to serve either as a grain-drill, a broadcast seeding-machine, or a disk harrow and cultivator.

In the drawings, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is a top plan view of same. Fig. 3 is a horizontal section taken through one of the disks. Fig. 4 is an end view of the block between the drag-bars, looking in direction of arrow in Fig. 3. Fig. 5 is a vertical section taken through one of the disks on lines *a b* of Fig. 1. Fig. 6 is a top plan view of my device, showing a modified construction for attachment of the grain-receiver. Fig. 7 is a side elevation of this modified construction.

In the drawings I have shown but one of my improved devices, but it will be understood that for the complete drill such number of similar parts are employed as go to make up a complete machine.

A A represent one pair of the drag-bars of the seeding-machine coupled to the frame in the usual way, as many sets of drag-bars being employed as there are seed-discharge tubes or disks for the machine. Journaled on suitable bearings between these drag-bars and inclined at a proper angle to the line of draft is a disk B. This disk is provided with an elongated hub *c'*, mounted to revolve on the spindle *d*.

e is a cap within which the end of the spindle fits to sustain same, and both spindle and cap are provided with square shoulders *f f*,

within the recesses of which the drag-bars fit to prevent the cap and spindle from turning. Both spindle and cap are also provided with protecting-flanges *g g*, fitting around the hub *c'* of the disk to keep out dust and dirt, while the spindle is slightly longer than the disk-hub *c'*, so that when the bolt C, which passes through the drag-bars and upon which the parts are mounted, is tightened the disk can turn freely in its bearings.

h is an oil-box cast on the spindle and provided with a cover to keep out dust and dirt, through which box lubricant is supplied to the bearings between the hub and spindle.

D is the seed conveyer or receiver, connected with the seed-hopper by suitable tubing in the usual way and located on the convex side of the disk B and to the rear of its journal-bearings. The lower end of the receiver D is provided with a downwardly and forwardly extending portion E, which extends over and in front of the seed-delivery opening *i* and is made to conform to the disk, as shown in Fig. 5, thus serving as a scraper for the convex surface of the disk and as a guard or shield to protect the descending seed from being scattered by stubble, grass, or other obstacles and as a guide to aid in the delivery of the seed to the furrow formed by the disk.

F is a block which fits between the ends of the drag-bars and is secured therein by the bolt G, which passes through the drag-bars and longitudinally through the block, the block being provided with shoulders *k k* to form channels for the snug fitting of the drag-bars and to prevent the block from turning or twisting. The upper surface of this block is also formed with a channel *l*, within which fits the bracket-arm *m* on the seed-receiver D, by which the receiver is bolted to the block by bolt *n*.

At the rear of the block F are the lugs *p p*, within which is hinged the flat rod H, connected above to the usual arm J, rocker-bar K, and lifting device, while the usual coiled spring L bears between the arm J and the sliding collar M, which is held from descending by the pin *r*, and thus variable pressure is brought to bear on the drag-bars to force the furrow-cutting disks into the ground any

desired depth. The lugs *p p* converge at the base to form the vertical lip *s*, having a hole within which may be attached, when desired, the usual drag-chain covering device.

- 5 *t t* are lugs extending rearwardly from block F, with bolt-holes in line with the drag-chain hole in the lip *s*, so that when the drag-chain covering is removed the supplemental drag-bars *N N* may be bolted thereto by bolt *O*.
 10 These supplemental drag-bars *N N* carry journaled therein at the rear the covering-wheel *P*.

- R* is the press-wheel-lifting bar, coupled to the drag-bars *N* by pin *u* and passing up through a slot in the rear projection *v* in the sliding collar *M* and held therein by the pin *w*, so that when the rocker-arm *J* is raised the press-wheel will be raised also.

- J'* is a coiled spring bearing between the rear projection *v* on the collar *M* and the pin *u*, so that when downward pressure is exerted on the bar *H* by the shifting of the rocker-bar the disk and covering-wheel are forced downward under the pressure of the two
 25 springs *L* and *J'*, and when the bar *H* is raised both disk and covering-wheel are raised clear of the ground.

- U* is a scraper secured on the bolt *G* to the drag-bars and bent in such a manner as to
 30 scrape the concave surface of the furrow-opening disk, or these scrapers may be secured in any other desired way to serve their purpose.

- It will be understood that while I have illustrated my grain-receiver *D* as connected to the block *F* the receiver can, if desired, be connected directly to the drag-bars. The grain-receiver *D*, however, is entirely distinct and separate from the disk *B* or its bearings. This
 40 construction I have illustrated in Figs. 6 and 7. Instead of attaching the grain-receiver to the block *F*, I provide a cylindrical block or tube *d'*, which is bolted between the drag-bars by the bolt *G*. The grain-receiver is attached
 45 directly to the drag-bar by the bolt *g'*, and the rear extension of the grain-receiver is provided with two lugs *f' f''*, which embrace the tube *d'* and hold the receiver *D* rigidly in place when it is bolted to the drag-bars.

- e'* is a collar provided with a pair of upwardly-extending lugs *h' h'*, to which the bar *H* is attached, and also the downwardly-extending lug *g''*, to which the usual drag covering-chain can be attached. This collar is
 50 also provided with a forwardly-extending arm *n'*, while the bolt *g'* for connecting the grain-receiver to the drag-bars also passes through this arm, thus locking the collar from turning when the spring-pressure is applied.
 60 The supplemental drag-bars *N N* for the covering-wheel *P* are attached to the implement on the tube *d'*. In other respects the construction is similar to that already described in connection with what is shown in Figs. 1
 65 to 5.

With my construction and arrangement as

above described the implement can be readily and easily adapted for many different purposes. The furrow-opening disks being entirely separate and distinct from the grain-receivers, whenever desired the receivers can
 70 be removed and the machine used as a broadcast seeder, the disks harrowing the seed into the ground as it is distributed in front of them, or the receiver can be removed by merely
 75 slipping the connecting-bolts, and the seed-hopper being also removed the machine can be used as a spring-pressure disk harrow or cultivator. This simple and easy adjustment of the parts and the means by which I effect
 80 it, whereby the character of the implement may be changed at a moment's notice, forms one of the chief features of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Pat-
 85 ent, is—

1. In a combined seeding-machine and harrow, the combination, with the frame and drag-bars, of a disk-wheel journaled to said bars at an angle to the line of draft, a grain-receiver separate and distinct from said disk
 90 and its journal-bearings, block secured between the drag-bars at the rear of said receiver with arms or lugs on the grain-receiver connected with said block, and bolt for securing said grain-receiver independently of
 95 the disk, substantially as shown and described.

2. In a combined seeding-machine and harrow, the combination, with the frame and
 100 drag-bars, of a disk-wheel journaled to said bars at an angle to the line of draft, a grain-receiver separate and distinct from said disk and its journal-bearings, block secured between the drag-bars at the rear of said receiver, with lugs on the grain-receiver embracing said block, and bolt securing said grain-receiver to the drag-bars independently
 105 of said disk, substantially as shown and described.

3. In a combined seeding-machine and harrow, the combination, with the frame and drag-bars, of a disk-wheel journaled to said bars at an angle to the line of draft, a grain-receiver separate and distinct from said disk
 110 and its journal-bearings, cylindrical block secured between the drag-bars at the rear of said receiver, with lugs on the grain-receiver embracing said block, collar with lugs mounted on the block, with spring-pressure and
 115 lifting devices attached thereto, and arm on said collar with bolt securing said arm and grain-receiver to the drag-bars independently of said disk, substantially as shown and described.
 125

4. In a combined seeding-machine and harrow, the combination, with the frame and drag-bars, of a disk-wheel journaled to said bars at an angle to the line of draft, a grain-receiver separate and distinct from said disk
 130 and its journal-bearings, cylindrical block secured between the drag-bars at the rear of

said receiver, with lugs on the grain-receiver embracing said block, collar with lugs mounted on the block, with spring-pressure and lifting devices attached thereto, and arm on said collar, with bolt securing said arm and grain-receiver to the drag-bars independently of said disk, and a press-wheel connected to said drag-bars by said cylindrical block with spring-pressure applied thereto, substantially as shown and described.

5. In a combined seeding-machine and harrow, the combination, with the frame and drag-bars, of a disk-wheel journaled to said bars at an angle to the line of draft, a grain-receiver separate and distinct from said disk and its journal-bearings, cylindrical block secured between the drag-bars at the rear of said receiver, with lugs on the grain-receiver embracing said block, collar with lugs mounted on the block, with spring-pressure and lifting devices attached thereto, and arm on said collar, with bolt securing said arm and grain-receiver to the drag-bars independently of said disk, and a press-wheel connected to said drag-bars by said cylindrical block with spring-pressure applied thereto, and means for lifting said press-wheels simultaneously with said disks, substantially as shown and described.

6. In a combined seeding-machine and harrow, the combination, with the frame and drag-bars, of a disk-wheel journaled to said bars at an angle to the line of draft, a grain-receiver separate and distinct from said disk and its journal-bearings, cylindrical block secured between the drag-bars at the rear of

said receiver, with lugs on the grain-receiver embracing said block, collar with lugs mounted on the block, with spring-pressure and lifting devices attached thereto, and arm on said collar with bolt securing said arm and grain-receiver to the drag-bars independently of said disk, said grain-receiver being provided with a downwardly and forwardly extending portion made to conform to the convexity of the disk to serve as a scraper for the disk and a shield to protect the grain-delivery, substantially as shown and described.

7. In a seeding-machine, the combination, with the drag-bars, of a disk-wheel having an elongated hub, a spindle upon which said hub is mounted longer than the hub, a spindle-cap to support same, said spindle and cap having squared shoulders on the outer ends within the recesses of which the drag-bars fit, and a bolt to clamp the parts together, substantially as shown and described.

8. In a seeding-machine, the combination, with the drag-bars, of a disk-wheel having an elongated hub, a spindle upon which said hub is mounted longer than the hub, with a spindle-cap to support same, said spindle and cap having flanges to embrace the outer ends of said hub, an oil-box upon the flange of said spindle, and a bolt to lock said parts securely to the drag-bars but allow the disks to turn freely, substantially as shown and described.

WILLIAM G. MUNN.

Witnesses:

CHAS. P. STEVENS,
L. W. HOMIRE.