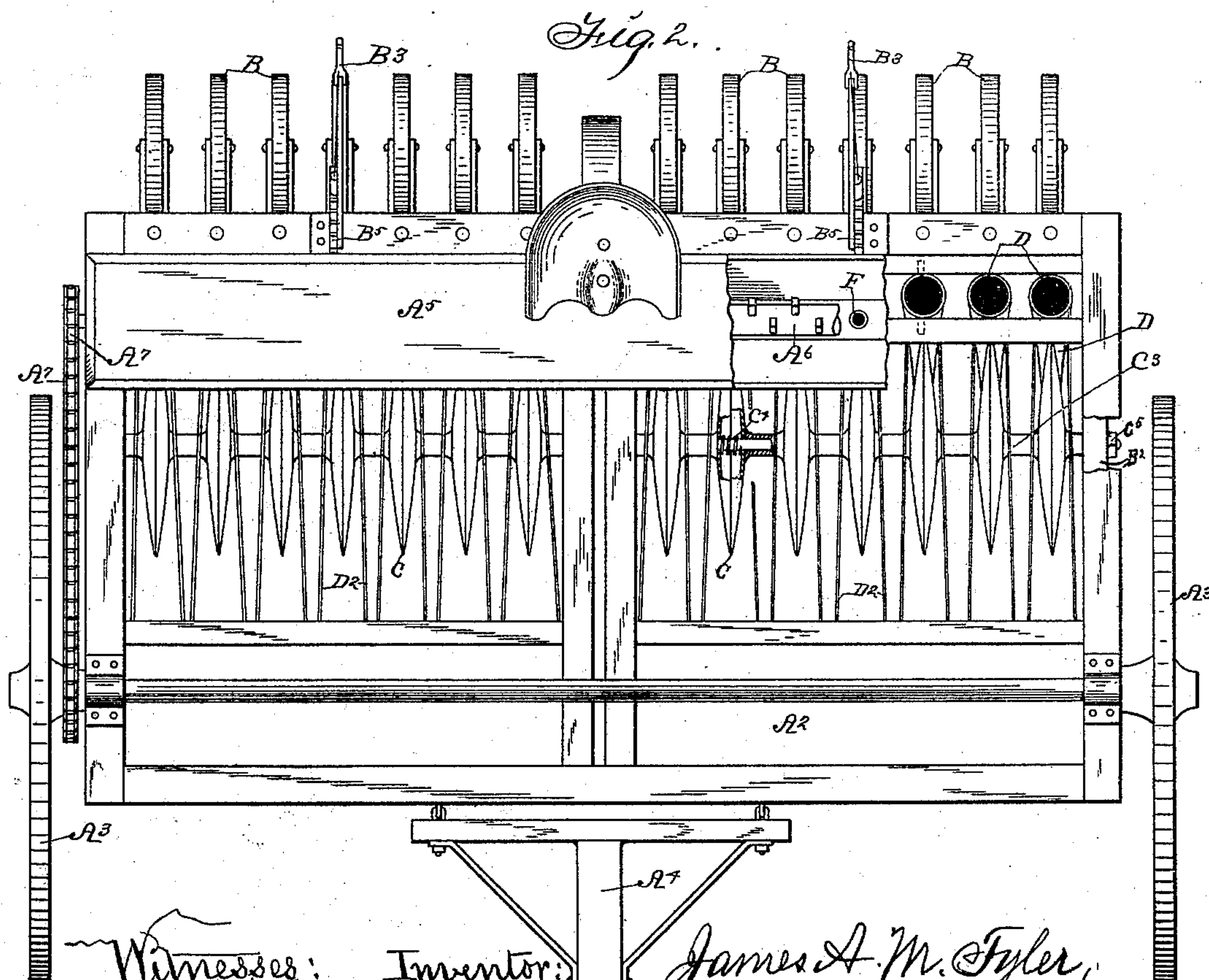
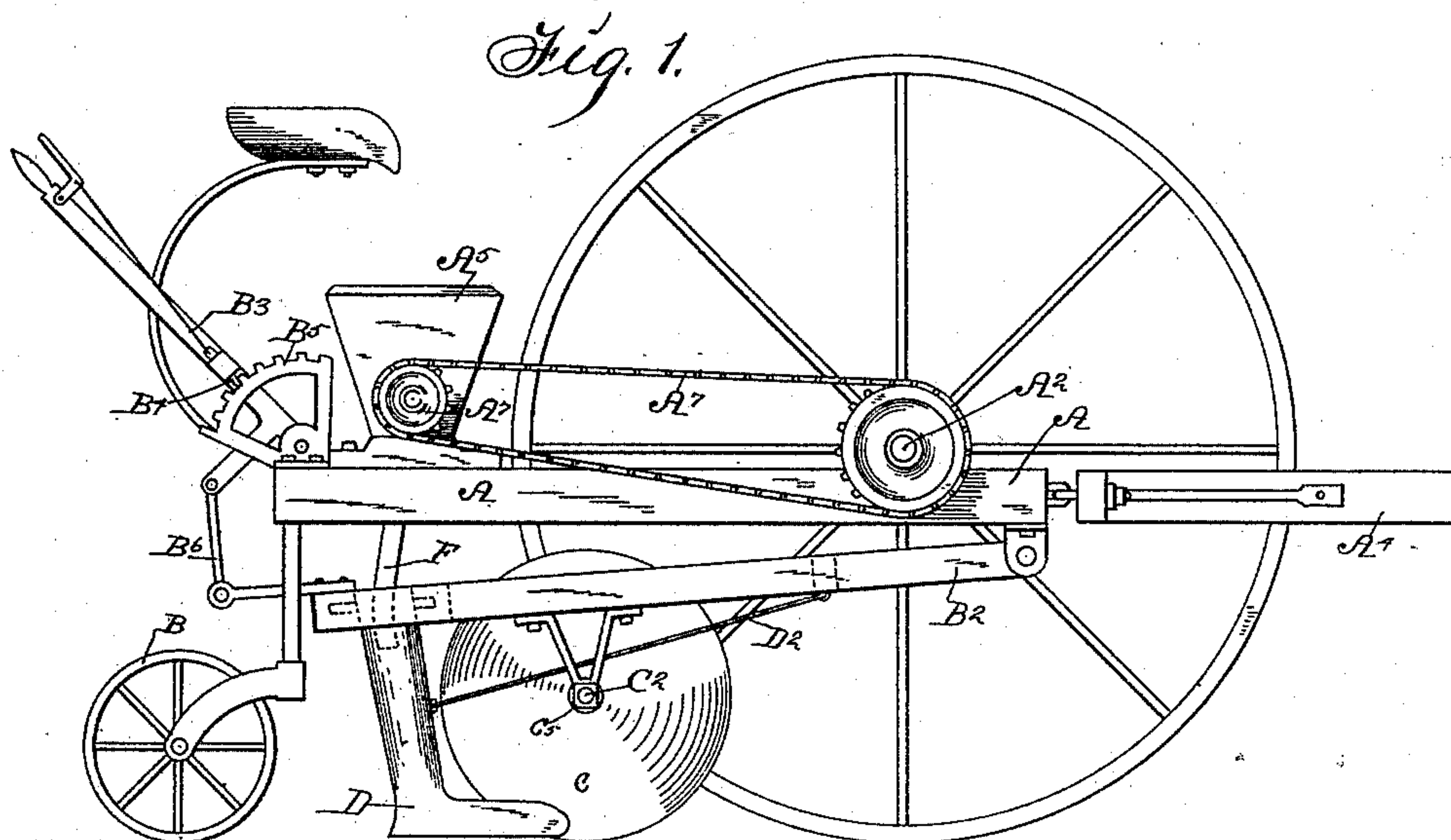


(No Model.)

J. A. M. TYLER.
GRAIN DRILL.

No. 500,725.

Patented July 4, 1893.



Witnesses:
W. J. Santley.
J. Ralph Orwig.

Inventor:

[Signature]

James A. M. Tyler,
Thomas C. Orwig, Atty.

UNITED STATES PATENT OFFICE.

JAMES A. M. TYLER, OF LEXINGTON, NEBRASKA.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 500,725, dated July 4, 1893.

Application filed January 26, 1893. Serial No. 459,916. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. M. TYLER, a citizen of the United States of America, residing at Lexington, in the county of Dawson and State of Nebraska, have invented a new and useful Grain-Drill, of which the following is a specification.

My invention consists first in the construction of disks for opening furrows and the arrangement of a plurality of them upon a shaft.

My invention consists further in the manner of attaching the shoes or runners to the machine frame and in the combination of a disk to open a furrow and a shoe to enlarge the same and drop the grain thereinto.

My invention consists further in certain features in the construction and arrangement of the supporting frame of the device as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of the complete device and Fig. 2 is a top view of the same with portions broken away to show hidden parts.

Referring to the accompanying drawings the reference letter A is used to designate the rectangular supporting frame of the machine having the rotatable axle A² of the traction wheels A³ mounted in its forward end portion and the tongue A⁴ attached to its front edge. Mounted upon the rear end portion of the frame is the seed box A⁵.

A⁶ designates an agitator within the seed box operated from the axle of the traction wheels by the gearing A⁷. The rear end portion of this frame A is supported by the caster wheels B which are adapted to cover the furrows made by the furrow opening devices, one of said wheels being placed in alignment with each of the furrow opening devices.

B² B² designate two rectangular frames each having a hinged connection at its forward end with the under side of the forward end of the frame A. The rear end portions of these frames B² are made vertically adjustable by means of the levers B³ mounted upon the frame A and each provided with a spring actuated pawl B⁴ to engage a segmental rack B⁵ and connected with said frame B² by means of a link B⁶.

C designates disks mounted upon the rotatable shafts C², which in turn are mounted in

bearings fixed to the approximate central portion of each of the frames B². These disks are formed of two circular concavo-convex metal plates placed upon the said shaft with their edges held in close engagement with each other by the metal spools C³.

C⁴ are spiral springs encircling the shaft C² and placed on the inside of each disk to engage its sides and exert a pressure outwardly thereupon, and thereby hold the sides of the disks separated and in engagement with said spools and all the parts firmly in position. These disks and their separating spools are held upon this axle by means of the lock nuts C⁵ at the ends thereof.

D designates shoes or runners through which the grain may pass to the bottom of a furrow, said runners are pivotally connected with the rear end of the frame to swing laterally, each shoe is bifurcated near its forward end to admit the edge of one of the disks and is supported by means of the rods D² attached to the opposite side of the shoe and to the forward portion of the frame B².

F designates flexible hose sections connected with the bottom of the seed box and extended into the interior of each shoe or runner.

The operation of the planting mechanism proper, is substantially as follows. The disks form approximately V-shaped furrows and pass readily through lumpy or hard soil, then the forward side portions of the shoes or runners engage the sides of the V-shaped furrow and broaden the bottom thereof, the lateral motion of which they are capable allows them to readily adapt themselves to irregularities in the furrows, and the seed is placed in the bottom of the furrow through the hose sections and the hollow interior of the shoes or runners, the furrows are then covered and pressed by the caster wheels B.

Having thus described the drill, what I claim as my invention, and desire to secure by Letters Patent of the United States therefor, is—

1. In a grain drill or the like, furrow opening devices comprising disks each composed of two circular concavo-convex metal plates placed on a suitable shaft, spools mounted on said shaft to separate the disks and a spiral spring within each disk to engage its sides, substantially as and for the purposes stated.

2. In a seed planting device the combination

of the following elements, to wit; a sharp edged disk mounted on a suitable axle and adapted to form a furrow in the ground surface and a shoe or runner D pivotally connected with a suitable support to be capable of a slight lateral movement and bifurcated at its forward end to admit the edge of said disk to thereby hold the disk and runner in approximate alignment and allow them slight lateral movement relative to each other.

3. In a seed planting device the combination of the following elements, to wit, a sharp edged disk mounted upon a suitable axle and adapted to form a furrow in the ground surface, a shoe or runner D bifurcated at its forward end to receive the edge of said disk and pivotally attached to a suitable support to be capable of a slight lateral movement, rods D² attached to the lower end portions and opposite sides of said shoe and to a suitable support in advance of the same and means for depositing seed in the bottom of said furrow.

4. In a grain drill the combination of the following elements, to wit: a suitable supporting frame, traction wheels mounted in the forward end portion of said frame and a plurality of caster wheels or furrow coverers to support the rear end of the frame, an auxiliary frame having its forward edge hinged to the under side of the said main frame, means for vertically adjusting the rear end of said auxiliary frame, a suitable axle mounted in the approximate central portion of said auxiliary frame, a plurality of sharp edged disks mounted upon

said axle, a like number of shoes or runners pivotally connected with said frame to swing laterally and in the rear of said disks, and means for depositing seed in the furrows formed by the disks and shoes.

5. In a grain drill the combination of the following elements, to wit: a rectangular supporting frame A having a rotatable axle A² mounted thereon and the traction wheels A³ on said axle, a seed box A⁵ mounted upon said frame containing an agitator A⁶ operated from the traction wheels by means of the gearing A⁷ the caster wheels or furrow coverer B mounted in the rear of said frame, two auxiliary frames B² hinged at their forward edges to the under side of the main frame for vertically adjusting the rear end portion of said frames a plurality of disks C constructed as set forth, mounted upon the axles C² which have their bearings in said frames, the spools C³ for separating said disks and the coil springs C⁴ inside of said disks the runners D pivoted to the rear of the frame B² to swing laterally and bifurcated at their forward ends to admit said disks, the rods D² attached to the shoes or runners and to the forward part of the frames B² and the hose sections F extending from the seed box to each shoe or runner, substantially in the manner set forth for the purposes stated.

JAMES A. M. TYLER.

Witnesses:

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