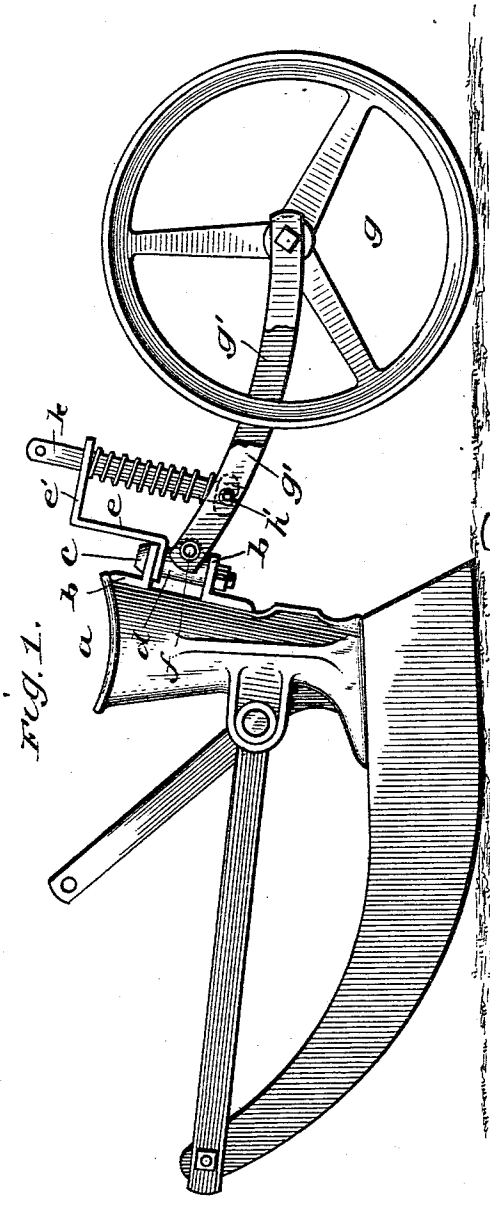
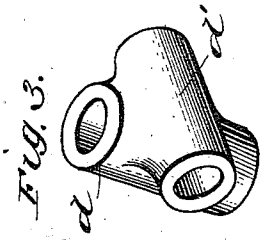
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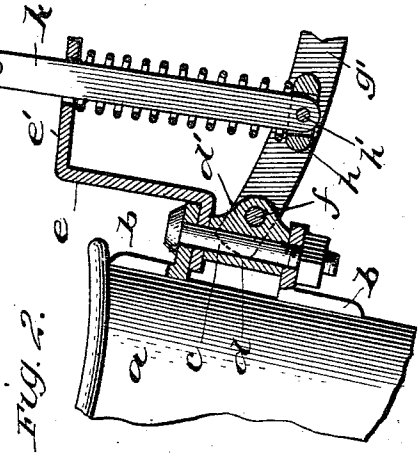
D. E. McSHERRY.

GRAIN DRILL.

No. 458,371. Patented Aug. 25, 1891.







Witnesses
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John M. Walsh

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By his Attorney
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DANIEL E. MCSHERRY, OF DAYTON, OHIO.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 458,371, dated August 25, 1891.

Application filed June 12, 1891. Serial No. 395,999. (No model.)

To all whom it may concern:

Be it known that I, DANIEL E. MCSHERRY, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a perspective view of one of my improved grain shoes or hoes complete; Fig. 2, a vertical sectional view showing the pivotal connection between the wheel or roller and the rear side of the seed boot or spout, and Fig. 3 a detail perspective view of the casting swivelly connecting the wheel to the hoe.

This invention has special relation to grain-drills wherein each shoe-runner and hoe carries a spring-depressed pivotally-connected pressure or covering wheel that follows along in the furrow behind the shoe and serves to yieldingly press the soil down upon and cover the seed dropped in the furrow, each wheel operating independently of every other and being free to rise and fall and swing laterally as the exigencies of the case may require; and it has for its objects, particularly, the provision of simple and effectual means for making a swiveling connection of the covering-wheels to the rear sides of the seed spouts or boots of each shoe, so that each wheel will be free to rise and fall independently of the others, and also swing laterally to readily follow the furrow, as will be more fully hereinafter described.

In the drawings annexed, *a* designates the seed-spout of an ordinary or any improved grain hoe or shoe, and as this forms no part of my present invention I do not deem it necessary to further refer to it in this specification.

Riveted or formed integral with the seed-spout, on its rear side near its upper end, is a pair of separated rearwardly-projecting lugs or ears *b b*, between which is pivoted by a vertical bolt *c* a laterally-swinging casting *d*, said vertical pivotal bolt passing down through holes in the ears and the intermediate casting and provided with a nut on its lower end. Clamped between the upper end of the casting and the upper ear is the lower horizontal portion of an upwardly-extending angular arm *e*, the upper end or portion *e'* of which is bent horizontally rearwardly. Formed integrally with the swinging casting is a horizontal tube or sleeve *d'*, this sleeve extending across its rear side or edge and having a passage through it for the horizontal pivotal bolt *f*. The bolt *f* pivotally clamps the forward ends of the arms *g'* of the presser-wheel *g* to the opposite ends of the transverse sleeve *d'*, the presser-wheel being journaled between the rear ends of the arms. At a suitable point between the wheel and the pivotal head is rigidly clamped between the arms, and by means of a horizontal bolt *h'*, a short bar or plate *h*, the bolt passing entirely through it and the arms. Pivoted on the bolt *h'*, in an opening in the plate *h*, is the lower end of a flat vertical bar *k*, the upper end of which works freely in a slot in the horizontal portion *e'* of the angular arm. A coiled expansible spring is placed upon the rod *k* between the arm *e'* and the block *h*, to keep the wheel yieldingly pressed downwardly.

It will be observed that by this construction of the connecting devices the presser-wheels will be free to swing both vertically and laterally and at the same time be kept pressed constantly downward, no matter in what position the wheels may be in respect to the hoe. The vertical movement is advantageous in that it permits the wheels to yield independently of each other in riding over obstructions and undulations in the soil, and the laterally-swinging movement is obviously important in that it permits the wheels to freely follow the furrows whether they be curved or straight. The pivoted arm *e* is an important feature in that it is free to swing around with the wheel and keep it constantly pressed downwardly. This connection is extremely simple and effectual, and will not be liable to readily get out of order.

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

1. The combination of a grain-drill shoe, a casting or block pivoted on the rear side of the same by a vertical bolt, a transverse sleeve carried by the casting, wheel-carrying arms

pivoted to this transverse sleeve, and means for depressing the wheel, substantially as described.

2. The combination of a grain-drill shoe provided with ears on its rear side, a casting pivoted between these ears by a vertical bolt, this casting having formed integral with it across its rear side a horizontal tube or sleeve, and arms pivoted to the ends of this sleeve by a horizontal bolt, said arms carrying a wheel at their rear ends, substantially as described.

3. The combination of a grain-drill shoe, a laterally-swinging casting pivoted thereto by a vertical bolt, a horizontal bolt pivoted to the rear side thereof, and vertically-swinging arms pivoted on said bolt, said arms carrying a presser-wheel, substantially as described.

4. The combination of a grain-drill shoe, a laterally-swinging casting pivoted thereto by a vertical bolt, a laterally-swinging angular arm pivoted thereto by said bolt, this arm having a rearwardly-extending arm at its upper end, wheel-carrying arms pivoted to the said casting by horizontal bolts, a vertical rod pivoted to these arms and extending up through an opening in the rearwardly-extending arm, and a spring for yieldingly pressing the wheel-carrying arms downward, substantially as described.

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

DANIEL E. McSHERRY.

Witnesses:
O. B. BROWN,
OSCAR M. GOTTSCHALL.