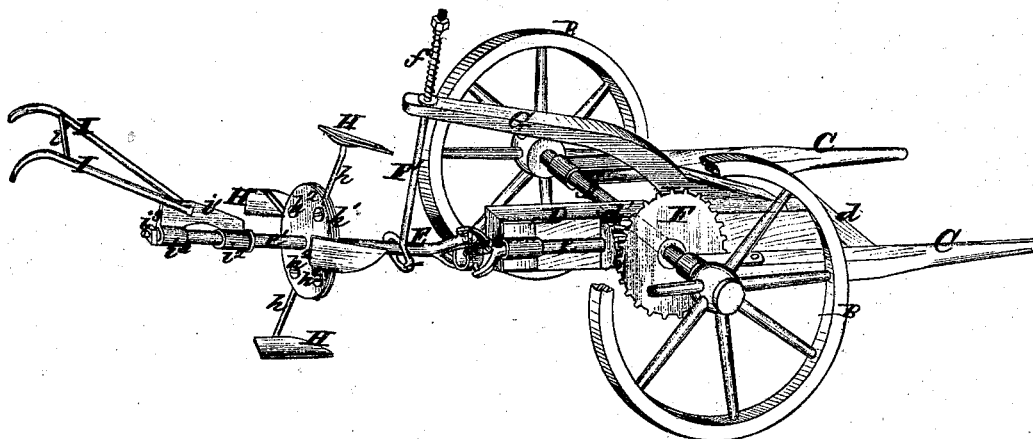


D. F. Welsh,
Rotary Cultivator.

No. 111,023.

Patented Jan. 17, 1871.



WITNESSES.

J. H. Master.
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INVENTOR.

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United States Patent Office.

DWIGHT F. WELSH, OF NEVADA, OHIO.

Letters Patent No. 111,023, dated January 17, 1871.

IMPROVEMENT IN COTTON-CHOPPERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, DWIGHT F. WELSH, of Nevada, in the county of Wyandot and State of Ohio, have invented a new and useful Improvement in Cotton-Choppers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing forming part of the same, and in which is represented a perspective view of my chopper.

This invention relates to certain improvements in cotton-choppers, and the nature thereof consists in forming the shaft carrying the choppers or hoes into two parts, which are united by means of a "universal" joint; in the employment of a vertical rod, embracing at its lower end, by means of an oblong or oval loop, the chopper-shaft, and having its upper end, which is supplied with a spring, passing through an arm secured to the upper part of the frame of the machine, and in an improved means of attaching the handles of the choppers to the chopper-shaft, as hereinafter more fully set forth.

Similar letters in the several figures indicate like parts.

In the accompanying drawing—

A represents an axle having the wheels B B, and to which are attached the shafts C C.

D is a longitudinal horizontal bar or support, secured at its front end to the transverse bar *d* of shafts C C, and having the axle A passing through its center, forming a support therefor.

E is a shaft, consisting of the parts *e e'*, which are united by means of a universal joint, *e²*, the part *e* revolving in journal-boxes secured to the side of bar or beam *d*, and provided with the beveled gear-wheel *d'*, gearing with the beveled gear-wheel F, located upon axle A, and the part *e'* being supported by means of a vertical pendent rod, through the looped end of which it passes.

F designates a vertical rod, formed at its lower extremity with an oval-shaped loop, through which the chopper-shaft passes, thereby forming a support for the part *e'* of said shaft, and also allowing it to have lateral movement, the universal joint *e²* acting in conjunction therewith for producing this result or movement, the object of which being to allow the choppers to be placed at any desired angle in a horizontal plane, in order that crooked rows of cotton may be chopped, or in case the choppers should not be drawn directly over the said rows of cotton, they may be made to come in contact therewith.

This rod is made to pass up through an aperture in the arm G, fastened to beam or support D, and supplied on that part of its surface extending above the arm G with a spiral spring, *f*, embracing it, and having its upper end confined by means of a nut and

its lower end resting on the said arm G, the object of said spring being for the purpose of allowing the rod F to freely yield to the upward and downward movement of the shaft E imparted to it in the manner and for the purpose hereinafter described.

H H designate the choppers or hoes, constructed as shown in the drawing, and having the inner ends of their shanks *h h* inserted in a metal disk, *h'*, consisting of two plates, between which are placed at suitable intervals apart wedge-shaped metal blocks for retaining in place the shanks of said hoes, they being made to enter the spaces or intervals above alluded to.

The screws *h² h²* are for holding the parts composing the disk *h'* together.

I I designate two handles, held together at their upper ends or thereabouts by a transverse piece, *i*, and secured at their lower or converging ends to a metal plate, *i'*, which is constructed with two clips or ferrules, *i² i²*, embracing the outer end of shaft E, and held thereon by a shoulder and nut, *i³*.

It will be remarked that, by means of the universal joint constructed on the cutter or chopper-shaft E, the hoes or choppers located on the said shaft can be made to cut rows of cotton on hilly or uneven ground, the rod F, embracing said shaft, yielding by means of its spring to the upward and downward movement thereof in its operation.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The shaft E, carrying the choppers or hoes H H, constructed in two parts, and connecting or hinging them, the said parts, together by means of a universal joint, arranged and operating substantially as and for the purpose described.

2. The vertical rod F, supplied with a loop at its lower extremity embracing the shaft E, and a spring, *f*, at its upper end, in combination with the projecting bar or support G fastened to beam D, all arranged and operating substantially as and for the purpose set forth.

3. The handles I I, secured in place on the shaft E by means of the metal plate *i'*, clips or ferrules *i² i²*, and shoulder and nut *i³*, arranged to operate in the manner and for the purpose specified.

In testimony that I claim the foregoing as my invention, I hereunto set my hand this day of October, 1870, in the presence of two subscribing witnesses.

DWIGHT F. WELSH.

Witnesses:

D. J. MINICH,
JAMES K. AGNEW.