

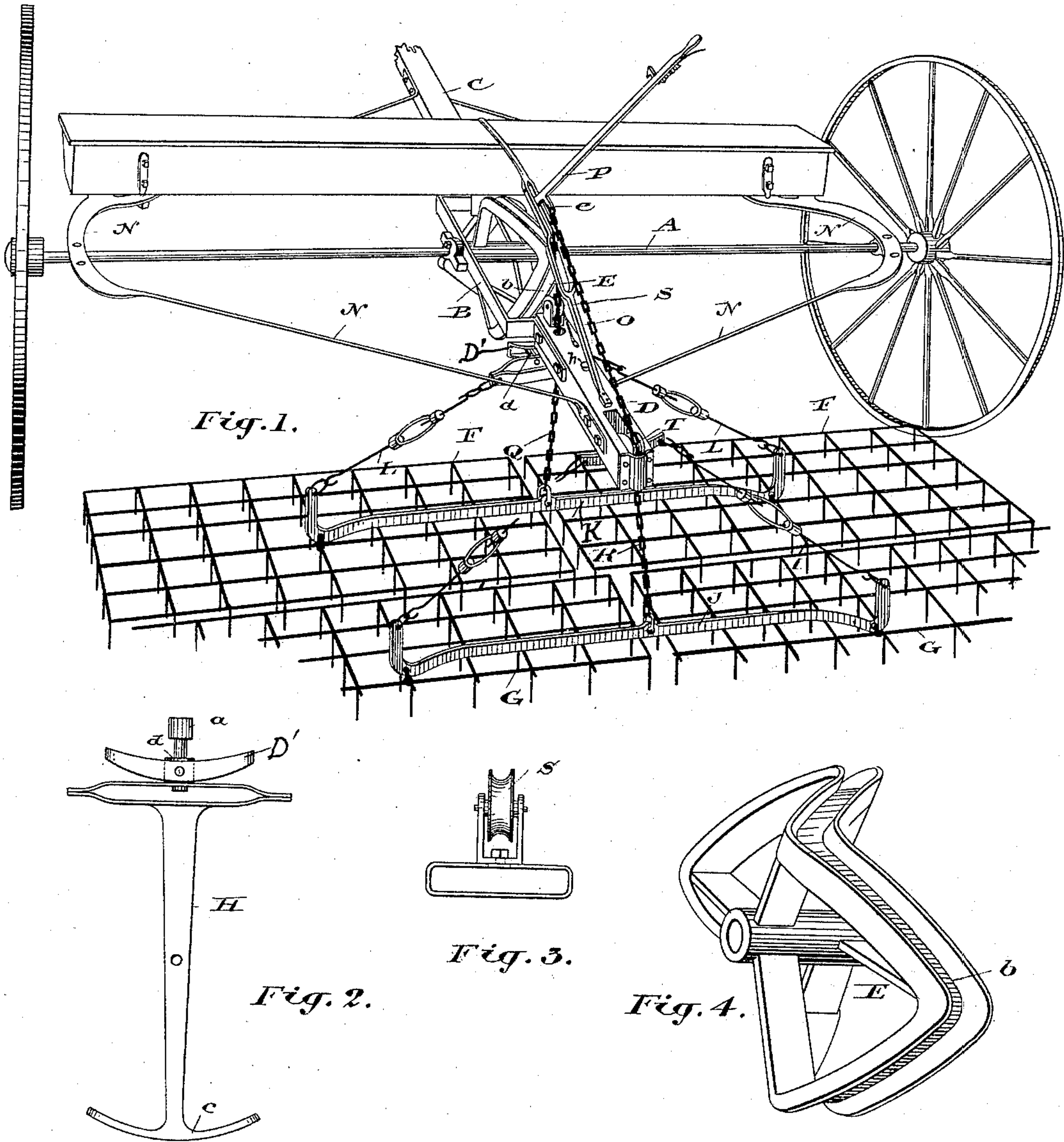
(No Model.)

D. W. CARTER.

WHEEL HARROW.

No. 324,655.

Patented Aug. 18, 1885.



Witnesses.

J. B. Fetherstonhaugh
Charles C. Baldwin

Inventor.

D. W. Carter
by Donald C. Ridout & Co
Attys

UNITED STATES PATENT OFFICE.

DAVID WELLS CARTER, OF CARRINGTON, DAKOTA TERRITORY, ASSIGNOR
TO JOHN WALDRON SCOTT, OF LISTOWEL, COUNTY OF PERTH, ONTARIO,
CANADA.

WHEEL-HARROW.

SPECIFICATION forming part of Letters Patent No. 324,655, dated August 18, 1885.

Application filed February 24, 1885. (No model.) Patented in Canada February 28, 1885, No. 21,193.

To all whom it may concern:

Be it known that I, DAVID WELLS CARTER, of the town of Carrington, in the county of Foster, in the Territory of Dakota, one of the territories of the United States of America, farmer, have invented certain new and useful Improvements in Harrows; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to Harrows; and it consists in the peculiar combinations and the construction and arrangement of parts herein-after more particularly described and claimed.

Figure 1 is a perspective rear view of the machine. Fig. 2 is a plan view of the lever H and its connections. Fig. 3 is a detail of the sheaf-pulley S. Fig. 4 is an enlarged detail of the cam-wheel E.

A is the main axle of the machine. B is a rectangular frame rigidly fastened to the pole C and journaled on the axle A, and having a tail or extension piece, D, extending from its rear substantially on a line with the tongue. E is a cam-wheel keyed or otherwise fastened to the main axle, a cam-groove in its periphery being made any required pitch to impart the desired lateral reciprocating movement to the harrows.

In order to convey the rotating movement of the cam-wheel E to the front and rear pairs of harrows, F and G, I pivot on the bottom of the tail or extension piece D at *h* a lever, H, the front end of which is preferably provided with a friction-roller, *a*, (see Fig. 2,) and fits into the cam-groove *b* of the wheel E.

A T-piece, *c*, is fastened to or forms part of the back end of the lever H, and from each end of the said T-piece a rod, I, extends down to the rear pair of harrows, G, where it is pivotally connected to the rods J, now to be described. The two harrows forming the rear pair are preferably connected together by the rod J, which is pivoted at each end to its respective harrow, as indicated in the drawings, and has a crank extending upwardly at each end, to which the rods I are preferably connected, as indicated. The front pair of harrows is preferably connected together by a similar rod, K, which is shaped in the same way as the rod J, and is similarly connected

to the harrows. The front end of the lever, which is preferably formed as shown in the drawings, is connected by the rods L to the two front harrows, F, as indicated.

In order to brace the front end of the lever, I provide a guiding-bracket, D, through which the end of the lever passes, and has fitted on it a friction-roller, *d*.

From the connection described it will be seen that by the forward movement of the machine the cam-wheel E revolves, and its revolving motion is converted into a reciprocating movement by the rocking of the lever H, and as one end of this lever is connected to the front pair of harrows and its back end to the rear pair of harrows the reciprocating movement of the front and rear harrows is opposite to each other.

With the view of strengthening the tail or extension piece D, I provide diagonal braces N, the outer ends of which are fastened to bearing-boxes fitted onto the shaft A, and extend, substantially as shown, toward the front of the machine, forming a support for the ends of the seed-box and a brace for the tongue C.

A brace, O, extends from the top side of the seed-box to the tail or extension piece D.

P is a hand-lever pivoted on the brace O, and provided with a crank, *e*, to which the chains Q and R are attached. The opposite end of the chain Q is fastened to the rod K, which connects the front pair of harrows together, while the opposite end of the chain R is fastened to the rod J, which connects the rear pair of harrows, as before described. These chains pass respectively over the sheaf-pulleys S and T, so that the forward movement of the hand-lever P, which tilts on its pivot, draws upon the chains and they raise the two pairs of harrows clear of the ground. A suitable catch for holding the hand-lever is provided, so that the machine can be driven with the harrows held clear of the ground.

What I claim as my invention is—

1. The combination, with the tongue extension D, two independent harrows supported by a lever pivoted on said extension and operating by their gravity, of said lever H, having friction-roller *a*, a cam rigid with the

axle, and flexible connections between the lever and the harrows, as and for the purposes set forth.

2. The tongue-extension D, carrying roller
5 T, the cam E, and pivoted lever H, having cross-arms and friction-roller, as shown, in combination with the independent harrows F F, connected by the yoke K, and harrows O O, connected by the yoke J, and the flexible
10 connections I L, as and for the purpose set forth.

3. The independent harrows G F, made in sections and connected together by yokes having flexible connections with the tongue-

extension D, combined with the cam E, lever 15 H and connections, and with means for elevating the whole simultaneously, as set forth.

4. In a wheel-harrow substantially as described, the combination, with the tongue-extension D, tongue C, the seed-box, and axle, 20 of the braces N, furnishing journals for the axle, supports for the seed-box, and braces for the tongue, as set forth.

Toronto, January 31, 1885.

DAVID W. CARTER.

In the presence of—

CHARLES C. BALDWIN,

F. B. FETHERSTONHAUGH.