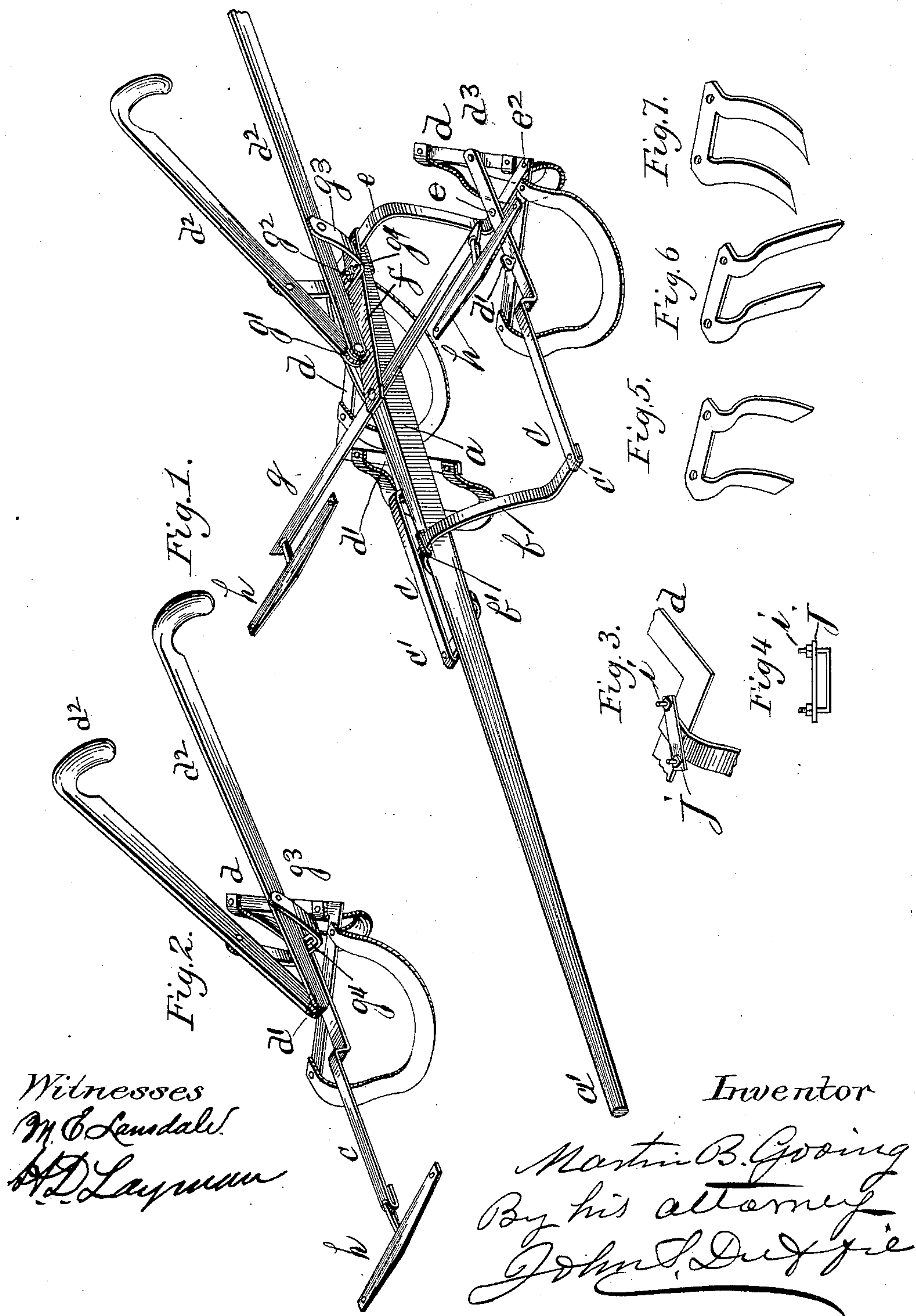


(No Model.)

M. B. GOOING.
DOUBLE SIDE HARROW AND CULTIVATOR.

No. 428,045.

Patented May 13, 1890.



UNITED STATES PATENT OFFICE.

MARTIN BIRD GOOING, OF HAROLDTON, ARKANSAS, ASSIGNOR OF ONE-HALF TO JAMES F. GOODING.

DOUBLE-SIDE HARROW AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 428,045, dated May 13, 1890.

Application filed January 29, 1890. Serial No. 338,446. (No model.)

To all whom it may concern:

Be it known that I, MARTIN BIRD GOOING, a citizen of the United States, residing at Haroldton, in the county of Crawford and State of Arkansas, have invented certain new and useful Improvements in Double-Side Harrows and Cultivators, and particularly in my double-side harrow and cultivator covered by Letters Patent No. 416,909, December 10, 1889; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has relation to double-side harrows and cultivators; and it consists in the novel construction and arrangement of its parts. The same is so constructed that it may be used for two horses as a double-side harrow and cultivator, and so constructed that each half of the diamond may be used separately as a single-side harrow or cultivator and drawn by one or more horses, and so constructed that each diamond may be used as an A-harrow and drawn by one or two horses.

In the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a perspective view of the left-hand side rigged as a single-side cultivator. Figs. 3, 4, 5, 6, and 7 are detail views.

My invention is described as follows: I make a center beam *a*, the front extension *a'* of which is the tongue. I attach a bow *b* to the upper face of said beam by means of a strong staple or U shaped bolt *b'*. The ends of said bow extend outwardly and equally distant from each side of said beam. To each end of said bow is bolted a side bar *c* by means of a removable bolt *c'*. To the rear end of each of said side bars is bolted a square *d*. The two squares, if joined, would form a diamond-shaped bar. The front sides of said squares *d* are secured to said bar *c* by means of eyebolts *d'*. The said bolts *d'* are provided each with an eye, so that the front ends of the handles *d²* may be attached thereto

when one or both of the said diamonds are used separately. The rear part of said squares *d* is attached to said side bar by means of bolts *d³*. Said squares *d* are further supported by a cross-bow *e*, the ends of which turn out and run under said side bars *c*, and are bolted to the same equidistant between the front and rear parts of said squares *d* by means of removable bolts *e'*. The extreme ends of said bow are bolted to the outside corners of said squares by removable bolts *e²*. Said bow *e* is secured to the rear end of said beam *a* by means of a metal plate *f*, one end of which is secured to the upper face of the rear half of said beam *a*, and extends beyond the rear end of said beam, and is bent around and under said bow *e*, and secured to the under face of said beam by means of proper bolts and nuts. The front end of said metal piece *f* is perforated and bent up a little, and the doubletree *g* is pivoted under the same. An eye elevation *g'* is also secured to the upper face of said metal plate to hold the front ends of the handles *d²*. A heavy-headed bolt *g²* passes through said plate *f* and the rear end of beam *a*, and under the head of said bolt is secured a slotted handle-brace *g³*, having in its base a slot *g⁴*, so that the said handles may be shifted either to the right or left to give the cultivator such incline to the right or left as may be deemed necessary.

When I wish to change the double cultivator to a single cultivator, I take out the removable bolts (say from the left side) *c'*, *e'*, and *e²*. This releases the left-hand square *d* and the bars *c* from the bows *b* and *e*. Now I attach to the front end of said bar *c* one of the singletrees *h*, and to the eyebolt *d'*, I secure the front ends of the handles *d²*, and at the perforation left open by removing the bolt *e'*, I secure the slotted U-shaped handle-brace *g³* by means of the heavy-headed bolt *g²*, which supports the said handles *d²*, and my single cultivator is complete.

Figs. 1 and 2 show the cultivator provided with bow-shaped plows. Said figures also show that they are bolted to the frame; but I sometimes use plows having bent tines, as shown in Figs. 5, 6, and 7, and I claim the right to use any suitable plow-points or har-

row-teeth in connection with my frame; and in order to secure the said plow-points to the frame, instead of using bolts I claim the right to and do use U-shaped bolts *i*, Fig. 3, each
5 provided with a perforated cross-plate *j*. Thus it will be seen that by using the removable bolts *c'*, *e'*, *e''*, and *g''*, and without the addition of a single piece, I can convert my double-cultivator frame into a single cultivator or harrow frame,
10 and by using an additional pair of handles and an additional bolt *g''* I can have two single cultivator or harrow frames.

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

1. The combination, in a double-side harrow and cultivator frame, of the beam *a*, having the tongue-extension *a'*, the bow *b*, secured to said beam, side bars *c*, having their
20 front ends secured to said bow, squares *d*, secured to said side bars by means of eyebolts *d'* and bolts *d''*, bow *e*, having its ends secured to said frame *d* and side bars *c*, plate *f*, secured to the rear half of beams *a* and having
25 attached an eye elevation *g'*, and having its front end perforated and raised to pro-

vide a fastening for the double-tree *g*, its rear end bent round the bow *e* and secured to the under face of said beam *a*, slotted handle-brace *g''*, secured to the rear end of said beam, 30 and handles *d''*, all substantially as shown and described, and for the purposes set forth.

2. The combination, in a double-side harrow and cultivator frame, of the beam *a*, having the tongue-extension *a'*, the bow *b*, side 35 bars *c*, squares *d*, secured to said side bars, bow *e*, having its ends secured to said frames *d* and side bars *c*, plate *f*, secured to the rear half of beam *a* and having an eye elevation *g'*, and having its front end perforated and 40 raised to provide a fastening for a double-tree, its rear end bent round the bow *e* and secured to the under face of said beam, handle-brace *g''*, handles *d''*, U-bolts *i*, and perforated plates *j*, all substantially as shown 45 and described, and for the purposes set forth.

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

MARTIN BIRD GOOING.

Witnesses:

SAMUEL A. MILLER,

JOSEPH W. COFFMAN.