

(No Model.)

W. S. PATES.
CULTIVATOR.

No. 329,590.

Patented Nov. 3, 1885.

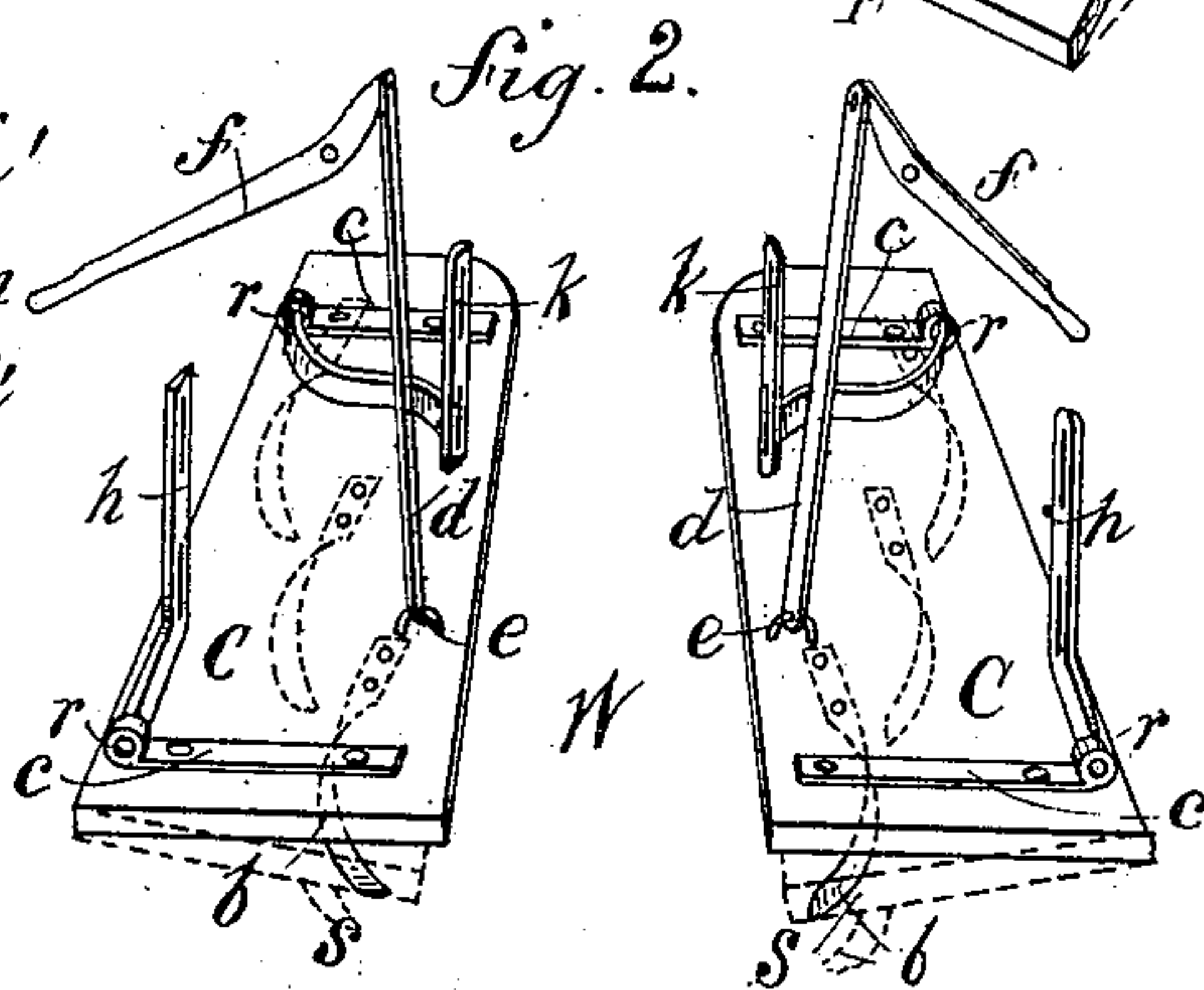
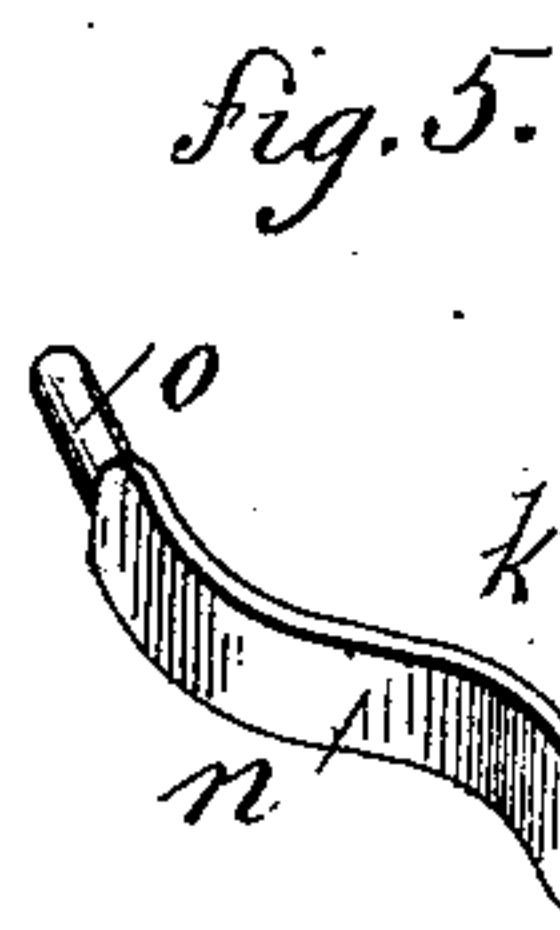
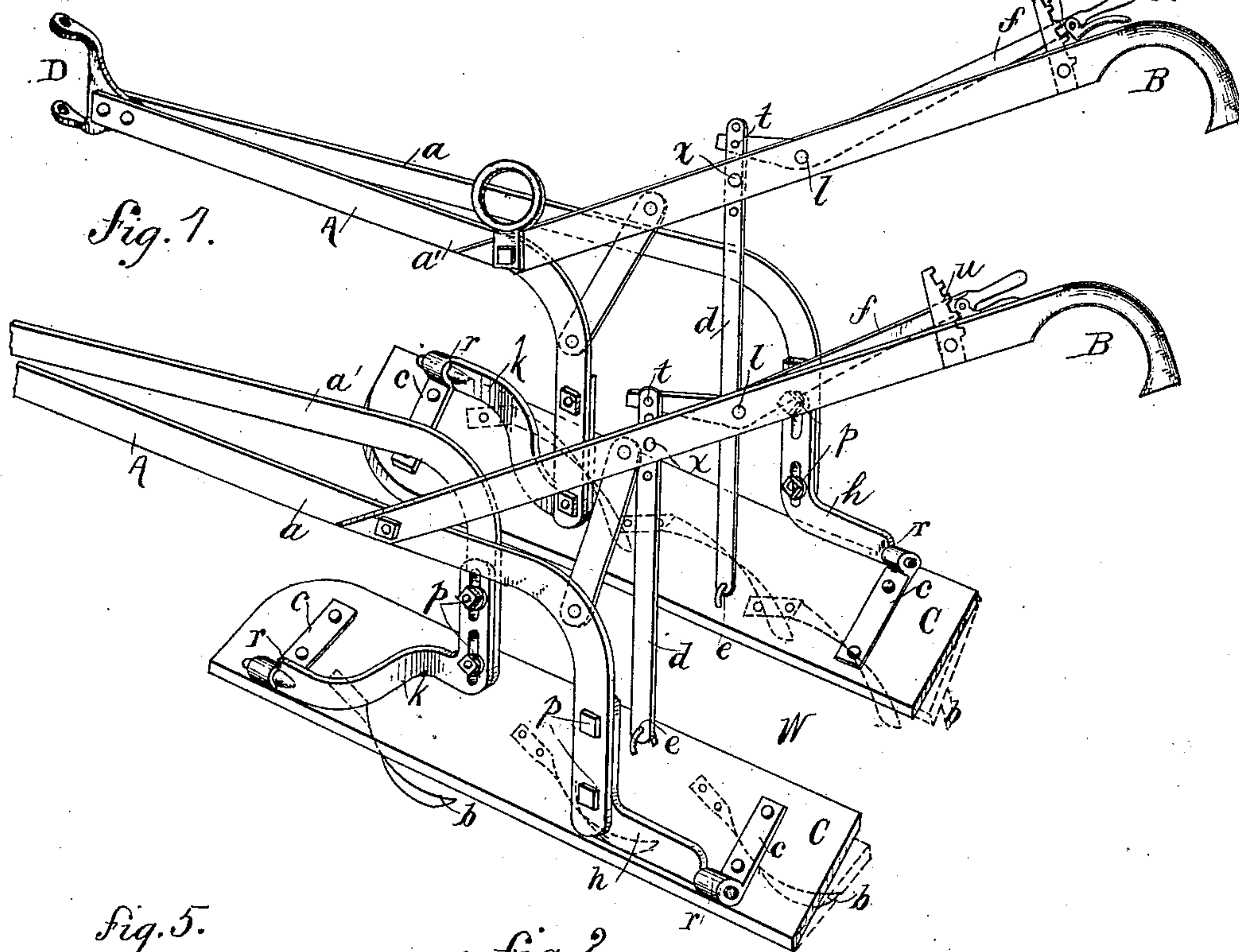


Fig. 4.

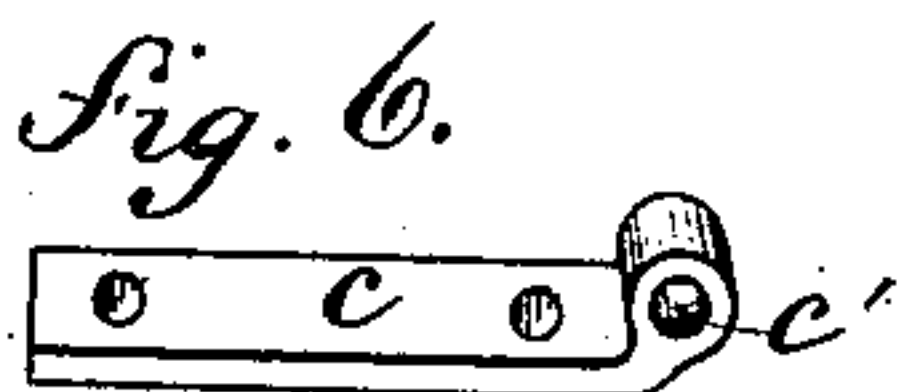
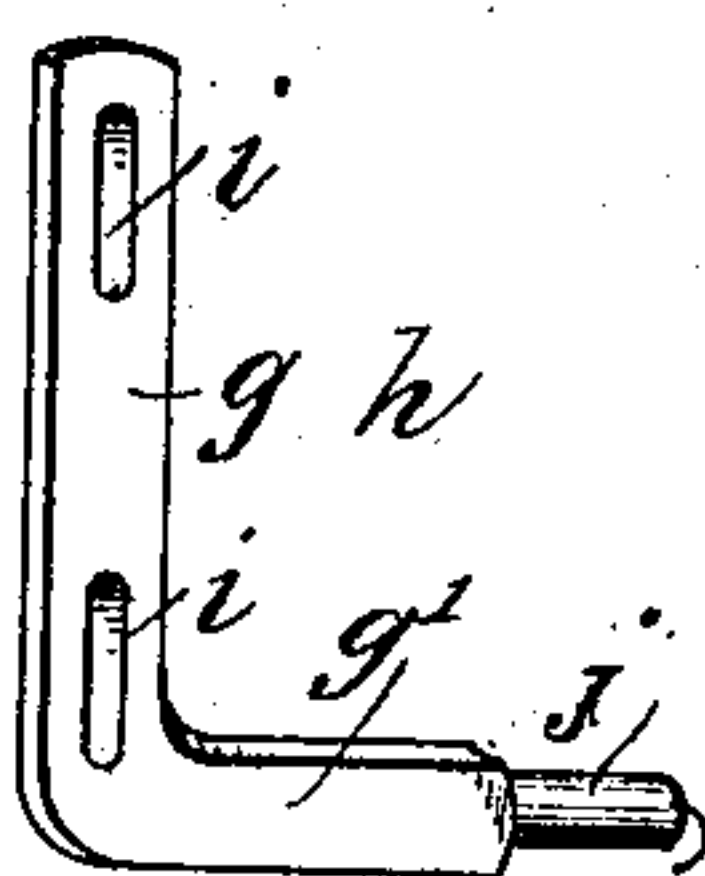
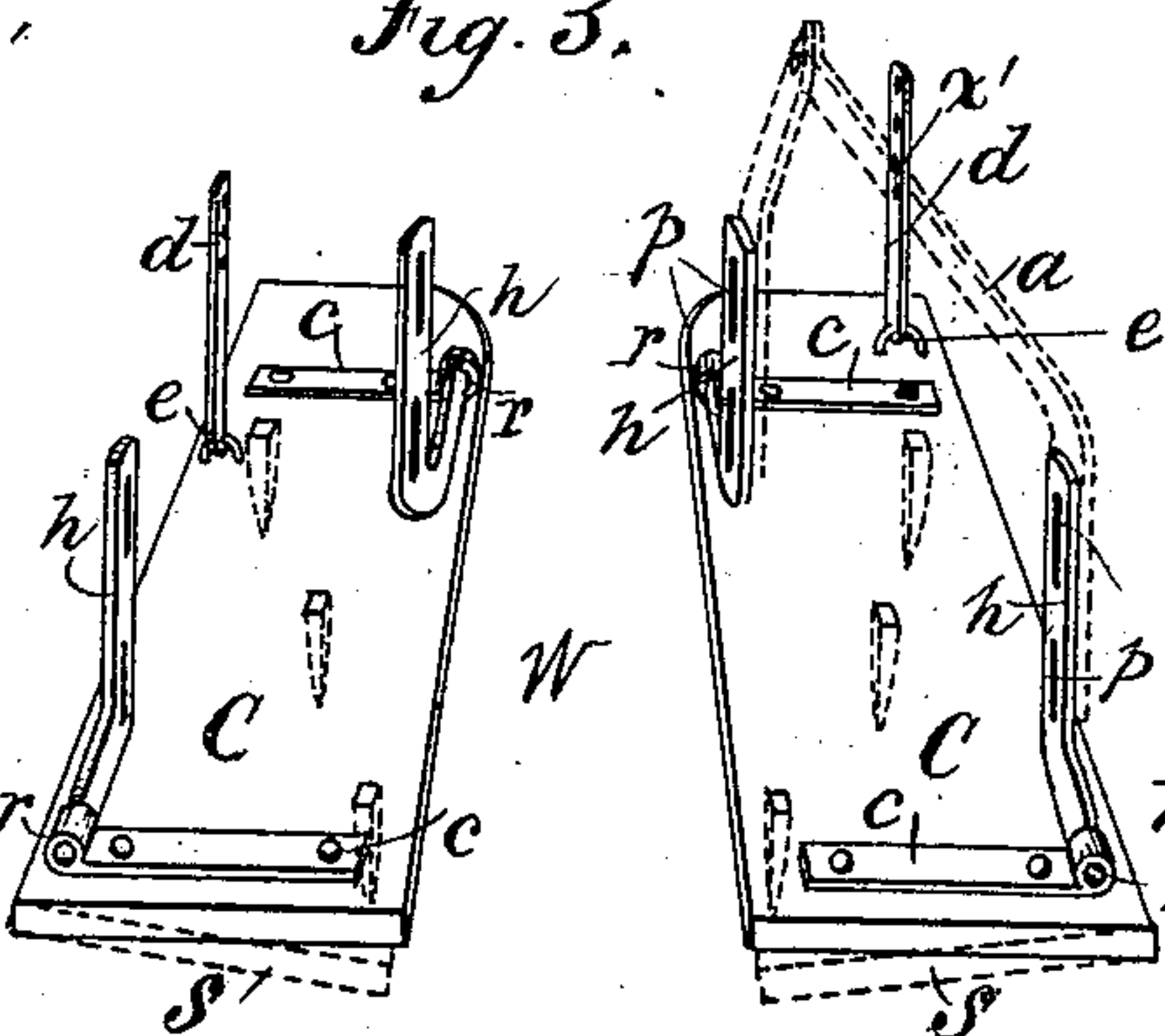


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM S. PATES, OF ALTON, ILLINOIS, ASSIGNOR TO THE HAPGOOD PLOW COMPANY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 329,590, dated November 3, 1885.

Application filed August 17, 1885. Serial No. 174,553. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PATES, a citizen of the United States, residing at Alton, in the county of Madison and State of Illinois, have invented a new and useful Improvement in Cultivators, of which the following is a specification.

My invention relates to wheel-cultivators of the straddle-row species having the ordinary drag-bars for shovel-blades.

The object of my invention is to provide the ordinary wheel corn-cultivator with an attachment suitable for cultivating corn which has been listed planted in a valley between ridges.

The corn-cultivator in common use is calculated for cultivating level ground, and is not adapted for use in such listed corn, by reason that the blades cannot be adjusted to work the sides of the ridges of an even depth. In my improvements I provide an attachment which may be attached to the drag-bars and adjusted to cultivate, stirring the soil in the valley and upon the sides of the ridges each side of the planted row to an even depth, as desired.

My invention consists in providing the ordinary corn-cultivator with an attachment consisting of two beams carrying blades or teeth for stirring the soil, pivotally connected to the drag-bars; and it further consists in certain construction of parts, combinations, and arrangements, which will first be set forth and described in the specification, and afterward pointed out in the claims.

Referring to the drawings, like letters refer to like parts in all the figures, in which—

Figure 1 is a perspective view of the ordinary drag-bars belonging to a wheel-cultivator, showing my improvements attached. Fig. 2 is a rear and foreshortened perspective view of the attachment, showing the beams C provided with the hinge-joint *r*, for connecting to the rear ends of the drag-bars. Fig. 3 is a like view as Fig. 2, modified in construction, and showing how the hinge-joint may be used without departing from my invention. Fig. 4 is a perspective view, enlarged, of the bracket *h*, a part of the hinge-joint *r*. Fig. 5 is a perspective view, enlarged, of the bracket *k*, a modified construction of the said bracket *h*.

Fig. 6 is a perspective view, enlarged, of the strap-hinge *c*, the other part of the hinge-joint *r*.

The two or pair of drag-bars A may each consist of the long beam *a* and the shorter beam *a'*, having their front ends joined, and provided with a clevis or coupling, D, for connecting to the axle of the cultivator, and the rear ends of the said beams bent downwardly and provided with perforations for connecting blades, and with handles B, all of which will be understood as ordinary by inspecting the drawings.

W represents my listing cultivator attachment, consisting of the two beams C, preferably of plank of sufficient width to carry all the blades or teeth, the strap *c*, which may be the ordinary hinge-strap, attached to the said beams and provided with the perforation *c'*, for the reception of the rounded end of the bracket connecting to the drag-bars, the bracket *h*, provided with the upright part *g*, provided with perforations *i*, for rigid attachment to the said drag-bars with bolts *p*, and the said perforations *i* may be long-slotted, whereby the bracket may be moved up and down and adjusted to any desired position upon the beam of the drag-bar and made rigid thereto by tightening the bolts *p*, as will be understood by the drawings, and the said bracket is also provided with the horizontal part *g'*, with rounded end *j*, to connect with the said strap *c* and form the hinge-joint *r*, the bracket *k*, provided with the upright part *m*, with perforations *i'*, the same as said bracket *h*, the horizontal part *n*, having the rounded end *o* and bent offset, so as to connect with the strap *c* at the opposite side of the said beam C, as shown in the drawings. The said attachment W may be connected to the drag-bars A A, as shown in Fig. 1, in which is shown how the said brackets are rigidly attached to the rear ends of the beams of said drag-bars, and how their horizontal part is pivotal in the strap *c* at one and the same side or edge of the said beam C, by which the said beams C may swing upon the said hinge-joint *r*. I preferably hinge the beams at their outer edge and swing them inwardly, as shown; but it is obvious that the beams may swing outwardly by moving the brackets, exchanging

places with each other, so as to have the pivotal connection at the inside, instead of outside.

d represents a rod or link connected to the said beam C by an eyebolt, e , permitting pivotal play, and the upper end of said link connected at t to the short arm of the lever f , which said lever is fulcrumed to the handle B at l , and the long arm of the lever provided with a series of stops, u , as will be understood by the drawings, and the beams C may be swung by a movement of the lever f , as will be readily understood.

In listed planted corn in a valley the valley is not of a uniform depth throughout its length, and they fill at places to a level by the washing of rain, so that at one place or part of the field the valleys may be deep, at other parts of less depth or filled. In such uneven workings my improvements enable the operator to adjust and adapt the machine to the depth of the valley or to either deep valley or level working without stopping the team by a movement of the lever f to another stop u .

It is obvious that either blades or harrow-teeth or a part blades and a part harrow-teeth may be used. I preferably use blades or teeth that will permit the beams C to slide upon the ground, which assists in breaking lumps and clods, and then the beam acts as a shield and prevents the soil from falling and covering the plants in the valley.

I sometimes provide the rod d with a series of perforations in its top end, and rigidly attach it to the handle B with a bolt at x , as shown in Fig. 1, by which the said rod is made adjustable, and by which the beams C may be moved and adjusted and set in any desired position, and when the said rod is so constructed and used the lever f may be dispensed with without departing from my invention.

I sometimes construct and use the attachment W, as shown in Fig. 3, in which the brackets are of one kind and alike, and without the said offset shown in Fig. 5, by which the hinge-joint r is placed at opposite sides of the beam C, and directly in line with the rear ends of each beam of the drag-bar A, and when so constructed and used I dispense with the lever f , and attach the top end of the rod d to the long beam of the drag-bar, all of which

will be understood by inspecting Fig. 3, by which the beams C may be moved, adjusted, and set in any desired position of incline by moving the said brackets and said rod up or down, and in loosening and tightening the bolts p and x' . It will be observed that each beam C has three connecting appliances for connecting with the drag-bars A, all being pivotal, two of which are the brackets and the third the rod or link d , and that all three are preferably made adjustable up and down, by which the said beam may be adjusted, inclined, or tipped, or either end may be moved up or down while the other end is not moved, and the beam set in any desired position by loosening and tightening said bolts p , and the said beams adjusted to ride the sides of the ridges at any incline, and by which the front and rear ends of said beams may be adjusted to a level or incline position, as desired.

Having thus set forth my invention, I claim—

1. The attachment W, consisting of the two beams C, each provided with hinge-joints adapted to be attached to the drag-bars of a cultivator, said hinge-joints provided with slotted upright parts and adapted to be moved and adjusted up and down, and a rod or link adapted to connect the said beams with the said drag-bars, substantially as and for the purpose set forth.

2. The combination of the beam C, provided with the strap c , the bracket h , and the bracket k , the latter provided with the offset, as shown, and the rod or link d , with the drag-bar A and with the lever f , all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

3. The combination of the beam C, provided with the hinge-joints having an upright part for attachment to the drag-bars, the drag-bar A, having the long beam a and the shorter beam a' , having their rear ends bent downwardly and provided with perforations, and handles B, and the said hinge-joints attached to the said rear ends, and permitting the said beam C to swing, all substantially as and for the purpose set forth.

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Witnesses:

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