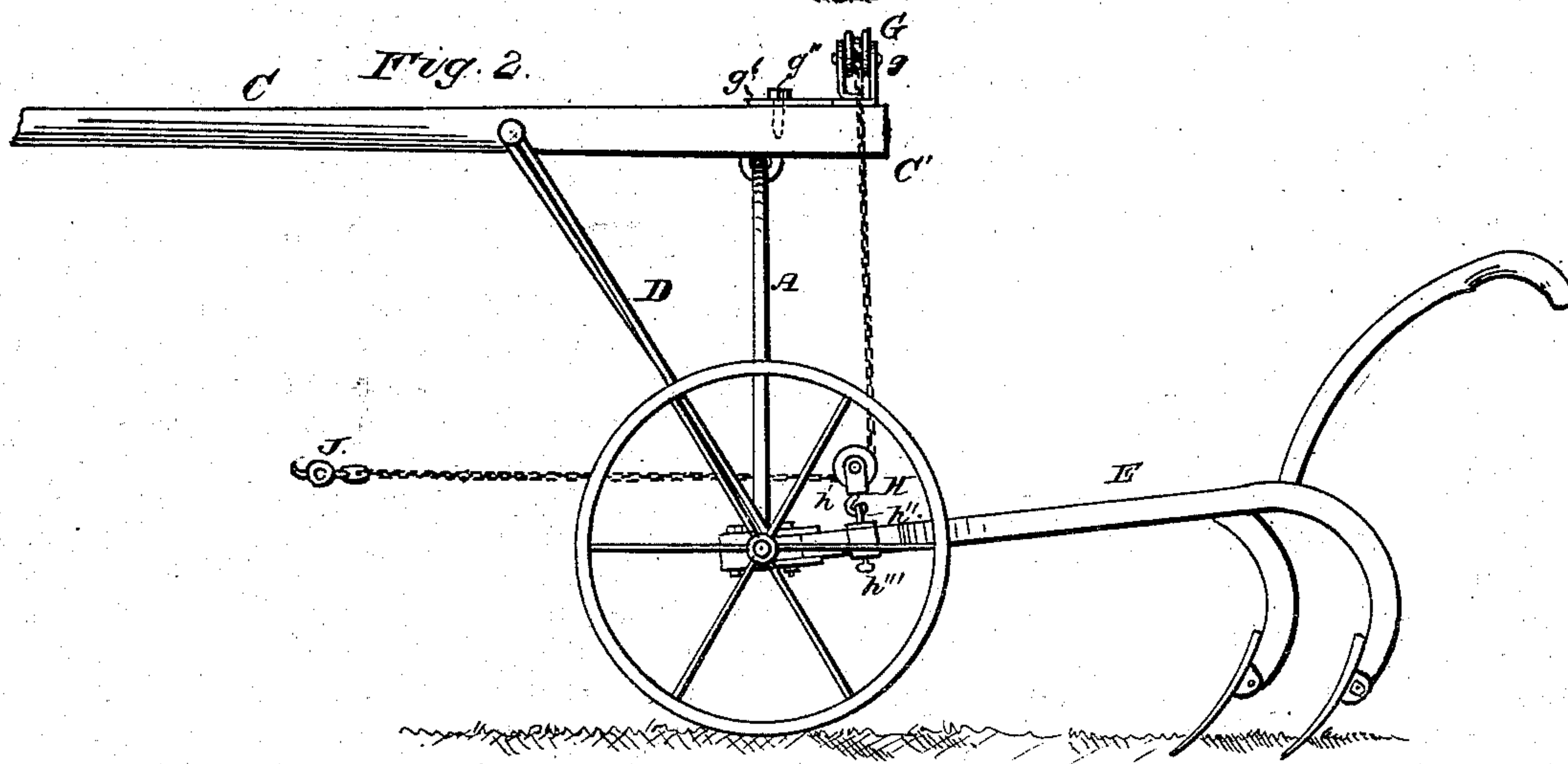
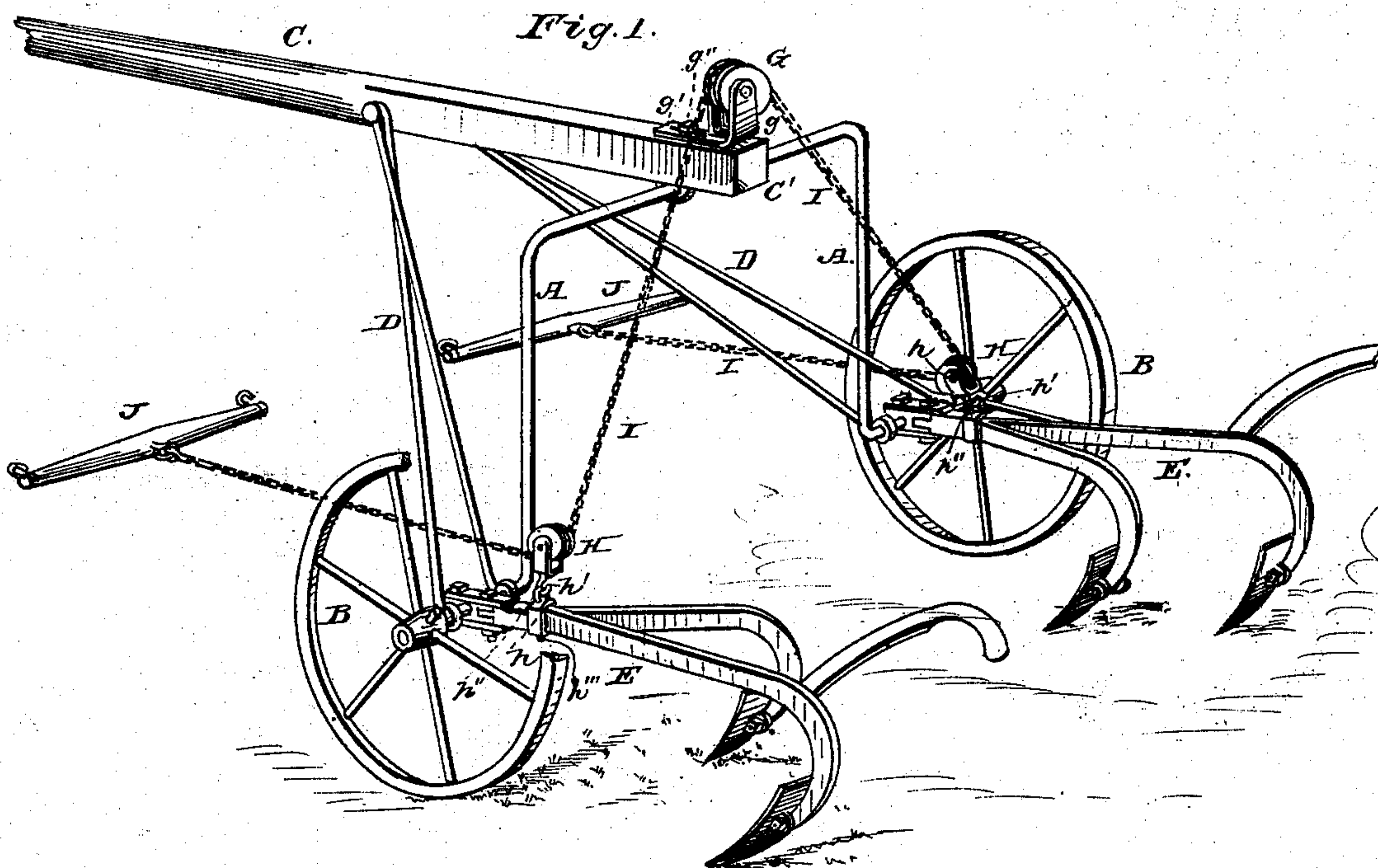


(Model.)

O. O. BOOTH.  
CULTIVATOR.

No. 252,174.

Patented Jan. 10, 1882.



WITNESSES

*Thos. G. Dieterich*  
*Jno. P. Ortolles*

By his Attorney.

INVENTOR

*Ossian O. Booth*

*W. B. Richards*



# UNITED STATES PATENT OFFICE.

OSSIAN O. BOOTH, OF BRIMFIELD TOWNSHIP, PEORIA COUNTY, ILLINOIS.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 252,174, dated January 10, 1882.

Application filed April 14, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, OSSIAN O. BOOTH, a citizen of the United States, residing in Brimfield township, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Cultivators; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of cultivators in which the gangs of plows or cultivators are hinged to an axle or frame, and adapted to cultivate both sides of a row of growing plants at each passage of the machine; and the nature of the invention consists in a draft-equalizing device adapted to exert a lifting force on the plow-gangs, a lifting force on the front end of the tongue or guide-pole, and to operate without exerting any force sidewise on the front end of the tongue.

In addition to my improvements relating to the general foundation features of the invention, my invention further consists in certain parts being adjustable, whereby the amount of upward force exerted on the tongue and the plow-gangs may be regulated as desired, all as hereinafter described.

In the accompanying drawings, which illustrate my invention, and in which the similar letters used as marks of reference indicate the like parts in all the figures, Figure 1 is a perspective of a cultivator embodying my invention. Fig. 2 is a side elevation, the rear wheel not shown in the figure.

Letter A represents an axle, common to this class of cultivators, supported on wheels B B, and supporting a tongue or guide-pole, C, braced by rods D.

E E are plow-gangs, hinged to the axle A, so that they may swing freely both laterally and vertically.

The axle A may be constructed, as shown, as a single bar, or it may consist of a frame, or be constructed in any known or desired manner, and the tongue may be formed as shown, or formed of a forked bar, or in any ordinary man-

ner, my invention only requiring that the rear end of the tongue, or some part or piece, C', attached to the axle or frame, extend in rear thereof. The plow-gangs may also be constructed and hinged to the axle or frame in any ordinary manner, and may be provided with any suitable shovels or teeth, and with handles or not, as desired.

G is a pulley, journaled in a frame, g. The frame g is provided with a foot-plate, g', and secured to the part C' of the tongue, which projects in rear of the axle. The frame g may be adjusted forward and rearward on the projection C', and be secured after adjustment by the set-screws g''. The pulley G may be secured to any part extending in rear of the axle or frame.

H H are pulleys secured, one to each plow beam or gang, in the rear of the axis on which the beam or gang is hinged to permit vertical oscillation. Each pulley H is secured to the plow beam or gang by a sleeve, h, to which the pulley-frame is attached by an eye, h', thereon, which interlocks with an eye or hook, h'', on the sleeve h, and forms a hinge which permits a swinging movement of the pulley-frame. The sleeve h may be adjusted forward and rearward on the plow beam or gang E, and secured after adjustment by a set-screw, h'''. The pulleys H may be attached to the plow-beams in various ways, to permit of adjusting them forward or rearward thereon, and this adjustment may be dispensed with and the pulleys rigidly attached to the plow-beam, by dispensing with the advantage arising from the adjustment, hereinafter described.

I is a cord or flexible wire rope, its median portion passed over the pulley G, from whence it extends downward at each end, and passes forward, one end beneath each pulley H. A single-tree, J, is attached to each end of the cord or wire I, to which the draft-animals may be attached. As the machine is drawn forward in operation in the field, either draft-animal may advance or recede without imparting any lateral oscillation to the tongue, and the draft on the cord or wire I will exert an upward force on the pulleys H, and hence an upward force on the plow beams or gangs, which will render the frequent lifting and manipulation of the plows in operation in the field much easier to



accomplish, and will cause the plows to run with less draft force, because the weight of the soil and its resistance on the forward and inclined part of the shovels or teeth will be to some extent transferred to the axle and wheels. The extent of upward force to be exerted on the plow beams or gangs may be adjusted, and thus adapted to different cultivators and different requirements, by adjusting the pulleys H forward or rearward on said plow beams or gangs.

The hinge between the pulley-frames of the pulleys H and the sleeves *h* may be dispensed with; but its use permits the pulley to swing and align itself to the cord or wire I, when the plow beams or gangs are flexed laterally or vertically.

By adjusting the pulley G forward or rearward it may be made to counterbalance the weight of the forward end of tongues of various weights and lengths, and attachments to the tongue or frame which press downward on the forward end of the tongue. The pulley G may be attached to the axle or frame otherwise than in rear thereof, and the device be fully operative, but not adjustable to different weights of tongue, as last described.

It will be seen that instead of the pulley G a bar may be used, which may be pivoted at its central part to the axle or tongue, and may have a cord or wire attached to each end, which extend beneath the pulley H, and forward in same manner as the cord I.

Having thus described my invention, what I claim is—

1. In a cultivator, in combination with an axle or frame, and plow-gangs hinged thereto, a cord or wire, with its median portion passed over a pulley journaled to the upper part of the axle or frame, and its ends passed beneath pulleys secured to the plow beams or gangs in rear of the axis on which they swing vertically, whereby the force of the draft-animals, which are connected to the ends of the cord or wire, may be partly utilized in exerting an upward force on the plow beams or gangs, for the purpose specified.

2. In a cultivator, in combination with the

axle and plow beams or gangs, and a projection, C', in rear of the axle, a cord or wire, I, passed over a pulley, G, journaled on the part C', and under pulleys H, journaled to the plow beams or gangs, in rear of the axis on which they are oscillated vertically, and its ends extending thence forward for the attachment of the draft-animals, substantially as and for the purpose specified.

3. In combination with the axle, plow beams or gangs, wheels, and tongue having its rear end extended in rear of the axle, pulley G, journaled on the rear-extended end of the tongue, and pulleys H, journaled to the plow beams or gangs, in rear of the axis on which they turn to oscillate vertically, the cord I, passed over the pulley G and under the pulleys H, substantially as and for the purpose specified.

4. In combination with the axle, wheels, plow gangs or beams, projection C' in rear of the axle, pulleys H, and cord I, the pulley G, adjustably secured to the extension C', substantially as and for the purpose specified.

5. In combination with the axle, wheels, plow gangs or beams, projection C' in rear of the axle, pulley G, and cord I, the pulleys H, adjustably secured to the plow beams or gangs, substantially as and for the purpose specified.

6. In combination with the axle, wheels, plow gangs or beams, pulley G, and cord I, the pulleys H, adjustably secured to the plow beams or gangs, substantially as and for the purpose specified.

7. In combination with the axle, wheels, plow gangs or beams, pulley G, and cord I, the pulleys H, hinged to the plow beams or gangs, so that they may align themselves to the cord I when the plow-beams are oscillated vertically or laterally, or adjusted at different distances from each other, substantially as and for the purpose specified.

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

OSSIAN O. BOOTH.

Witnesses:

H. P. TRACY,  
DANIEL BECK.