

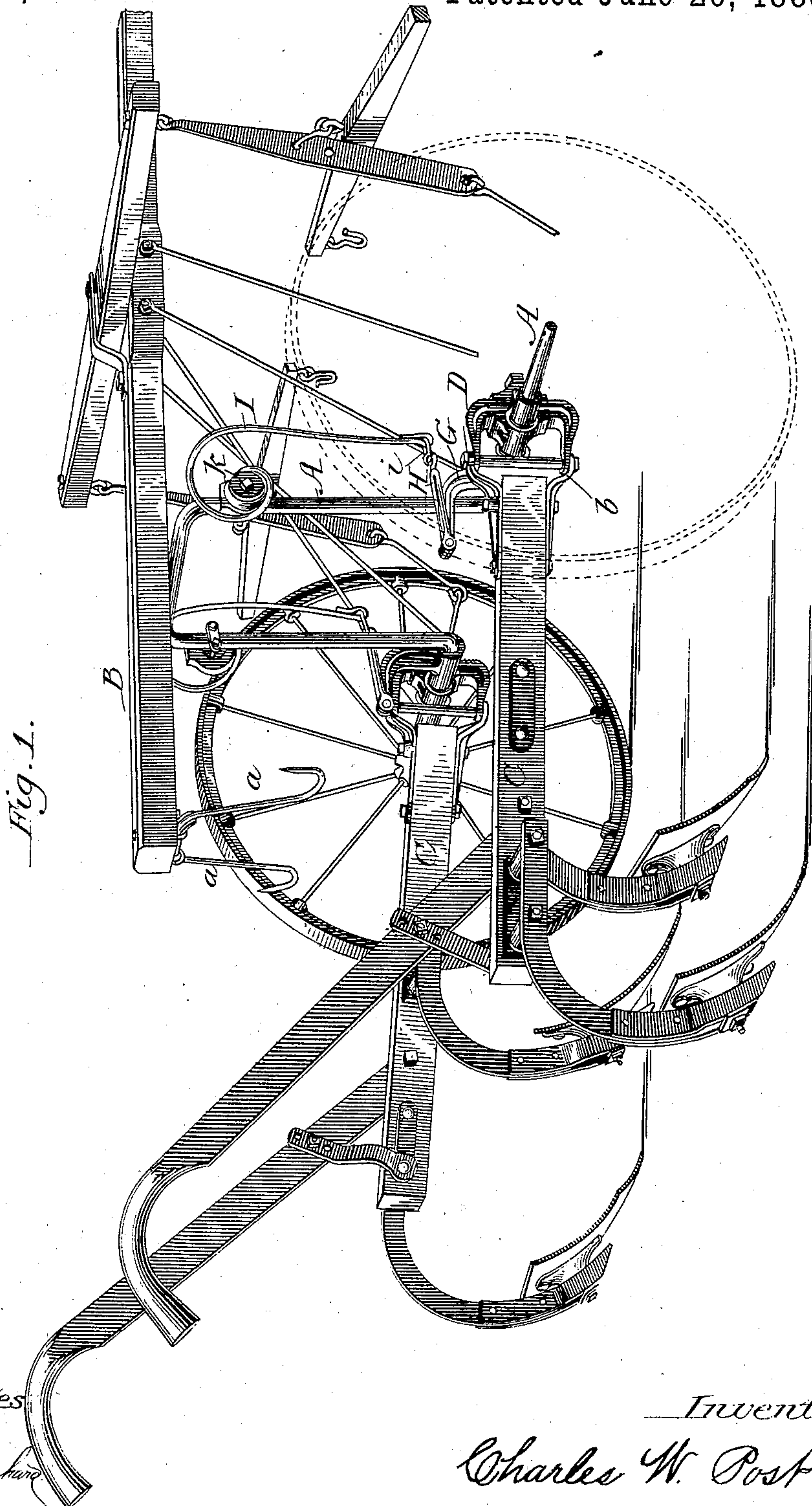
(No Model.)

2 Sheets—Sheet 1.

C. W. POST.
CULTIVATOR.

No. 279,980.

Patented June 26, 1883.



Witnesses
Frank Blanchard
W. H. Elliott

Inventor:
Charles W. Post
By Jno. G. Elliott
Attorney.

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Fig. 2.

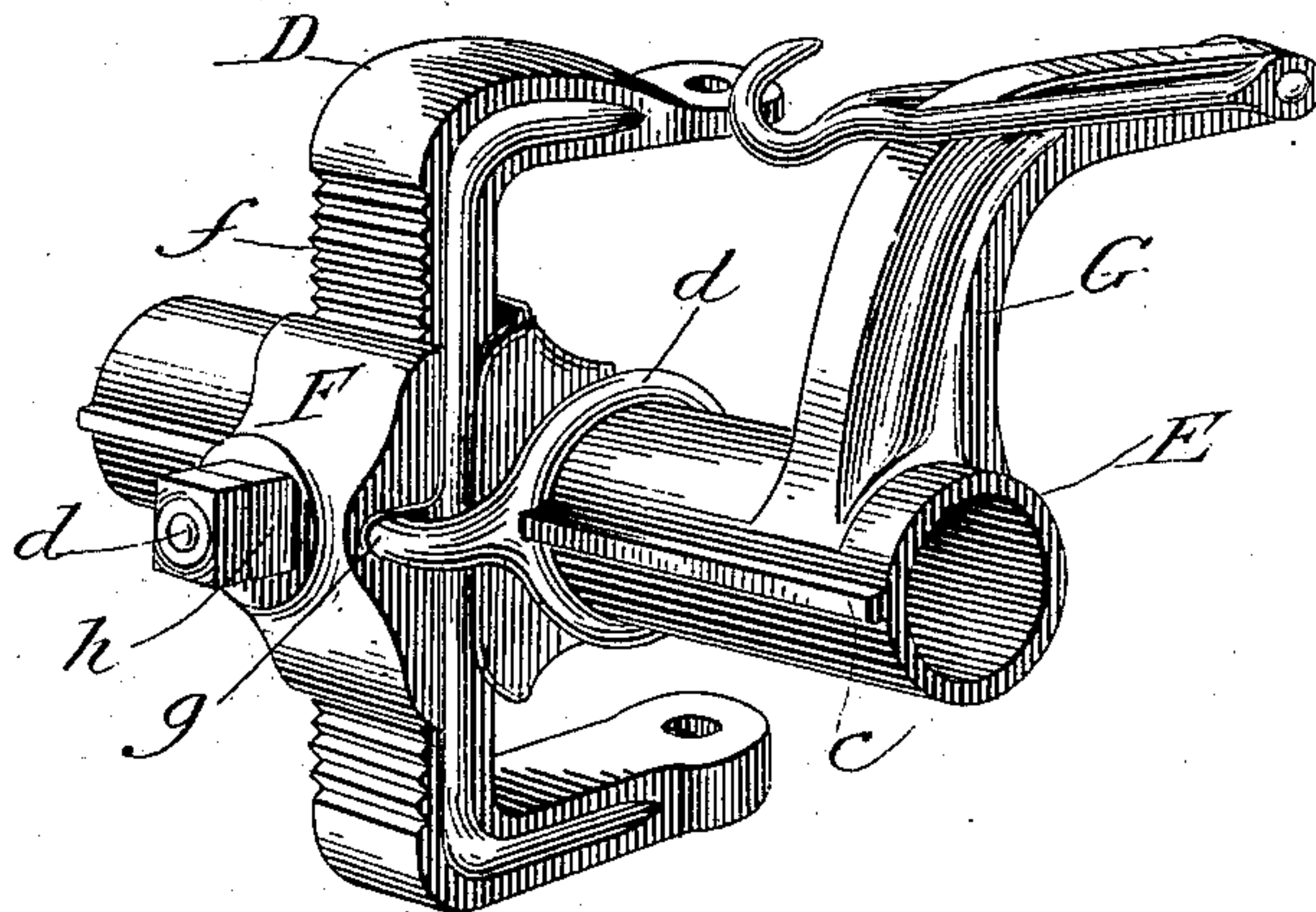
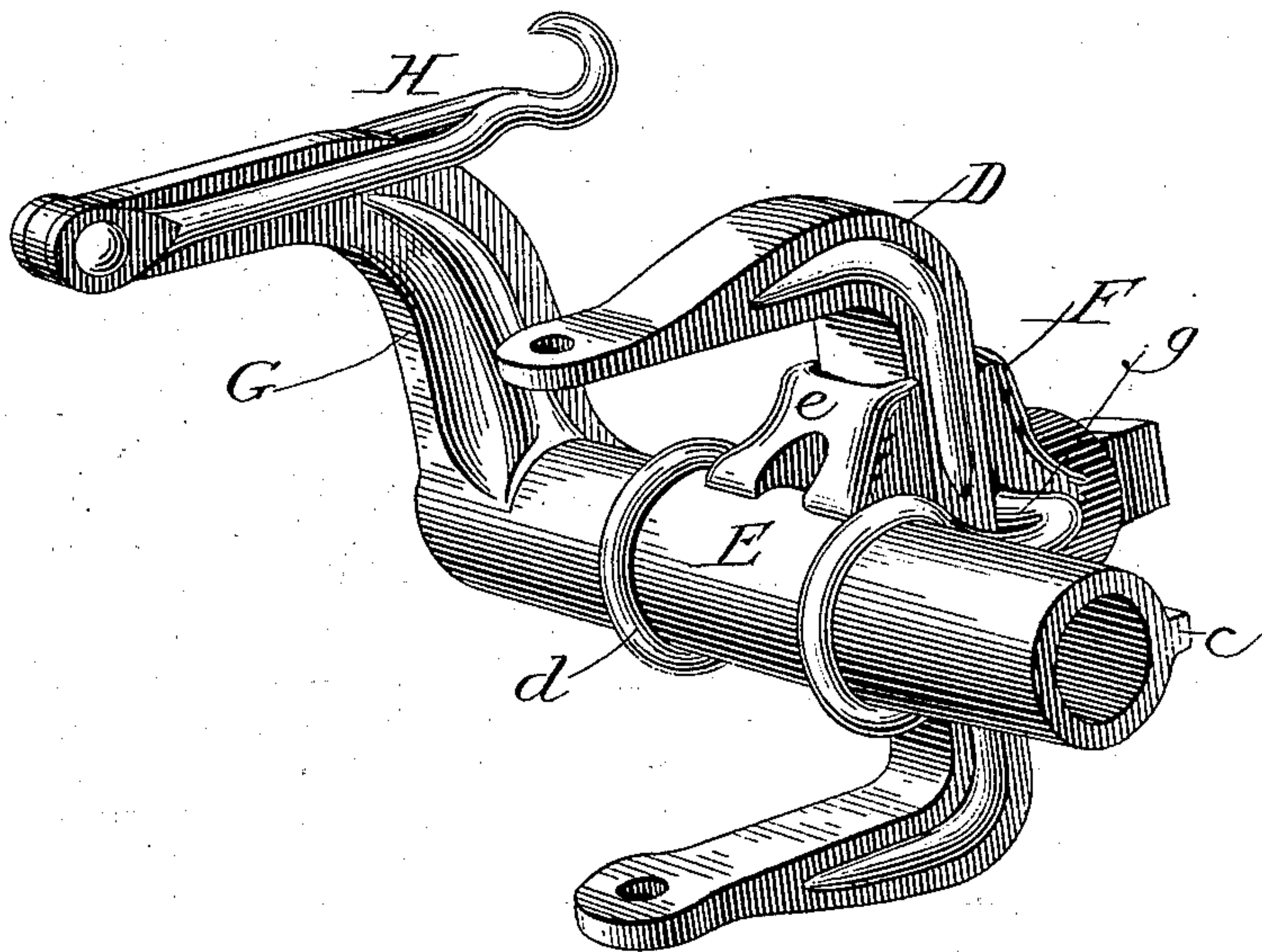


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES W. POST, OF SPRINGFIELD, ILLINOIS.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 279,980, dated June 26, 1883.

Application filed November 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. POST, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

My invention relates to improvements in cultivators in which the beams are coupled to a loose sleeve upon the axle, and are actuated, when raising and lowering them, by a spring secured to the arch of the cultivator.

The objects of my invention are to provide means for the lateral adjustment of the beams upon their respective sleeves and for the vertical adjustment of the forward end of the beams independent of but upon the sleeve, and at the same time prevent the beams from having a laterally-rocking movement, so that they may be more effectually guided to or from a corn-hill by the operator; to provide means for counterbalancing the weight of the beams when in their operative position, so as to relieve the operator as much as practical from the weight of the beams when working the beams laterally; to provide means for a more gradual release of the beams from the power of the lifting-spring than is commonly attained, and without giving the spring an increasing lifting-power when elevating the beams above their operative position to suspend them in hooks depending from the frame of the cultivator; and, finally, to provide certain novel details of construction, hereinafter described. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a cultivator embodying my invention; Fig. 2, a detail perspective of the sleeve and coupling devices connected thereto, and Fig. 3 a similar view taken from the opposite side of the sleeve and coupling devices from that of Fig. 2.

Similar letters of reference indicate the same parts in the several figures of the drawings.

A represents the usual arched axle, supported upon wheels, and in turn supporting the frame B of the cultivator, from which depends hooks *a*, adapted to suspend beams C when elevated above their operative position.

Beams C, with their shovels and handles, are of the ordinary construction, and have bolted or otherwise rigidly secured on the upper and lower sides of their forward ends angular castings *b*, perforated at their free ends to receive a bolt pivoting thereto an \square -shaped coupling, D, the ends of which are confined between and have a bearing against the inner faces of the castings *b*, and while preventing the beams from rocking permits them to be swung laterally in a straight line, and hence the shovels to be adjusted laterally without permitting their faces to assume an oblique relative to a vertical line.

On the axle, between the hubs of the wheels and the arch of the axle, is a cylindrical sleeve, E, provided with an external longitudinal rib, *c*, and sleeved on the sleeve E is a yoke, *d*, which, when taken alone, is free to reciprocate on the sleeve, but prevented from turning by reason of a notch (see Fig. 2) embracing the rib *c* of the sleeve. Yoke *d* confines the coupling D, which has a bearing, against and between flanges on a block, *e*, concaved and grooved on its opposite side to conform to the sleeve and its rib, and, like the yoke, reciprocate but not rotate on the sleeve, the flanges on the block *e* serving to maintain the coupling against a lateral movement, but not interfering with the vertical adjustment of the coupling, hereinafter described.

The outer and perpendicular face of the coupling is provided with serrations *f*, engaged by a correspondingly-serrated plate, F, transversely grooved at *g* to straddle the yoke *d*, the yoke itself terminating in a bolt projecting through a perforation in the plate, and having screw-threaded thereon one or more nuts, *h*, bearing against the plate when tightened.

From the above-described construction it will be understood that while the beams of my cultivator have an axial movement about the axle by reason of the sleeve, they may have their forward ends vertically adjusted by raising and lowering the coupling D and securing it in the desired position by tightening the plate F against the yoke, the serrations more effectually preventing the plate from working loose than if the adjacent faces of the plate and

coupling were plain. The advantages of this construction are that both the vertical and lateral adjustment of a beam may be made simultaneously by the manipulation of a single nut, and that when once adjusted the several parts are effectually secured against accidental displacement, for, as will be seen, tightening the nut *h* forces the plate against the coupling, the coupling against the block, and the block against the sleeve, the yoke in the meantime being drawn in the opposite direction and tightened on the sleeve, while, on the other hand, loosening the nut enables the yoke and block to be shifted along the sleeve for lateral, while making the vertical, adjustment of the coupling. Furthermore, the several parts are of a convenient form for economical casting, and require little or no finishing.

Cast with or otherwise secured to the sleeve *E* is a bent arm, *G*, which, rising perpendicular to the sleeve, extends forward toward and parallel with the beams, and has pivoted in its free end a bifurcated hook-arm, *H*, connected with the straight arm of a spring, *I*, by a link, *j*, the upper end of which spring is coiled and secured to and near the top of the arch of the cultivator by an adjustable locking-plate, *k*, of any preferred construction.

By reference to Fig. 1 it will be seen that when the beams are down and in their operative position the spring is exerting its greatest power and the bifurcated arm extends along the length of the overhanging portion of the bent arm, and that with these parts in this position the weight of the beam is counterbalanced, or at least so nearly so that the operator may swing the beam laterally without having to bear a substantial part of its weight—a desirable object to attain in this class of devices. As the beams are lifted above their operative position to hang them on the hooks *a* the tension, and hence the power of spring *i*, correspondingly diminishes; but in raising the beam the overhanging portion of the bent arm *G* rises toward a vertical line and correspondingly increases in length of leverage, thereby increasing the effectiveness of the beams, though not fully compensating for the loss of power of the spring, owing to its diminished tension.

The purpose of the bent arm *G* is not to give the spring an increasing power as the beams rise, for, on the contrary, it is desirable to avoid giving the spring that function, but to compensate to some extent for the loss of power in the spring until the greater portion of the weight of the beams is supported by the axle, which is done shortly before the beams reach the hook, owing to the angle of the beams relative to the axle.

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

1. The combination, with the axle-sleeve *E* and with the coupling *D*, of the double yoke *d* and blocks *e f*, embracing the coupling and sleeve, substantially as described.

2. The combination, with the sleeve provided with a longitudinal rib and with the coupling, of a yoke embracing the coupling and notched to fit the rib of the sleeve, and longitudinally adjustable upon the sleeve, substantially as described.

3. The combination of the sleeve, the coupling, the plate, and the yoke provided with a bolt projecting therefrom, and a nut working upon said bolt and bearing against the plate to lock the several parts together after adjustment, substantially as described.

4. The combination, with the sleeve, of a coupling pivoted to the beams and partially surrounding and closely embracing the sleeve, and mechanism, substantially as described, adapting said coupling to be both laterally and perpendicularly adjusted, as set forth.

5. The combination, with the sleeve, the yoke, and the coupling having its inner face embracing the sleeve and its outer face serrated, of a correspondingly-serrated plate, and means for locking said plate to the coupling, substantially as described.

6. In a cultivator, the combination, with the sleeve, of a bent arm rigidly secured thereto and extending toward the beam, and a lifting-spring arranged forward of the sleeve and connected with the bent arm, substantially as described.

7. In a cultivator, the combination, with a lifting-spring, the axle-sleeve, and the beam, of an arm attached directly to the sleeve and to the spring, the arrangement of said arm being such that as the tension of the spring decreases when lifting the beam, the leverage of the arm will increase, substantially as and for the purpose described.

8. The combination, with the beam, the sleeve, and the bent arm cast therewith and projecting toward and substantially parallel with the beam, of the lifting-spring and the bifurcated hook-arm pivotally connecting the bent arm and spring, substantially as described.

CHARLES W. POST.

Witnesses:

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