

M. GROVE.  
Sulky-Plows.

No. 154,476.

Patented Aug. 25, 1874.

Fig 1.

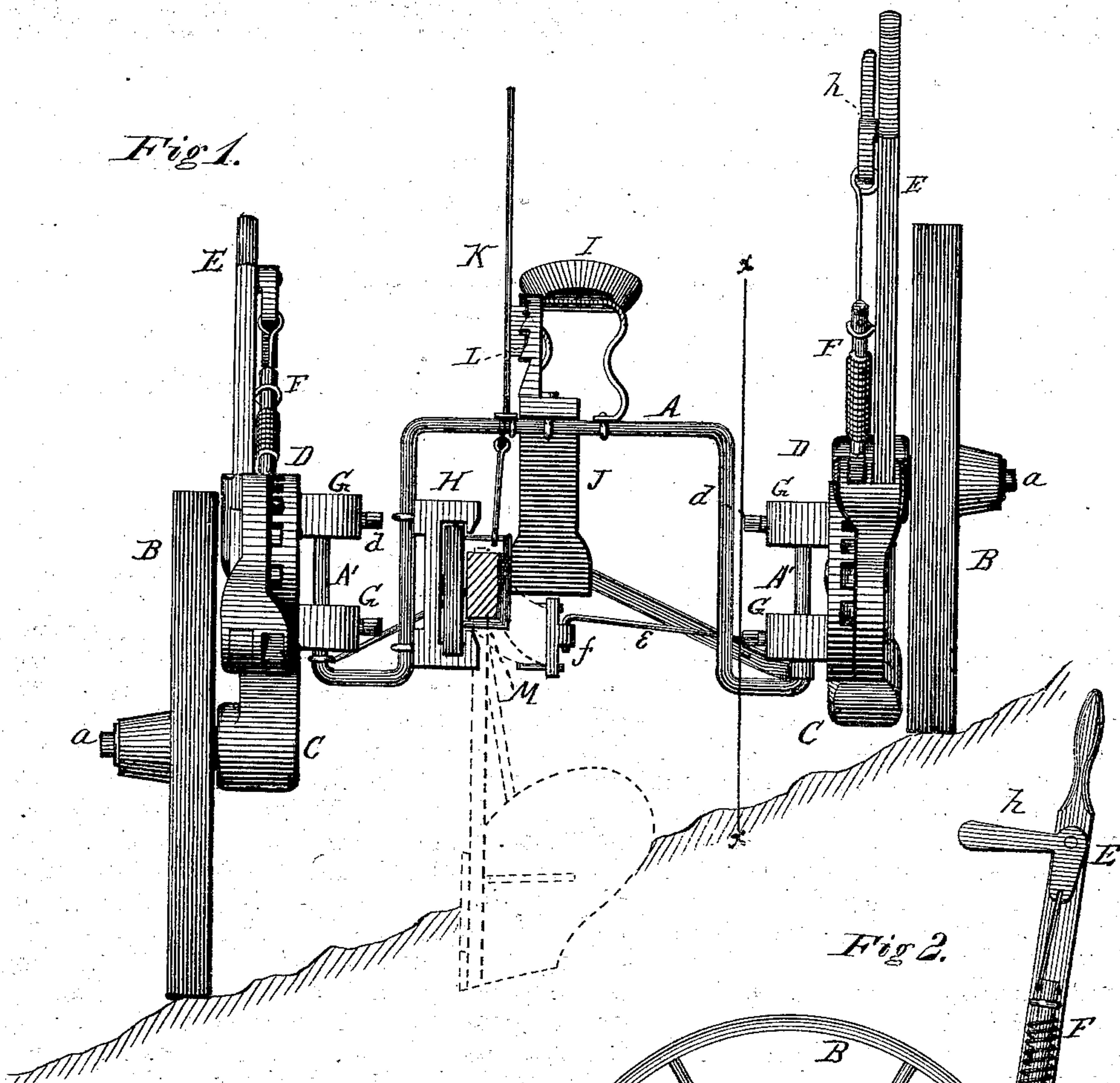


Fig 2.

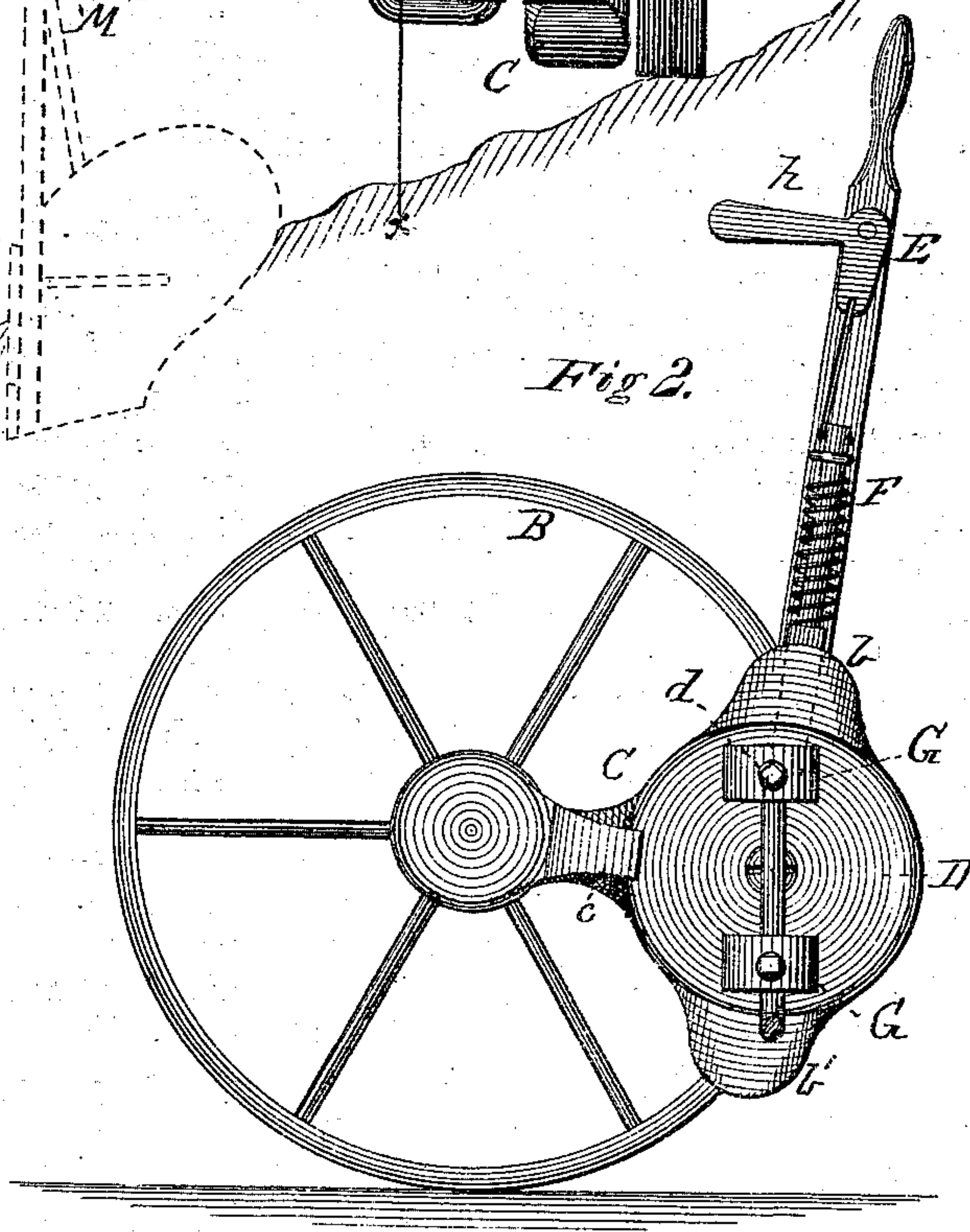
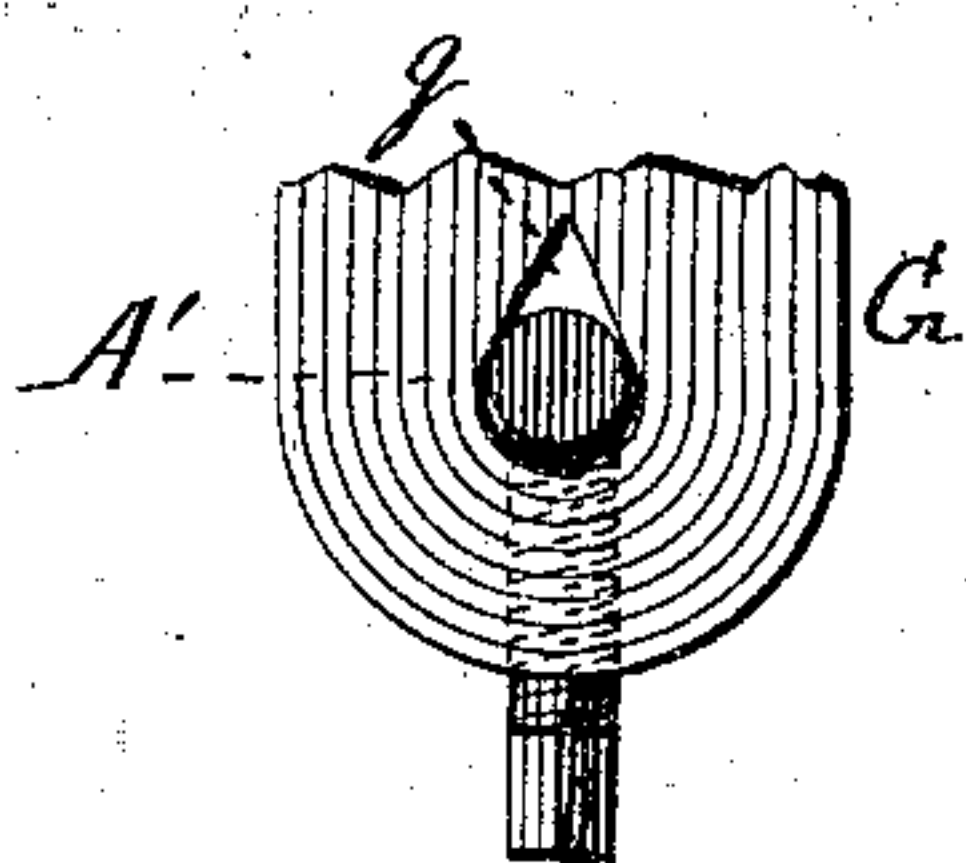


Fig 3.



WITNESSES

Harry King  
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By

INVENTOR

Michael Grove  
Stansbury & Munn  
his Attorneys



# UNITED STATES PATENT OFFICE.

MICHAEL GROVE, OF BELLEFONTE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM GROVE, OF SAME PLACE.

## IMPROVEMENT IN SULKY-PLOWS.

Specification forming part of Letters Patent No. **154,476**, dated August 25, 1874; application filed July 10, 1874.

*To all whom it may concern:*

Be it known that I, MICHAEL GROVE, of Bellefonte, county of Centre, State of Pennsylvania, have invented certain Improvements in Sulky-Plows; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a rear elevation, showing the plow in operation on a side hill. Fig. 2 is a section on the line *xx* of Fig. 1, showing in elevation one of the wheels, and the mechanical devices connected thereto; and Fig. 3 is a top-plan view of a part detached.

The object of my invention is to provide a sulky-plow specially adapted for use in an uneven or hilly country; and it consists of an arched crank-axle, having its ends bent up vertically at right angles with its length, and with the wheels connected thereto adjustably by certain mechanical devices, together with the plow.

A is a crank-axle, with its ends A' A' bent up vertically and at right angles to the length of the axle, as shown in Fig. 1. B B are the wheels, mounted on short axles *a a*, to the inner ends of which are connected rigidly radial arms C C, whose outer ends expand in a circular form, and are provided with lugs *b b'* *c*, and with hand-levers E E, all arranged as clearly shown in Figs. 1 and 2. To each of these radial arms, and within the circle formed by the lugs *b b' c*, is pivoted a circular plate, D, having a series of slots on its inner-rim face, and a couple of ears, G G, on its outer face, as clearly shown in Figs. 1 and 2. The plates D D are coupled and uncoupled to the radial arms C C by spring-bolts F F, which slide through the lugs *b*, and into the slots on the plates. These bolts are operated by a crank-lever, *h*, near the handle of the lever E,

as shown in Fig. 2. The ears G G are provided with vertical holes *g*, circular on one side, and wedge-shaped on the other, as shown in Fig. 3. Through these ears the upright ends A' A' of the axle A are passed, and firmly secured by set-screws *d*, as shown. These screws force or jam the ends of the axle into the wedge-shaped sides of the holes, and in this way make a firm connection. H is a coupling-block, to which the beam M of the plow is attached. It may be arranged to slide vertically on either of the inner upright parts of the axle, to suit either a right or left hand plow, as desired; and is raised or lowered for any required depth of plowing by a lever, K, arranged to engage with a ratchet, L, near the driver's seat, as shown in Fig. 1. I is the driver's seat, which is mounted on the bow of the axle, and J is the tongue of the machine.

The team is hitched to the end of the plow-beam, which is held in any desired position by a brace-rod, *e*, and an adjustable loop, *f*, on the beam, as shown in Fig. 1.

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

In a sulky-plow the crank-axle A, bent up at both ends, as herein shown and described, and having the plates D D adjustably attached thereto, in combination with the radial arms C C of the short axles of the wheels B B, constructed and arranged substantially as set forth.

The above specification of said invention signed and witnessed at Washington, D. C., this 30th day of June, A. D. 1874.

MICHAEL GROVE.

Witnesses:

H. B. MUNN,  
W. P. BELL.