

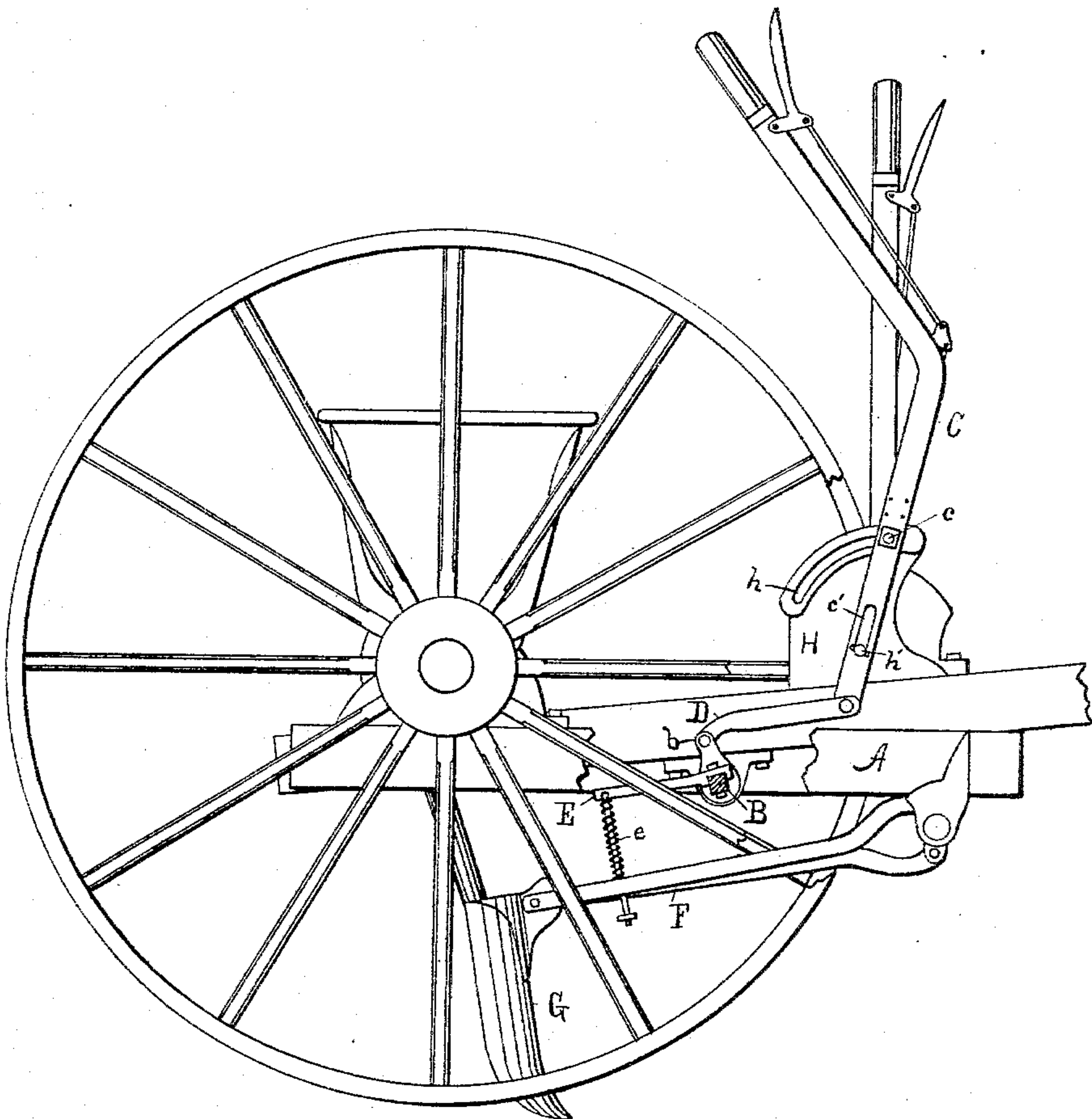
(No Model.)

S. B. HART.

GRAIN DRILL.

No. 323,327.

Patented July 28, 1885.



Witnesses

E. L. Thurston
Charles S. Weaver^h

Inventor

Stacy B. Hart
by Hill & Dixon
His Attorneys.

UNITED STATES PATENT OFFICE.

STACY B. HART, OF PEORIA, ILLINOIS.

GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 323,327, dated July 28, 1885.

Application filed September 26, 1884. (No model.)

To all whom it may concern:

Be it known that I, STACY B. HART, of the city of Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Grain-Drills, of which the following is a description, reference being had to the accompanying drawing, which is made a part of this specification.

My invention relates to mechanisms for raising and depressing the teeth or hoes of grain-drills and other analogous structures; and it consists in a lifting-lever provided with means for shifting the fulcrum, whereby the leverage is increased or diminished as the teeth are depressed into or raised out from the ground.

The drawing represents a side elevation of a grain-drill having a portion of the frame and of the ground-wheels cut away, said grain-drill being provided with my improved means for raising and depressing the drill-teeth.

A represents the frame-work of the drill.

B represents the rock-shaft, supported by and capable of revolving in bearings attached to appropriate parts of the frame.

C represents the hand-lever, the motion of which, through the instrumentality of the short arm *b*, rigidly attached to said rock-shaft, and the connecting-link *D*, causes the rock-shaft *B* to revolve, thereby, through the instrumentality of the lug or arm *E*, rigidly attached to said rock-shaft, and the link *e*, raising or depressing the drag-bars *F* and drill-teeth *G*.

With the ordinary hand-lever now in use for raising or depressing the drill-teeth a much greater force is required to force the teeth into the ground than to raise them out from the ground.

In order to more nearly equalize the force required in these two operations, and to make it possible with a comparatively slight force to press the teeth into the ground and to throw a large portion of the weight of the machine onto the teeth, I construct the lever in the manner illustrated in the drawing, to wit: I provide the lever *C* at its lower end with the longitudinal slot *c'*, which passes over the pin

h', fastened to the plate *H*. This plate *H*, which may be attached to any convenient part of the frame-work of the drill, is provided with a curved slot, *h*, one end of which slot approaches nearer to the pin *h'* than does the other end. A bolt or pin, *c*, passes through this slot *h*, and is rigidly attached to the lever *C*. Now, when this lever *C* is moved from the position shown in the drawing to the left, the bolt *c*, being rigidly fixed to the lever *C* and moving in the slot *c*, will compel the slot *c'* to slide down on the pin *h'*, thereby lengthening the lower arm of said lever. It is evident that by this movement, when the teeth are being lifted from the ground, the lever loses in power, but gains in speed and extent of motion imparted. When this motion is reversed, and the lever *C* passes toward the position illustrated in the drawing, the slot *c'* slides up on the pin *h'*, the lower arm of the lever is shortened, and the upper arm lengthened, thereby increasing the leverage, and enabling the operator to easily press the teeth into the ground with great force.

A lever constructed as above described, with means for shifting the fulcrum, thereby increasing or diminishing the leverage at different points in its movement, is applicable not only to a grain-drill, but to a variety of other analogous structures, and where a portion of the machine may be raised or lowered by the operator.

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

The combination, with a lever provided with a longitudinal slot, of a supporting-plate provided with a pin which fits into said slot in the lever, and with a curved slot, one end of which is nearer to said pin than the other end, which curved slot receives a pin rigidly attached to said lever, substantially as and for the purpose specified.

STACY B. HART.

Witnesses:

EMERY S. WALKER,
E. L. THURSTON.