W. P. BETTENDORF.

Cultivator and Plow.

No. 219,381. Patented Sept. 9, 1879.

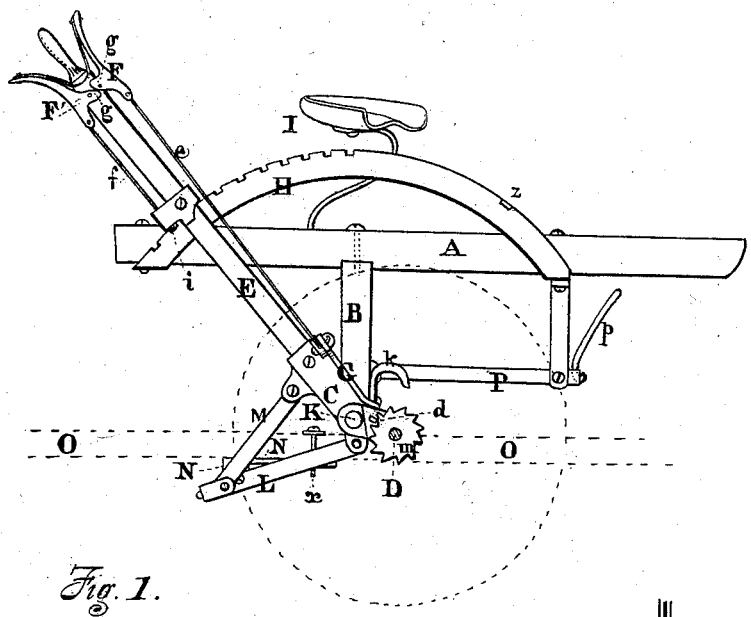

Fig. 1.

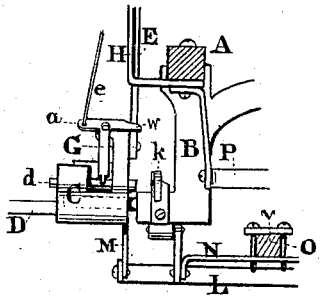

Fig. 2.

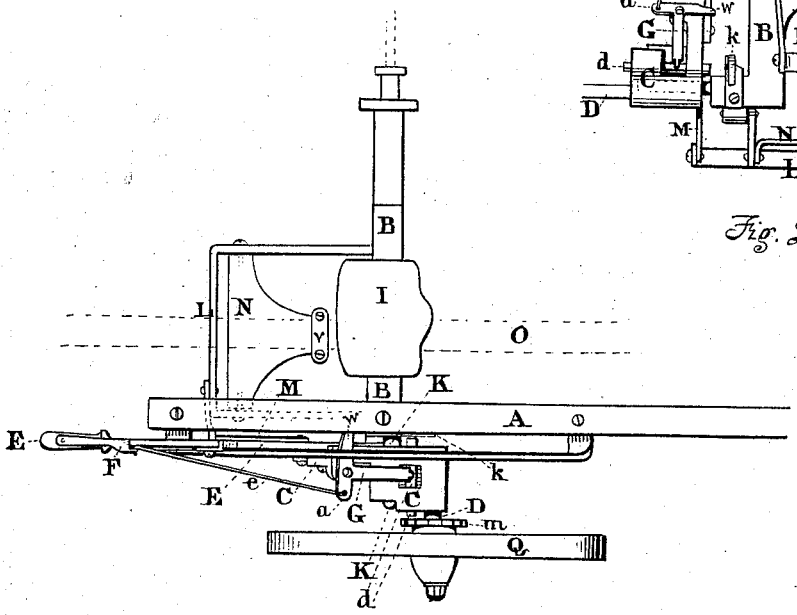

Fig. 3.

Witnesses:
John Falconberg
Henry Samon

Inventor
William P. Bettendorf
by E. Thurlow atty
in fact

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UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF PERU, ILLINOIS.

IMPROVEMENT IN CULTIVATORS AND PLOWS.

Specification forming part of Letters Patent No. **219,381**, dated September 9, 1879; application filed December 14, 1878.

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, of Peru, in the county of La Salle, in the State of Illinois, have invented an Improvement in Crank Levers and Axles for Cultivators or Plows, &c.; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a side elevation; Fig. 2, a cross-elevation of arched crank-lever; Fig. 3, a plan.

This is an improvement in levers and detents for operating the crank-axles of cultivators, plows, &c., for raising or lowering the wheels or elevating the frame or plow.

It consists, first, in obviating the defects arising from the clogging (with soil) of the wheel-ratchet on interior of the supporting wheel or wheels. This I do by making the ratchet a spur-ratchet, erect on the hub of the wheel or attached to its inner face. Second, in the use of a T-shaped lever or rectangular crank, pivoted near the junction of its arms, having its lower arm pivoted to the usual sliding pin or bolt which engages with said wheel-ratchet at the wheel-hub, the outer arm of the T-crank being connected by a rod with the usual hand-lever, (and a small latch thereon,) the other arm of said crank acting, by contact with a cam-shaped stop or detent, (when the lever is used in raising the plow and crank,) to reverse the action of the said crank and withdraw the bolt from the wheel-ratchet when the stoppage of the wheel is no longer necessary. Third, in the combination, with the usual crank-lever, of interacting cam-latches or small levers, one of these acting as the usual detent of said lever upon the arc or large ratchet, the other operating the sliding bolt which engages with the wheel-ratchet at the wheel-hub, and so contrived as to release the crank-lever from its arc and engage the sliding bolt with the wheel at one motion of the lever, when it is necessary to depress the crank-axle and cause the wheel to assist in doing the latter.

I prefer to use cams or cam-headed arms as interacting or interoperating devices between the two latches mentioned; but I also use a link or other connection for the same purpose, the effect being to pull back each of their connecting-rods running to their several detents (arc and sliding pin) simultaneously, as said.

In the drawings, which represent the devices as applied to one wheel only, A is the frame of a plow or cultivator, (or similar implement on which said devices may be conveniently employed,) with arc H, or ratchet; B, arched cross-axle, which carries said frame, all of a common form of construction; C, wheel-axle crank, pivoted upon arched axle, carrying parallel with its axis of revolution a bolt, *d*, to engage with ratchet *m*; D, wheel-axle; E, crank-lever, of usual form, except that the latch F′ (engaging with arc H) has a cam-shaped arm, *g*, near its pivot, (and usual tension-spring,) also excepting that its fellow latch F has a similar arm or cam or finger, *g*, which, by pressure upon the arm of its neighbor, causes the simultaneous release of their respective detents *i* and *d*. The rod *e* of latch F passes downward to a T-shaped crank or lever, G, pivoted to the crank-axle C, the lower end of same being engaged with a sliding bolt, *d*, engageable with a spur-ratchet, *m*, on the wheel-hub. The other arm, *w*, of the crank G, when the lever E is at the end of its forward stroke, strikes the rounded top of a stop, *k*, on the fixed axle-arch B, and reverses the action of the lever and withdraws said bolt.

H is the arc or ratchet of lever E on frame A; I, the seat; K, wheel-axle; L, stirrup or support of plow or cultivator beam O, extending from the rear of crank-axle C; M, brace; N, pivoted platform, on which beam O is attached by bolts and plate *v*; O, plow or cultivator beam; P, brace or stirrup and foot-rest; Q, wheels.

What I claim as my invention is—

1. A crank-operating lever having interacting latches or levers, one connected with the detent of said lever, upon the usual ratcheted arc of a plow or cultivator, the other connected with a detent arranged to lock the crank-axle to the wheel when it is required to raise the plow or cultivator-shovels simultaneously with the liberation of the main lever from its ratcheted arc, and a forward motion of said lever for the purpose of obviating two distinct movements in different directions in

the process of depressing the crank-axle and engaging the wheel with the crank to assist the motion, substantially as and for the purposes described.

2. The combination, with a crank-axle, of a curved arm for automatically releasing the clutch-bolt, an intermediate arm or lever, a main lever provided with two spring-latches and connecting-rods, and a curved ratchet, substantially as and for the purposes set forth.

3. The combination, with lever E, of lever F, having an engagement on the cam or arm *g* of the fellow lever or latch F′, so as to operate the rods *e f* of respective latches simultaneously, substantially as and for the purposes described.

4. The combination, with a crank-axle, of the clutch-bolt *d*, curved releasing-arm *k*, lever G, and operating-lever E, provided with two hand-levers or latches and connecting-rods, substantially as shown and described.

5. The cam-headed stop or arm *k* on arch B, in combination with the arm *w* of crank G, for reversing or withdrawing the bolt *d* at the end of the forward stroke of lever E, substantially as described.

6. The combination and arrangement, with crank C, arc H, and lever E, of latches F′ F, rods *f e*, lever G, bolt *d*, ratchet *m*, and stop *k*, substantially as and for the purposes described.

In testimony that I claim the foregoing plow or cultivator devices for operating the crank I have hereunto set my hand and seal this 6th day of December, 1878.

WILLIAM P. BETTENDORF. [L. S.]

Witnesses:

FRANK L. BREWSTER,

A. L. SHEPHERD.