

(No Model.)

2 Sheets—Sheet 1.

P. F. WELLS.
CULTIVATOR.

No. 555,059.

Patented Feb. 18, 1896.

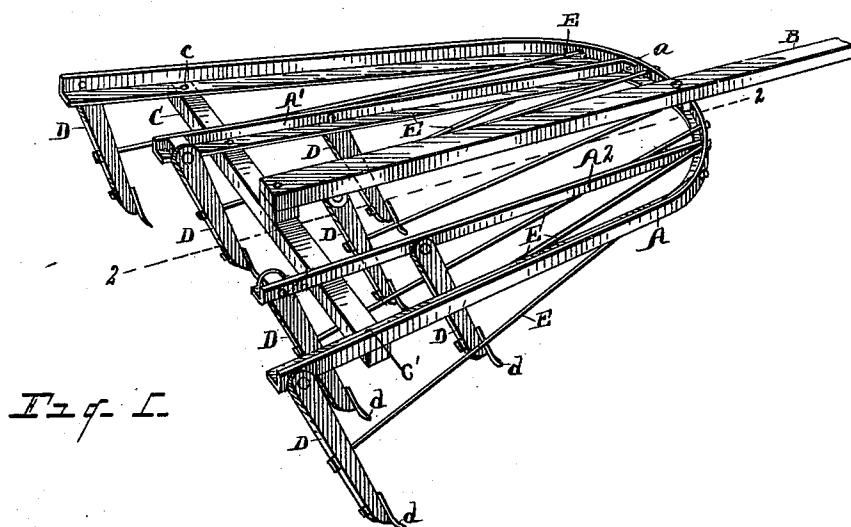


Fig. 2.

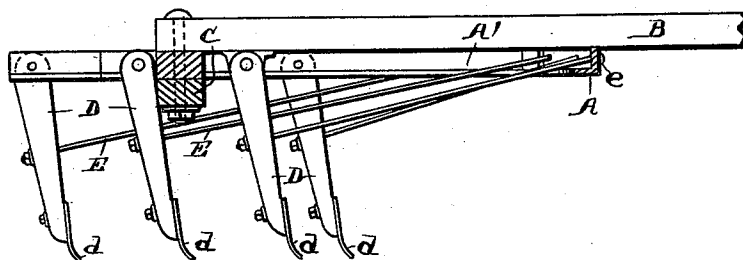
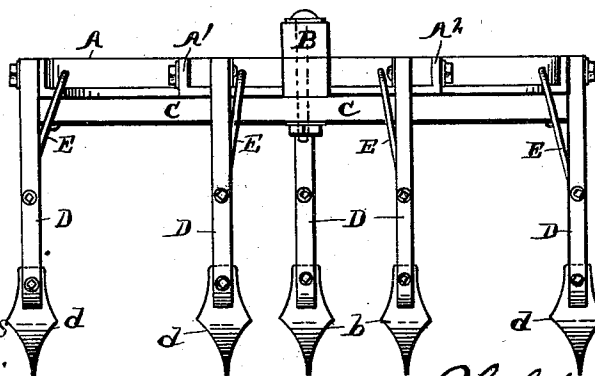


Fig. 3.



WITNESSES

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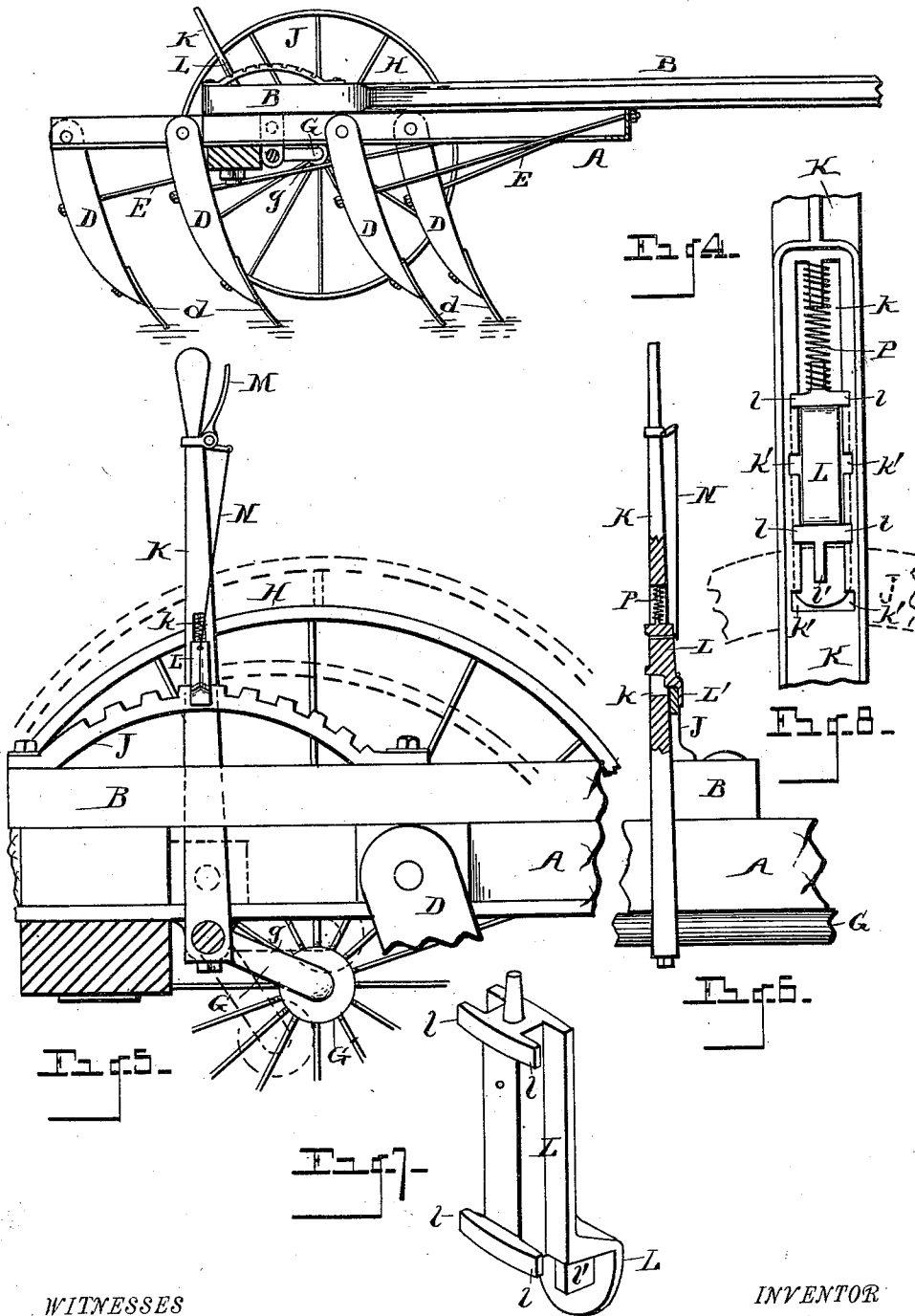
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2 Sheets—Sheet 2.

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WITNESSES

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UNITED STATES PATENT OFFICE.

PHILIP F. WELLS, OF MILFORD, MICHIGAN.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 555,059, dated February 18, 1896.

Application filed December 26, 1894. Serial No. 532,965. (No model.)

To all whom it may concern:

Be it known that I, PHILIP F. WELLS, a citizen of the United States, residing at Milford, county of Oakland, State of Michigan, have
5 invented a certain new and useful Improvement in Cultivators; and I 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, which form a part of this specification.

My invention is designed to provide certain new and useful improvements in cultivators; and it consists of the construction, combination and arrangement of devices hereinafter specified and claimed, and illustrated in the accompanying drawings.

The purpose of my invention is to provide
20 a cultivator of simple and economical construction which shall be strong and durable, my invention being also applicable either to a "float" or to a wheel-cultivator.

In the drawings, Figure 1 is a view in perspective showing my invention applied to a float-cultivator. Fig. 2 is a longitudinal section on the line 2 2, Fig. 1. Fig. 3 is a rear elevation of the same. Fig. 4 is a side elevation showing my invention applied to a
30 wheel-cultivator. Fig. 5 is an enlarged view illustrating the pawl-and-ratchet mechanism. Fig. 6 is a vertical section through the operating-lever. Fig. 7 is a detail view of the pawl. Fig. 8 is a side elevation of portions of the pawl L and lever K viewed from the side opposite that shown in Fig. 5.

More particularly my invention contemplates a cultivator formed with a metal frame having tooth-bearing standards engaged therewith, the whole structure so united and strengthened as to be rigid and firm against any strain that may come thereupon. Heretofore, as cultivators of this class have been commonly constructed, the metal frames have
45 been liable to bend out of shape by the severe strain to which they were subjected.

I carry out my invention as follows:

A represents the outer portion of the cultivator-frame, essentially U-shaped, and preferably made of angle-iron. This portion of the frame I prefer to have extend around the two sides and front of the cultivator. To

this bar A of the frame I attach rearwardly-extended bars A' and A², said bars having any suitable connection at their forward ends with the bar A. This engagement may be
55 made by means of a bolt, for example, as indicated at *a* and *a'*. The bars A' and A² are also preferably made of angle-iron.

B is the tongue of the cultivator. 60

C denotes a cross-bar engaged with the bar A toward its rear extremities, as shown at *c* and *c'*, as by means of bolts or other suitable devices.

D denotes standards engaged respectively
65 with the frame-bar A, together with the bars A' and A², and with the tongue in any suitable manner.

E denotes a rod connecting the various standards D with the frame-bar A. These
70 rods are preferably engaged with the standards midway of the extremities of said standards in any suitable manner and are led forward to the front portion of the bar A and connected therewith in any suitable manner,
75 as by a nut *e* having a threaded engagement upon the outer end of each of said rods. The cross-piece C may be made either of angle-iron or of other material, as of wood.

The frame of the cultivator is preferably
80 made of steel.

It will be evident that the tongue connected with the cross-piece C and with the frame-bar A acts as a brace for the cultivator-frame. The bars A' and A² also act as braces and
85 take the heavy forward draft exerted on top of the standards D in the ordinary operation of the cultivator, while the rods E sustain the back-draft or strain upon the standards D, as in case the point *d* engaged with the
90 standard is caught by a stone or root. It will thus be perceived that the forward and back strains upon the upper end of the standards D and upon their lower ends are equally distributed to the rods E and the bars A' A²
95 or upon the tongue and rod E, where the standard D is engaged with the tongue. In this manner the parts of the cultivator are constructed and arranged in a strong and durable manner, so that they will sustain the
100 strain without bending and without injury.

In Figs. 4 and 5 G denotes an axle cranked at its ends, as shown at *g*. H denotes the wheels supported upon the axle, the axle

running under the metal frame A. G' denotes the boxings for the axle engaged in any suitable manner on the metal frame A. J denotes a rack-bar and K is a lever engaged with the axle for lifting the rear part of the cultivator. The rack-bar is engaged upon the rear end of the tongue.

My invention contemplates a novel construction of the ratchet mechanism for lifting and holding the cultivator-frame in a given position. To this end the lever K, I construct with an elongated slot *k*, in which I engage a pawl L. (Shown in detail in Fig. 7.) The slot *k* in the lever is provided with transverse openings, as at *k'*, to receive transverse shoulders *l* upon the pawl. The transverse slots are provided simply to permit the engagement of the pawl in the lever, the shoulders passing therethrough permitting the pawl to be engaged in sliding engagement with the lever. It will be seen that when said shoulders are passed through the openings *k'* and the pawl is then raised or lowered the shoulders will project across the corresponding face of the lever, while the opposite edge of the pawl will project from the opposite face of the lever. The pawl at its lower end is provided with an arm *L'* to extend down over the rack-bar J, said rack-bar being embraced between the lever K and the arm *L'* of the pawl. The lower end of the body of

the pawl, as indicated at *l'*, will normally seat in the sockets of the rack-bar J.

M is a lever engaged with the top of the lever K for lifting the pawl L, the lever M and the pawl L being connected by a rod N.

P is a spring to hold the pawl L in engagement with the rack-bar. This construction of the ratchet mechanism insures a positive and efficient action of the pawl.

What I claim as my invention is—

In a cultivator, the combination of a frame, means to lift the frame, and pawl-and-ratchet mechanism to hold the frame in a given position, said pawl-and-ratchet mechanism consisting of a rack-bar, an oscillatory lever constructed with an elongated slot having transverse openings communicating therewith, a pawl constructed with lateral shoulders and having a sliding engagement in the slot of said lever, and a lever connected with said pawl, said pawl provided with an arm extending down over one side of the rack-bar, the rack-bar being embraced between the arm of the pawl and the rack-bar, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

PHILIP F. WELLS.

Witnesses:

ROBERT S. WELLS,
C. E. LOVEJOY.