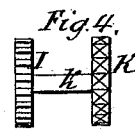
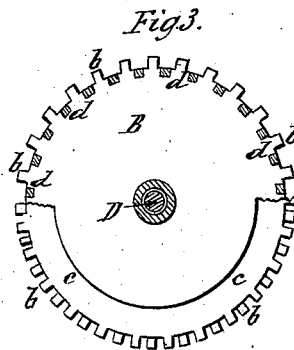
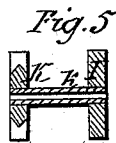
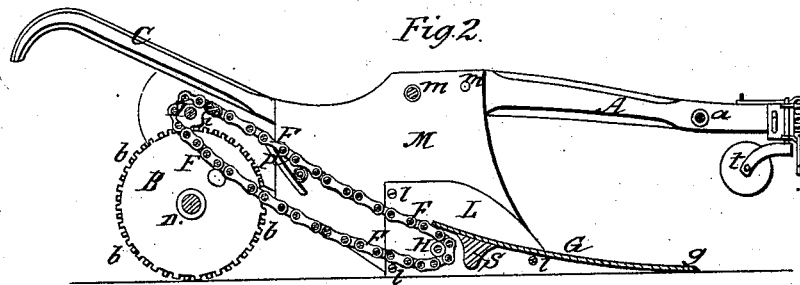
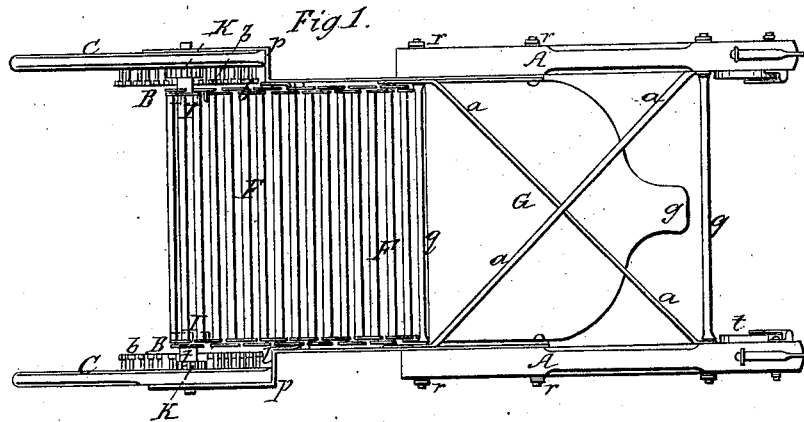


A. DOLLOFF.

Potato-Digger.

No. 52,830.

Patented Feb. 27, 1866.



Witnesses:
E. J. Brown.
Sophia Brown.

Inventor:
Alphus Dolloff
By his Atty.
J. S. Brown.

UNITED STATES PATENT OFFICE.

ALPHEUS DOLLOFF, OF LAKE VILLAGE, NEW HAMPSHIRE.

IMPROVEMENT IN POTATO-DIGGERS.

Specification forming part of Letters Patent No. 52,830, dated February 27, 1866.

To all whom it may concern:

Be it known that I, ALPHEUS DOLLOFF, of Lake Village, in the county of Belknap and State of New Hampshire, have invented a new and Improved Potato-Digger; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a top view of my improved potato-digger; Fig. 2, a central longitudinal vertical section thereof; Fig. 3, a part side view and part section of one of the driving-wheels, the section being central and parallel with the faces of the wheel; Fig. 4, a side view of the double pinions; Fig. 5, a central longitudinal section of the same.

Like letters designate corresponding parts in all of the figures.

This implement is of the class composed essentially of a blade or scoop, G, to pass under and gather up the potatoes, and an endless revolving screen, F, which receives the potatoes and earth from the blade and separates the latter from the potatoes by sifting through its meshes while conveying the potatoes upward and backward to be deposited on the ground behind the machine.

The blade having the action of a plow in its movement, the machine is drawn by a beam or beams, A A, and guided by handles C C, and the revolving screen requiring rotary power to move it, driving-wheels B B supporting the rear end of the machine are employed for the purpose. The front end also requires for successful operation a wheel or wheels to gage the depth at which the point *g* of the blade shall run, and to this end, as well as to render the motion of the machine steadier than heretofore has been the case, I find that it effects a special purpose, particularly useful in this connection, to employ two beams, A A, instead of one, and to apply an adjustable caster-wheel, *t*, under the forward end of each, the distance of the beams being such that the caster-wheels will run between the rows, where the ground is comparatively smooth, whereas with a single central beam it is impossible to use a caster-wheel to run over the uneven tops of the hills and stalks of potatoes. The casters are swiveled so as to allow them freedom of movement between the rows. With this duplicate arrangement of the beams and cast-

er-wheels the machine also runs much more steadily.

To give strength and firmness to the beams they are connected by diagonal brace-rods *a a*, as well as by direct transverse-rods *q q*, substantially as shown in Fig. 1.

The frame construction of the implement is adapted to this improvement, and, with general purpose, lightened very much, in addition to enhancing the compactness and convenience of other operative parts thereof, by employing metallic side plates, M M, to which the beams A A are respectively bolted, and the handles C C are attached thereto. The blade G is also secured to both of these plates by means of side flanges, L L, which are bolted or otherwise strongly attached to the plates.

Under the rear end of the blade G, just forward of the revolving screen F, is a rib projection, *s*, extending down as low as or lower than the screen, and serving the purpose of a fender to protect the screen from stones and from rubbing on the earth beneath.

The driving-wheels B B and handles C C are located in offsets *p p* of the side frame-plates, M M, inside thereof. This arrangement gives compactness to the whole construction of the machine, allowing the endless revolving screen F to extend in width closely to the plates, as shown in Fig. 1, and the driving-wheels being located in the said offsets, their inner faces are flush with the inner faces of the plates forward of them, thereby allowing the revolving screen freedom to pass between them and admitting of the rear part of the same to be lowered more nearly to a level with the front part, if desired, only requiring to clear the shaft of the driving-wheels. In this case the pinions K K, which gear into the driving-wheels and transmit the motion to the endless screen, whose spur-wheels I I are on the pinion-shaft *i*, are located lower down and farther backward, but still gear into the driving-wheels. Since the pinions K K gear into the peripheries of the driving-wheels to obviate the use of additional gear-wheels, and the said peripheries roll upon the ground, the latter would become clogged with earth if constructed in any ordinary manner and stop or impede the movement of the machine. This is obviated by a peculiar construction of the driving-wheels, as follows:

Instead of gearing-teeth, the periphery of

each wheel is made with openings *d d* through a rim which forms the periphery, the wheel being open or hollow inside, so as to have their openings *d d* extend through the rim and allow a free passage of anything entirely through it, as shown in Fig. 3. One face, at least, of the wheel is made open, there being only a flange, *c*, projecting inward to give the necessary strength to the periphery. Into these openings the teeth of the pinions *K K* enter like gearing, and whatever earth may have lodged in the openings as the wheels turn on the ground is immediately, at each revolution of the wheels, cleared out by the cogs of the pinions themselves.

There are the necessary spur-projections *b b* on the peripheries of the driving-wheels *K K*, although the peculiar gearing construction of the peripheries, as above described, serves to produce adherence to the ground, without slipping thereon, to a great extent. The pinions *K K* also have a peculiarity of construction to obviate any danger of their teeth becoming clogged with earth. This consists in sloping the edges at the bottom of the recesses between the cogs of the pinions outward each way, as indicated in Fig. 5, whereby the dirt is readily cleared out by the intermeshes of the peripheries of the driving-wheel. The pinions *K K* and spur-wheels *I I* are connected by a tubular shaft or hub, *k*, as seen in Figs. 4 and 5, to take the strain from the shaft *i*.

Between the folds of the endless screen *F*, near the middle thereof, is located, on each side of the machine, a pivoted vibrating bar, *P*, so arranged that the rounds of the upper ascending fold of the screen will strike the upper end thereof and be raised slightly in passing over it, thereby giving a shaking motion to the screen, which facilitates the separation of the dirt from the potatoes.

The endless screen is composed of round

iron rods, which pass through link-plates at the end, secured on the rods by heading the ends thereof. The rods form the pivots of the links, and also gear directly into the spur-wheels *I I*, which drive them. The front extremity of the screen passes around the roller *H*.

There may be a roller on the shaft of the driving-wheels nearly as large in diameter as the wheels themselves—as large as may be without interfering with the revolving screen. The use of the roller is to smooth down the earth, so as to render the picking of the potatoes a little more easy and convenient. A suitable fender should be placed between the screen and the roller, to cause the potatoes to fall back of the roller without fail.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the duplicate beams *A A*, each provided with an adjustable caster-wheel, *t*, and the two beams being connected by oblique brace-rods *a a*, substantially as and for the purpose herein set forth.

2. The construction of the driving-wheels *B B* with the gear-openings *d d* in the peripheries thereof, in combination with the pinions *K K* gearing into said openings, substantially as and for the purpose herein specified.

3. The pinions *K K*, when made with the sloped surfaces at the bottoms of the recesses between the cogs, for the purpose set forth.

4. The vibratory bars *P P*, for giving a shaking motion to the endless screen, arranged and operating substantially as herein specified.

The above specification of my improved potato-digger signed by me this 12th day of July, 1865.

ALPHEUS DOLLOFF.

Witnesses:

B. J. COLE,

M. C. DEXTER.