

H. J. KINTZ.
Potato-Digger.

No. 62,858

Patented Mar. 12, 1867.

Fig. 1.

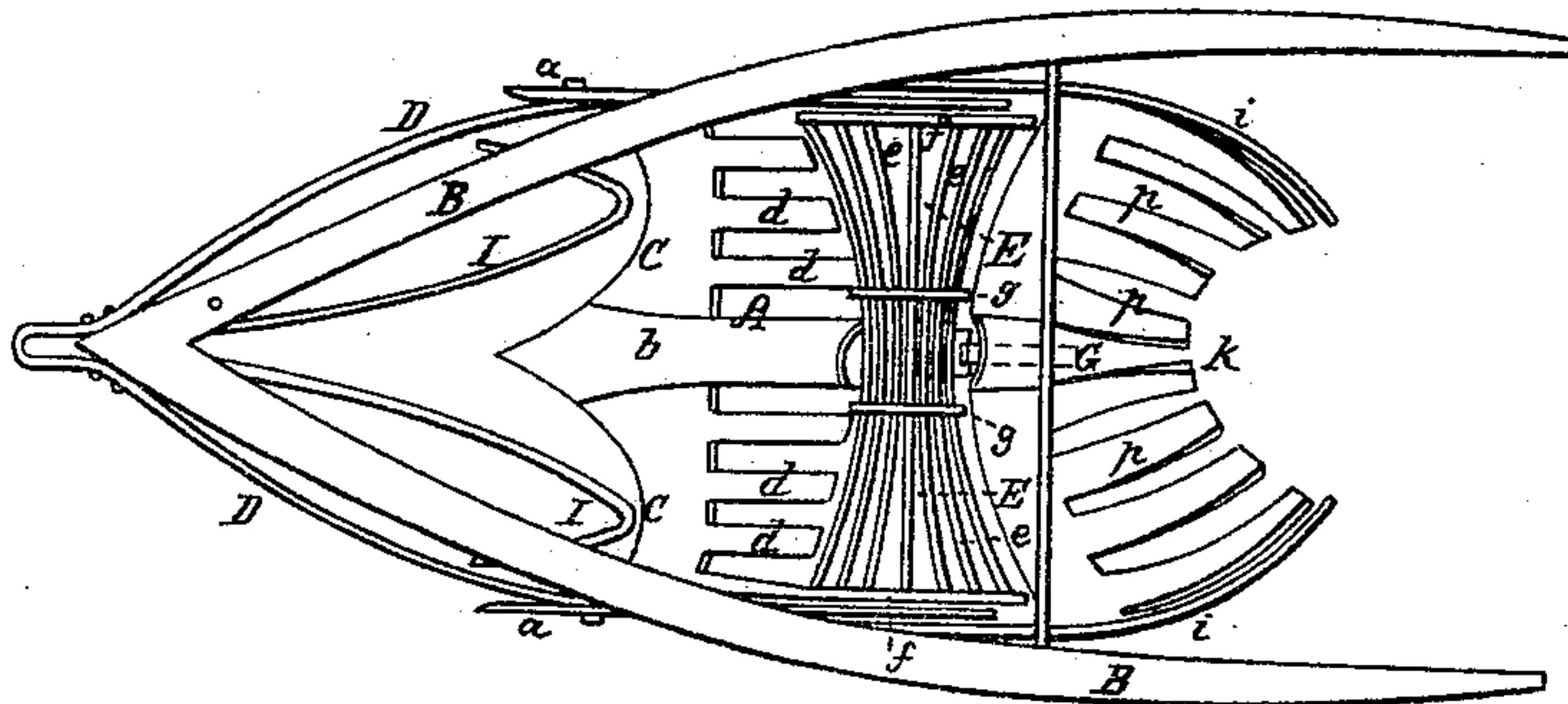


Fig. 2.

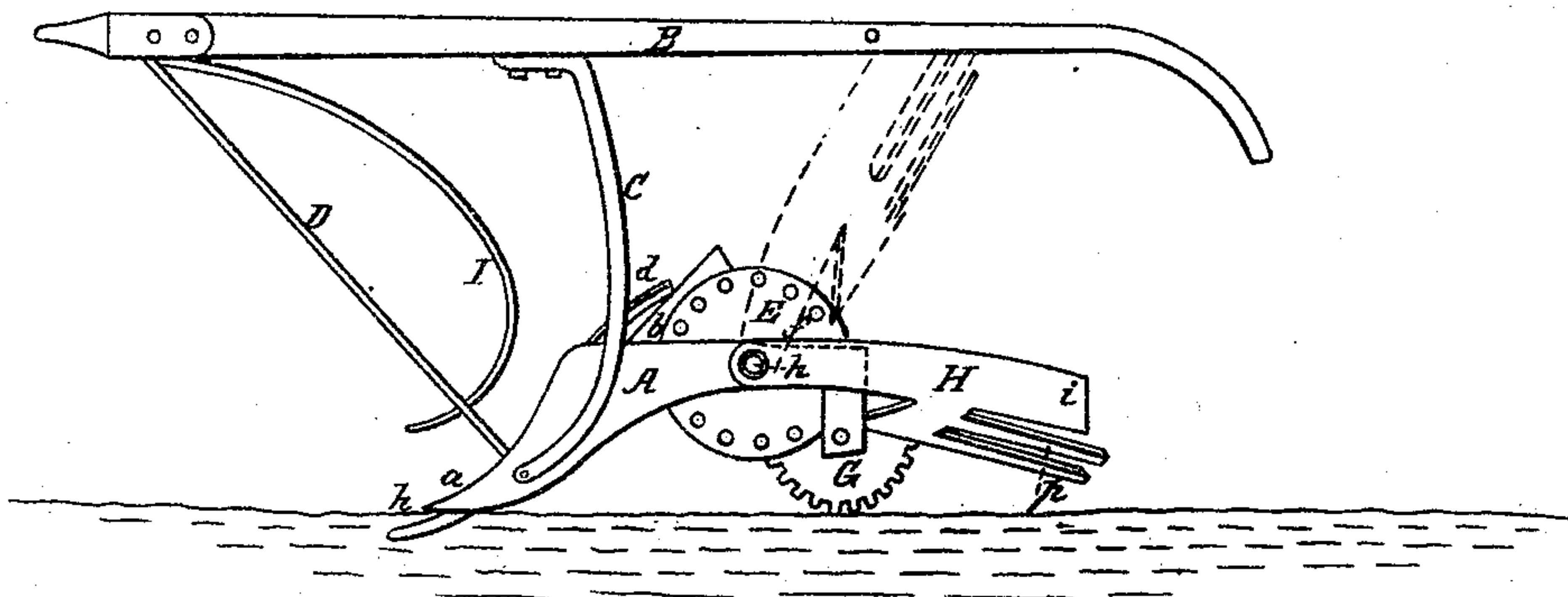
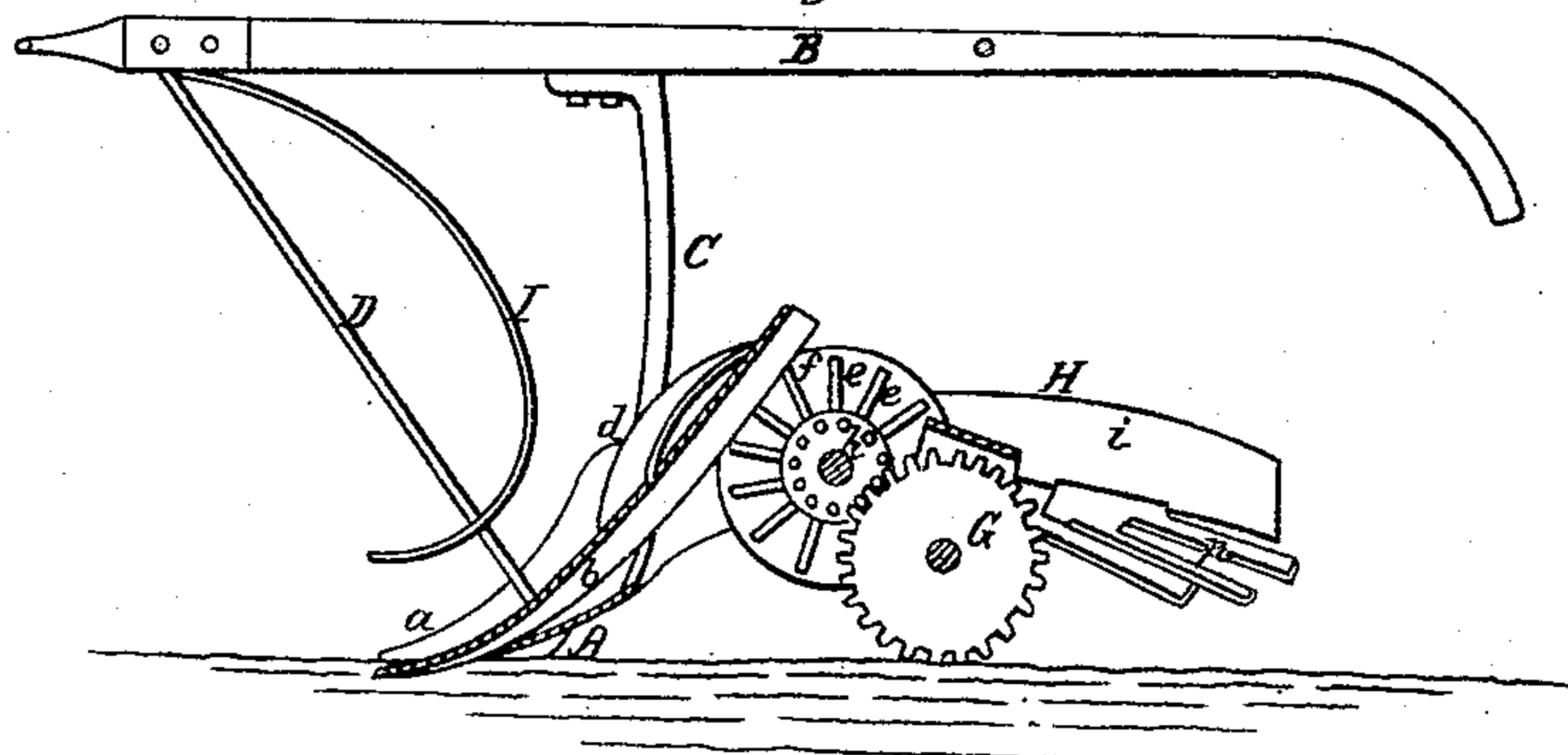


Fig. 3.



Witnesses:

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H. J. KINTZ, OF GREECE, NEW YORK.

Letters Patent No. 62,858, dated March 12, 1867.

IMPROVEMENT IN POTATO-DIGGERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, H. J. KINTZ, of Greece, in the county of Monroe, and State of New York, have invented a certain new and useful Improvement in Potato-Diggers; 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 is a plan of my improved machine.

Figure 2, a side elevation.

Figure 3, a central vertical section.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists in the special construction and arrangement of the scraper, having a central, elevated mould-board, with a projecting point for dividing the hills, and a concave each side of said mould-board for allowing a free turning of the earth and insuring the minimum of resistance to the draught, and a projection of the vertical sides of the scraper to an extent equal or nearly so to the central point, for producing the necessary balance in cutting and for insuring the proper working of the implement; also, in connection with the above, in the special arrangement of the double-conical sifter and its driving-wheel, the hinged conductor, and the vine-clearers, all as hereinafter described.

As represented in the drawings, A is the scraper, which is connected with the handles B by means of standards C and draught-arms D, as shown. This connection insures a great degree of strength. The scraper is formed with two vertical sides, whose ends *a a* are brought to a point and made to project forward at some distance, as shown in fig. 1. It also has in the centre an elevated, rounded mould-board, *b*, whose point is made to project forward about the same distance as *a a*, but somewhat below their level. The bottom of the scraper on each side between *a* and *b* is recessed or hollowed out so as to form concaves or depressions *c c*, as clearly shown. This peculiar construction secures several advantages. The pointed and elevated mould-board *b* passes centrally under the hills and divides them, throwing half in one direction and half in the other, thus breaking the tubers from their stems and freeing them from the vines much more effectively than if the scraper were plain. This action of breaking them from the stems is greatly assisted by the recession of the concaves *c*, which leave the space opposite the opening point on each side free and unobstructed so that the earth can yield. One great feature of this form of the front of the scraper is that the mould-board, by projecting forward, cuts deep under the hills and throws them up in a double furrow, while the scraper itself, so to speak, simply slides over the surface and catches the furrows, or cuts so shallow as to hardly impede the draught. This is much more effective than when the full scraper cuts deep. If the scraper were plain and not provided with the mould-board the hills would be simply scraped up on it without being broken, and the separation of the potatoes from the vines would be very imperfectly accomplished; and, on the other hand, were the mould-board alone used the potatoes would be simply buried. As it is, the point of the mould-board turns the furrow like a double-acting plough in front, while the concaves in the rear follow just in the right position to catch these furrows without acting simply as a scraper to scrape them up. The great length of the mould-board makes it a perfect divider of the hills. The projecting ends *a a* of the sides of the scraper, by extending forward in about the same degree as the central point, serve as a counterbalance to prevent the furrows turned by the mould-board from being thrown beyond the scope of the machine. The vertical sides follow just opposite the point and catch the furrows. They also serve as a centrebalance to keep the machine steadily in place. It will be at once seen that the formation is such as to impede the draught as little as possible, since not only is the mould-board the only part that cuts deeply, but also the concaves, by setting back, raise those portions above the general level. The tubers being thus broken from the stems by the double-acting mould-board, and spread evenly over the floor of the scraper, pass up over the usual curved fingers *d d*, where they are in a great degree freed of the heavy earth. In the rear of these fingers is situated a double conical-shaped sifter, E, made up of wires or rods *e e*, secured to heads and disks *f f, g g*. The large ends of the cones are placed outward in such a position as to catch the contents of the scraper and work them toward the centre again. This sifter is fixed upon an axis *h* and made to revolve by means of a traction cog-wheel, G, resting upon the ground and gearing with the rods *e e*. In the rear of the sifter is situated a conductor, H, hinged to the sides of the scraper in such a position as to be turned up, as indi-

cated by red lines in fig. 2. This conductor is provided with vertical sides *z z* for retaining the potatoes, and also with fingers *p p*, similar to *d*, for sifting out small stones, &c. The sides and fingers all converge back, and in the rear the outline is in the form of a concave, as shown at *k*, fig. 1, the effect being to concentrate the potatoes as they drop from the machine in a compact row behind. It will be perceived that the form of the double-conical sifter *E* has a specific relation to the scraper, since the mould-board has a tendency to throw the furrows toward the outside of the machine, and, when carried over, the contents are deposited toward the outer ends of the sifter. The conical form will draw the contents toward the centre again, and thus the potatoes are passed over a great extent of sifting surface, which frees them very effectually from dirt. By hinging the conductor *I* am enabled to turn it up in going into the field or passing an obstruction and to adjust it to any position; and by using stops to hold it up I am enabled to preserve its position at all times and to prevent its wear, which effects could not be accomplished if it dragged upon the ground. To the front end of the handles are secured two bent rods *I I*, expanding backward and outward in the form of hooks. These, by running between the rows, divide the vines so that as they are turned by the mould-board they pass up over the machine without being tangled.

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

The construction, combination, and arrangement of the scraper *A*, consisting of the vertical side points *a a*, the central share *b* extending backward and upward in a semicircular ridge, with its point projecting below the level of the side points, and the intervening shallow scoops with concave edges *c c*, and gradual upward inclination between the side and central points, operating substantially in the manner and for the purposes herein set forth.

In combination with the scraper, constructed and arranged as above described, I also claim the double-conical sifter *E* and its cogged driving-wheel *G*, operating in the manner and for the purpose specified.

I also claim the hinged, adjustable, and self-supporting conductor *H*, provided with the converging fingers *p*, and the concave *k*, when combined and arranged with the double-conical sifter *E* in the manner and for the purpose set forth.

I also claim the special arrangement of the machine, consisting essentially of the scraper *A*, with draught-arms *D*, the sifter *E*, with driving-wheel *G*, the conductor *H*, and the vine-clearers *I*, operating as herein described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

H. J. KINTZ.

Witnesses:

R. F. OSGOOD,

J. C. CAMPBELL.