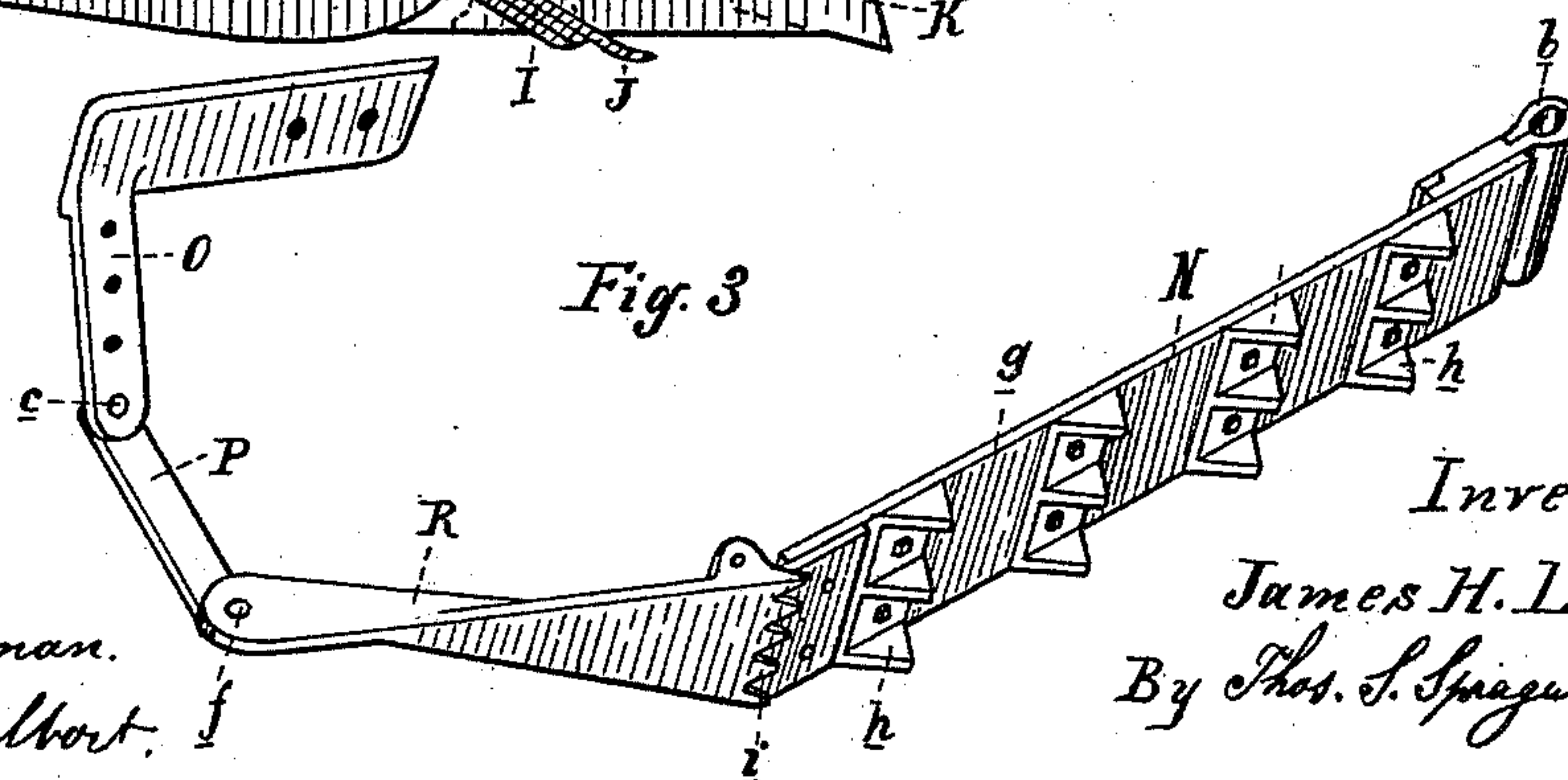
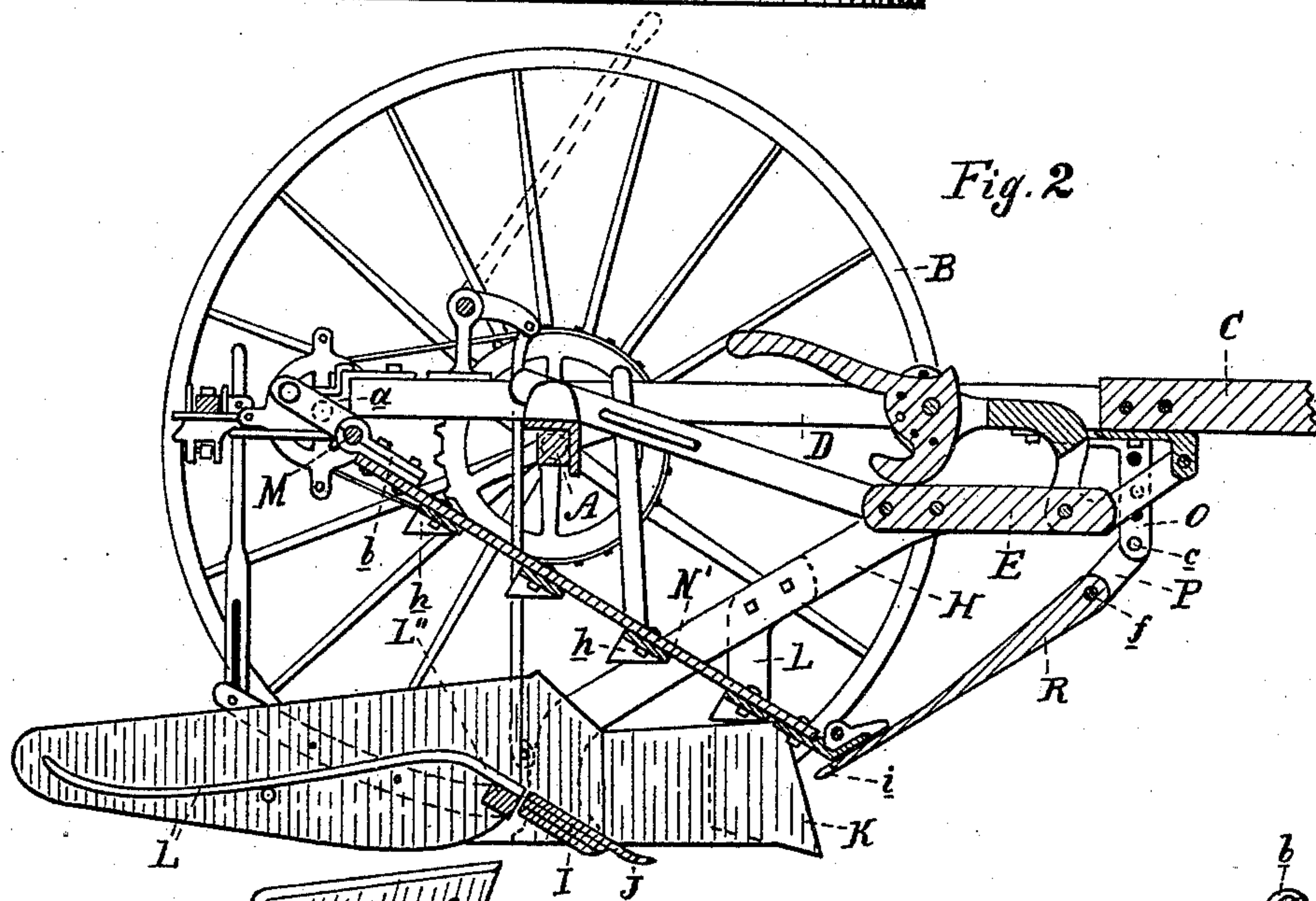
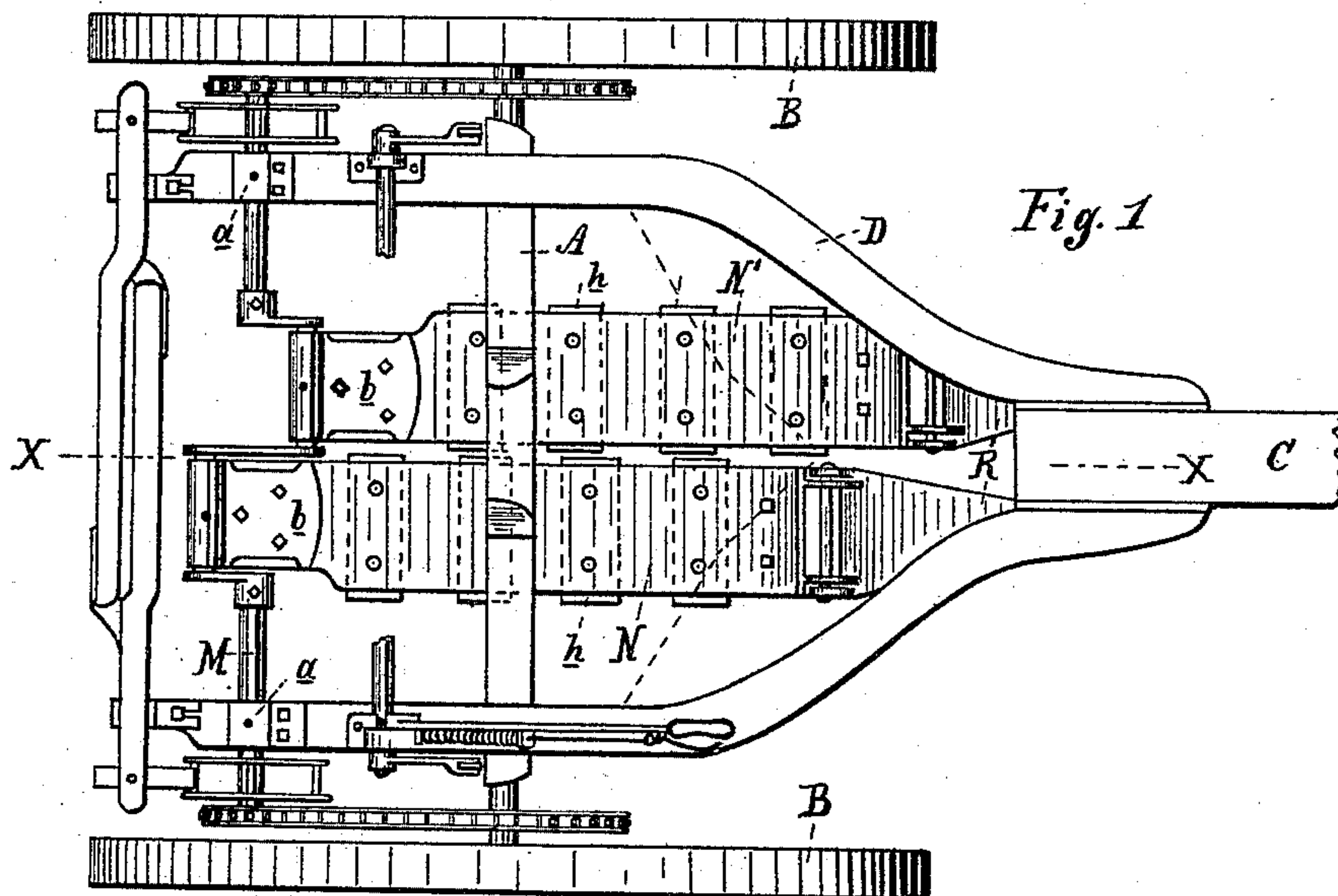


(No Model.)

J. H. LEWIS.
POTATO DIGGER.

No. 395,571.

Patented Jan. 1, 1889.



Attest:
John Schuman.
R. M. Hulbert.

Inventor:
James H. Lewis.
By Thos. S. Sprague & Son
Atty.

UNITED STATES PATENT OFFICE.

JAMES H. LEWIS, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-HALF TO
CHARLES G. HAMPTON, OF SAME PLACE.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 395,571, dated January 1, 1889.

Application filed May 11, 1888. Serial No. 273,567. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. LEWIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Potato-Diggers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in potato-diggers, and the invention is designed to form an improvement on a former application for Letters Patent filed March 6, 1888, Serial No. 266,296.

My present invention consists, especially, in the improved construction and operation of the carrier, by means of which the potato-hills, after being taken up by the plow, are delivered to the shaking-grates, all as more fully hereinafter described.

In the drawings which accompany this specification, Figure 1 is a top plan of a potato-digger to which my improvement is applied, with some of the parts removed to show the construction and operation of the carrier. Fig. 2 is a vertical longitudinal section thereof on line $x x$ in Fig. 1. Fig. 3 is a detached perspective view of the parts composing the carrier.

A is the axle, supported by the ground-wheels B, both of which are drive-wheels. C is the draft-pole centrally secured between the hounds D, which at their rear ends are secured to the axle and support the operating parts of the plow. E is the plow-beam, the forward end of which is adjustably secured to the under side of the draft-pole, while the rear end is bifurcated and carries between the outwardly and downwardly projecting rear ends the plate or shoe I, upon which a suitable plow, J, is secured. Side plows, K, are secured to the standards H by means of vertical standards L. L' are shaking-grates, the cross-head L'' of which is pivotally secured to the plate I. All these parts are of known construction and embody no part of my present invention, and are merely shown for the sake of illustrating the same in connection with my present invention.

M is a double-throw crank-shaft transversely secured in suitable bearings, a , on the

rear ends of the hounds. Said crank-shaft M receives motion by means of a sprocket-and-chain connection or in any other suitable manner from the ground-wheels.

N N' are forwardly-inclined carrier-rakes placed longitudinally and centrally above the shovel-plow. They are provided at their rear ends with suitable journal-boxes, b , mounted upon the crank-shaft, and at their forward ends they are supported from the front ends of the hounds by means of the stationary hangers O and links P. The hangers O are provided with vertical adjusting-holes for adjustably connecting the link by means of the bolt c , and the forward end of the rake has a hinge secured to its upwardly and forwardly projecting arm R, to which the lower end of the link P is pivotally secured by means of the pin f . The head g of the rake is in the form of a flat blade, and is provided on its under side with rake-teeth h , arranged in rows transversely to the rake head, and the lower end of the hinged arm R is also provided with a series of rake-teeth, i , projecting below the rake-head.

In practice, the parts being arranged as shown and described, the motion conveyed to the carrier will impart to each rake a four-motion raking action—that is, to and fro in the longitudinal direction of the plow, up and down in a vertical plane, and tilting to clear itself when passing from and to the work. At the same time the rakes move in opposite direction to each other, and each rake is free to adjust itself at its forward end up or down, so as to ride freely over the ground. Thus the rakes are alternately brought down upon the hills dug up by the plow, which thereby are thoroughly broken up and carried with an even feed to the rear onto the grates in the best condition for effecting a clean separation.

I prefer to give the rakes a rapid movement by properly proportioning the parts so as to gain the utmost advantage from the breaking up of the ground by the quick movement. A carrier of this construction is less liable to be interfered with by potato-vines and weeds than by endless carriers; and it will be seen, further, that the parts described, which connect the forward ends of the rakes with the

frame, form compensating hangers, which permit a free up-and-down vertically self-adjustment for the rakes, whereby the same may freely ride over the top of the ground. The peculiar V shape of the rake-teeth, combined with the tilting motion of the rake, clears the teeth readily from the vines and ground. The width of the two rakes combined is intended to cover the hills as raised from the shovel-plow. My carrier is intended to be applied to that class of potato-diggers wherein the digging is done by means of shovel-plows, in the practical use of which it has been found that the hills do not readily pass from the plow to the grates, but often accumulate on the plow, and thereby arrest the digging or produce otherwise unsatisfactory work.

What I claim as my invention is—

1. The combination, with the shovel-plow of a potato-digger, of a carrier-rake adjusted above that plow and actuated by mechanism to impart thereto a rake motion, said mechanism consisting of a crank or cranks carrying the rear end of the rake and provided with drive-connection from the ground-wheels, and of self-adjusting compensating hangers for suspending the front end of said rake, substantially as described.

2. The combination, with the shovel-plow of a potato-digger, of two inclined reciprocating carrier-rakes mounted above said shovel-plow

side by side, of self-adjusting compensating hangers suspending the front end of the rakes independently of each other, and a double-throw crank supporting the rear end of the rakes and imparting motion in opposite direction to such rakes, substantially as described.

3. The combination, with the forwardly-inclined rakes N N' of the double-throw crank-shaft M, upon which the rear end of such rakes are mounted, of the arms R, hinged to the front ends of the rakes, the hangers O, secured to the frame, and the links P, pivotally connecting said hangers with the arms R, substantially as described.

4. The combination, in a carrier-rake for potato-diggers, substantially as described, of the V-shaped rake-teeth *h*, arranged in rows, and a rake-head, *g*, to which the teeth are secured, substantially as described.

5. The combination of the rake-head *g*, the rake-teeth *h*, secured thereto in rows, and the arm R, hinged to the forward end of the rake-head, and the rake-teeth *i*, formed on the lower side of said arm, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 5th day of May, 1888.

JAMES H. LEWIS.

Witnesses:

JOHN SCHUMAN,

P. M. HULBERT.