

(No Model.)

W. F. & C. MAVES.
POTATO DIGGER.

No. 589,846.

Patented Sept. 14, 1897.

Fig. 1.

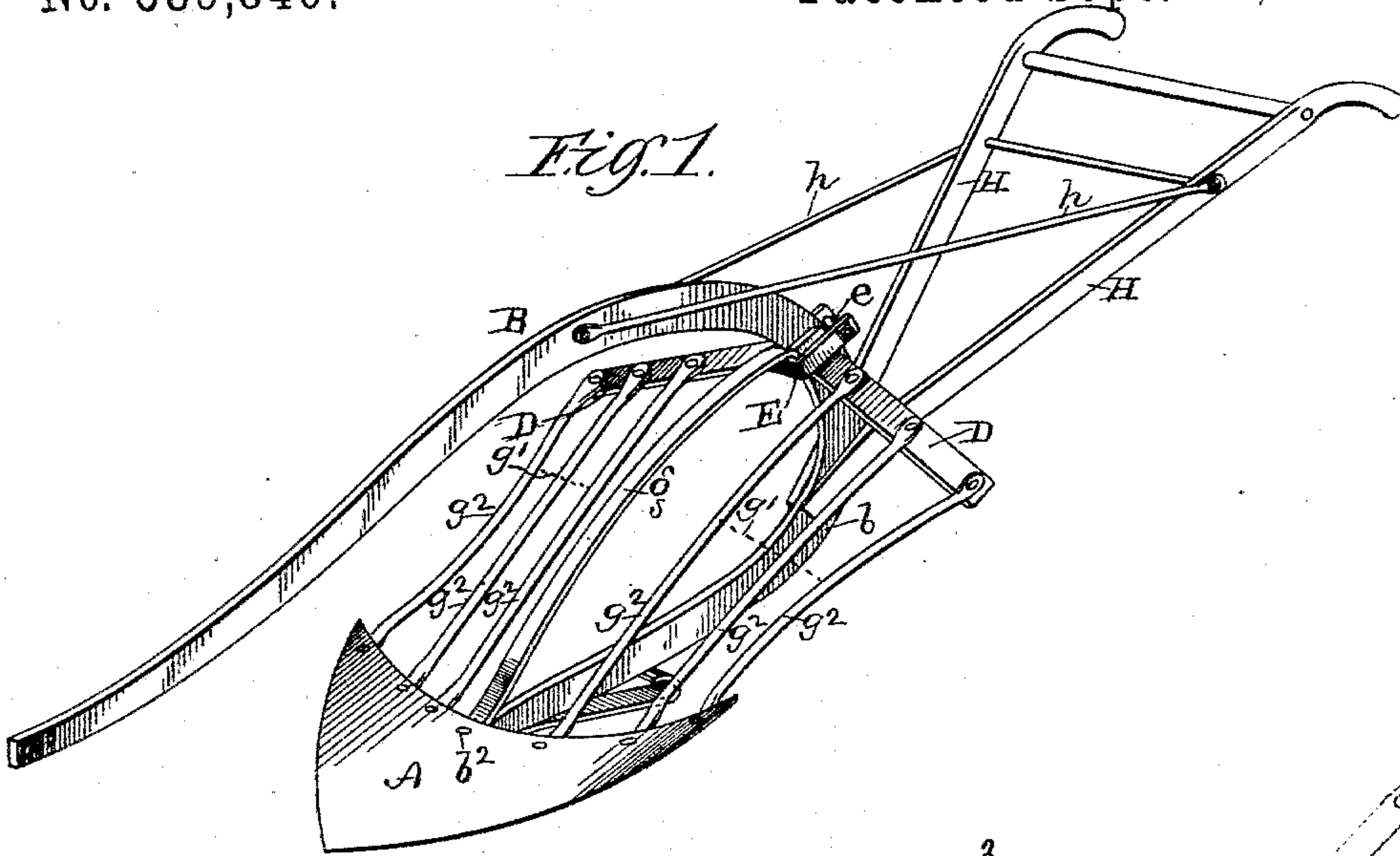


Fig. 2.

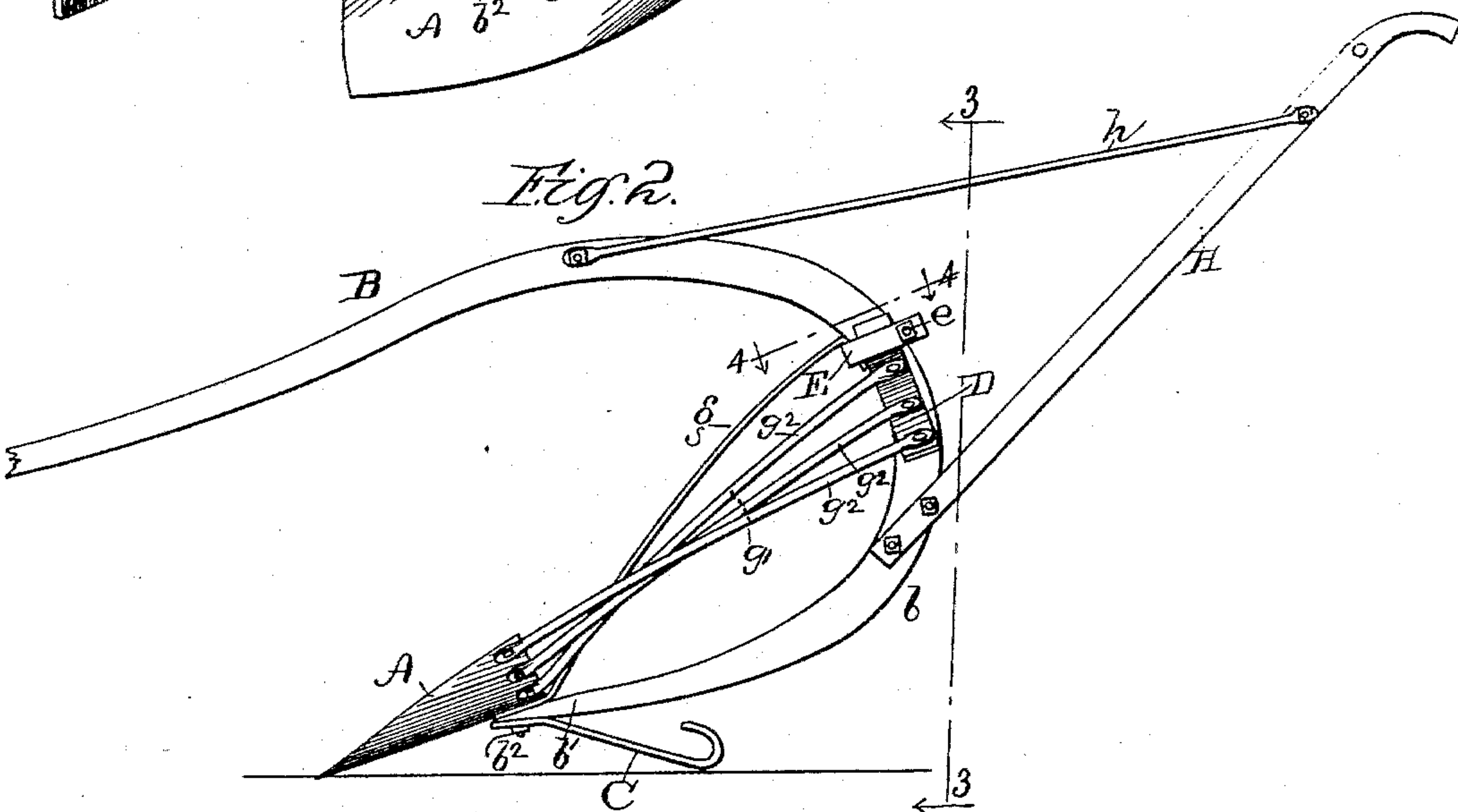


Fig. 3.

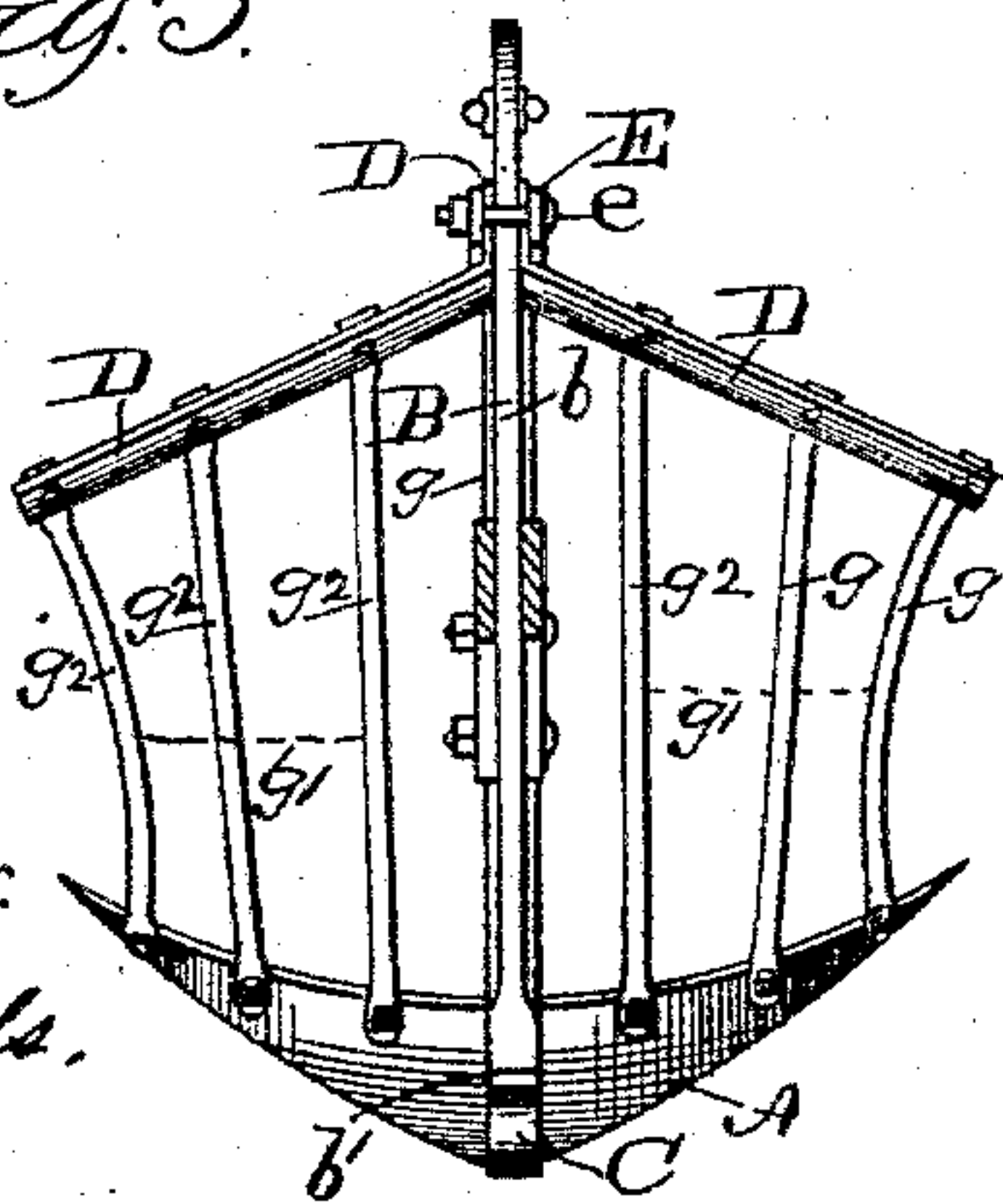
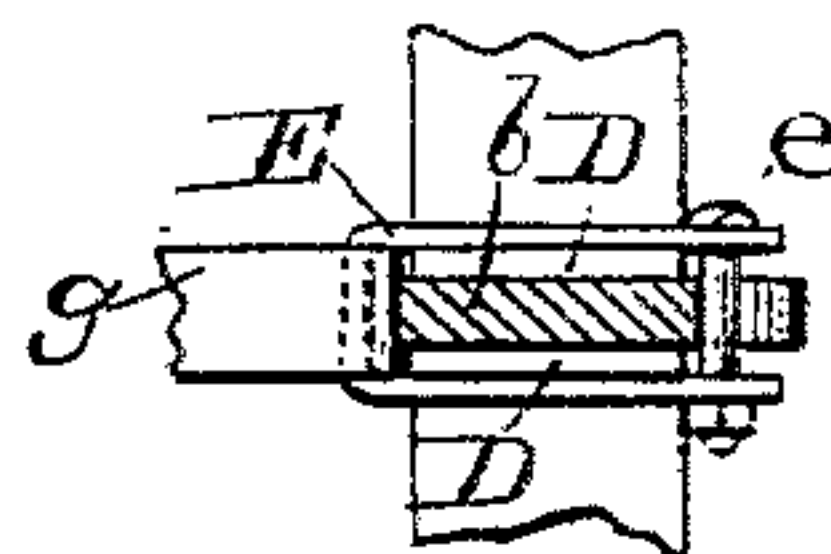


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM F. MAVES AND CHRIST MAVES, OF DAVENPORT, IOWA.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 589,846, dated September 14, 1897.

Application filed August 7, 1895. Serial No. 558,513. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. MAVES and CHRIST MAVES, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Potato-Diggers, of which the following is a specification.

Our invention relates to potato-diggers, a composite structure the parts of which have no movements in relation to each other, and in that sense have not machinal but have constructive functions in the machine.

The object of our invention is to provide potato-diggers of this class which are simple in construction, which will run with light draft, which will raise the potatoes together with the adjacent soil in which they lie, and which will separate the potatoes, the weeds, and the soil with improved results, which shall combine strength with lightness and simplicity of construction, which shall be durable and economic of manufacture, and which can be easily manipulated in operation; and to this main end and object our invention consists in novel structural features and novel combinations, in which combinations the parts coöperate in producing results which arise from the combined action of the several parts and not from the separate action of each, as hereinafter more fully described, and summarized in the claims hereto appended.

In the accompanying drawings we have shown our invention carried into effect in that precise form and organization of parts in which we have successfully practiced it. It will be understood, however, that some or all of said parts may be varied or modified in their structures and organizations without departure from the purview of our invention.

In the accompanying drawings, Figure 1 is a perspective of a potato-digger embodying our improvements; Fig. 2, a side elevation; Fig. 3, an elevation of the main parts seen from the rear and sectional elevation of other parts in the line 3 3 in Fig. 2, and Fig. 4 is a sectional plan of parts in the line 4 4 in Fig. 2.

The share or scoop A is a plate of sheet-steel or other suitable metal of triangular form, with curved sides and preferably a straight rear side, and is of such curved form in its transverse section as to have a concave upper and convex lower side. The rear part

b of the beam B is curved downwardly and forwardly to its lower end b' , where it is fixed to the scoop A by means of the bolt b^2 , which bolt also fixes the forward end of the runner C to the beam and shovel. The runner C, of rigid metal, is curved upwardly and forwardly at its rear end to facilitate drawing the digger backwardly, and is connected with the scoop A in such manner as to hold the scoop when in operation in the inclined position shown best at Fig. 2.

The inner or adjacent ends of the bars D are attached to the rear end part of the beam B by means of a clip E and bolt e , which clip binds the upturned ends of the bars D against the sides of the beam. The bars D extend laterally, downward, and outward in opposite directions from the beam B and for purposes hereinafter described are located in a plane above the highest part of the scoop A. The central screen-finger g is fixed at its forward end to the lowest part of the rear end of the scoop A by the bolt b^2 , and is fixed at its rear end to the rear part of the beam A by means of the clip E, which receives its downturned end between the forward part of the clip and said beam. The series g' of screen-fingers g^2 at each side of the finger g are bolted at their forward ends to the the scoop A and extend backwardly and upwardly and diverge toward their rear ends, in order to give greater width to the two series of fingers at their rear than at their forward ends. The rear ends of one series of the fingers g^2 are bolted to one of the bars D and those of the other series to the other bar D. Handles H and braces h are fixed to each other and to the beam B in an ordinary manner. The forward ends of the screen-fingers being, as shown and described, fixed to the rear side of the laterally-curved scoop A will together form at their forward end parts a trough-shaped passage-way (see Fig. 2) for the potatoes, soil, weeds, and debris, which are raised by the scoop A as it passes forwardly beneath them in operation. By reason of the rear ends of each series of screen-fingers being fixed to a downwardly-inclined bar D, as shown at same figure, said trough-shaped passage-way will a short distance in rear of its forward end be divided in such manner that the potatoes, soil, weeds, and debris will pass to each side of the finger

g as the two series of screen-fingers pass beneath them by the forward movement of the digger.

As the scoop A moves forwardly in operation it will pass beneath the hills of potatoes, and the potatoes, together with the soil, weeds, tops, and debris, will be forced upwardly and over the screen-fingers as the digger passes beneath them. The trough-shaped forward part of the two series of screen-fingers will guide said material centrally of the screen-fingers a short distance, whence it will be forced upwardly by the passage of the upwardly-inclined rear parts of the screen-fingers beneath it. As such material passes upwardly over the two series of screen-fingers toward their higher parts it will by its own gravity, by the forward movement of the digger, and by sliding and rolling thereover, tend toward discharge at both sides of the screen-fingers, and the soil be thereby completely loosened, so that a greater part of it will fall through between the screen-fingers, together with many of the smaller potatoes, while the remainder of the potatoes will pass off the sides of the series of fingers and all be spread out in a swath, widened and thinned by the wider rear part of the series of screen-fingers to such an extent as to expose all the potatoes to view, so that they may be easily collected, the greater part of the potatoes being discharged in lines at the sides of the series of screen-fingers. The weeds, roots, potato-tops, and the lighter debris will to some extent cling together and pass upwardly over the finger *g* or higher part of the screen-finger passage-way and be discharged laterally from the higher rear end part thereof.

The essential feature of our invention, it will thus be seen, rests in a composite structure in which the parts are so disposed that the curved rear part of the beam B is entirely beneath and in rear of the finger *g* and the two series *g'* of fingers, whereby this part of the beam will not interfere with the free passage of the soil, potatoes, and weeds rearwardly and upwardly over the screen-fingers and bar *g*, and in which the screen-fingers are fixed at their forward ends to the scoop, which is curved laterally, so that the forward end parts of each series *g'* of screen-fingers, considered as a body or surface, inclines downwardly from its outer side toward its inner side, or side next to the central finger *g*, which finger *g* operates in combination with both series *g'*. This downward and inward inclination of each series of screen-fingers at and near their forward end parts forms a trough-

shaped passage-way for the potatoes, soil, and debris toward the rear end parts of the two series of screen-fingers, which rear end parts of each series *g'* incline downwardly and outwardly from their adjacent sides, or from the fingers *g'*. All of the screen-fingers incline upwardly from their forward ends to their rear ends, and are divergent from near their forward ends to their rear ends, so that the two series of screen-fingers are wider at their rear ends than at their forward ends.

Constructed as described, as the digger passes forwardly in operation the scoop will raise the potatoes, soil, and debris, and the screen-fingers passing beneath same will raise them toward their higher rear end parts, over which they will roll and slide, partly pass through and partly pass outwardly and downwardly, and, as hereinbefore described, be pulverized, and the potatoes, soil, and debris be spread and deposited in a swath considerably wider and shallower or thinner than the space occupied by the same material before being operated on by the potato-digger, and the potatoes be thereby deposited mostly in lines from the outer sides of the two series of screen-fingers and the remainder exposed in the upper part of the swath of soil and debris.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a potato-digger and in combination substantially as described, the beam B having a curved rear part, the scoop A fixedly secured on the end of the beam, the downwardly-inclined runner C located below and secured to the end of the beam its rear end being curved upwardly, the inclined bars D on the beam and the fingers extending from the scoop to the bars D.

2. In a potato-digger, the combination with the curved beam, of the scoop A on its end, a central finger *g* connected to the scoop having a turned rear end, the side fingers connected to the scoop, the downwardly-inclined side bars D, having their inner ends bent at an angle and resting against the beam and the clip E spanning the beam, the inner end of finger *g* and the angular portions of the bars D, whereby the same are held firmly on the beam, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM F. MAVES.
CHRIST MAVES.

Witnesses:

JOHN BRONNER,
JOHN GRABBE.