

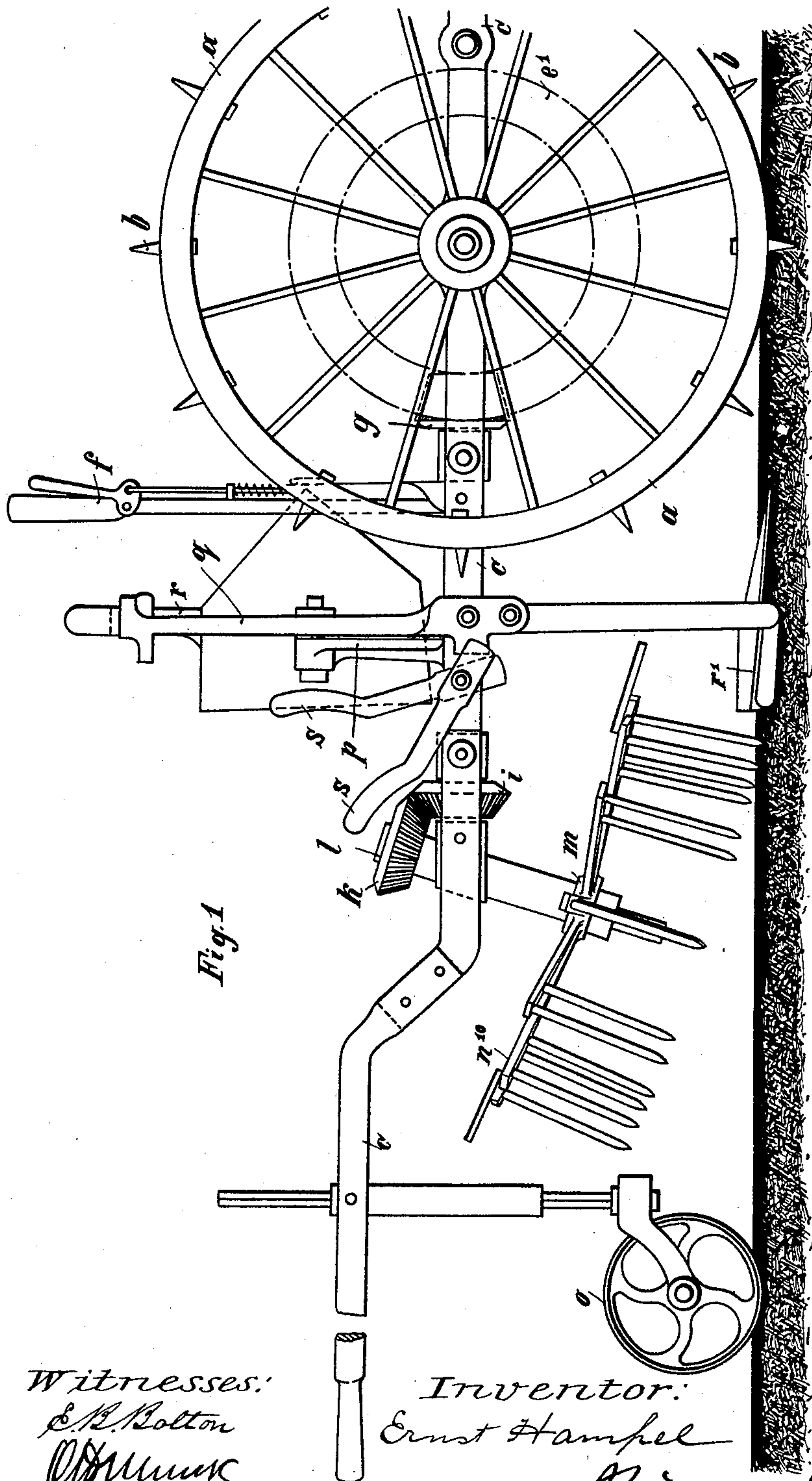
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3 Sheets—Sheet 1.

E. HAMPEL.
POTATO DIGGING MACHINE.

No. 605,871.

Patented June 21, 1898.



Witnesses:
E. B. Bolton
O. Munk

Inventor:
Ernst Hampel

By Reynolds & R
his Attorneys.

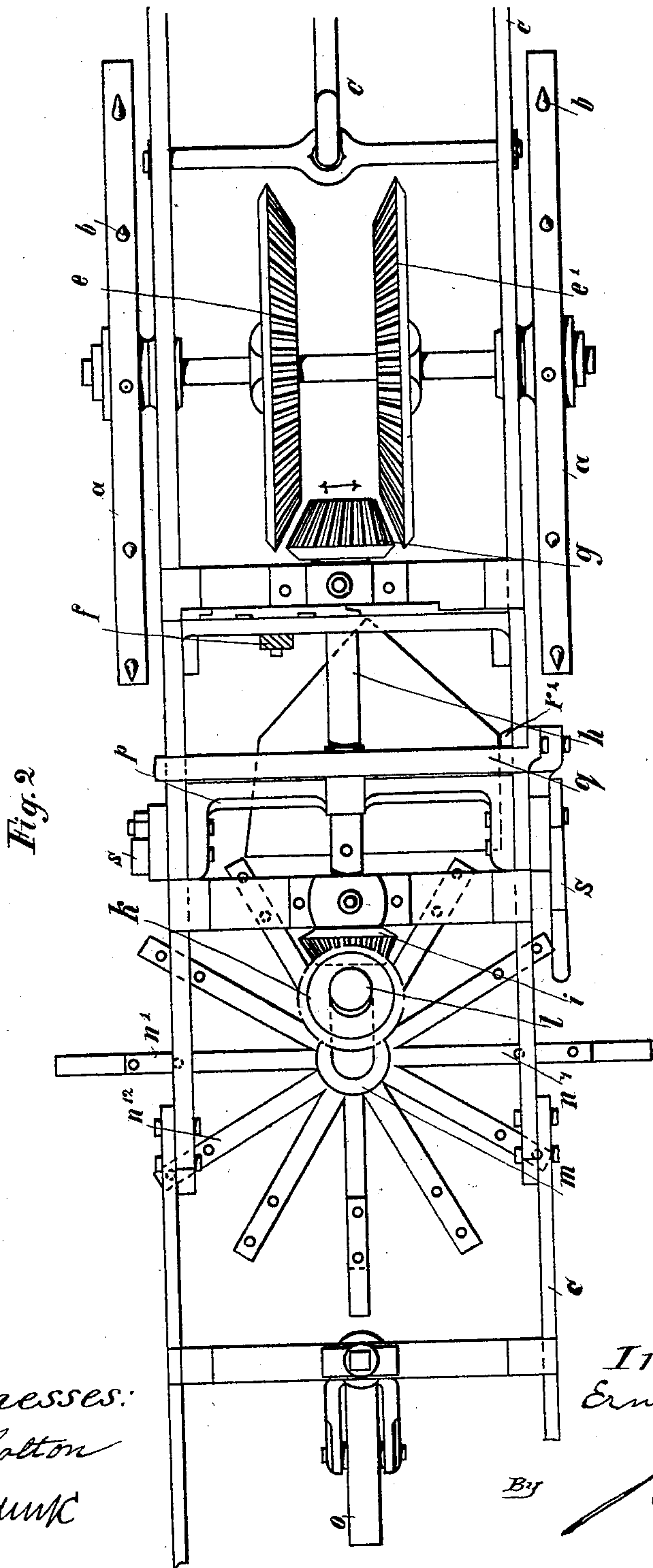
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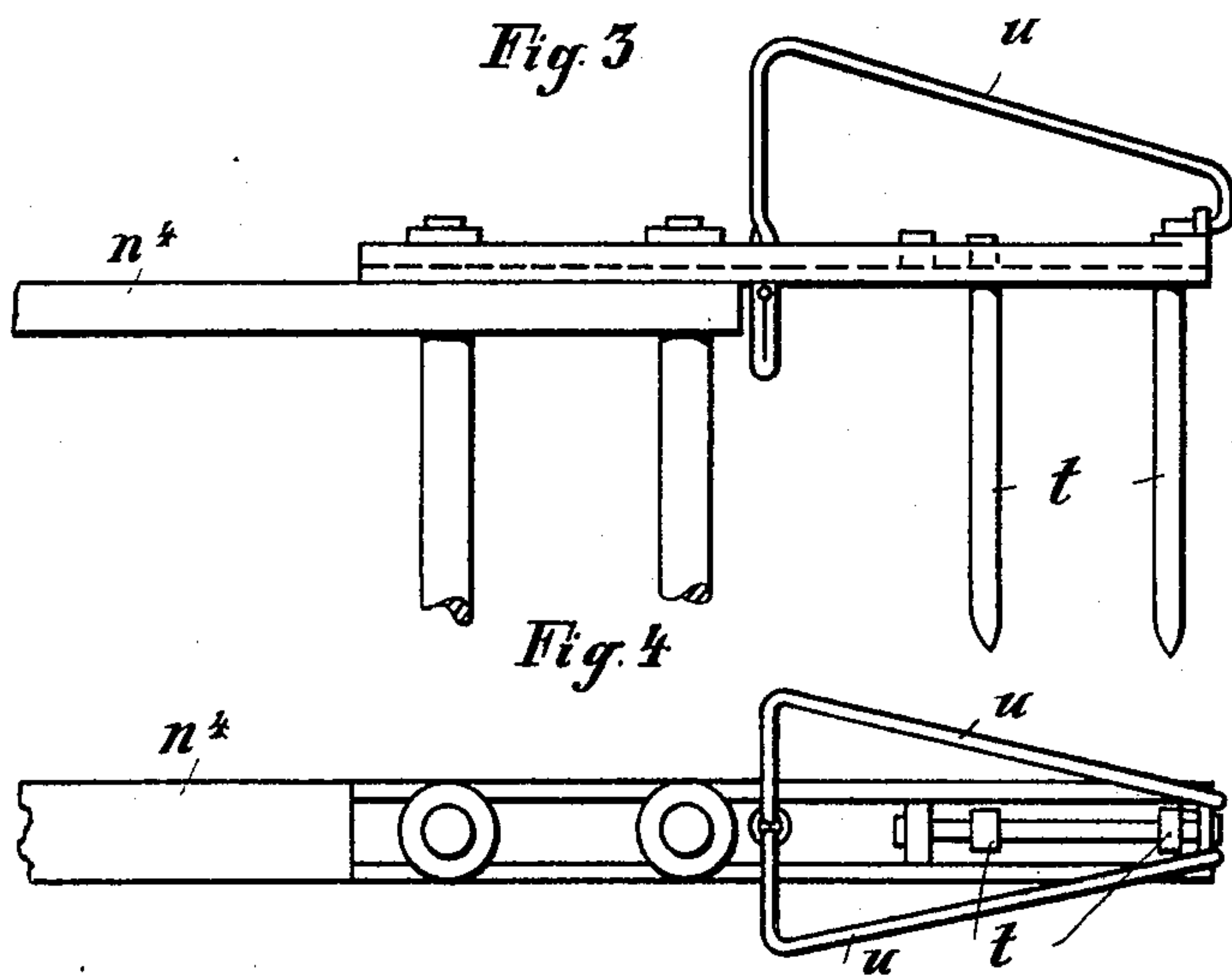
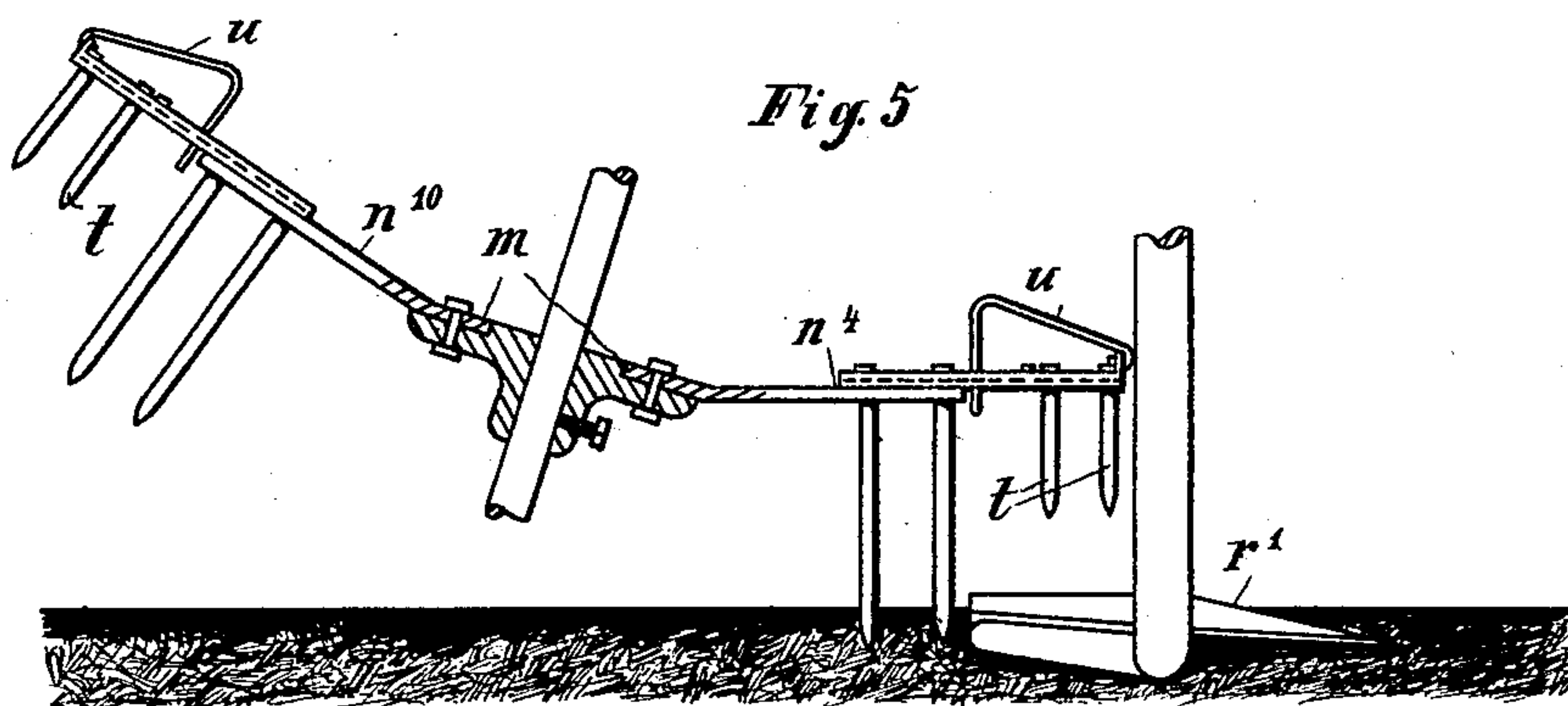
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Witnesses:

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UNITED STATES PATENT OFFICE.

ERNST HAMPEL, OF HAUNOLD, GERMANY.

POTATO-DIGGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 605,871, dated June 21, 1898.

Application filed October 9, 1897. Serial No. 654,710. (No model.) Patented in Germany September 30, 1897, No. 94,501.

To all whom it may concern:

Be it known that I, ERNST HAMPEL, a subject of the King of Prussia, German Emperor, residing at Haunold, Prussia, Germany, have
5 invented a certain new and useful Improvement in Potato-Digging Machines, of which the following is a specification.

The invention has been patented in Germany, No. 94,501, dated September 30, 1897.

10 This invention relates to that class of agricultural machines used for digging out or extracting potatoes.

15 The features of invention reside in the combination and arrangement of parts hereinafter described, and particularly pointed out in the claims.

The method of carrying this invention into effect is illustrated in the accompanying drawings, as follows:

20 Figure 1 is a side elevation of the machine. Fig. 2 is a plan. Figs. 3 and 4 are respectively elevation and plan of the portion of the harrow which does the weeding. Fig. 5 is a vertical section showing the complete harrow in
25 detail.

On reference to the drawings it will be seen that a frame *c'* carries two traction-wheels *a a*, fitted with suitable spiked projections *b*, which grip in the soil. These spiked
30 projections *b* may be of any suitable form capable of withdrawal from the soil as the machine travels forward. On the front of the frame a draw-bar *c* for yoking the team to is provided. Upon the axle *d* of the wheels
35 *a a* two bevel spur-wheels *e e'* are keyed, and situated between these spur-wheels is a small bevel-wheel *g*, which can be made to engage, as required, with either of the wheels *e e'* by
40 means of the lever *f*, moving the spur-wheel *g* to one side or the other. The small wheel *g* is keyed upon one extremity of a shaft *h*, while at the other extremity a similar bevel-wheel *i* is fixed, which in turn gears with a
45 bevel-wheel *k*, fixed upon the top end of a shaft *l*, rotating in suitable bearings on the framework and at an angle with the ground, as clearly shown in Fig. 1. This shaft *l* carries the circular harrow *m*, so that when the
50 machine is drawn forward the harrow may be rotated in either direction by putting the wheel *g* into gear with either of the bevel-pinions *e e'*, the direction being changed ac-

cording to the side upon which it is desired to place the potatoes.

The circular harrow *m* consists of twelve 55 radiating arms *n'* to *n*¹², inclusive, and each of these arms has two steel teeth *t' t'* attached to its extremities in the positions clearly shown in the drawings, while fixed to the ends of these arms *n'* to *n*¹², inclusive, are extension-pieces carrying short steel teeth *t*, which
60 operate to remove the weeds and potato-tops in a manner hereinafter described, the teeth *t'* acting upon the soil to extract potatoes. The shorter teeth *t*, which tear away the potato-tops and weeds and throw them on one
65 side, may be arranged to oscillate and facilitate the falling off of the tops and weeds from the teeth, and in order that these weeds and tops may be conveyed toward the outside and
70 not fall in upon the teeth *t'*, which are harrowing the potatoes, two curved ribs *u* are fixed over the extension, as shown on Figs. 3, 4, and 5, which lead off the weeds and tops
75 in an upward direction away from the harrow-teeth *t'* until they are carried round and cast off to one side of the machine. The circular harrow may be arranged to enter to any re-
quired depth in the soil by altering the depth of the plowshares *r r'* and the depth of the
80 following wheel *o*, which slides on a bracket *o'* suitable for this purpose.

The plowshares *r r'* break up and loosen the soil in front of the harrow *m*, and these shares are applied in such a manner to the
85 machine that they may be lifted, as required, out of the soil on either side. The shares are fixed to a share-holder *q*, which in turn rotates upon a supporting-block *p*, fastened to the framework *c'*. Levers *s s*, pivoted upon
90 the side of the framework *c'*, are so disposed that in one position they hold either share-holder rigidly down in the soil, but when released they allow the share-holder to swivel to either side, lifting out either share, as may
95 be required.

The operation of the hereinbefore-described mechanism is as follows: The pulling of the team of horses sets in motion the machine, and the bevel-wheels *e e'*, through the bevel-
100 cogs *g*, *i*, and *k*, rotate the inclined shaft *l*, carrying the harrow *m*. The ground is cut up by the plowshares, and as the teeth *t*, which remove the weeds and potato-tops, are in ad-

vance of the harrow-teeth *t* the loosened soil and the absence of the weeds allow these harrow-teeth to easily and rapidly extract the potatoes and deposit them in heaps on either side of the machine, according to the direction of rotation of the harrow. Thus the amount of tractive force on the driving-wheels *aa* is very slight in comparison to the machines at present in use, because the circular harrow does not, like the wheel now used, exert its power upon a fixed body, but upon a comparatively free one, as the plowshares have loosened the soil and the extensions carrying the teeth *t* have removed the potato-tops and the weeds.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination in a potato-digger, the frame, a rotary harrow, the shaft therefor and the two sets of teeth extending downwardly

and substantially parallel with the shaft of the rotary harrow, said teeth being long and short, the short teeth being at a greater distance from the shaft than the long teeth, substantially as described.

2. In combination in a potato-digger, the frame, a rotary harrow, a shaft therefor, the two sets of teeth extending downwardly and substantially parallel with said shaft, some of said teeth being shorter than the others, and being arranged at a greater distance from the shaft than the long teeth and an inclined rod over the short teeth adapted to take the weeds and potato-tops and direct them laterally, substantially as described.

In witness whereof I have hereunto set my hand, in presence of two witnesses, this 16th day of September, 1897.

ERNST HAMPEL.

Witnesses:

MAX HIRSCHFELD,
LOUIS K. VLATZ.