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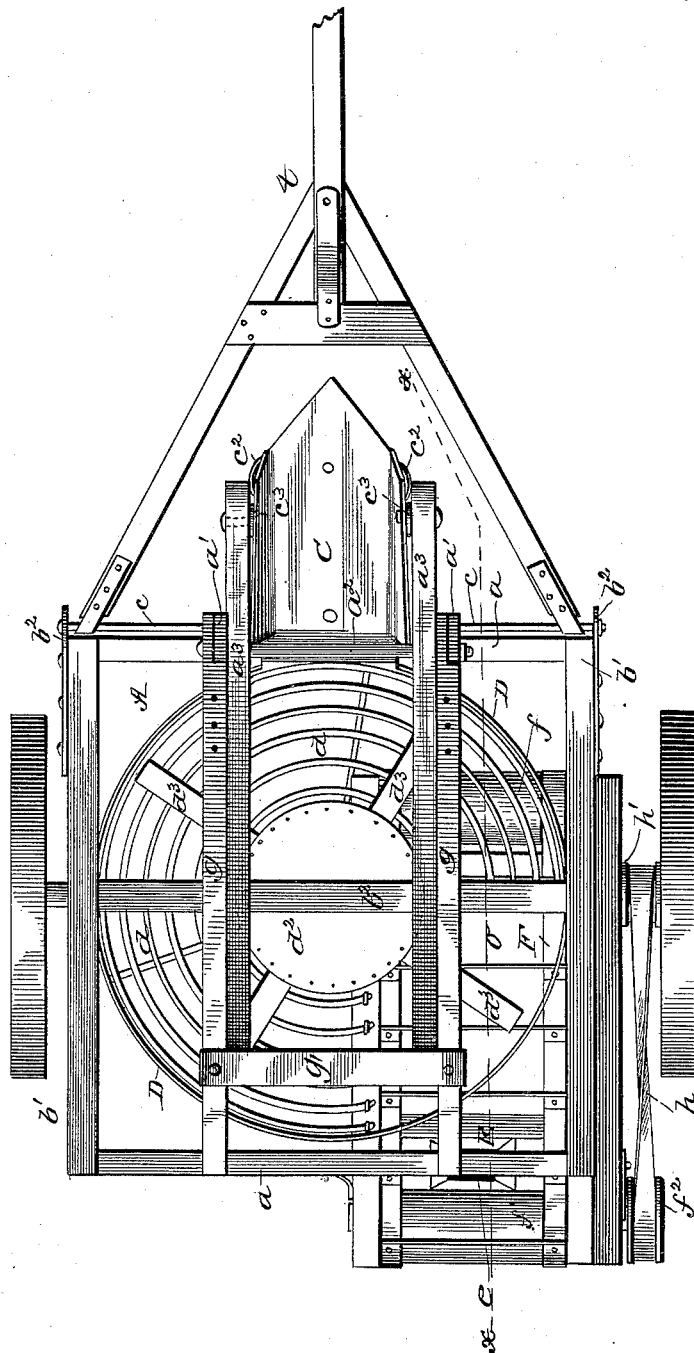
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J. H. PRIESTLEY.
POTATO DIGGER.

No. 417,883.

Patented Dec. 24, 1889.

Fig. 1.



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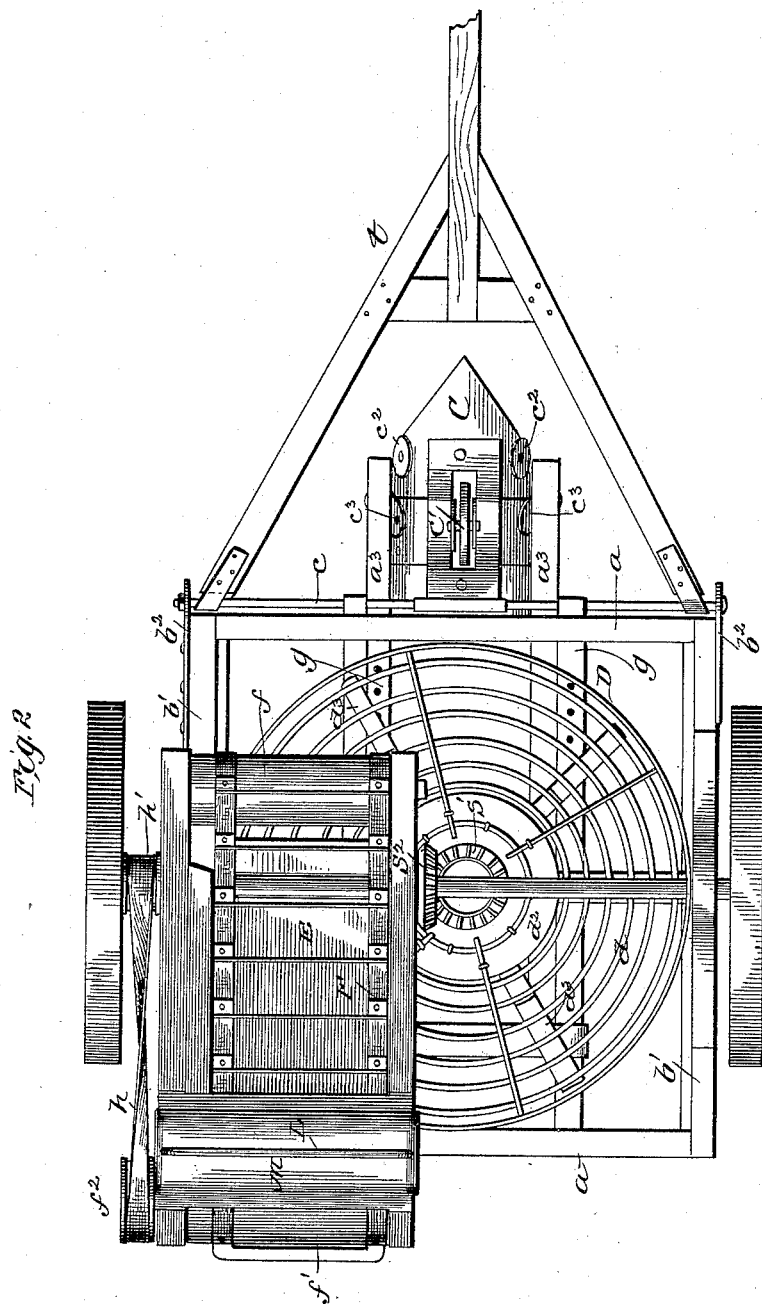
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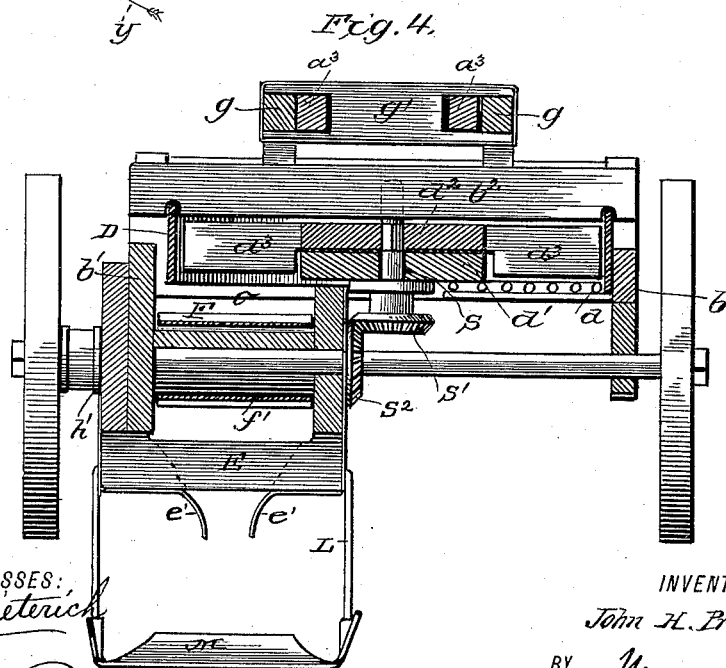
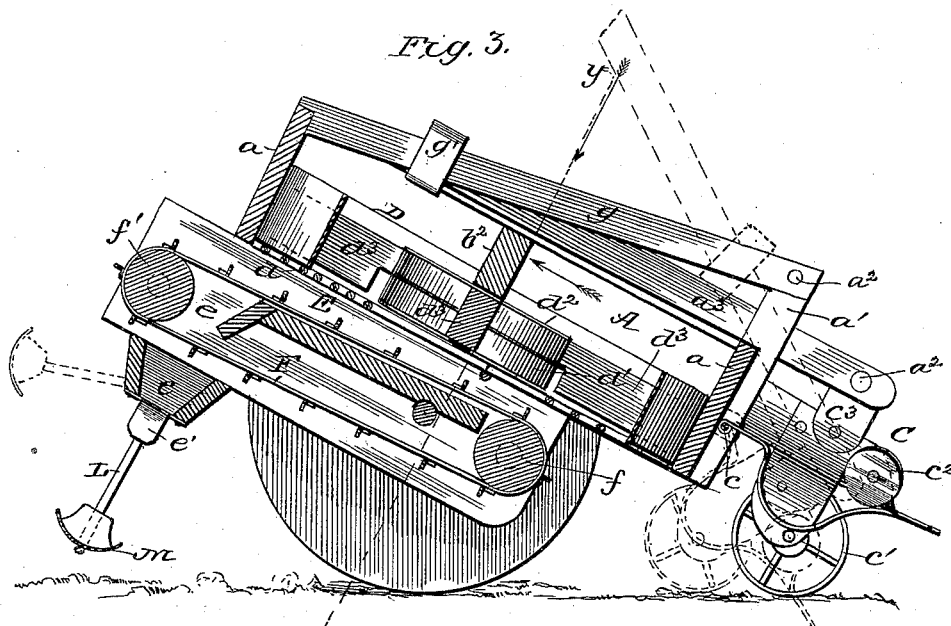
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UNITED STATES PATENT OFFICE.

JOHN H. PRIESTLEY, OF MERIDEN, IOWA.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 417,883, dated December 24, 1889.

Application filed May 10, 1889. Serial No. 310,329. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. PRIESTLEY, of Meriden, in the county of Cherokee and State of Iowa, have invented a new and useful Improvement in Potato-Diggers, of which the following is a specification.

My invention relates particularly to that class of potato-diggers in which the potatoes are dug and carried to a suitable cleaning-hopper and then carried off and bagged; and it consists of a frame suitably mounted upon wheels, carrying an adjustable scoop or digger at its front end, a sifting-hopper located within the frame, arms revolving in said hopper, a carrier for removing the potatoes to the bagging-chamber, and an adjustable holder for supporting the bags while being filled.

It consists, further, in certain details of construction and combination of parts, as will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view. Fig. 2 is a bottom plan view. Fig. 3 is a section on line X X of Fig. 1. Fig. 4 is a section on line Y Y of Fig. 3.

In constructing my improved digger I employ a bottomless frame A, suitably mounted upon wheels and constructed of the front and rear cross-pieces *a a* and side pieces *b' b'*. At the forward end of the side pieces *b' b'* are secured suitable eyes or flat metallic apertured straps *b²*, adapted to receive a cross-rod *c*, to which is connected a tongue *t* in the usual manner. The front cross-piece *a* is cut away at its central portion, and to the front of and opposite said opening is arranged a scoop C, said scoop being preferably pivoted at its rear end to the cross-rod *c*. Upon the under side of the scoop C is journaled a wheel or roller *c'*, held within suitable guides, which runs upon the ground when the scoop is elevated or at work and being transported from place to place. To the front edges of the upright sides of the scoop are secured the revolving cutters *c²*, which serve to cut away the vines surrounding the potatoes when digging the potatoes. At either side of the central opening in the front cross-piece *a* are secured the upright standards *a'*, supporting a horizontal shaft *a²* above the frame, and to which are pivoted the levers *a³*, the forward ends of which are connected with the scoop C by means of the pivotal link-levers *c³*. Con-

nected with the upper ends of the uprights *a'* and extending to the rear cross-piece *a* are the inclined guide-pieces *g*, upon which slides the keeper and adjustable stop *g'*, the apertures of said keeper being sufficiently large to permit it to slide over the rear ends of the movable levers *a³* when they are brought into coincidence with the guide-pieces. When the levers are brought to this position, the scoop will be elevated and the machine may be moved from place to place without inconvenience, and these levers may be locked by pins or bolts passing through apertures in the keeper and engaging with holes made in the guide-pieces *g* near their rear ends.

When the scoop is to be used for digging, the pins are withdrawn, the keeper moved forward over the guide-pieces, and the lever-arms are moved to an approximately upright position, and held in such elevated position by locking the keeper at the forward portion of the guide-pieces, as clearly shown in Fig. 3, a series of holes being formed in the forward ends of the guide-pieces, whereby the keeper and stop may be adjusted to elevate the levers to any desired angle. Within the frame A is secured a hopper D, preferably circular in shape and opened at its front side to coincide with the opening in the front cross-piece of the frame, whereby the potatoes as they are brought up by the scoop C are introduced into the hopper D. The hopper is provided with a grated bottom *d*, composed of a series of parallel bars arranged concentric to the circular sides of the hopper; but any other form of grated bottom may do as well as that shown in the drawings. At the center of the bottom *d* is rigidly secured a flat circular disk *d'*. Passing through the disk *d'* is a vertical shaft S, said shaft carrying a bevel-gear S' on its lower end adapted to engage with a bevel-gear S², keyed upon the axle, and receive motion from the same. The upper end of the vertical shaft S is journaled in a cross-beam *b²*, secured to the side pieces *b* of the frame, and keyed upon the vertical shaft S between the cross-beam *b²* and the rigid circular disk *d'* is a revolving circular disk *d²*, provided with radiating cleaner-arms *d³*, extending outwardly near to the circular sides of the hopper and downwardly to the bottom of the same. By this arrangement all potatoes, no

matter how small, will be carried around by the arms d^3 and the dirt thoroughly sifted from the same.

A portion of the bottom, preferably the rear side portion, is cut away, forming an opening o , through which the potatoes, after being thoroughly cleaned, are allowed to pass. Located directly beneath the opening o is an inclined trough E , secured to the frame and formed at its rear end with a bagging-chamber e , the lower side of which is apertured and provided with the supporters $e' e'$, arranged on either side of the aperture and adjacent to the same, and to which the mouth of the bag may be attached when desired.

To carry the vines and weeds that may be brought into the sifting-hopper and to facilitate the movement of the potatoes toward the bagging-chamber, I employ a slatted endless carrier F , which passes through and beneath the trough E and over rollers $f f'$, journaled, respectively, in the front and rear ends of the trough-frame, the roller f' being extended toward the outer side or carrying a pulley f^2 upon its outer end, which end or pulley is connected by the cross-belt h with a pulley h' , keyed upon the axle. By this arrangement the potatoes will be carried back and dropped into the bagging-chamber e , while the weeds and vines will be carried to the rear of the machine and dropped upon the ground.

Pivotaly secured to the bagging-chamber is a bail L , essentially rectangular in shape, the horizontal member of said bail being arranged parallel with the longitudinal axis of the chamber e . Sliding upon the vertical sides of the bail is a vertically-adjustable bag-holder M , U-shaped in cross-section, adapted to support a bag beneath the opening of the bagging-chamber, the mouth of the bag being secured to the supporters e' . The holder M may be raised or lowered upon the bail L to suit the depth of the bag, and, if desired, the bag may be removed and the potatoes caught in the holder and dropped upon the ground by swinging the bail as shown in dotted lines, or the holder may be swung up out of the way and the potatoes dropped directly upon the ground.

Having described the construction of my improved digger, I will now describe its operation. The arms or levers being raised to their highest position and securely locked by the adjustable stop g' , the digger is ready for operation. Upon being drawn over the rows of potatoes the pointed end of the scoop will run beneath them in the usual manner and the rotary cutters c^2 , carried in the front ends of the vertical sides, will cut away the weeds and vines surrounding the potatoes. The potatoes thus dug, together with the earth surrounding them, and in many instances the vines, are carried up the scoop and introduced into the hopper D through the opening in the center of the front side of the frame. The machine being in motion,

the radiating arms d^3 are rapidly rotating in the direction shown by the arrow and the potatoes, with the dirt and vines, are carried around over the grated bottom d . By this operation the dirt is thoroughly sifted from the potatoes and dropped upon the ground, while the potatoes and vines are carried around until they reach the opening o , when they pass through, the potatoes passing through the slatted carrier and dropping upon the bottom of the trough E , while the vines usually rest upon the slats of the endless carrier, when they are carried to the rear of the machine and dropped upon the ground. As the endless carrier lies very close to the bottom of the trough E , the potatoes will be quickly swept down into the bagging-chamber. The potatoes, after reaching the bagging-chamber, pass through an opening made in the bottom of the same and into a bag which is held beneath said opening by the holder M and supporters e' , the holder being vertically adjustable to suit the depth of different bags. When it is desired to do away with bagging the potatoes, the bag may be removed and the potatoes caught in the holder and then dropped on the earth by swinging the bail as shown in dotted lines, and the potatoes dropped in piles upon the field.

Having thus described my invention, what I claim as new is—

1. In a potato-digger, the combination, with a frame having an opening in its front side, of a scoop pivoted to said frame opposite said opening, upright standards secured to the front side of the frame on either side of the opening and supporting a horizontal shaft above the frame, arms or levers pivoted to said shaft and connected with the scoop at their front ends, guide-pieces connected with the upright standards and the rear side of the frame, and an adjustable keeper and stop sliding on said guide-pieces and adapted to lock the scoop in either a raised or lowered position, substantially as shown and described.

2. In a potato-digger, the combination, with a sifting-hopper having an opening in its bottom, of a trough arranged beneath the said opening, a bagging hopper or chamber arranged to the rear and below the trough, a slatted endless carrier running through the chamber and the trough and beneath the same, and belt and pulley arranged, as described, for operating the carrier, substantially as and for the purpose described.

3. In a potato-digger, the combination, with a bagging-chamber having an apertured bottom and suitable supporters arranged adjacent to said opening, of a bail pivoted to the hopper and a vertically-adjustable holder sliding upon the bail, substantially as shown and described.

4. In a potato-digger, the combination, with a sifting-hopper having an opening in its bottom for the discharge of potatoes, of a trough arranged beneath said opening, a bagging-

chamber located to the rear and below the trough, an endless carrier arranged and operated as described, and a vertically-adjustable bag-holder pivotally secured to the bagging-chamber, substantially as shown and described.

5 5. In a potato-digger, the combination, with a frame suitably mounted upon wheels, of a sifting-hopper located in the frame and
10 formed with an opening in its bottom, a revolving disk carrying radiating arms revolving within the hopper, shaft and gears arranged, substantially as described, for imparting motion to the arms, an endless carrier
15 arranged beneath the opening in the hopper, and belt and pulleys, all arranged and adapted to operate substantially as shown and described.

20 6. In a potato-digger, a scoop pivoted to the front side of a frame, provided with a roller on its under side suitably mounted in guides, and rotary cutters secured to the front edges of the upright sides of the scoop, substantially as shown and described.

7. In a potato-digger, the combination, with 25 a frame having an adjustable scoop secured to its front side, of a hopper held within the frame and having a grated bottom provided with an opening, a revolving disk carrying radiating arms revolving in the hopper, shaft and
30 gears for operating said disk and arms, a trough arranged beneath the opening in the bottom of hopper, a bagging-chamber arranged to the rear and below the trough, having an opening in its bottom, supporters arranged adjacent
35 to said opening, a bail pivotally secured to the bagging-chamber, a vertically-adjustable holder sliding on said bail, a slatted endless carrier arranged substantially as described, and belt and pulleys for operating
40 said carrier, all arranged and adapted to operate substantially as and for the purpose described.

JOHN H. PRIESTLEY.

Witnesses:

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