(No Model.) 3 Sheets—Sheet 1.

C. W. KATTELL.

POTATO DIGGER.

No. 346,819. Patented Aug. 3, 1886.

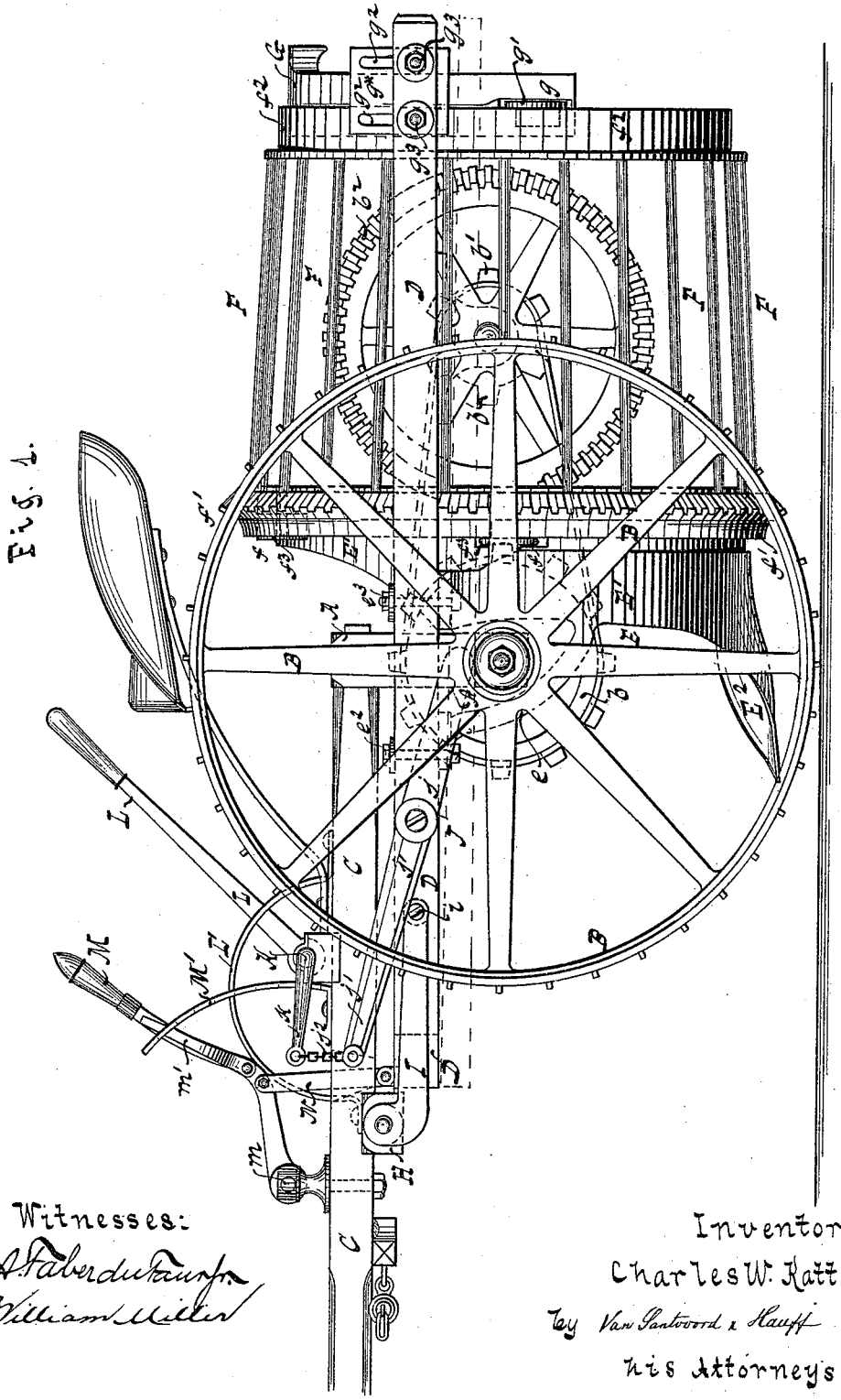

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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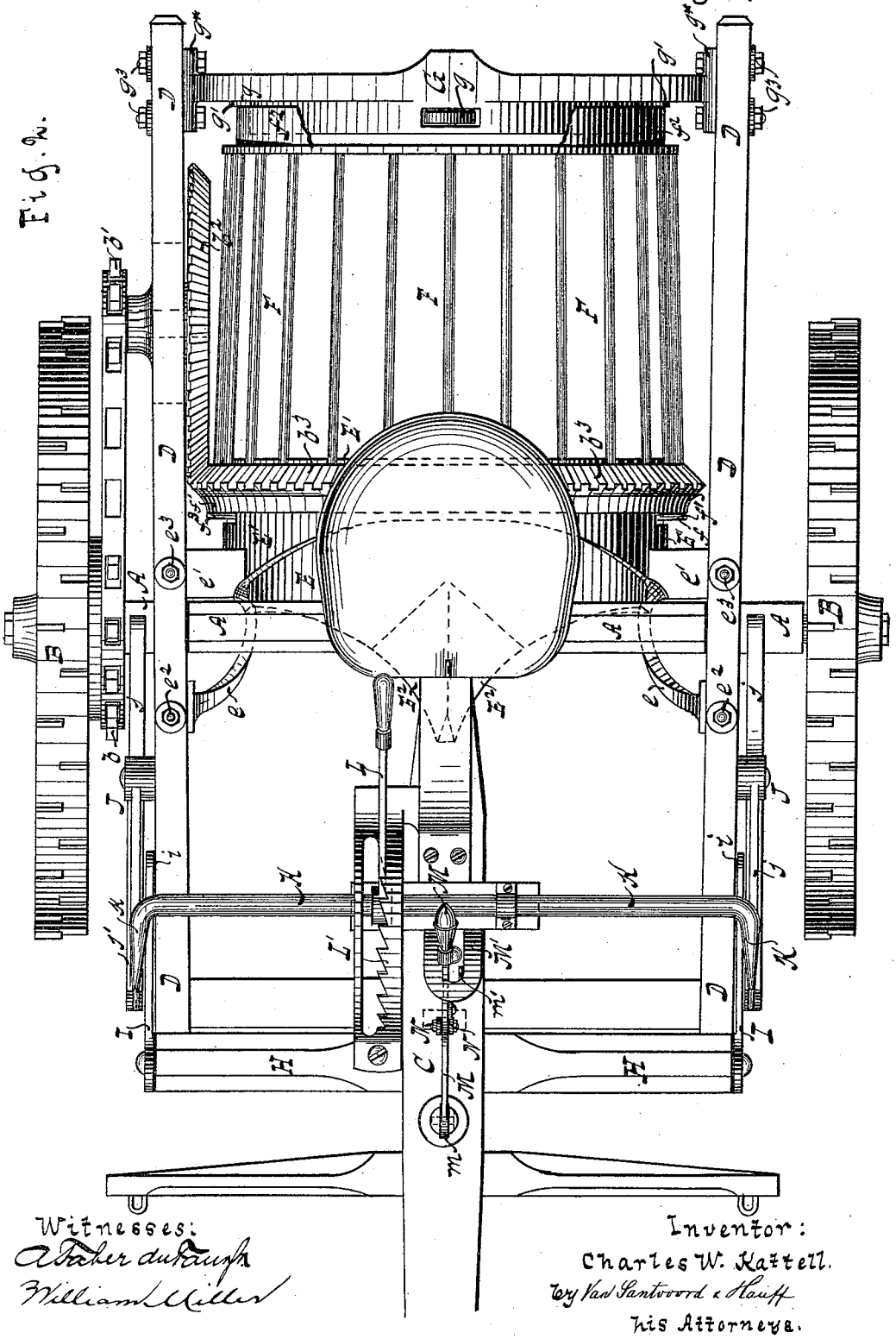
Fig. 2.



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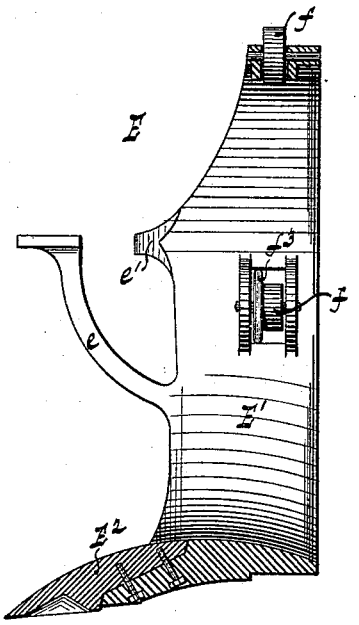
(No Model.) 3 Sheets—Sheet 3.

C. W. KATTELL.

POTATO DIGGER.

No. 346,819. Patented Aug. 3, 1886.

Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES W. KATTELL, OF NEW YORK, N. Y.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 346,819, dated August 3, 1886.

Application filed October 7, 1885. Serial No. 179,247. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. KATTELL, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Potato-Diggers, of which the following is a specification.

This invention has for its object to provide novel mechanism for digging potatoes, whereby the plow and revolving sifting-cage are placed directly under control of the operator, and the plow-frame serves as a support for one end of the cage.

The object of my invention I accomplish in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of a potato-digger embodying my invention, the swinging frame being shown in its elevated position. Fig. 2 is a plan view thereof. Fig. 3 is a central transverse cross-section of the plow.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the axle of the potato-digger.

B B are the wheels journaled to the axle, and C is the draft-pole, which is rigidly secured to the axle, all constituting an ordinary-wheeled truck.

D is a supporting-frame, to which is rigidly secured the plow E, which, in the example shown in the drawings, consists of a circular frame, E′, and a share or nose, E^2, projecting therefrom, the said share or nose being made of wrought-iron or steel, while the circular frame can be made of cast-iron, the two being bolted together in the usual manner.

F is the sifting-cage, which is open at both ends, and is supported at its discharge end upon rollers *g*, having bearings in a segment, G, extending across and attached to the frame, the said segment being adjustably secured in regard to height in order that the sifting-cage F can be more or less inclined to the horizontal plane. This adjustment can be accomplished by casting the segment G with projecting plates g^*, having vertical slots g^2, Fig. 1, therein, which are engaged by bolts g^3, extending through the supporting-frame D, or by other well-known means.

At its receiving end the sifting-cage F is supported upon rollers *f*, journaled in the circular frame of the digger-share, the said cage being provided at both its ends with suitable collars or rings, $f' f^2$, which rest upon the rollers, while, in order to prevent the cage from shifting longitudinally, the rollers which bear against the ends of the rings $f' f^2$ are provided, respectively, with flanges f^3 g', against which the edges of the rings bear. It must be observed that only three rollers are placed on the circular frame E′, the lower rollers being omitted, and that the diameter of the ring is somewhat larger than that of the circular frame F′, which is necessary to allow the cage to be shifted obliquely, as before stated, and as it is also desirable to have the lower portion of the periphery of the ring *f* to bear closely against the circumference of the circular frame E′.

The digger-share is secured to the supporting-frame by means of arms *e e′* extending therefrom, which latter are bolted to the frame at e^2 e^3, and rotary motion is imparted to the sifting-cage from one of the wheels B by means of a chain-wheel, *b*, secured to the one of the wheels which connects with a chain-wheel, *b′*, having a common shaft with a bevel-gear, b^2, which engages with a bevel-gear, b^3, on the cage. However, other means commonly employed for similar purposes can be adopted.

In order that the operator may have perfect control of the plow—that is to say, in order that he may regulate the depth to which the share enters the ground, or that the same, together with the cage, may be raised clear of the ground—I place the swinging frame subject to the action of certain levers, which are actuated by the operator to produce the desired result. It will be observed that for this purpose two motions of the swinging frame D, from which the share and cage are suspended, are necessary—namely, a nearly parallel motion upward, which will eventually clear the plow entirely from the ground, and also a tilting motion about the axle A, which will properly incline the digger-share.

The upward nearly parallel movement of the swinging frame D is accomplished as follows: Near the forward end of the swinging

frame a cross-beam, H, is secured to the pole, the said beam H extending parallel to the end piece of the frame. The swinging frame is connected with this cross-beam by links I, one on each side of the frame, and which are pivoted at *i* to the frame. At a suitable distance back of the points *i* are fulcrumed levers J J, the arms *j j* of which bear upon the top of the axle A, and the arms *j' j'* thereof are connected by chains j^2 j^2, Fig. 1, to arms *k k*, extending outward from a shaft, K, having a bearing in a block secured to the pole C, and which shaft K is turned by a hand-lever, L, extending therefrom and engaging with a tooth-segment, L, which latter retains the lever in any desired position. As shown in the drawings, the lever L is in a position corresponding to the extreme elevated position of the supporting-frame, in which position the plow is entirely clear of the ground. By shifting the lever in the proper direction the frame can be lowered until it bears upon the axle, as shown by dotted lines in Fig. 1, or the plowshare can be retained in any desired horizontal plane by the proper adjustment of the arm.

To cause the plowshare to enter the ground to a greater or less degree, the frame is tilted about the axles by the action of a hand-lever, M, pivoted at *m* to the pole, and which is connected with the forward end of the frame by a link, N, pivoted to the supporting-frame and lever, so that by moving the lever in the proper direction the frame is caused to turn about the axle A as a fulcrum, whereby the plow is inclined. To retain the frame in the tilted position, the lever is subjected to the action of a spring, *m*, which causes the same to engage with one of the notches in a notched segment, M', secured to the pole A in the proper position. When the lever M is depressed while the frame is in an elevated position, the frame then swivels about the fulcrum of lever J as a fulcrum, and the same effect is produced.

The object of my present invention is to obtain a potato-digger in which the position of the plow is directly under the control of the operator, and one in which such operation can be performed quickly and with but little exertion by the operator, while at the same time this digger is characterized by its simplicity of construction.

It must be observed that since the circular frame of the plow extends directly into the cage a smooth and continuous passage is formed for the tubers and the clod dug up by the plow, and there can be no possibility of either potatoes or clod falling between cage and plow as in the ordinary potato-diggers provided with sifting-cages.

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

1. The combination, in a potato-digger, of the rotary sifting-cage with a plow constructed with a circular frame extending into and supporting the front end of the rotating cage, substantially as described.

2. The combination, in a potato-digger, of a rotating sifting-cage, having an annular flange at its front end, with a plow constructed with an annular frame provided at its top portion with friction-rollers, and extending into and supporting the flanged end of the rotating cage, substantially as described.

3. The combination, in a potato-digger, of a wheeled frame, a segmental frame at the rear thereof, a plow arranged at the front and constructed with a circular frame, and a revolving sifting-cage, having annular end flanges, respectively supported by and revolving on the circular frame of the plow and the segmental frame, substantially as described.

4. The combination, in a potato-digger, of a wheeled frame, a segmental frame at the rear thereof provided with friction-rollers, a plow arranged at the front and constructed with a circular frame, carrying friction-rollers, and a rotating sifting-cage, having end flanges supported by and revolving on said rollers, substantially as described.

5. The combination, in a potato-digger, of a wheeled frame, a plow constructed with a circular frame, arms secured to the wheeled frame and to the circular frame for suspending the plow, and a rotating sifting-cage, having its forward end supported by and rotating on the circular frame of the plow, substantially as described.

6. The combination, in a potato-digger, of the wheeled axle, the main frame capable of rising and falling bodily independent of the axle and to rest and tilt upon said axle, with a plow carried by the frame, and a rotating sifting-cage, supported at one end by the frame of the plow, substantially as described.

7. The combination, in a potato-digger, of a wheeled frame, a segmental frame vertically adjustable at the rear of said wheeled frame, a plow carried by the wheeled frame and having a circular frame, and a rotating sifting-cage, supported at its front end by said plow-frame and at its rear end carried by and movable vertically with the segmental frame, substantially as described.

8. The combination, in a potato-digger, of a wheeled axle, a main frame capable of rising and falling bodily independent of the axle and to rest and tilt upon the latter, with the draft-tongue carrying a cross-bar, links pivoted at one end to the frame and at the other end to the cross-bar, levers fulcrumed between their ends to said frame behind the links and having their rear ends resting on the axles, hand-levers connected, respectively, with the forward end of the frame and with the levers on the latter, the plow, and the sifting-cage, substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

CHAS. W. KATTELL. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.