

(No Model.)

G. H. KIDNEY.
POTATO DIGGER.

No. 559,455.

Patented May 5, 1896.

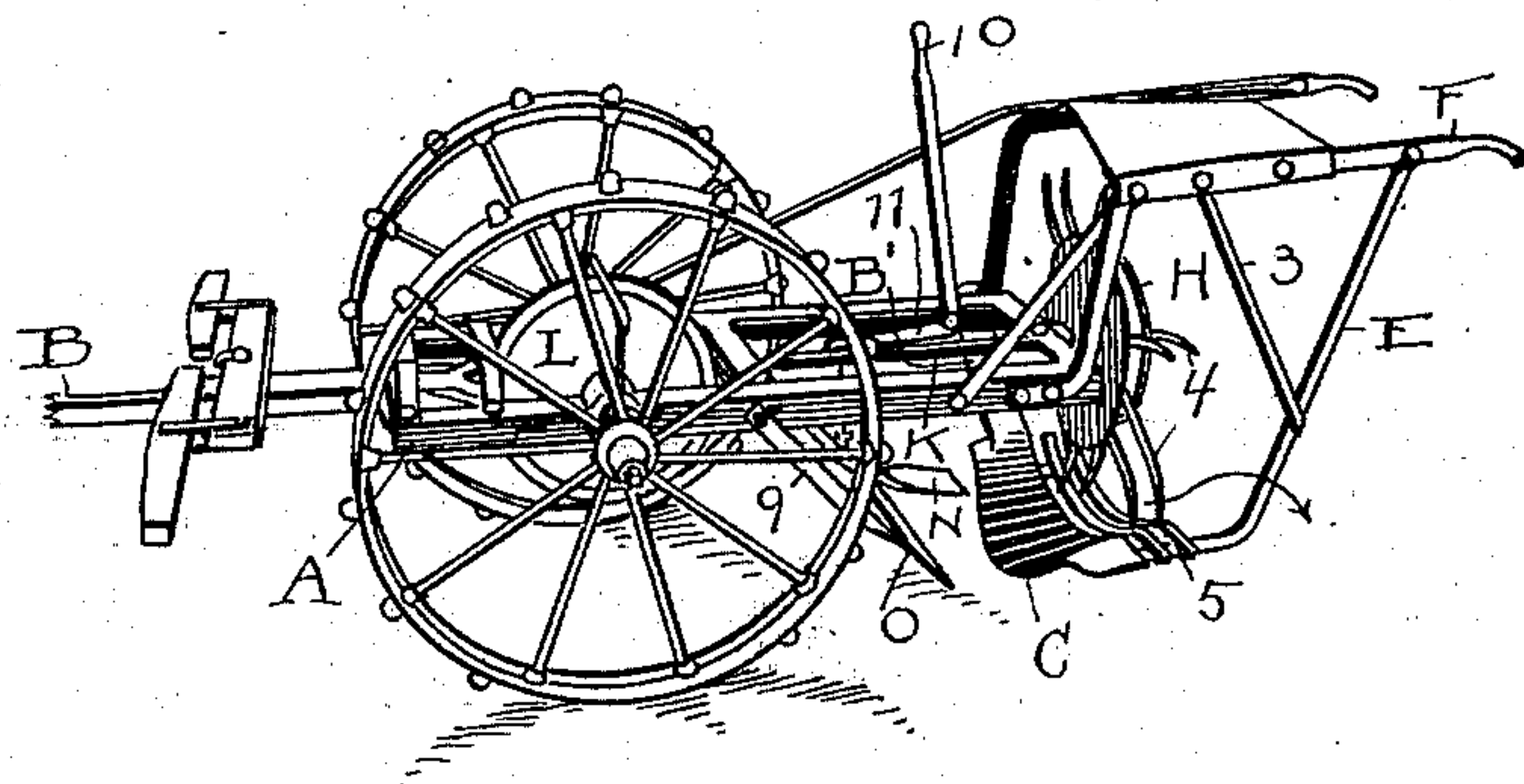


FIG. 1.

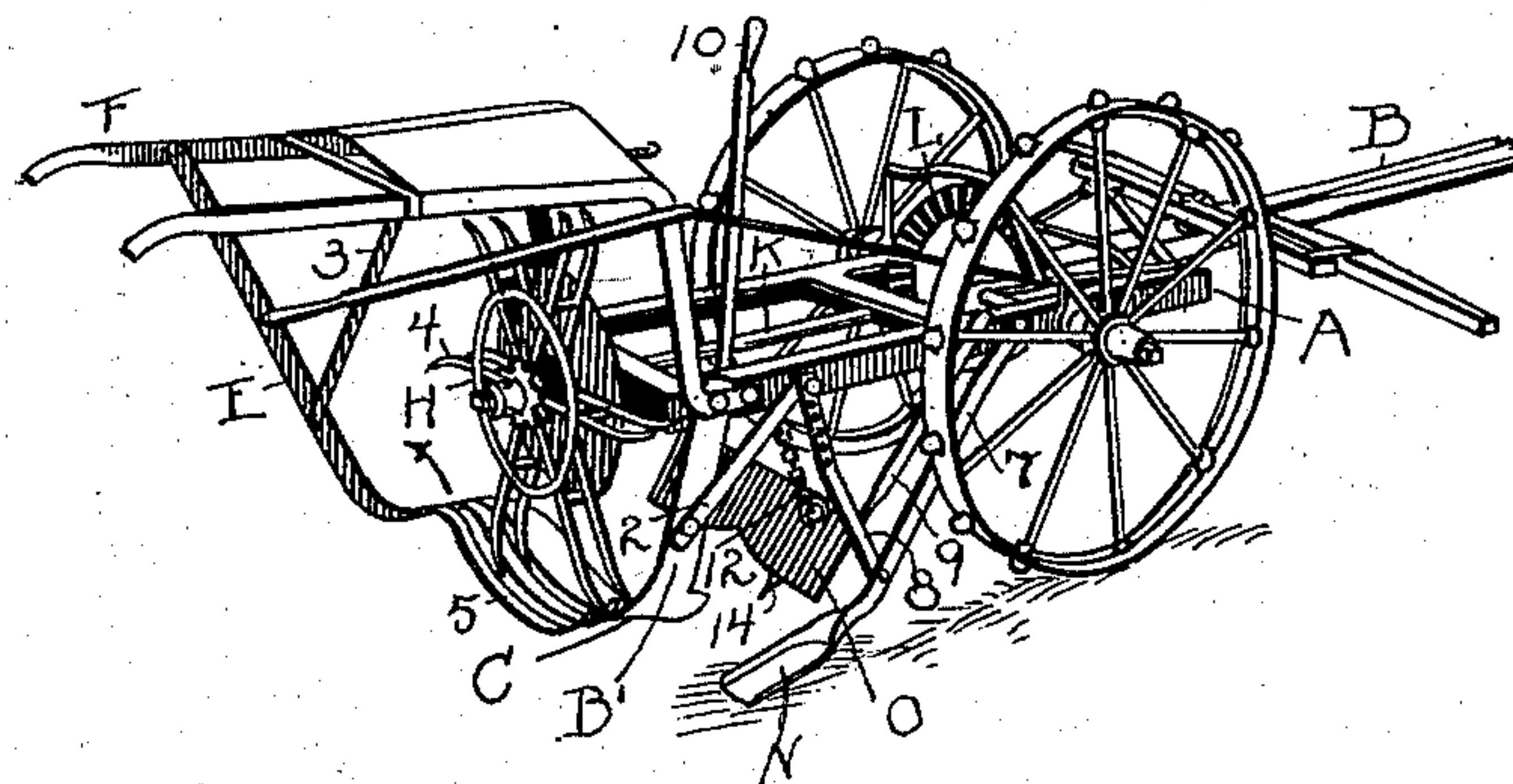


FIG. 2.

ATTEST

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GEORGE H. KIDNEY, OF CLEVELAND, OHIO.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 559,455, dated May 5, 1896.

Application filed January 13, 1896. Serial No. 575,289. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. KIDNEY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Potato-Diggers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to
10 which it appertains to make and use the same.

My invention has reference to potato-diggers, and is an improvement on the machine patented to me on the 5th day of December, 1893.

15 In the accompanying drawings, Figures 1 and 2 are perspective views of the digger from opposite points, as shown and hereinafter more fully described.

A is the main frame of the digger, and B the tongue, and said parts are connected in such way that there is substantial balancing of tongue and frame when the tongue is raised and the frame is in horizontal position; but said mechanism does not enter into the present invention and need not be more definitely described at this time. If preferred, I might dispense with this balancing and support the frame at its rear on one or more casters.

C is the potato-lifter or lifting-scoop. This
30 lifter is set transversely of the line of travel at the rear of frame A and is curved on or about a segment of a circle, so as to bring its center down in position to pass beneath the potatoes in the hill or row and to carry its sides up out of the earth at the sides of the hill or row, and thus cause the lifter to raise as little earth as possible with the potatoes and also give clearance at one side of the machine for the potatoes. As here shown, the
40 said lifter is somewhat narrow as compared with its length and its front or cutting edge has a slightly-developed point or projection at the center somewhat like a shovel-plow. The said lifter is peculiar, also, that while it
45 is deepest at the center, where it passes beneath the potatoes, and is curved upward at the sides of the machine, it still is constructed and arranged to have the potatoes discharged at the side of the machine, over the curved
50 end at that side. To this end I usually make somewhat less curvature of the lifter at the discharge side thereof than on the other side

to promote easy clearance, and leave this side of the lifter unobstructed by standard or support of any kind which will hinder or obstruct the discharge of the potatoes and the casting to one side of the potato-tops and the like, which may be reached by the reel at the rear of the lifter. Said lifter, furthermore, is set at an angle of inclination from front to rear, so that it will carry the potatoes upward to the surface. Then to support the lifter I employ a single standard B', which is fixed to the end of the lifter opposite its discharge end and is attached to frame A at its other end, and a reinforcing-brace 2 serves further to strengthen the said standard B' with respect to the frame and make a very firm support for the lifter at this point. Then at the other or discharge side or end I employ a brace E, which comes down from the handle F and has its lower end bent to come in at or near a horizontal plane and engages under the end of the lifter, thus leaving the top surface entirely free. A supplemental small brace 3 extends from the handle F down to the brace E, so as to reinforce the same and thus protect the lifter against back thrusts or pressure. In this way I am enabled to leave the discharge side of the potato-lifter perfectly free for the discharge of the potatoes at one side of the machine by the revolving reel H, as before described. This reel is supported immediately at the rear of the frame A on a shaft K, operated by the gear-wheel L on the axle of the machine, and said reel has a number of fingers 4, associated in this instance in pairs of two and of such number as to continuously subject the earth and potatoes lifted by the digger to the action of said reel. Fingers are better than vanes or paddles would be, because they have a sifting action and move the potatoes, while they leave the earth to drop in the line of the furrow. At the rear of the lifter I have arranged a grating or sifter for the earth that is raised with the potatoes, constructed in this instance with several transverse bars or grate-strips 5, having an open space between them to drop the earth and forming a rearward extension of the lifter and curved in substantially like manner.

The fingers 4 of the reel are intended to pass over the said grate in such relation thereto as to prevent the fingers from pierc-

ing or injuring the potatoes, and to this end they are here shown as extending down between the grate-bars somewhat from side to side, thus preventing possible contact at their 5 points with the potatoes. If a plain instead of a grated extension were used, the fingers would run in close relation thereto and thus prevent injury to the potatoes; but a close or plain extension in lieu of the grate is not desirable. The said reel is intended to rotate 10 with just such rapidity that it will work a constant agitation of the earth which passes back over the lifter and gather the potatoes therefrom and roll them out to one side with- 15 out doing them injury. It will be noticed that said fingers have a slight back curve or turn at their extremities, so as not to really expose their points to the potatoes; but this curvature is not such as to detract from their 20 efficient service in carrying the potatoes laterally.

In order that the potato-lifter may be adjusted with respect to depth of operation in certain soils, I provide a sliding shoe N, which 25 is supported on a bar 7, pivoted at its front end forward on the frame A, and is adjusted vertically and supported in adjusted position by the brace-bar 8, which has a series of perforations at its top and is adapted to be engaged in any one of said perforations by a 30 bolt through its upper end, as shown. However, in some soils the said shoe is not used nor needed.

It is important in digging potatoes having 35 heavy tops and weeds that there should be means for leveling the said tops or vines and weeds and getting them in such position that they will not interfere with the work of the lifter or digger. To this end I have provided 40 a drag consisting of a transverse plate O, preferably recessed at its lower edge about as shown and supported at each side by hanging bars 9, which suspend it from the main frame. This drag is raised out of the way or 45 lowered into working position by means of a lever 10, having a crank-arm 11, and the chain 12, extending thence to the said drag-plate, so that the operator can raise the drag by drawing the handle toward him or let it down 50 at pleasure. If the tops or weeds are heavy, the said drag is used, but is not needed if the tops are low or dead and there are no weeds of consequence. It will be noticed that the drag is in such relation to the lifter 55 that it will bear down on the tops while the plow passes beneath the roots thereof, and

points 14 are formed on the bottom of the drag to help straighten out the vines.

In operation the fingers 4 come around just fast enough to give a regular and effective 60 agitation to the earth and reach all the potatoes, so as to carry them laterally, while the earth is allowed to pass rearward and drop behind the lifter. Both the lifter and the grate or sifter at its rear are equally free to 65 discharge the potatoes at one side of the machine.

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

1. The digger having the transversely- 70 curved lifter and the sifter at its rear, a single substantially vertical supporting-standard for the said parts fixed to one side of the main frame and the brace E fixed to the discharge end of the said lifter and sifter and 75 connected at its other end with one of the handles of the digger, and the reel for discharging the potatoes from the machine, substantially as described.

2. In a potato-digger, the two carrying- 80 wheels and the axle therein and the main frame supported on the said axle near its front, in combination with the digger C fixed to the rear of said frame at one side thereof, the handles F connected with the rear of said 85 frame, the brace E for the free end of the digger C, and the sifter at the rear of the digger, the reel H having fingers 4 running between the bars of the said sifter and the drag O in front of the digger C, and the adjustable 90 shoe N on the side of the main frame next to the standard-support for the digger C, substantially as described.

3. The mechanism described, comprising the main frame A, the curved lifter C, the 95 standard B' supporting said lifter from one side of frame A, the handles F fixed to the rear of said frame and the brace E connecting one of said handles to the free end of the said lifter and the brace 3 from the opposite 100 handle F to said brace E, the reel H and the screen 5 for separating the potatoes from the earth, the shoe N for carrying the said frame and the plate O in front of the lifter C, substantially as described. 105

Witness my hand to the foregoing specification this 24th day of December, 1895.

GEORGE H. KIDNEY.

Witnesses:

H. T. FISHER,
R. B. MOSER.