

(No Model.)

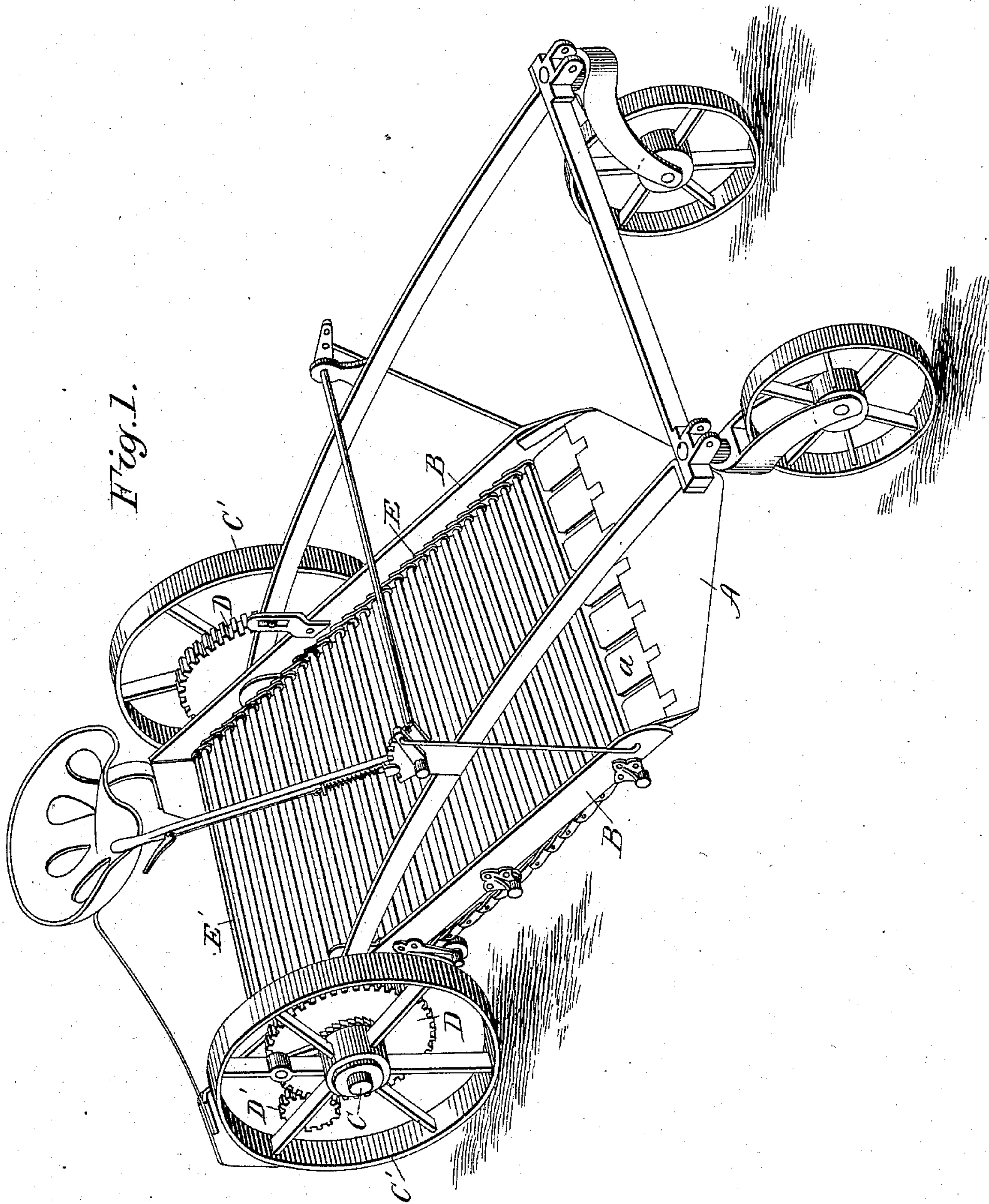
2 Sheets—Sheet 1.

J. T. WARREN.

POTATO DIGGING MACHINE.

No. 282,135.

Patented July 31, 1883.



Witnesses.

Wm. J. Coe
Chas. J. Simon

Inventor.

Jabez T. Warren,
By J. W. Ford Atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

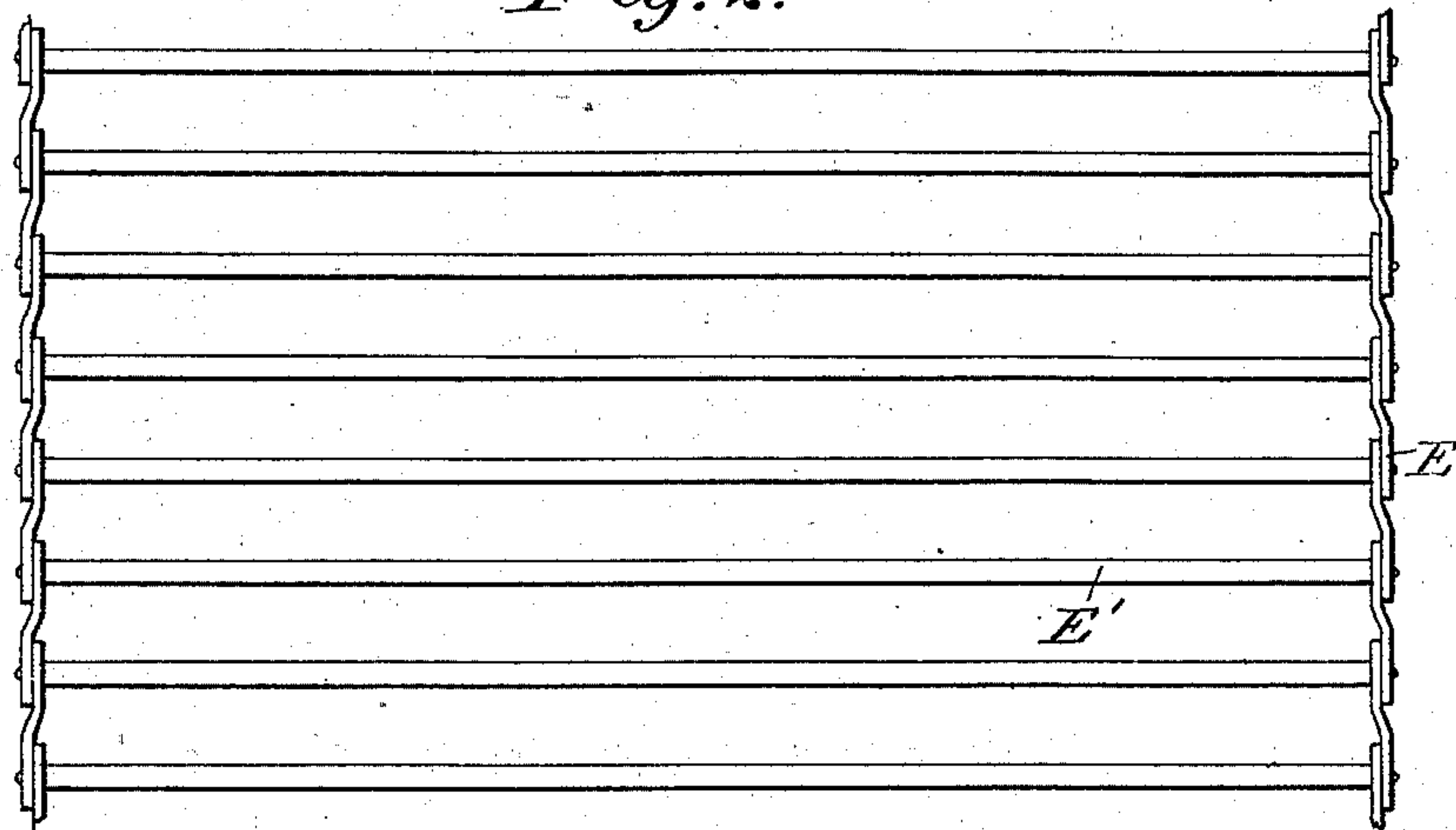


Fig. 3.

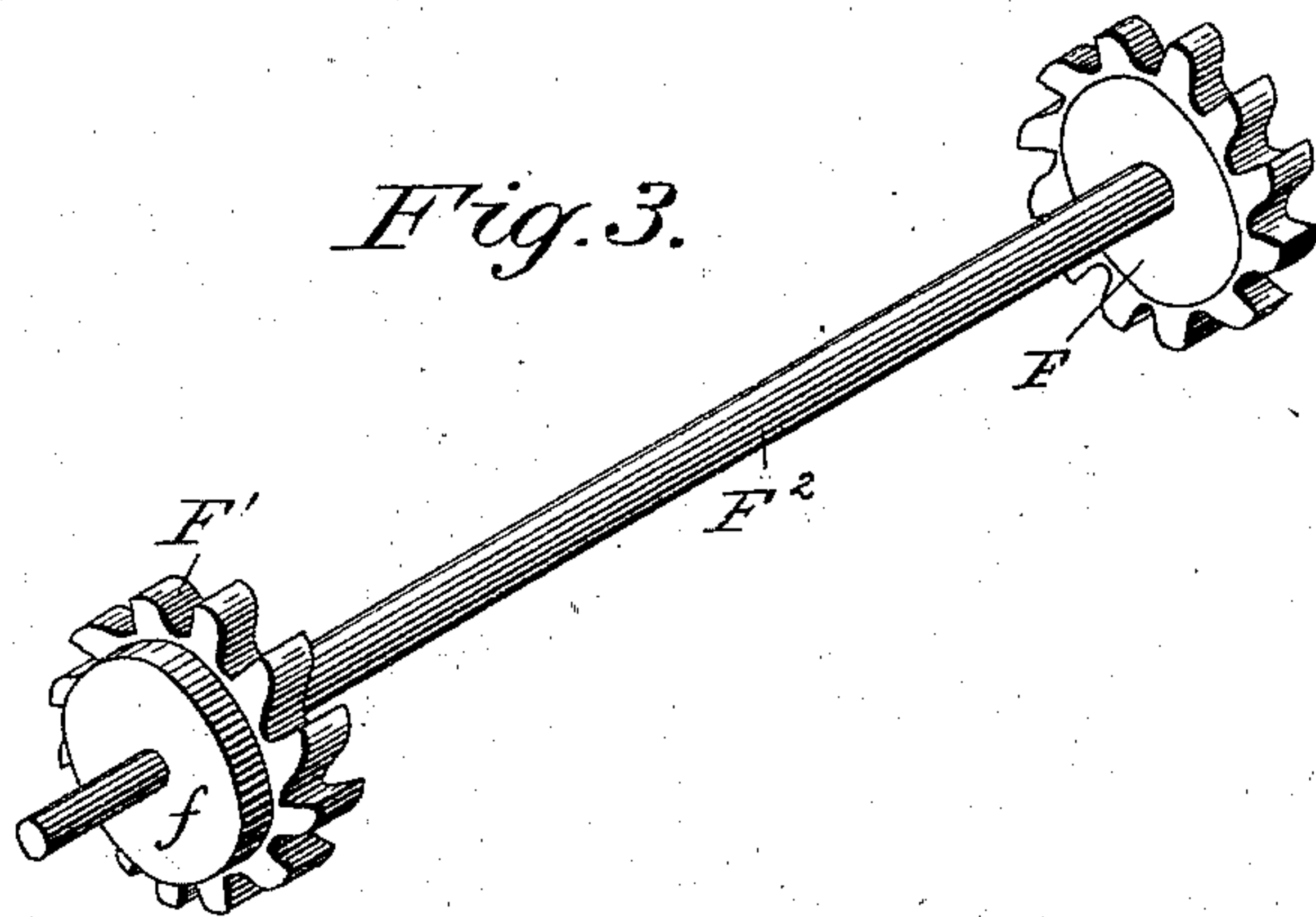
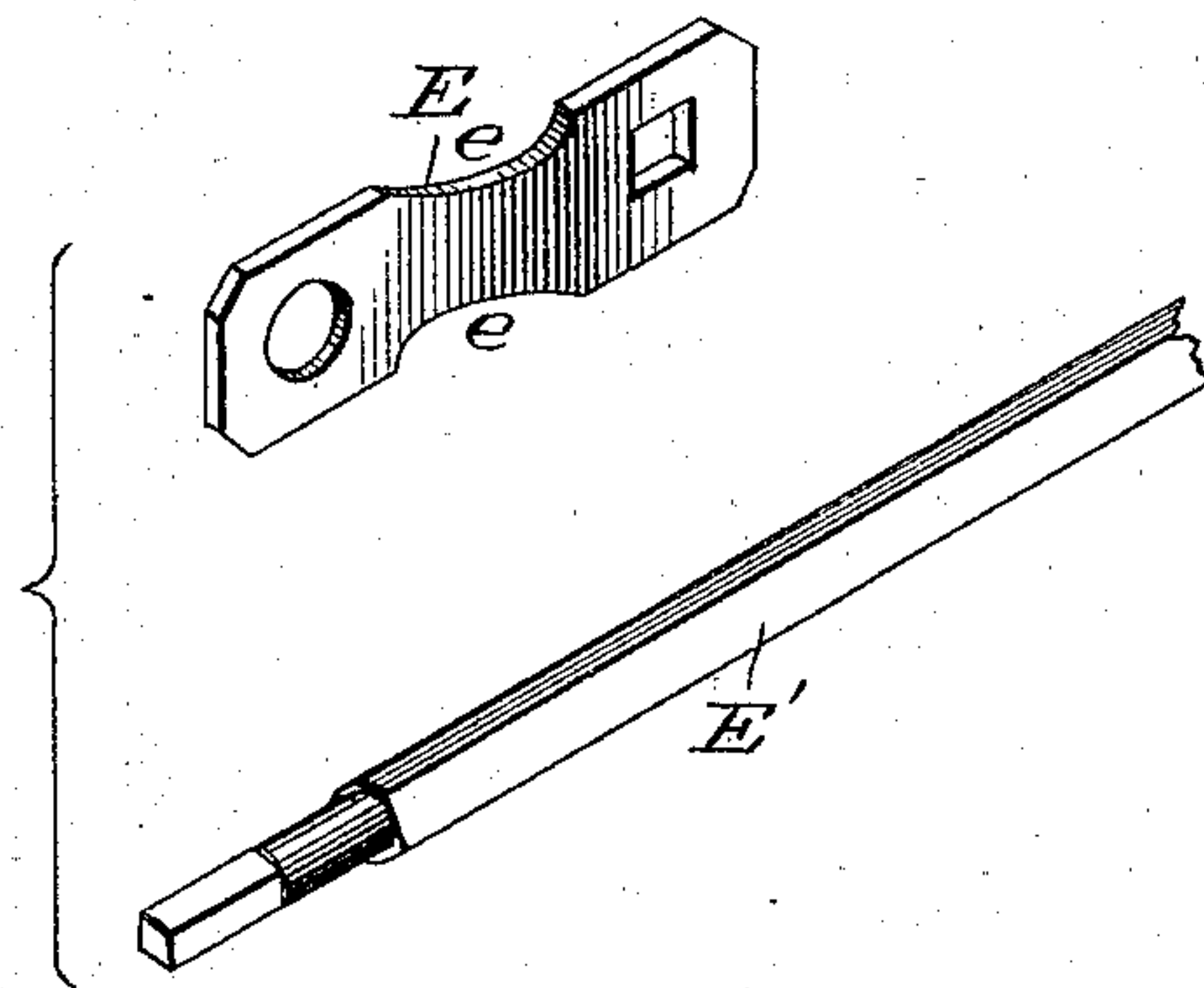


Fig. 4



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UNITED STATES PATENT OFFICE.

JABEZ T. WARREN, OF LE ROY, ASSIGNOR TO MICHAEL NEVINGER, OF ATTICA, AND MIRA SELDEN, ADMINISTRATRIX OF ROBERT SELDEN, DECEASED, OF STAFFORD, NEW YORK.

POTATO-DIGGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 282,135, dated July 31, 1883.

Application filed March 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, JABEZ T. WARREN, a citizen of the United States, residing at Le Roy, in the county of Genesee and State of New York, have invented a new and useful Potato-Digging Machine, of which the following is a specification.

My invention relates to improvements in carrying-belts to be used in potato-digging machines of the class shown in Letters Patent of the United States issued to Michael Nevinger and Robert Selden, December 2, 1879, No. 222,199; and it consists of certain improvements in the said machine, and more particularly in the carrying-belt, and in the rag-wheel for driving the same. My carrier is shown in connection with the said Nevinger and Selden's patented machine; but as I only claim the carrying-belt it will not be necessary for me to describe the operation of their device further than is necessary to show the workings of my improvements, which I attain by the use of the mechanism illustrated in the drawings, in which—

Figure 1 is a perspective view of the said machine taken from the front and showing my carrier in working position. Fig. 2 is an enlarged section of the carrier detached. Fig. 3 is a perspective view of the rag-wheels and the carrying-shaft detached. Fig. 4 is an enlarged view of one of the links and one of the connecting-bars detached.

Similar letters refer to similar parts throughout the several views.

The excavating-shovel A has hinged at its rear end valves, *a*, which are so formed that an upward motion may be given to them, but are not allowed to drop below the face of the shovel. In operation the point of the shovel is lowered so as to pass beneath a hill of potatoes, and they, with a portion of the soil, pass over the shovel and valves, and are deposited upon the carrier, the soil passing through between the bars, the potatoes being deposited in the rear.

B are longitudinal bars connected together at their forward ends by the excavator-shovel, and secured together from lateral displacement at their rear ends by being fastened to

the main axle C, upon which the driving-wheels C' revolve. Anti-friction rollers are secured to the longitudinal bars, and upon which the carrier rests. This axle C has upon it, near its ends, gear-wheels D, which are secured to the drive-wheels by the usual ratchet-connection, so that they will revolve with the forward motion of the drive-wheel, but not with the backward motion. These gear-wheels D mesh into corresponding pinions, D', and by which motion is imparted to the carrier that forms a part of my invention, and will be hereinafter fully described.

My invention consists of a chain formed of flat thin links E, the edge being presented to the work and being the bearing portion, with holes through the flat surface of either end, one being round, the other square, (see Fig. 4,) for the insertion of corresponding parts upon the ends of bars E'. These bars are made round upon one side and flat upon the other, for the purpose of more readily removing the adhering soil from the potatoes in their passage from the front to the rear of the machine. Upon each end of the bars E' are formed tenons, the inner portions of which are made cylindrical in shape, (see Fig. 4,) and so as to fit into the round hole made through the link. The outer end, being squared or made rectangular in cross-section, fits into the square hole of the said link. This square part of the tenon is made diametrically smaller than the cylindrical portion next to it, so that the link may be riveted against the shoulder thus formed upon the rod, so as to firmly unite the link with the rod, while the contiguous link, by having the round hole upon the rounded portion of the same rod, will be allowed to turn, and while uniting the links, so as to form one continuous chain, flexibility will be given, and yet maintain the link and rod in the same relative position each with the other. The links have a bend, so that the forward end laps upon the rear end of the contiguous one, and the chain thus formed by the uniting of the links will remain in a straight line longitudinally. The links have concavities upon one or both of their edges, as at *e*, so as to more readily turn around the pulley

at the front end of the carrier, as well as to give a vibratory motion to the carrier as the links pass over the supporting-pulleys, and thus aid in separating the soil from the tubers.

5 I prefer having the concavities upon both edges of the link, so that the carrier can be used either side out or turned over as the parts become worn by use.

F are rag-wheels, provided upon their circumferential edges with teeth F' , and are mounted upon a horizontal shaft, F'' , which also carries the drive-pinions D' . These rag-wheels have each a shoulder, f , which acts as a smooth roller for the support of the chain part of the carrier. The carrier is propelled by means of the teeth upon the rag-wheels, which enter within the vacant spaces between the bars and impinge against them upon their rear edges while in operation. The back side of the teeth upon the rag-wheels are rounded or beveled toward a point, so that nothing can become wedged in between them.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The endless metallic carrying-belt having upon each side a single line of flat thin links set on edge, with a square hole through one

end of the link for rigidly attaching to the square part of the cross-bar, a round hole through the other end of the link for flexibly uniting with the said bar, and the lateral offset or bend in the link for lapping the end of one link upon the end of the contiguous one and not throw the links laterally out of line, substantially as described, and for the purposes herein set forth.

2. The endless metallic carrying-belt having upon each side a single line of flat thin links set on edge, with a square hole through one end of the link for rigidly uniting with the cross-bar, a round hole through the other end of the link for flexibly uniting with the same bar, the lateral bend or offset for lapping the end of one link upon the end of the contiguous one, in combination with the rag or carrier driving-wheel, having a shoulder for supporting the carrier, and spurs or teeth upon the periphery, which enter between and impinge against the bars for imparting motion to the carrier, substantially as described.

JABEZ T. WARREN.

Witnesses:

RANDOLPH BALLARD,
G. W. FORD.