

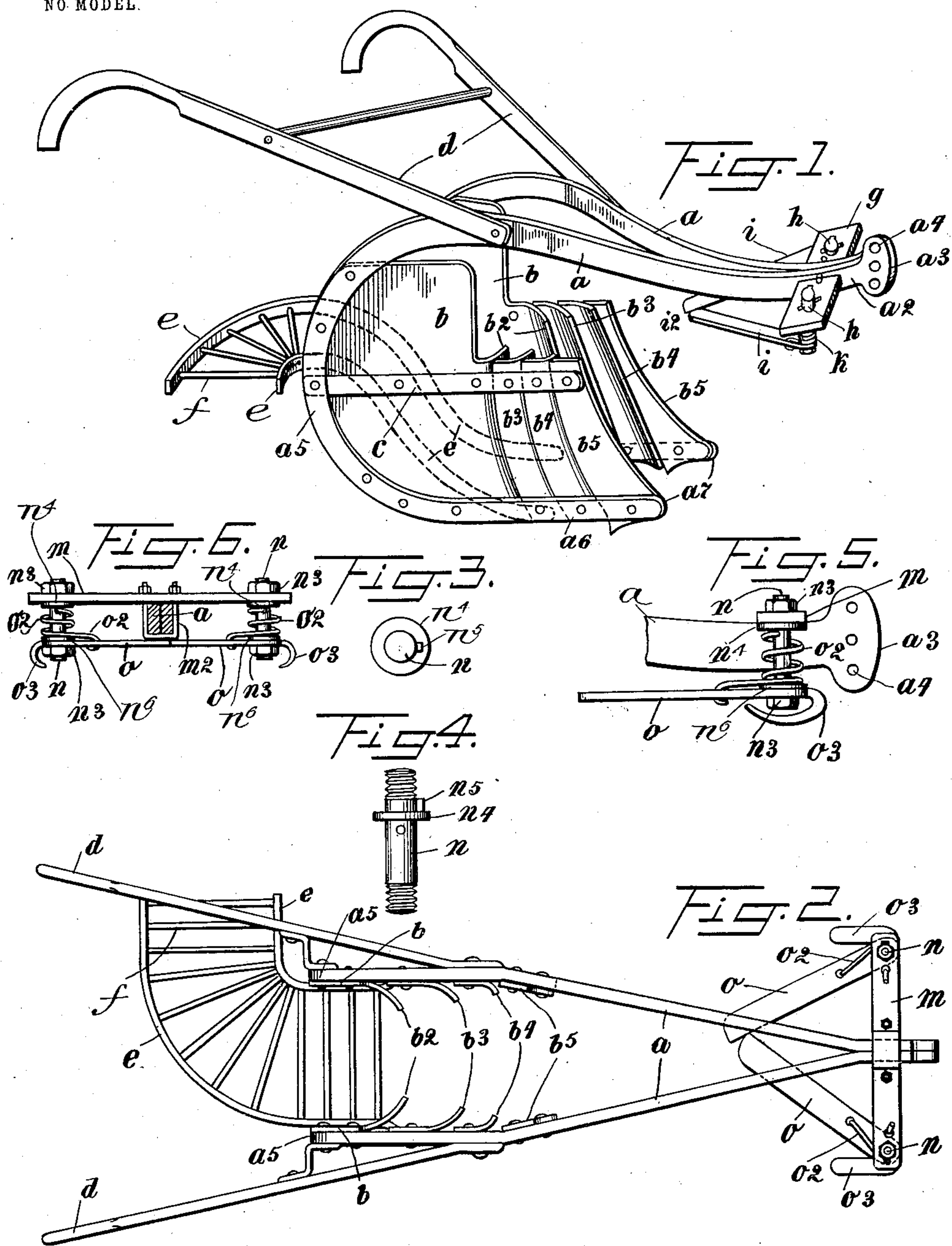
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T. F. FITZSIMMONS.  
BEET DIGGER.

APPLICATION FILED FEB. 15, 1902.

NO MODEL.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## BEET-DIGGER.

SPECIFICATION forming part of Letters Patent No. 735,736, dated August 11, 1903.

Application filed February 15, 1902. Serial No. 94,157. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS F. FITZSIMMONS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Beet-Diggers, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved device for digging beets, which is made in the form of and operates as a plow and which will cut off the tops of the beets and remove the beets to one side of the row or furrow; and with this and other objects in view the invention consists in a device of the class specified constructed as hereinafter described and claimed.

In the drawings forming part of this specification, in which the separate parts of my improvement are designated by the same reference characters in each of the views, Figure 1 is a perspective view of a beet-digger made according to my invention; Fig. 2, a plan view thereof and showing a slight modification; Fig. 3, a plan view of a detail of the construction; Fig. 4, a side view thereof; Fig. 5, a side view of a detail of the construction shown in Fig. 2 on an enlarged scale, and Fig. 6 a front view of a detail of the construction shown in Fig. 2.

In the practice of my invention, as shown in Fig. 1, I provide a device of the class specified which comprises two beams *a*, the front ends of which abut together, as shown at *a*<sup>2</sup>, and are provided with a head *a*<sup>3</sup>, having perforations *a*<sup>4</sup>, whereby a clevis for the support of a doubletree or similar device may be connected therewith, and the beams *a* are curved outwardly and backwardly, and the rear ends thereof are curved downwardly, as shown at *a*<sup>5</sup>, and forwardly, as shown at *a*<sup>6</sup>, and the front ends of the forwardly-curved portions *a*<sup>6</sup> converge, as clearly shown, and secured to the rear of the downwardly-curved portions *a*<sup>5</sup> and to the bottom portions thereof are vertically-arranged plates *b*, which extend forwardly to about the middle of the forwardly-directed portions *a*<sup>6</sup> of the beams *a*, and to the sides of these plates and to the rear portions *a*<sup>5</sup> of the beams *a* are secured horizontal

reinforcing-bars *c*, and the front edges of the plates *b* are provided with inwardly and forwardly directed blades *b*<sup>2</sup>, and secured to the bars *c* and to the front end portions *a*<sup>6</sup> of the forwardly-directed portions of the beams *a* are supplemental blades *b*<sup>3</sup>, *b*<sup>4</sup>, and *b*<sup>5</sup>, the edges of which, except the blades *b*<sup>5</sup>, project inwardly and forwardly, the same as the edges of the blades *b*<sup>2</sup>, and the edges of all of said blades are preferably curved downwardly and forwardly, as clearly shown in the drawings, and the distance between the blades *b*<sup>2</sup> *b*<sup>3</sup> *b*<sup>4</sup> increases forwardly. The arrangement of these blades is clearly shown in Figs. 1 and 2, and the edges of the front blades *b*<sup>5</sup> are substantially in vertical line with the beams *a*.

The beams *a* are provided with handles *d* similar to ordinary plow-handles, and secured between the plates *b* is a track or way consisting of curved side bars *e*, which extend downwardly and forwardly between said plates, as indicated in dotted lines in Fig. 1, and the rear ends of which are curved outwardly at one side, and these bars *e* are connected by transverse rods *f*, any desired number of which may be employed, and in the operation of the device, as hereinafter described, the beets are taken up and moved backwardly over this track or way and deposited at one side of the digger, as will be readily understood.

In Fig. 1 the track or way is turned to the right, while in Fig. 2 said track or way is turned to the left, and either form of construction may be employed, as desired, and the front end of this track or way, formed by the bars *e* and transverse rods *f*, extends downwardly and forwardly approximately to the lower end of the blades *b*<sup>2</sup>, and in the operation of the device, as hereinafter described, the beets drop thereon and are moved backwardly thereover by the operation of the apparatus or the forward movement thereof through the ground.

In the form of construction shown in Fig. 1 I pass through the front ends of the beams *a*, rearwardly of the head *a*<sup>3</sup>, a plate *g*, provided with vertically-arranged pins *h* on the opposite sides of the beams *a*, and on the lower ends of these pins are placed backwardly-converging blades *i*, which converge and meet at *i*<sup>2</sup>, and the pins *h* are provided each with



a spring  $k$ , one end of which is secured to its respective pin and to the corresponding blade  $i$ , and these blades are intended to cut off the tops of the beets as the device passes there-  
 5 over, and the springs  $k$  permit of a slight lateral movement of said blades, as will be readily understood. The pins  $h$  in Fig. 1 are vertically movable in the plate  $g$ , but cannot turn therein.

10 In the construction shown in Fig. 2 I substitute for the plate  $g$  a plate  $m$ , which is secured to the beams  $a$  by a yoke-shaped fastening device  $m^2$ , as shown in Fig. 6, and in this form of construction the pins  $n$  are passed  
 15 through the ends of the plate  $m$ , and blades  $o$  are mounted on the lower ends thereof, and said pins are provided at both ends with nuts  $n^3$ , and mounted on said pins are springs  $o^2$ , which are each connected with its respective  
 20 pin and the corresponding blade, and said blades operate in the same manner as the blades  $i$ , (shown in Fig. 1,) and each of said blades  $o$  is provided at its forward end with a downwardly and forwardly curved member  
 25  $o^3$ , which serves as a buffer and will strike any obstruction and raise the front end of the beams  $a$  and prevent such obstruction from coming in contact with the blades  $o$ . Each of the pins  $n$  is provided with an annular collar or washer  $n^4$ , above which the plate  $m$   
 30 rests, and above the annular collar or washer  $n^4$  is a longitudinal projection or rib  $n^5$ , which prevents the pin from turning in the plate  $m$ . Other washers  $n^6$  are also preferably placed  
 35 on the lower portions of the pins  $n$  and form bearings for the springs  $o^2$ .

In practice a horse or horses are hitched to the device in the manner of an ordinary plow, and the front end portions  $a^7$  of the parts  $a^6$   
 40 of the beams  $a$  and the blades  $b^2$ ,  $b^3$ ,  $b^4$ , and  $b^5$  divide the soil at each side of the row of beets in the manner of an ordinary plowshare, and the soil is all removed down to the roots of the beets and the beets drop back-  
 45 wardly onto the track or way formed by the bars  $e$  and the transverse rods  $f$ , and as the device is pulled forward the beets pass over the track or way and are delivered at one side of the device or at one side of the fur-  
 50 row formed thereby.

This device is well adapted to accomplish the result for which it is intended, and it will be apparent that changes therein and modifications thereof may be made without de-  
 55 parting from the spirit of my invention or sacrificing its advantages.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

60 1. A digger of the class described made in the form of a plow, and provided with beams which diverge rearwardly and backwardly and are curved downwardly and forwardly, blades secured to the forwardly-curved por-  
 65 tions of said beams and extending upwardly and backwardly, said blades being arranged in pairs on the opposite sides of the device

and the rear blades being closer together than the forward ones and a track placed between the rear blades and extending upwardly and  
 70 backwardly and the rear end of which is curved laterally, substantially as shown and described.

2. A digger of the class described made in the form of a plow, and provided with beams  
 75 which diverge rearwardly and backwardly and are curved downwardly and forwardly, blades secured to the forwardly-curved portions of said beams and extending upwardly and backwardly, said blades being arranged  
 80 in pairs on the opposite sides of the device and the rear blades being closer together than the forward ones and a track placed between the rear blades and extending upwardly and backwardly and the rear end of which is  
 85 curved laterally, the front of said beams being provided with a cross-head having backwardly-directed spring-operated blades suspended therefrom and the rear ends of which converge beneath said beams, substantially  
 90 as shown and described.

3. A device of the class specified comprising beams provided with handles, the front ends of said beams being brought together  
 95 and the rear ends thereof diverging and being curved downwardly and forwardly, plates secured to the downwardly and forwardly curved portions of said beams and the front edges of which are provided with inwardly  
 100 and forwardly directed blades, and other blades secured in front on the first-named blades and arranged in pairs, the edges of all of said blades extending downwardly and forwardly and devices connected with the  
 105 forward ends of said beams for cutting off the tops of the beets, substantially as shown and described.

4. A device of the class described comprising beams provided with handles, the front ends of said beams being brought together  
 110 and the rear ends thereof diverging and being curved downwardly and forwardly, plates secured to the downwardly and forwardly curved portions of said beams and the front edges of which are provided with inwardly  
 115 and forwardly directed blades, and other blades secured in front on the first-named blades and arranged in pairs, the edges of all of said blades extending downwardly and forwardly and devices connected with the for-  
 120 ward ends of said beams for cutting off the tops of the beets, and said plates being also provided with a track which extends downwardly and forwardly between said blades and upwardly and backwardly and the rear  
 125 end of which is curved laterally, substantially as shown and described.

5. A device of the class described comprising two beams  $a$  provided with handles  $d$ , the front ends of said beams being brought to-  
 130 gether and the rear ends thereof being curved outwardly, downwardly and forwardly, plates  $b$  secured to the said beams and provided with inwardly and forwardly directed blades



5  $b^2$ , other blades  $b^3$ ,  $b^4$  and  $b^5$  arranged in front of the blades  $b^2$ , a track placed between the plates  $b$  and extending downwardly and forwardly and upwardly and backwardly and the rear end of which is curved laterally, substantially as shown and described.

10 6. A device of the class described comprising two beams  $a$  provided with handles  $d$ , the front ends of said beams being brought together and the rear ends thereof being curved outwardly, downwardly and forwardly, plates  $b$  secured to the said beams and provided with inwardly and forwardly directed blades  $b^2$ , other blades  $b^3$ ,  $b^4$  and  $b^5$  arranged in front  
15 of the blades  $b^2$ , a track placed between the plates  $b$  and extending downwardly and forwardly and upwardly and backwardly and the rear end of which is curved laterally, and devices connected with the forward ends of  
20 said beams for cutting off the tops of the beets, substantially as shown and described.

7. A device of the class described comprising two beams  $a$  provided with handles  $d$ , the front ends of said beams being brought together and the rear ends thereof being curved

outwardly, downwardly and forwardly, plates  $b$  secured to the said beams and provided with inwardly and forwardly directed blades  $b^2$ , other blades  $b^3$ ,  $b^4$  and  $b^5$  arranged in front  
30 of the blades  $b^2$  a track or way placed between the plates  $b$  and extending downwardly and forwardly and upwardly and backwardly and the rear end of which is curved laterally, and devices connected with the forward ends of said beams for cutting off  
35 the tops of the beets, and comprising a crossplate, pins connected with the ends thereof and depending therefrom and spring-operated blades connected with said pins and the rear ends of which converge beneath said beams,  
40 substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 13th day of November, 1901.

THOMAS F. FITZSIMMONS.

Witnesses:

F. F. TELLER,

F. A. STEWART.