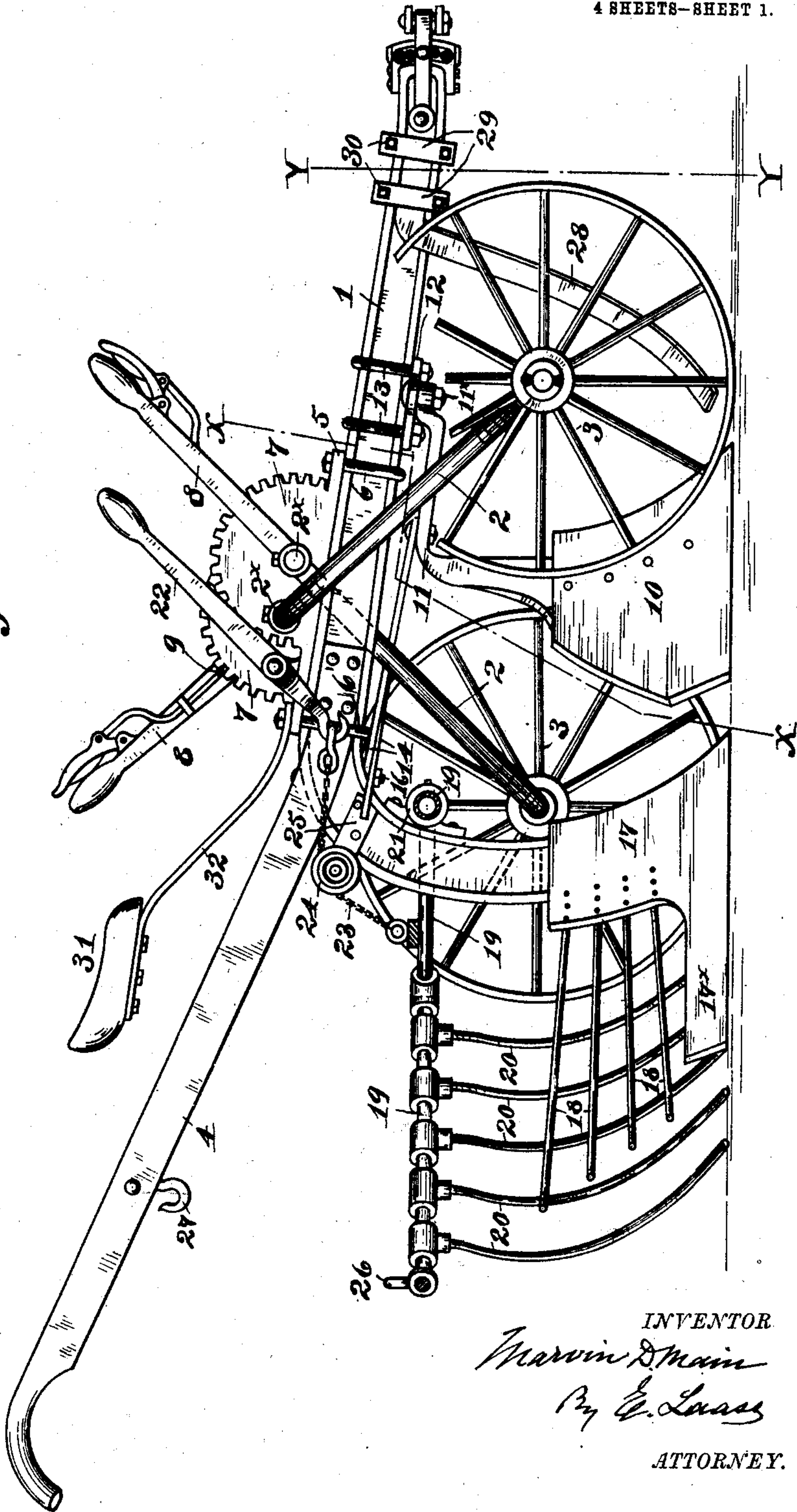


906,811.

M. D. MAIN, DEC'D.
E. B. MAIN, ADMINISTRATRIX.
POTATO DIGGER.
APPLICATION FILED APR. 8, 1907.

Patented Dec. 15, 1908.
4 SHEETS—SHEET 1.

Fig. 1



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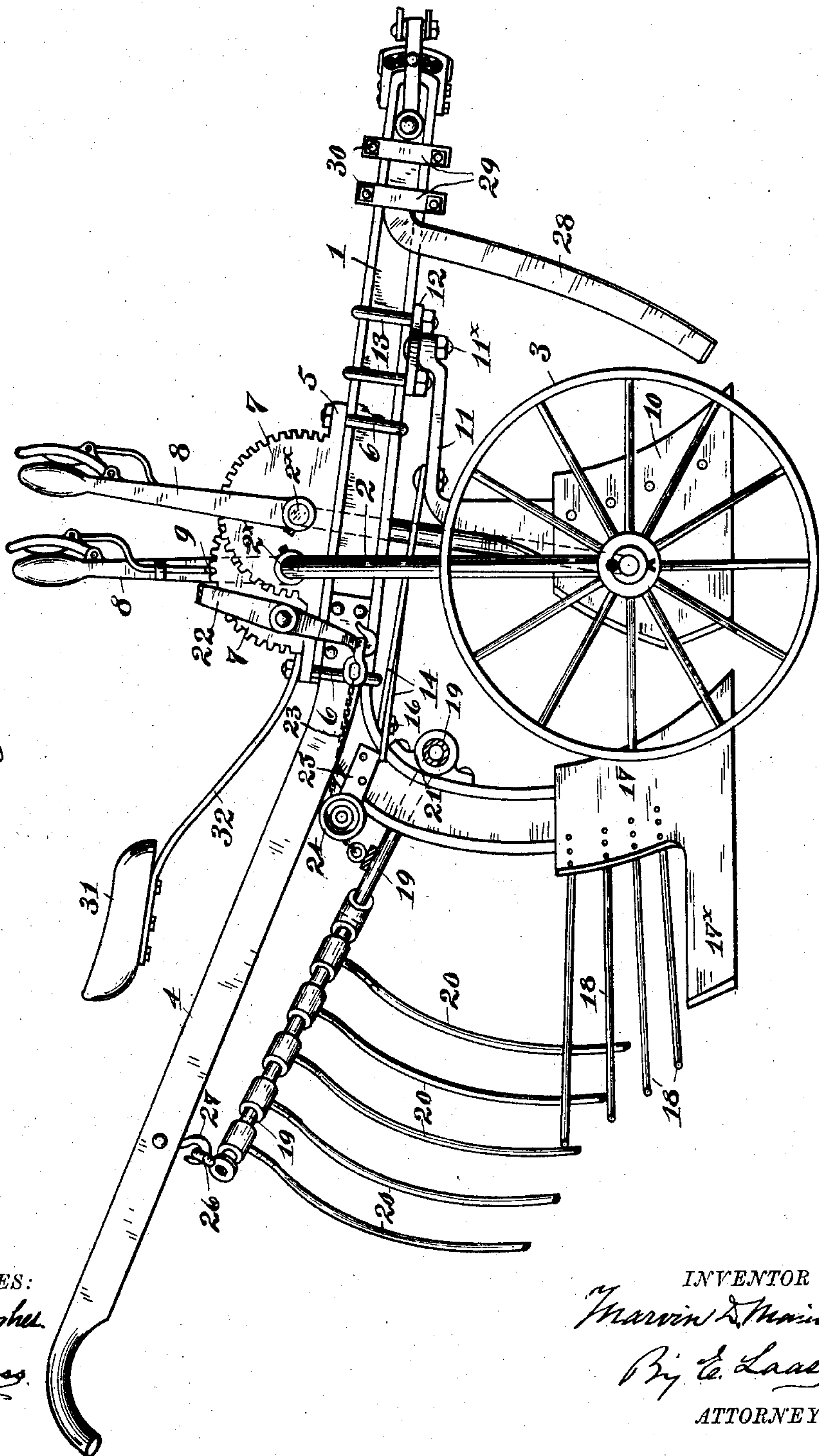
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4 SHEETS—SHEET 2.

Fig. 2



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4 SHEETS—SHEET 3.

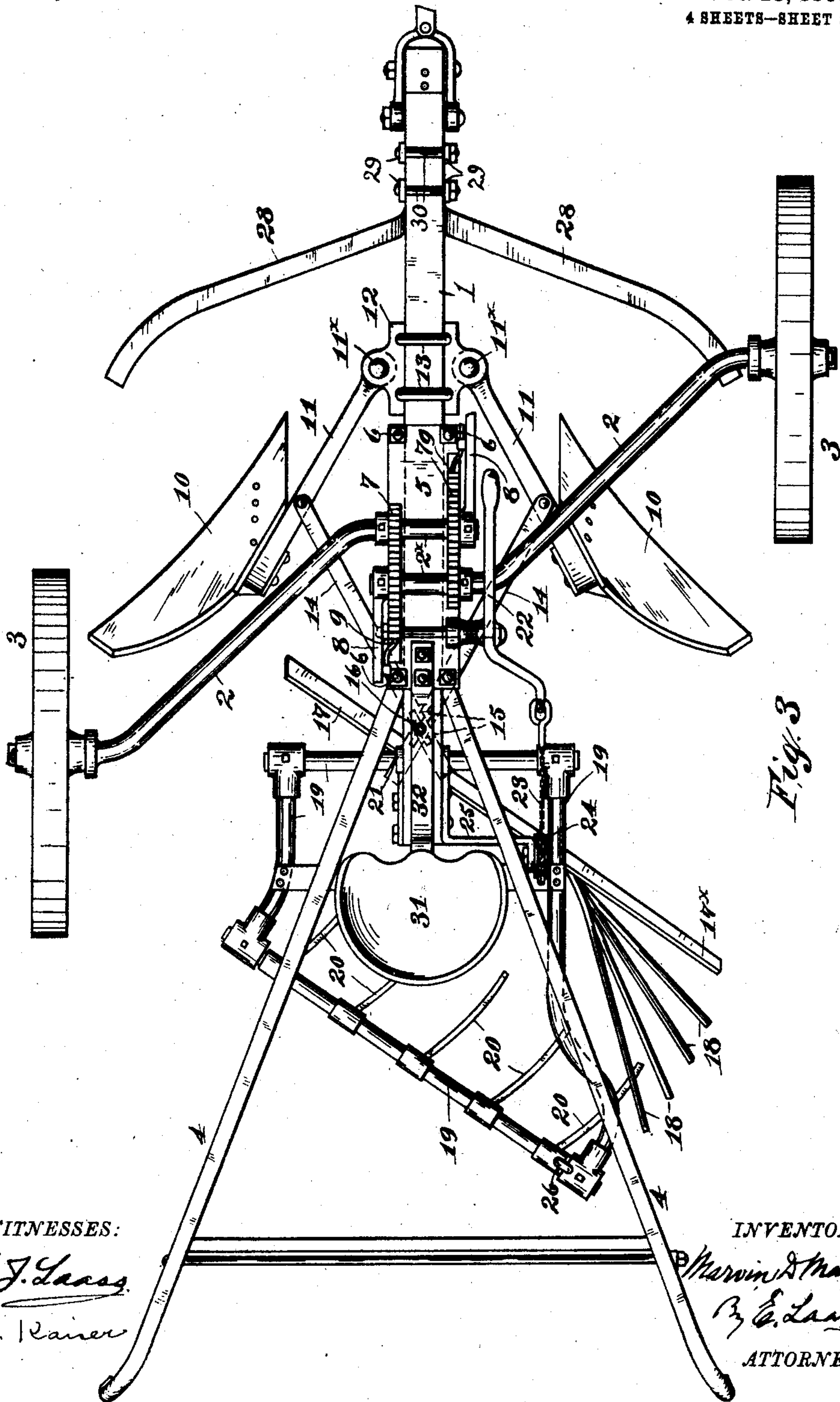


Fig. 3

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4 SHEETS—SHEET 4.

Fig. 4

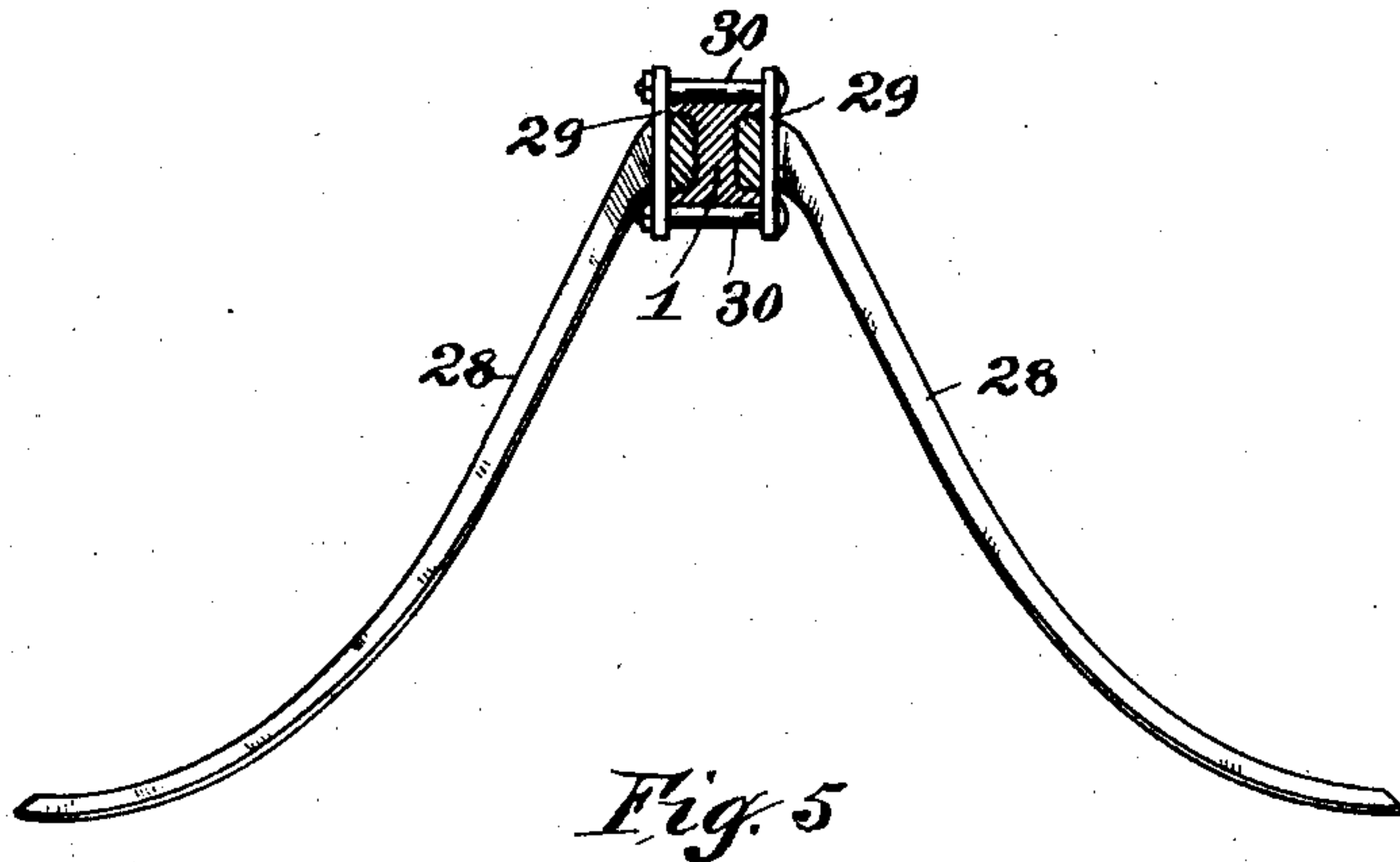
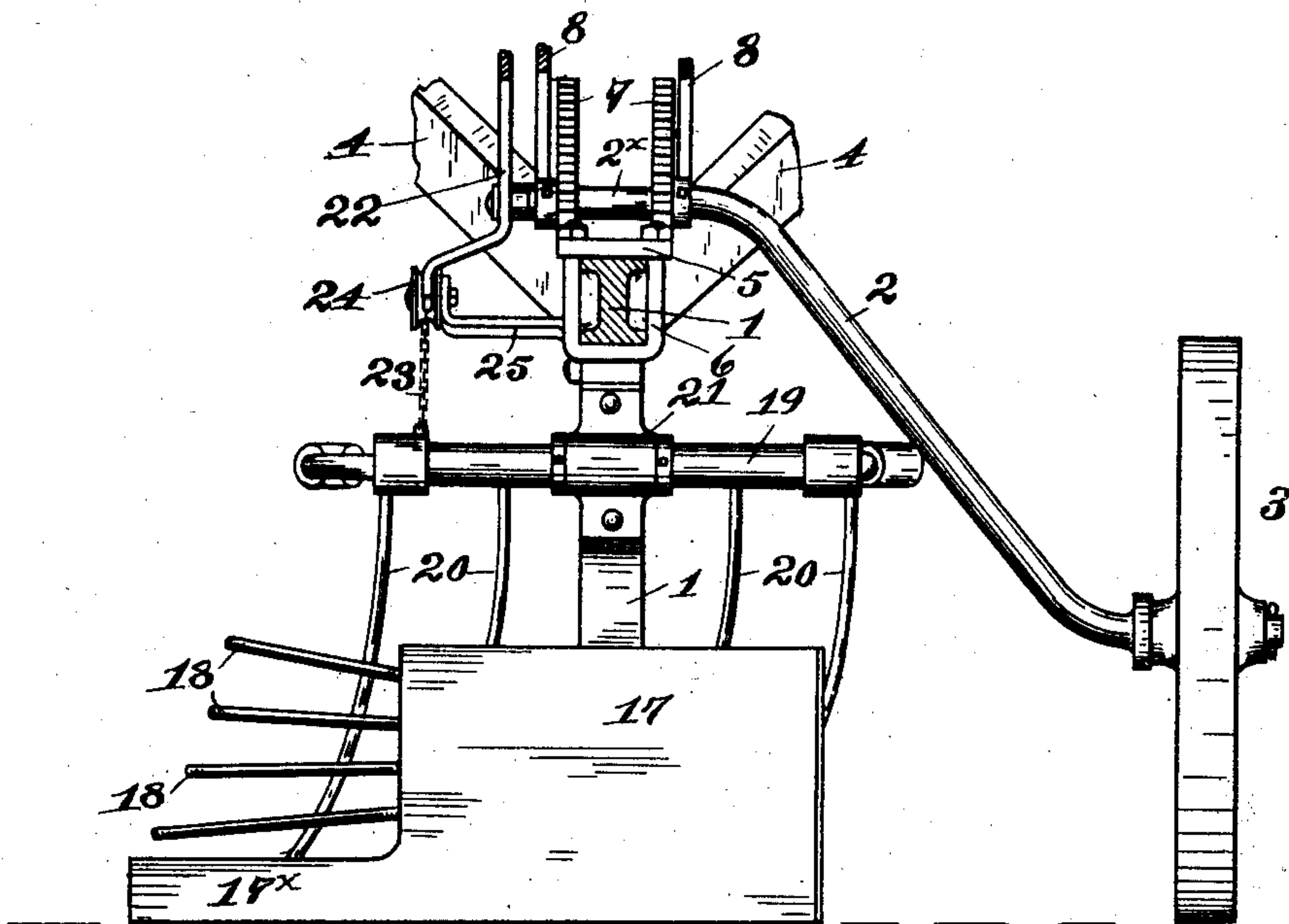


Fig. 5

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UNITED STATES PATENT OFFICE.

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POTATO-DIGGER.

No. 906,811.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed April 8, 1907. Serial No. 366,891.

To all whom it may concern:

Be it known that I, MARVIN D. MAIN, a citizen of the United States, and resident of Cortland, in the county of Cortland, in the State of New York, have invented new and useful Improvements in Potato-Diggers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of potato-digging machines comprising a draft-beam or frame mounted on carrying-wheels and having connected to it plows of various forms designed to operate on the soil.

The present invention resides mainly in the employment of an ordinary plow-beam for the frame of the machine and combining therewith several novel elements which can be easily and conveniently attached to said beam by simply removing the usual mold-board, and which can be readily detached from the said beam when it is desired to replace the mold-board.

The chief object of the invention is to produce a machine which shall be simple and inexpensive to construct and at the same time shall be very efficient for the purpose stated.

Other objects of the invention will be apparent by the peculiar construction and arrangement of the several parts combined with the plow-beam as hereinafter fully described and set forth in the claims.

In the accompanying drawings Figure 1 is a side elevation of the potato-digging machine embodying my invention and showing the parts in operative positions; Fig. 2 is also a side elevation of the machine, and showing the draft-beam raised to carry the parts out of contact with the ground and further showing the rake raised; Fig. 3 is a plan view of the machine; Fig. 4 is a vertical section taken on the dotted line —X—X— in Fig. 1, parts being broken away; and, Fig. 5 is a vertical section on the dotted line —Y—Y— in Fig. 1 and showing the attachment of the weed-cutters to the front end portion of the beam.

Similar numerals of reference indicate corresponding parts in the several views.

—1— denotes the well known draft-beam of a plow, which beam is mounted upon a pair of crank-axles —2—2— of the carrying-wheels —3—3— and is provided with the usual handles —4—4—.

On top of the beam is detachably secured a longitudinal plate —5—, preferably by means of clips —6—6—. This plate is formed along its side edges with a pair of upright segmental racks —7—7— provided with suitable bearings in which the upper transverse portions —2^x—2^x— of the crank-axles are journaled, and one rack is disposed slightly in advance of the other. To these transverse portions of the crank-axles are rigidly connected suitable hand-levers —8—8— which are employed to swing the axles forwardly and rearwardly for the purpose of changing the relative positions of the wheels so as to raise and lower the beam —1— when required, as illustrated in Figs. 1 and 2. The said hand-levers —8—8— are provided with suitably operated dogs —9—9— adapted to engage the aforesaid segmental racks —7—7— to lock the axles thereto so as to retain the beam at the desired elevation.

—10—10— denote a pair of plows which are disposed equidistantly at opposite sides of the beam and are preferably supported on hangers —11—11— pivotally and detachably connected to a bracket —12—. This bracket consists of a plate secured to the underside of the beam by means of suitable clips —13—13— and is disposed intermediate the length of the beam. This plate is preferably formed with oppositely disposed ears which receive the hanger-attaching bolts —11^x—11^x— as shown in Fig. 3.

The plows —10—10— are disposed in rearwardly divergent position and are designed to cut away the soil from the sides of the usual rows in which the potatoes are cultivated. The said plows may be of any suitable form and may be fastened to the hangers by means of bolts or screws or other devices.

In order to adjust the hangers to set the plows in proper position in relation to the central line of draft, I provide a pair of horizontally disposed bars —14—14— pivotally connected at one end to the hangers and extending rearwardly and convergently therefrom and crossing under the beam —1—, the rear end portions of the bars being slotted longitudinally, as indicated at —15— for the reception of a bolt —16— passing vertically through the beam, whereby the said bars are clamped to the beam and may be shifted longitudinally. This

movement of the bars —14—14— obviously swings the free end portions of the hangers toward and from the beam whereby the plows —10—10— may be placed the desired distance apart.

—17— denotes a digging-plate which is substituted for the usual mold-board of the plow and may be applied to the beam in any suitable way. However, I prefer to connect it to the beam in the same manner that the mold-board is fastened, thus obviating the provision of special attaching devices. For that reason detail description and illustration of this digging-plate connection are unnecessary. The said digging-plate may be of various forms and it is disposed obliquely under the draft-beam. The forward end of the said digging-plate is in line with the inner edge of one plow and the opposite end is substantially in line with the outer edge of the other plow, as illustrated more clearly in Fig. 3.

The forward or inner end portion of the digging-plate is preferably of the same depth as that of the plows and the rear or outer end portion is of less height as indicated at —17*—.

The described digging-plate is designed to penetrate the ground sufficiently to level off the hills of the rows and thus effectually remove the potatoes and cast them to one side of the machine so as to spread them in the path back of the corresponding carrying-wheel and thereby guard against their being crushed by the wheel traveling along a succeeding row.

Over the outer end portion of the digging-plate is arranged a set of screening-bars —18—18— disposed one above another and preferably at successively increasing angles in relation to the digging-plate. These screening-bars serve to break up the lumps of dirt tending to pass over the low outer end portion of the digging-plate and thus insure the separation of the potatoes from the dirt. The bars are preferably fastened to the back of the digging-plate and are adapted to vibrate during the travel of the machine and are thus very effectual in their operation.

Back of the digging-plate is disposed a rake comprising a frame —19— having a set of spring-teeth —20—20— adapted to drag upon the ground and arranged on a line parallel with the digging-plate as shown in Fig. 3. These teeth serve to cast aside potatoes which might be strewn upon the ground back of the digging-plate —17— incident to the action of the aforesaid vibrating bars —18—18— in breaking up the lumps of dirt. The frame —19— may be of any suitable construction and the teeth fastened to it in any convenient manner. This frame is pivotally connected at its forward end to a bracket —21— secured to the draft-

beam so as to permit the frame to be swung vertically to carry the teeth into and out of contact with the ground. It is obvious that by swinging the said frame up, the teeth will be free from liability of striking objects while the machine is being drawn to and from the field.

Various devices may be employed for raising and lowering the rear end of the frame —19—, however I prefer to provide the means shown, which consists of a hand-lever —22— pivotally connected to the beam —1— and a chain or cable —23—. The said chain may be fastened to the lever and frame in any convenient manner and it travels over a pulley —24— which is supported on a bracket-arm —25— fastened to the beam.

To retain the frame —19— in its raised position, I provide the same with a screw-eye —26— or other device which is disposed to engage a hook —27— depending from one of the handles —4— as illustrated in Fig. 2 of the drawings.

—28—28— denote a pair of weed-cutters which are connected to the forward end of the draft-beam to guard against entanglement of the weeds with the side row-cutters. These cutters consist of thin steel bars which extend downwardly and divergently from the beam and have their lower end portions curved outwardly and the forward edges beveled to form sharp knives. The upper end portions of the weed-cutting bars are bent forwardly and embrace the opposite sides of the beam and are clamped adjustably to the beam by means of plates —29—29— and bolts —30—30— passing through the said plates. By attaching the cutting-bars in this manner, they can be easily and conveniently removed when required and may be set at greater or less distance from the plows.

I prefer to provide the described machine with a seat —31— for the person in charge. The said seat is preferably mounted on the usual spring-bar —32— secured to the top of the beam.

What I claim is:—

1. A potato-digging machine comprising a pair of rearwardly-divergent plows disposed equidistantly at opposite sides of the central line of draft, and a digging-plate disposed back of the plows at an angle to the line of draft and extending from a point in line with the inner edge of one plow to a point substantially in line with the outer edge of the other plow as set forth.

2. In a potato-digger, the combination with a draft-frame, of a pair of hangers pivotally connected to the frame and having their free ends disposed at opposite sides thereof, plows rigidly secured to said hangers, means for adjusting the hangers to set the plows at different distances from the

central line of draft, and a digging-plate rigidly connected to the frame and disposed back of the plows as set forth.

3. In a potato-digger, the combination with a draft-frame, of a pair of hangers pivotally connected to the frame and having their free ends disposed at opposite sides thereof, plows carried on said hangers, bars pivotally connected to the hangers for moving the same to set the plows at different distances from the central line of draft, means for clamping the bars to the frame to retain the hangers in their positions, and a digging-plate rigidly secured to the frame and disposed back of the plows as set forth.

4. In a potato-digger, the combination with a draft-frame consisting of a plow-beam, a bracket secured to the beam intermediate the ends thereof, a pair of hangers pivotally connected to said bracket at opposite sides of the beam, plows carried on the free ends of the hangers, means for retaining the hangers in their positions, and a digging-plate rigidly secured to the rear end of the beam as set forth.

5. In a potato-digger, the combination with a draft-beam and its carrying-wheels, of a pair of plows supported adjustably at opposite sides of the beam, and a digging-plate secured to the beam and disposed back of the plows and at an angle to the line of draft as set forth.

6. In a potato-digger, the combination with a pair of carrying-wheels having independent crank-axles, and a draft-beam mounted on said crank-axles, of a pair of hangers connected adjustably to the beam in front of the axles, plows carried on the hangers and disposed at opposite sides of

the beam, means for retaining the hangers in their positions, a digging-plate secured to the beam and disposed back of the plows, and means for swinging the crank-axles forwardly and rearwardly to raise and lower the said draft-beam as and for the purpose set forth.

7. In a potato-digger, the combination with carrying-wheels and a draft-beam mounted vertically adjustable thereon, of a pair of hangers adjustably connected to opposite sides of the beam, plows carried on said hangers, longitudinally extending bars pivotally connected to the hangers for adjusting the free ends of the hangers in relation to the beam, means on the beam engaging the adjusting-bars for retaining the hangers in their positions, and a digging-plate rigidly connected to the beam and disposed back of the plows and arranged obliquely under the beam, as set forth.

8. A potato-digger comprising a draft-beam, a pair of independent plows pivotally connected to opposite sides of the draft-beam, means for sustaining said plows adjustably in relation to the central line of draft, a digging-plate carried on the draft-beam and disposed back of the plows, and a set of vibratory screening-bars carried on the digging-plate and arranged one above another and disposed at successively increasing angles in relation to the said digging-plate, all combined to operate consecutively in the manner described.

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