

No. 771,374.

PATENTED OCT. 4, 1904.

S. D. LAYTON.
DITCHING MACHINE.

APPLICATION FILED DEC. 31, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 5.

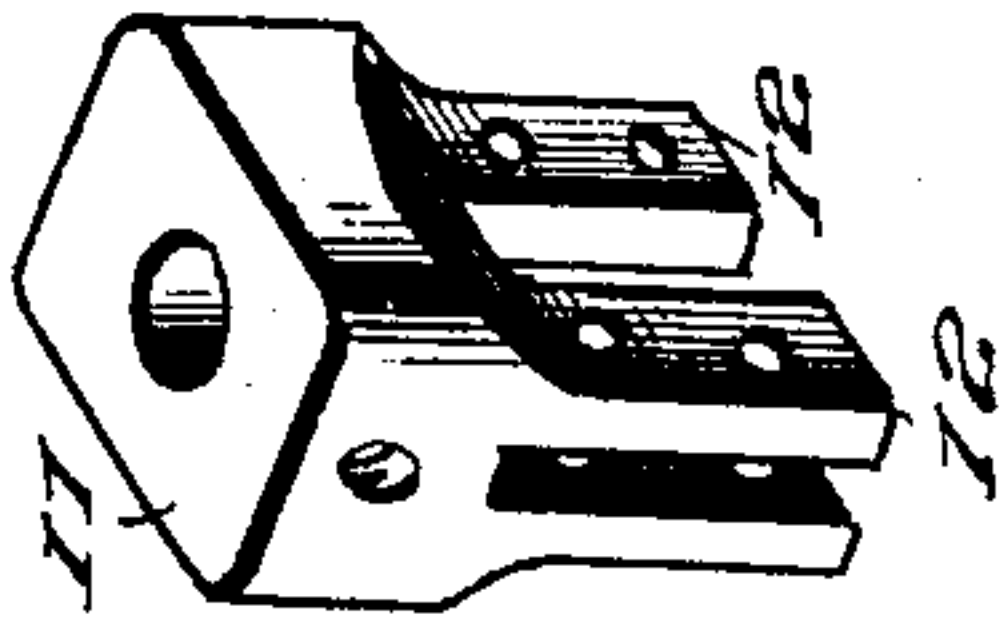
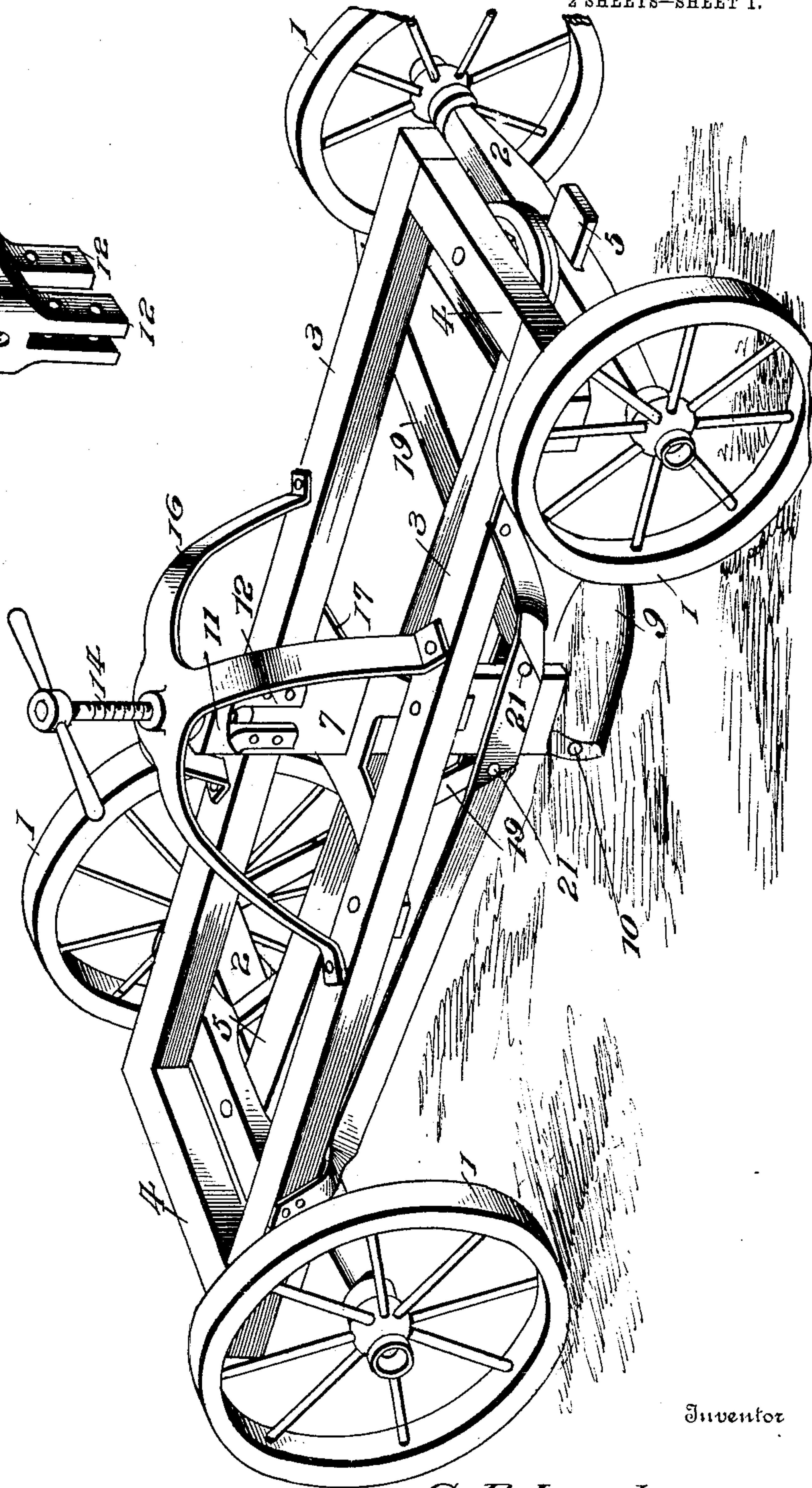


Fig. 1.



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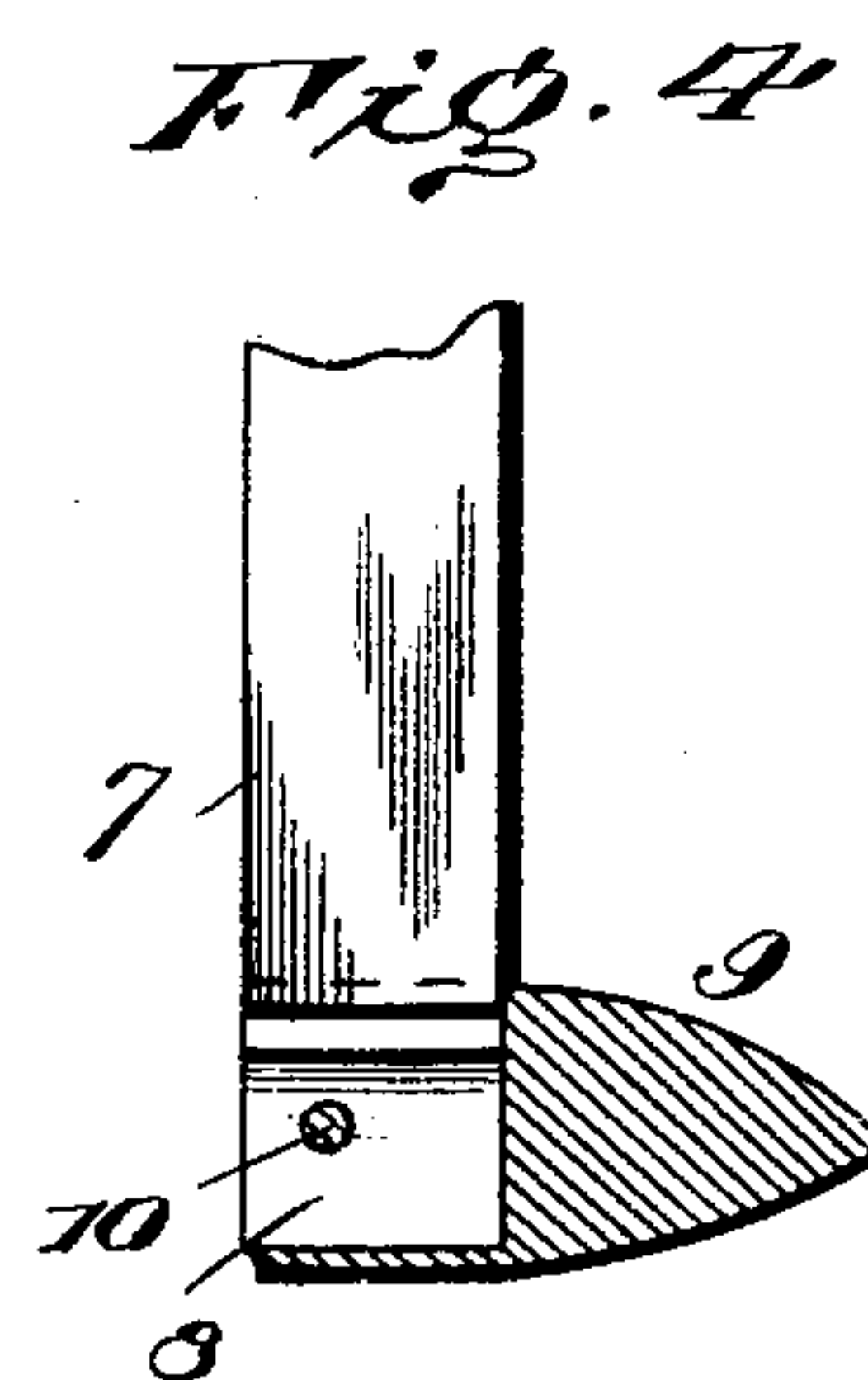
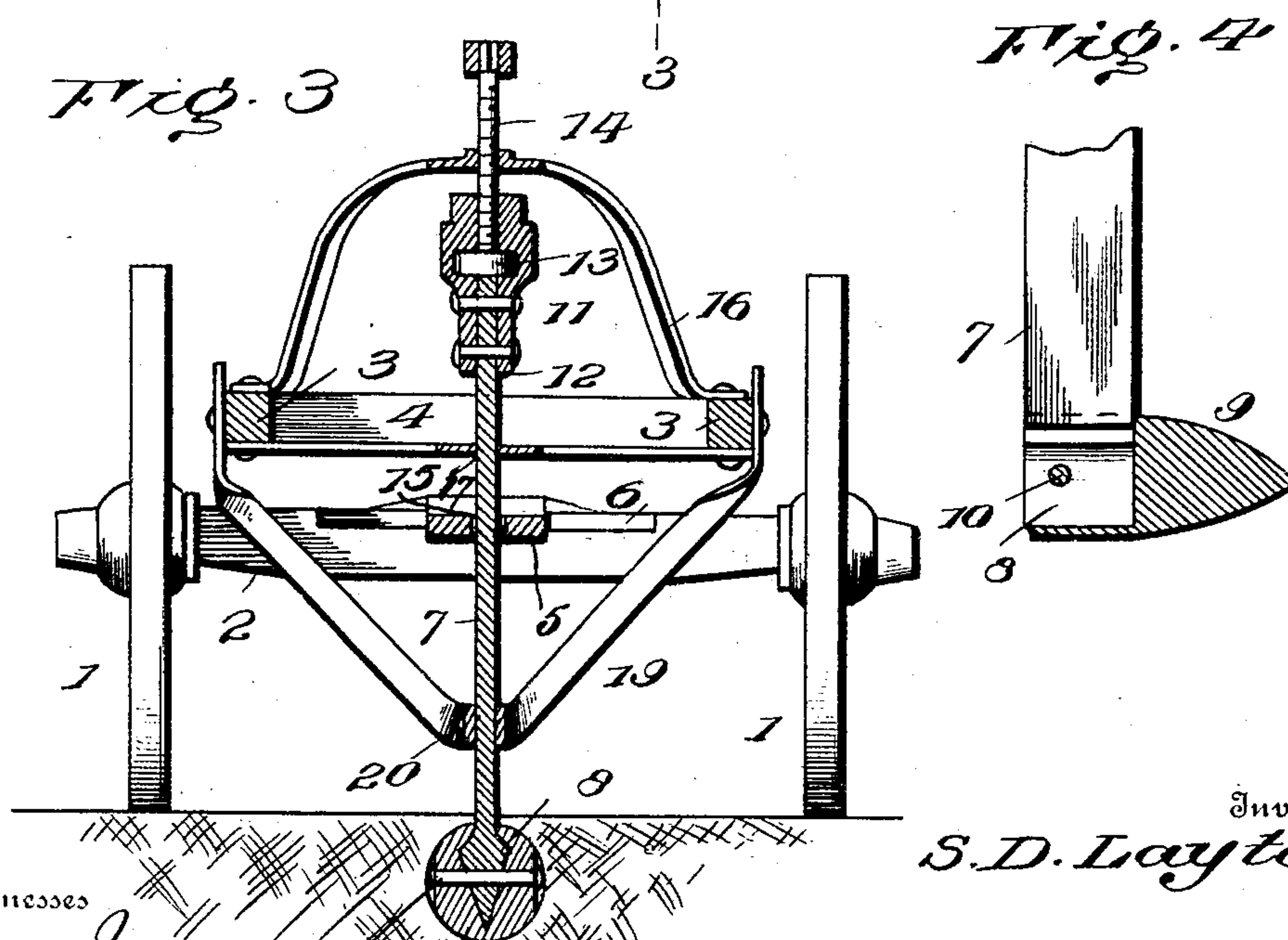
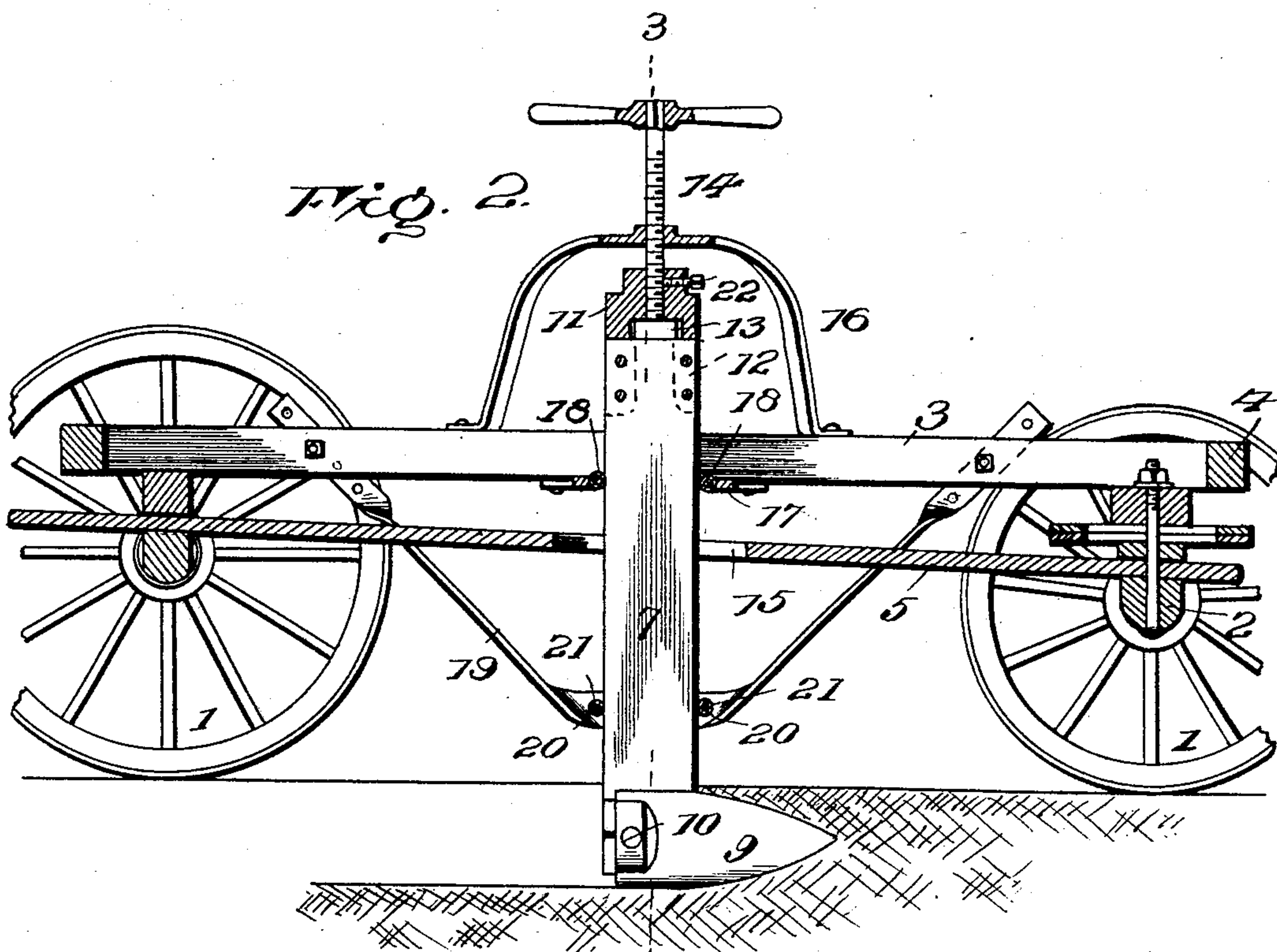
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

STEPHEN D. LAYTON, OF WESTPORT, INDIANA.

DITCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 771,374, dated October 4, 1904.

Application filed December 31, 1903. Serial No. 187,376. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN D. LAYTON, a citizen of the United States, residing at Westport, in the county of Decatur and State of Indiana, have invented certain new and useful Improvements in Ditching-Machines, of which the following is a specification.

This invention relates to machines for forming subsoil drains, trenches, or passages for carrying off water from lowlands, meadows, and places where there is a tendency for water to accumulate and stand.

In its structure the machine comprises a frame adapted to be advanced over the field, a point constructed to penetrate the soil a distance below the surface, a standard having the point attached thereto, upper and lower braces for fixing the position of the standard, and adjusting means for moving the standard and point vertically as may be required according to the depth of the trench or drain required from the surface of the ground.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a machine embodying the invention. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a transverse section on the line 3-3 of Fig. 2. Fig. 4 is a longitudinal section of the point, showing the lower part of the standard. Fig. 5 is a detail perspective view of the head applied to the standard.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The working parts of the machine are carried by the frame, which, as illustrated, is mounted upon supporting-wheels 1 at the ends of the axles 2, the front axle having king-bolt connection with the frame in the usual way.

The frame comprises longitudinal bars 3 and end bars 4. The reach or pole 5 connects the front and rear axles in the accustomed manner and is reinforced at its rear end by hounds 6.

The standard 7 is comparatively thin and wide and is arranged with its greatest width lengthwise of the machine, so as to present a minimum amount of surface to the action of the ground and to resist the strain. The lower end of the standard is thickened and tapered to an edge, as indicated at 8 in Fig. 3. The point 9 is approximately of conical form and is provided with a socket extended lengthwise thereof from the rear end to receive the thickened end 8 of the standard 7, said socket opening through the upper side of the point to receive the standard. The point is connected to the standard by a slip-joint and is held in place by a pin or like fastening 10, passed through transversely-aligned openings formed in the point and end 8. The head 11, secured to the upper end of the standard 7, is provided with four lugs 12, which are transversely and longitudinally spaced to receive the upper end of the standard and the enlargement 13 at the lower end of the feed-screw 14. The head 11 is secured to the upper end of the standard 7 by pins or rivets in the usual manner. The reach 5 is longitudinally slotted, as indicated at 15, to admit of the standard 7 passing therethrough.

A frame 16 is secured to the main frame of the machine and comprises a plurality of curved legs which are firmly attached at their lower ends to the longitudinal bars 3, the central portion of the frame being reinforced by a boss and provided with a threaded opening to receive the feed-screw 14. This frame 16 is of spider form and constitutes a brace for the upper end of the standard 7. A plate 17 is firmly attached to the longitudinal bars 3 and is centrally slotted to receive the standard 7 and is provided at the ends of the slot with rollers 18 to minimize the frictional contact of the edges of the standard 7 with the plate. The brace-frame is pendent from the main frame and acts jointly with the stay elements 16 and 17 to strengthen the standard 7. This pendent brace-frame is composed of cor-

responding bars 19, having the middle portion of each bent downward and inward and the end portions twisted, so as to lie flat against the outer side of the longitudinal bars

5 3. The middle portions of the bars 19 are brought together, so as to lie against opposite sides of the standard 7, and are connected by bolts or pins 20, upon which are mounted sleeves 21, which constitute antifriction-rollers for contact of the edges of the standard
10 therewith. The bars 19 are adjustably connected at their upper ends with the longitudinal bars 3, so as to provide for vertical adjustment of the standard and admit of bracing the same at any distance from the surface
15 of the ground.

The machine is adapted to be drawn over the ground in any accustomed way, and the point 9 running through the soil provides a
20 drain or passage for carrying off water. The depth of the drain may be regulated by adjusting the standard 7 vertically, this being accomplished by means of the feed-screw 14, threaded into the upper portion of the brace-
25 frame 16 and having its lower end connected to the head 11 by a swivel-joint. The clamp-screw 22, threaded into a lateral opening of the head 11, is adapted to be forced against the feed-screw, so as to hold the standard in
30 the adjusted position.

Having thus described the invention, what is claimed as new is—

1. In a ditching-machine, the combination of a standard having its lower end thickened, a
35 point having a socket extended lengthwise

thereof from the rear end and adapted to receive the thickened end of the standard and to make connection therewith by means of a slip-joint, substantially as set forth.

2. In a ditching-machine, the combination of 40 the main frame, a standard provided at its lower end with a point, and a brace-frame pendent from the main frame and composed of companion bars having their middle portions bent downwardly and inwardly and having their terminal portions connected to longitudinal bars in the front and in the rear of the standard, said middle portion being connected immediately in the front and in the rear of the standard and lying against opposite sides of the latter, substantially as set forth. 50

3. In a ditching-machine, the combination of a main frame, a vertically-disposed standard provided at its lower end with a point, companion bars having their end portions twisted to lie flat against the longitudinal bars of the main frame and having their middle portions deflected downward and inward and bent to lie flat against opposite sides of the standard, 60 and means connecting the ends of said bars to the main frame and their middle portions to each other in the front and in the rear of the standard, substantially as set forth.

In testimony whereof I affix my signature in 65 presence of two witnesses.

STEPHEN D. LAYTON. [L. s.]

Witnesses:

THOMAS KETCHUM,
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