

**No. 630,433.**

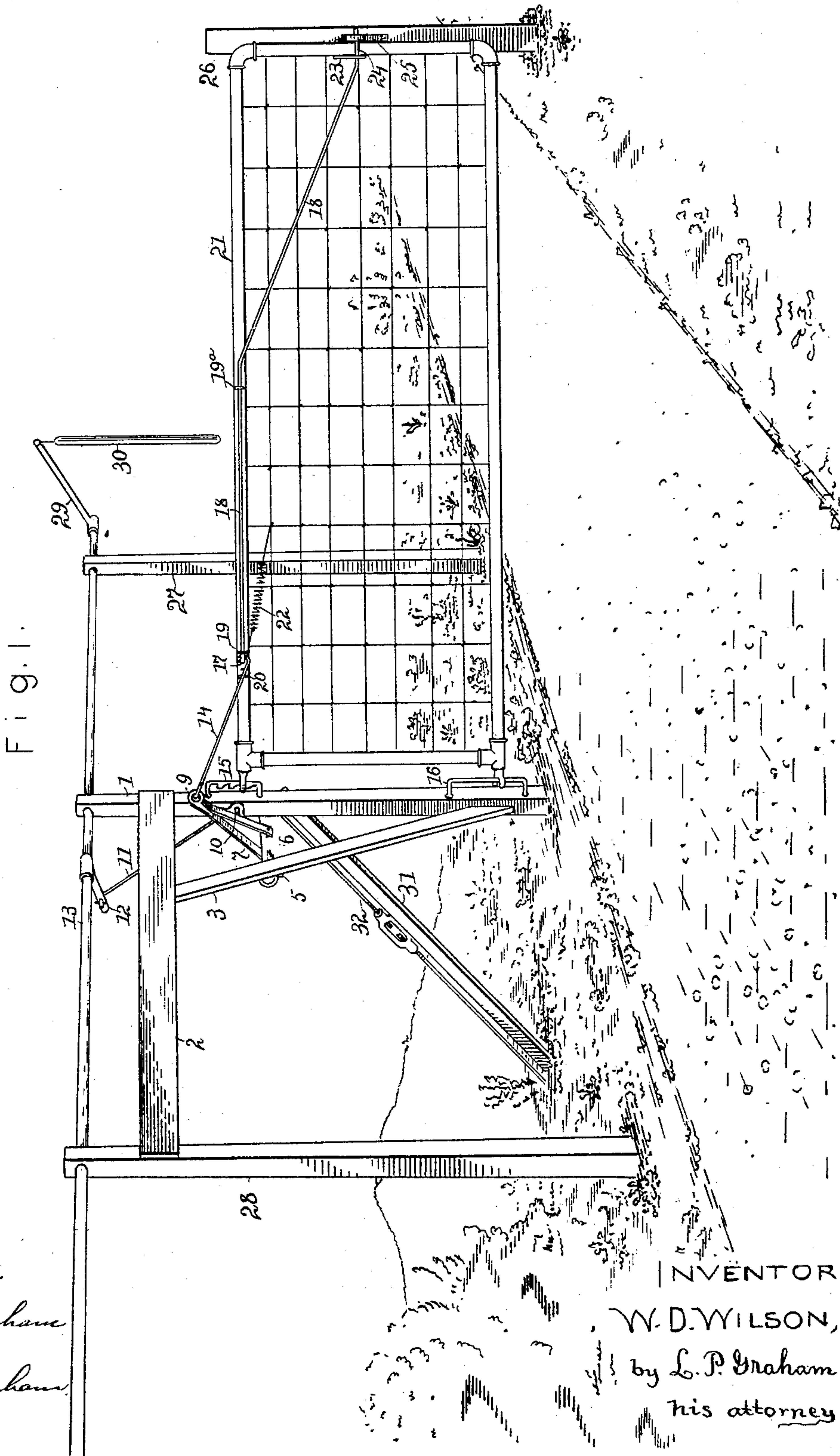
**Patented Aug. 8, 1899.**

W. D. WILSON.  
GATE.

(Application filed Nov. 14, 1898.)

(No Model.)

**3 Sheets—Sheet 1.**



Attest

Nora Graham

Ina Graham.

INVENTOR

W. D. WILSON,

by L. P. Graham

his attorney

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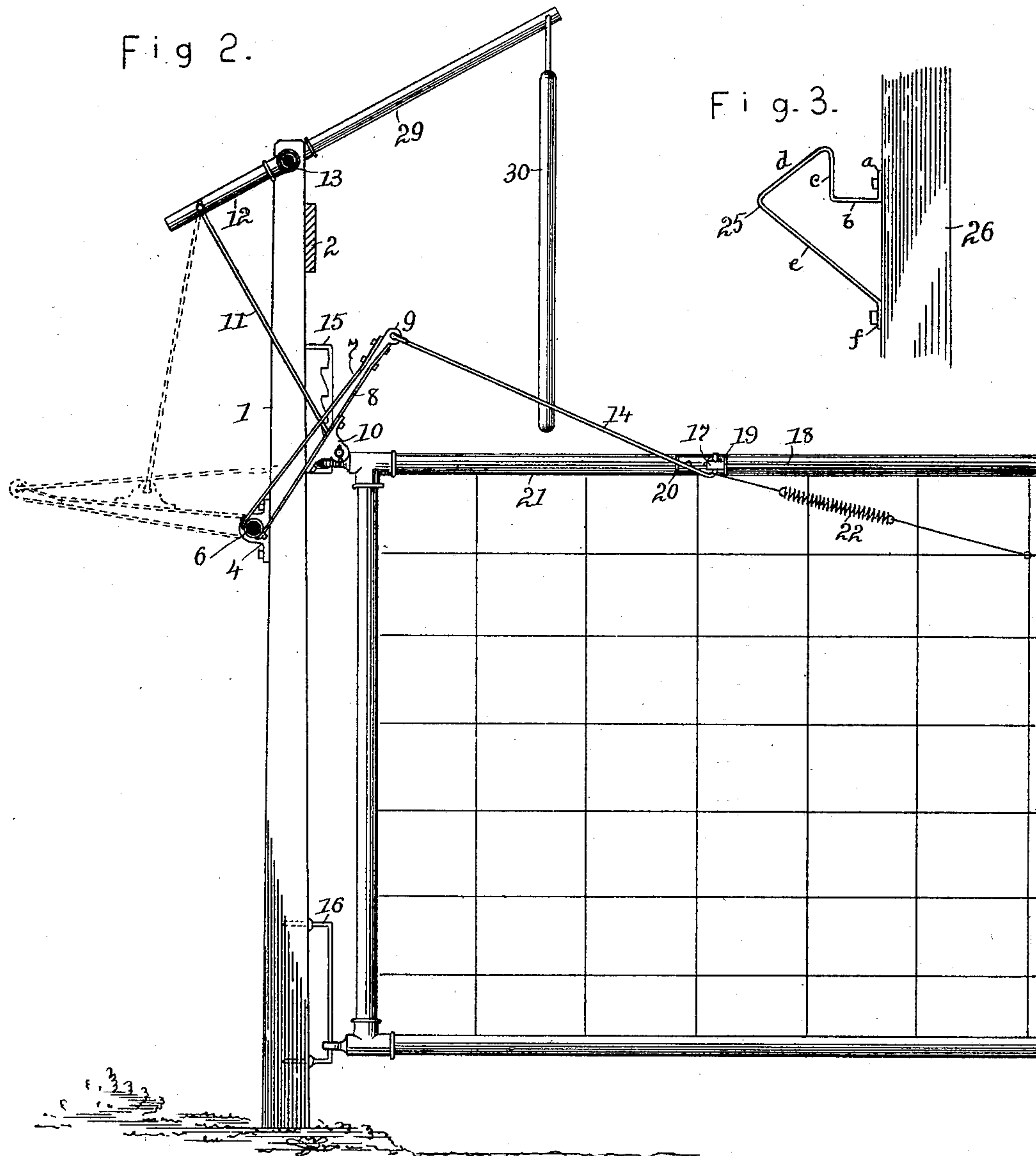
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

Fig. 5.

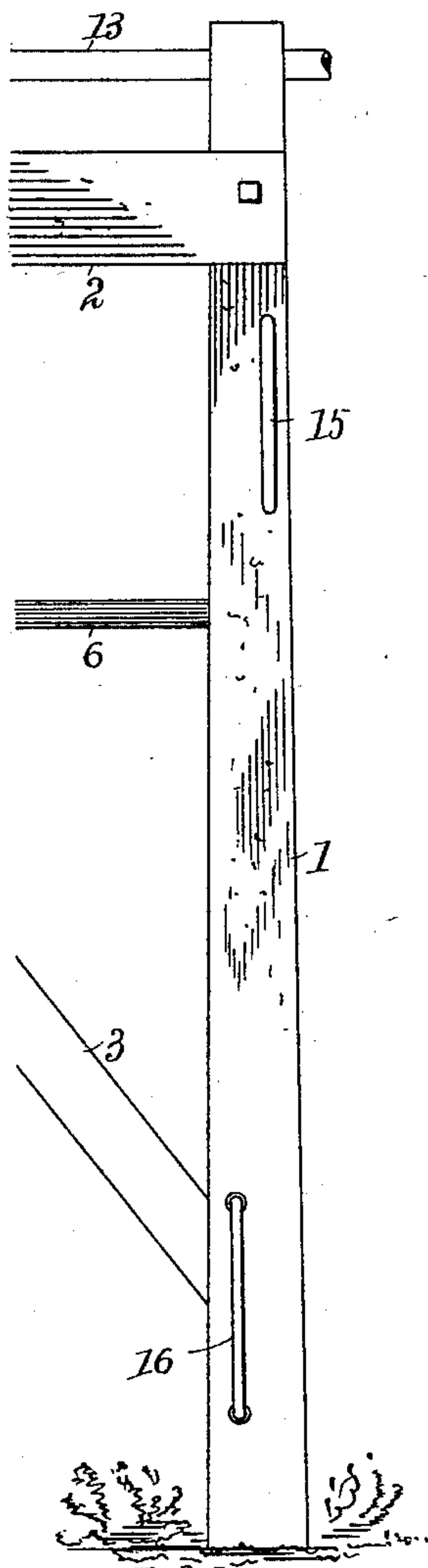
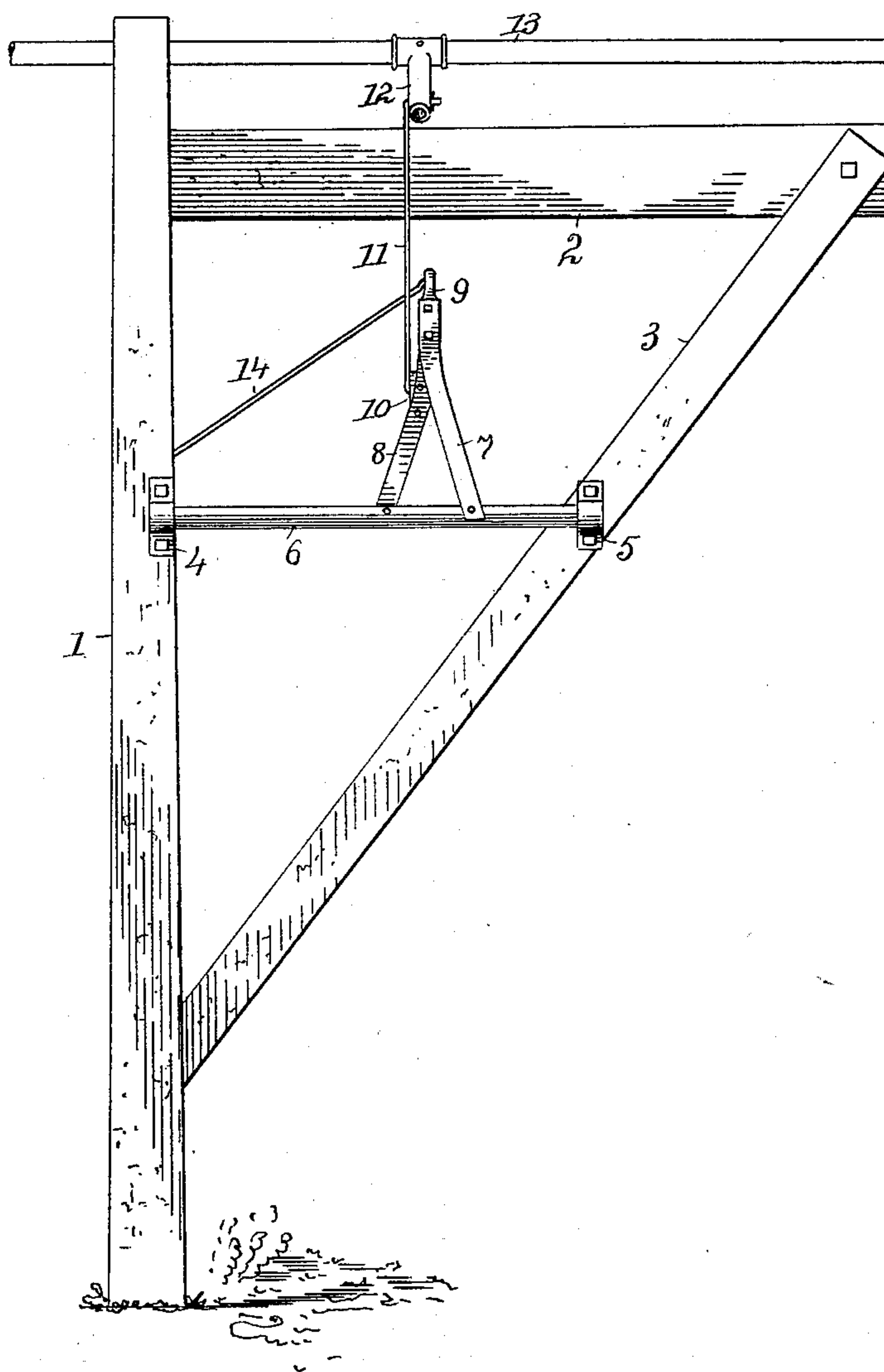


Fig 4.



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# UNITED STATES PATENT OFFICE.

WILLIE DURFFEE WILSON, OF CHAMPAIGN, ILLINOIS.

## GATE.

SPECIFICATION forming part of Letters Patent No. 630,433, dated August 8, 1899.

Application filed November 14, 1898. Serial No. 696,410. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIE DURFFEE WILSON, of Champaign, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in Gates, of which the following is a specification.

This invention is in the nature of an improvement on the gate described by me in Letters Patent of the United States No. 590,870, issued September 28, 1897.

It relates to various features of the gate-operating mechanism, it is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a perspective representation of a gate constructed in accordance with my invention. Fig. 2 is a side elevation of the mechanism used to swing the gate. Fig. 3 is a detail in side elevation of the catch that engages the latch. Fig. 4 is a rear elevation of the gate-actuating rock-arm and adjuncts. Fig. 5 is an elevation of the post on which the gate is hinged, showing the disposition of the hinges thereon.

In constructing a gate in conformity with my improvements a post 1 is set at the place the gate is to swing, a post 27 is set on the side of post 1 in a direction contrary to the direction of the swing of the gate in opening, a post 28 is set on the opposite side of post 1, and still another post (not shown) is set still farther from post 1 in the direction the gate swings in opening. A horizontal bar 2 is fastened to posts 1 and 28, near the upper ends thereof, and a bar 3 extends obliquely upward from the lower end of post 1 to bar 2. A shaft 6 is journaled in bearings 4 and 5 on post 1 and bar 3, respectively, and on such shaft is fastened an arm composed of bars 7 and 8 and head 9. The bars 7 and 8 are fastened one to the upper side and the other to the under side of shaft 6 at different points lengthwise of the shaft, and they converge toward head 9, with which they are connected.

The gate 21 is made in any desirable manner, and it is hinged on loops 15 and 16, which are preferably constructed as shown, and which are connected with post 1 in a certain correlation to be hereinafter explained. A latch-rod 18 has sliding bearings in lugs 19 and

19<sup>a</sup>, which are fastened to the top rail of the gate. It extends downward from the top rail to and through a slotted guide-plate 23 on the swinging end of the gate, and its end 24 engages a catch 25 on post 26. A head 17 of rod 18 bears against lug 19, except when the gate is opening, and a rod 14 connects such head with the head 9 of the arm of rock-shaft 6. A spring 22 connects with rod 14 or with rod 18 and holds the head 17 yieldingly against lug 19. A shaft 13 journals in the upper ends of posts 1, 27, and 28, and in the additional post not shown. At each end the shaft 13 is provided with an arm, as 29, and from the arms depend handles, as 30. An arm 12 is fastened to shaft 13 in vertical alinement with a bracket 10 on the arm of rock-shaft 6, and a rod 11 connects arm 12 with the bracket 10. A brace-bar 31 is connected with post 1 by a bolt that extends through a slot lengthwise in the bar, and a rod 32, anchored at one end and connected with post 1 at the other end, is provided with a turnbuckle to adjust the post. The hinge-loops 15 and 16 are connected with post 1, one above the other, but not in precise vertical alinement, the lower loop being nearer the side of the post toward which the gate swings in opening than is the upper loop. The catch 25 is made of a continuous bar of metal, shaped as shown in Fig. 3 and comprising the downward extension *a*, the horizontal extension *b*, the upward catch extension *c*, the downward and outward lift extension *d*, the downward and inward brace extension *e*, and the downward extension *f*. The extensions *a* and *f* are fastened to the post 26 by bolts or the like, as indicated in the drawings.

When the gate is closed, the end 24 of the latch-rod rests in catch 25 and holds the gate closed against post 26. To open the gate, a downward pull is given one or the other of the downward-depending handles 30, thereby rocking shaft 13, raising arm 12, and acting on the latch-rod through rod 11, the arm on rock-shaft 6, and rod 14. The rock-arm on shaft 6 is at one side of the hinges of the gate, so that its backward swing exerts an oblique pull on the gate; but the obliquity of the direction of the initial pull is not great enough to cramp the latch-rod in its sliding



bearings, and so the first result of the pull is to slide the latch-rod endwise against the action of spring 22 until the end of the latch-rod is clear of the catch. At this time the head of the latch-rod is in contact with a stop-lug 20 on the gate-frame, and further pull on the handle will compel the gate to swing open. Owing to the disincidence of the hinges, heretofore explained, the gate swings slightly upward as it opens, and if the impulse given the handle should not develop sufficient momentum to carry the gate past the dead-center of the opening mechanism the gate will automatically swing back toward the catch-post in position to permit a repetition of the pull of the handle, when the operator, profiting by his experience, will increase the force applied to the handle to an extent sufficient to swing the gate entirely open. When the gate is open, the rock-arm of shaft 6 will assume the position shown in broken lines in Fig. 2, or even lower, and by its weight and the approximate alinement of the different connections it will hold the gate open with sufficient firmness to resist all accidental or unintentional closing stress and enable the catch commonly employed to hold the gate open to be entirely dispensed with. As soon as the pull on the gate becomes approximately sidewise the spring will return the latch-bolt to its shown position, and when the gate is swung shut the latch will ride over surface *d* of the catch and rest behind vertical extension *c*. As the initial pull of the rock-arm on the gate is indirect or partly sidewise, the construction

of the arm is admirably adapted to resist such pull.

The bracket 10 on the rock-arm places the connection of rod 11 at a point on the arm to swing the gate with the least possible tendency to developing a dead-lock, and in this, as well as in other obvious particulars, the operating mechanism is simplified and improved.

What I claim is—

1. In gate-operating mechanism, the combination of a gate-post, a gate hinged thereon, a rock-shaft at one side of the post an arm on the shaft consisting of convergent bars 7 and 8 and head 9, a rod connecting the head with the gate and means for rocking the arm, substantially as set forth.

2. In gate-operating mechanism, the combination of a gate-post, a gate hinged thereto, a rock-shaft at the upper end of the post having arms and depending handles at its ends, an intermediate rock-shaft to one side of the post, an arm on the intermediate shaft consisting of convergent bars 7 and 8 and head 9, a bracket 10 on one of the bars a rod connecting the bracket with an arm on the overhead shaft, and a rod connecting head 9 with the gate, substantially as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

WILLIE DURFFEE WILSON.

Witnesses:

MILON WILSON,  
R. S. WILBER.