

No. 774,787.

PATENTED NOV. 15, 1904.

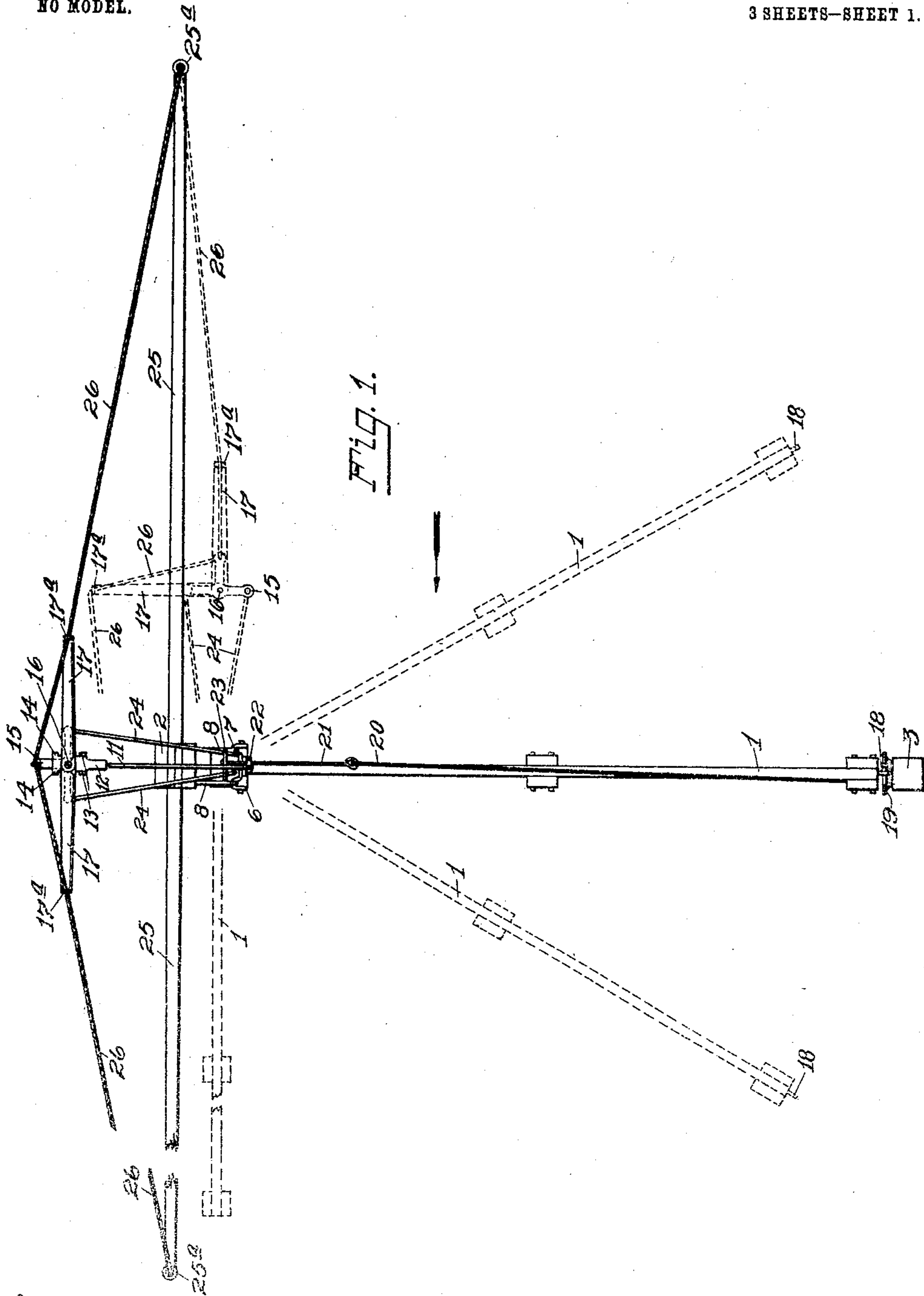
W. W. SANDERS.

GATE.

APPLICATION FILED APR. 7, 1904.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses.
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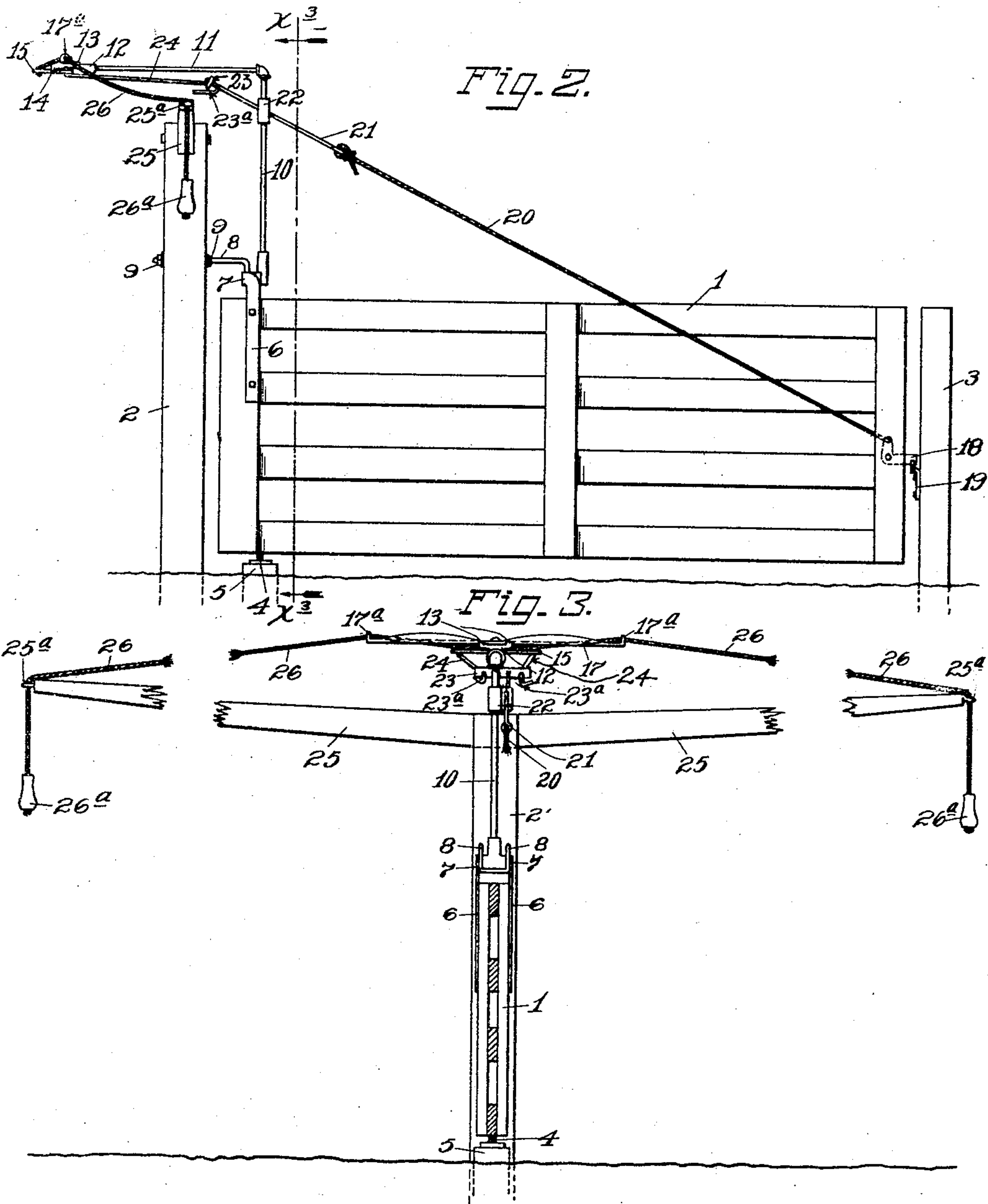
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

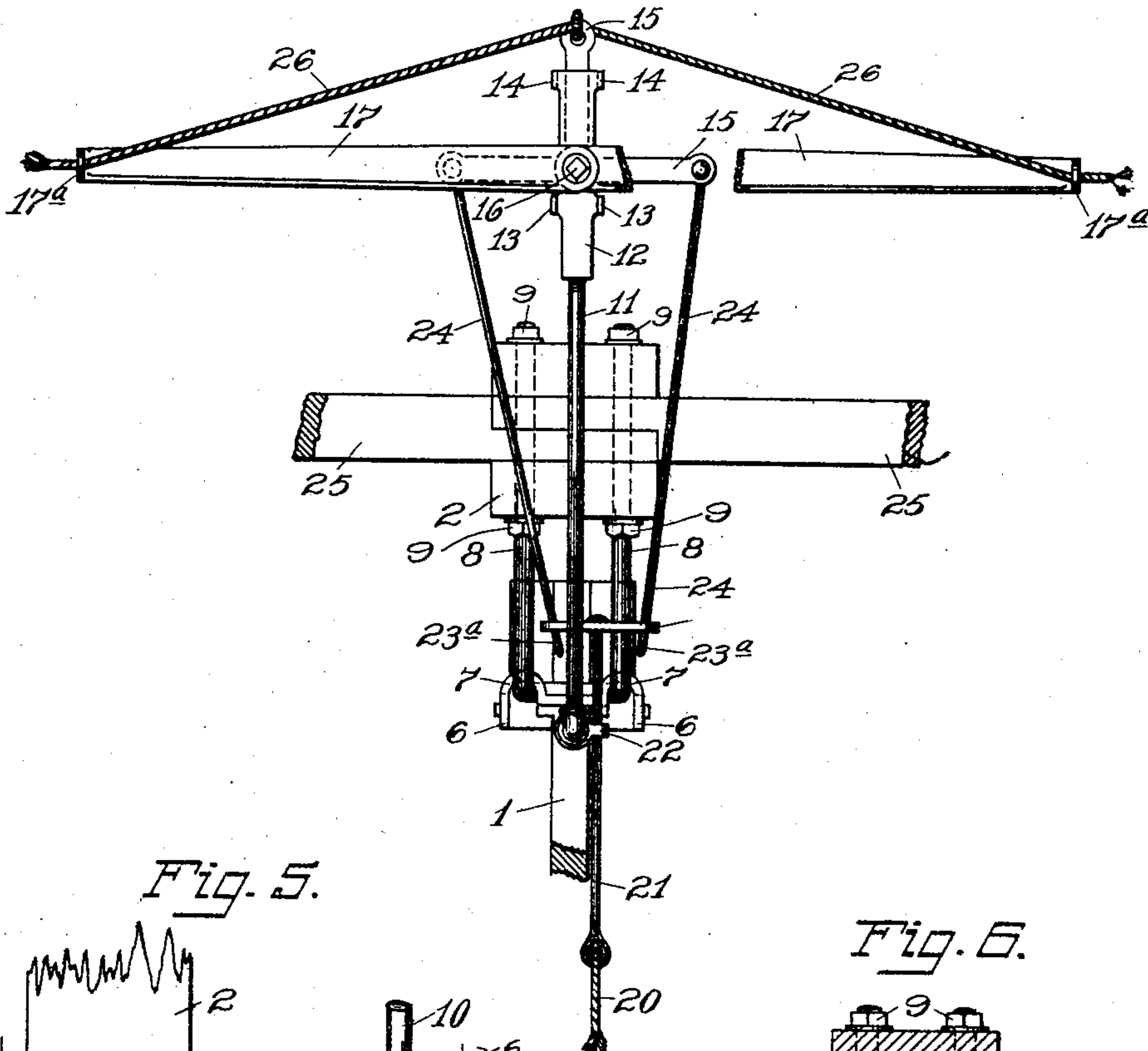


Fig. 5.

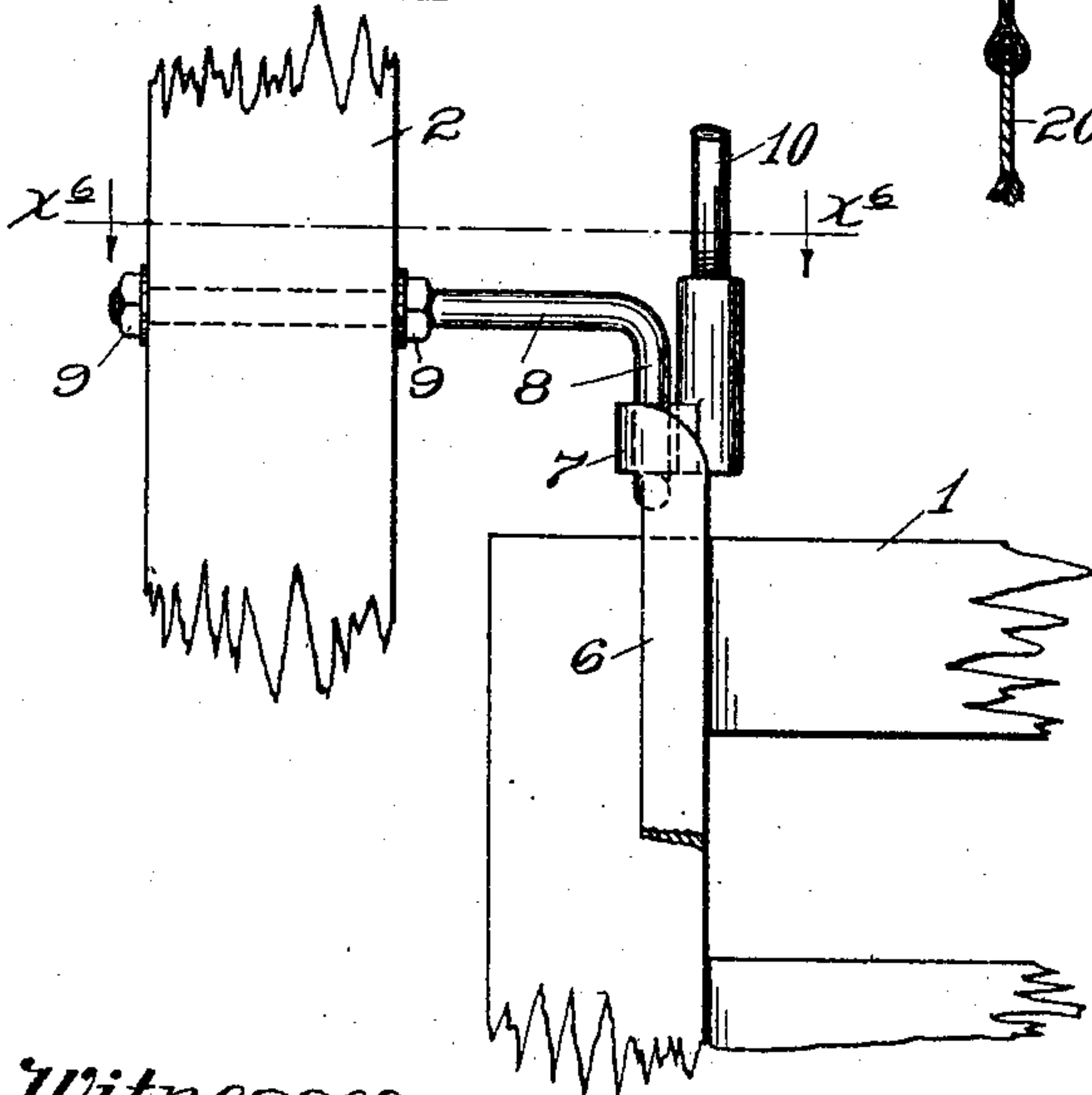
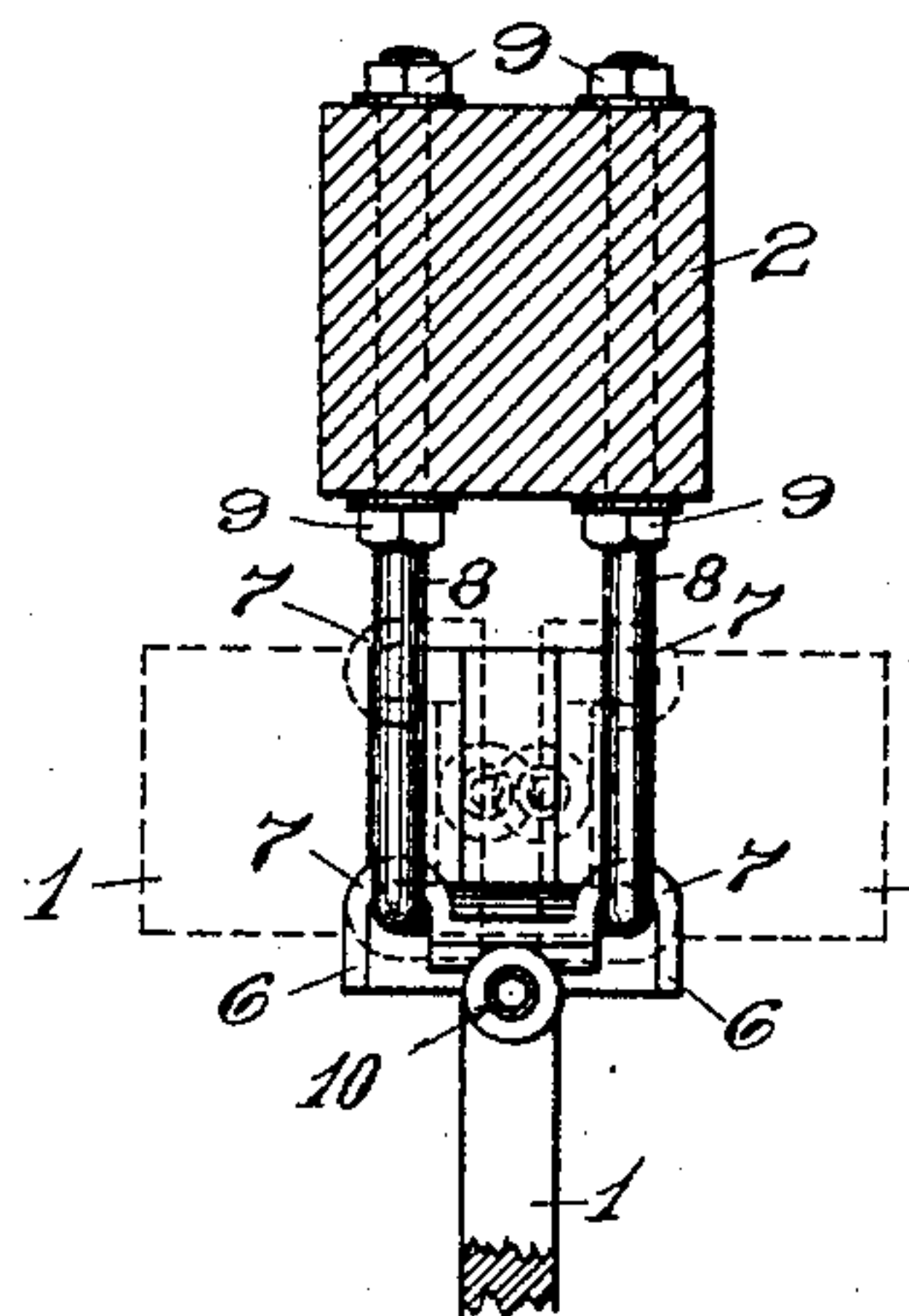


Fig. 6.



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GATE.

SPECIFICATION forming part of Letters Patent No. 774,787, dated November 15, 1904.

Application filed April 7, 1904. Serial No. 201,977. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SANDERS, a citizen of the United States, residing at Osceola, in the county of Polk and State of Wisconsin, have invented certain new and useful Improvements in Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to road-gates and to means for operating the same, and has for its object to simplify and generally improve the construction and actions thereof.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a plan view showing a gate mounted and equipped in accordance with my invention. Fig. 2 is a view in elevation of the parts shown in Fig. 1. Fig. 3 is a vertical section on the line $x^3 x^3$ of Fig. 2. Fig. 4 is an enlarged detail in plan showing a portion of the gate and parts of the gate-actuating mechanism, some parts being broken away. Fig. 5 is a detail in side elevation illustrating the construction of the upper hinge for supporting the gate, and Fig. 6 is a detail in horizontal section on the line $x^6 x^6$ of Fig. 5.

The numeral 1 indicates a gate, which may be of any suitable construction.

The numeral 2 indicates a relatively long post at one end of the gate, and the numeral 3 indicates a shorter post at the other end of the gate.

The gate 1 is hinged for lateral swinging movement by a hinge-mounting of novel construction which causes the gate to automatically swing to a closed position when moved beyond a certain intermediate position and which also causes the gate to automatically swing into an open position whenever it is moved toward its extreme open position beyond a predetermined point. To thus mount the gate, it is pivotally supported near one

end on a pintle or pivot-pin 4, shown as projecting upward from a stub-post 5, set into the ground. To the same end of the gate at its upper portion is rigidly secured a hinge-bracket 6, the upper portion of which extends transversely over the top of the gate and is bent to form open seats 7, located one on each side of the gate. When the gate is closed, the seats 7 are engaged each by the downturned end of one of a pair of hinge-bolts 8, which bolts are rigidly but adjustably secured to the post 2 by means of clamping-nuts 9 or other suitable devices.

The open seats 7, it will be noted, are located rearward of the pintle 5, and it has already been stated that the said seats are located one on each side of the gate. In virtue of this construction when the gate is swung laterally from its normal or closed position it will move pivotally on the pintle 5 and on one of the hinge-bolts 8 and seats 7, while the other seat 7 of the hinge-bracket 6 will of course be moved away from the depending end of its cooperating hinge-bolt 8. The weight of the gate when the gate is in closed position or when it is close to a closed position tends to swing the gate and hold the gate so that both of the open seats 7 will engage the depending ends of the hinge-bolts 8. If, for instance, the gate be swung toward the left, the seat 7 at the left will be moved away from the depending end of its hinge-bolt 8 and the weight of the gate will tend to throw the gate back toward the right into a closed position. The above-stated action is that which will take place when the gate is not swung more than forty-five degrees. When, however, the gate is moved more than forty-five degrees from its closed position, it will be tilted to such an extent that its center of gravity will be changed, and the gate will then under the action of its own weight tend to swing into an extreme open position, as indicated by dotted lines in Fig. 1.

The gate-operating device is preferably constructed as follows: A rod 10 is rigidly secured at its lower end to the upper central portion of the hinge-bracket 6, and at its upper end it is provided with the horizontal extension or arm 11, to the end of which is rigidly

secured a bearing-head 12, having upturned lugs 13 and downturned lugs 14. A three-armed bell-crank lever 15 is pivoted on a bolt 16, supported by the head 12, and a pair of reversely-extending folding levers 17 are pivoted to this same bolt. The intermediate arm of the bell-crank 15 has a limited movement between the depending lugs 14 of the head 12. The stop-lugs 13 of said head engage one with each of the folding levers 17 to limit their movements in one direction to the positions shown in Fig. 4. At the free end of the gate is a pivoted latch-dog 18, which coöperates with a latch-plate 19 on the post 3 to lock the gate in its closed position. This latch 18 is, as shown, connected by a small wire or cord 20 to a short rod 21, that freely slides through a lug 22, secured on the rod 10. At its upper end this rod 21 is provided with a transversely-extending head 23. To the free ends of the oppositely-projecting arms of the bell-crank 15 are pivotally attached tripping-rods 24, the free ends of which work through perforations in the head 23 of the rod 21 and are provided with hooks 23^a, that engage with the said head 23. As is evident, the latch-dog 18 will be released from the latch-plate 19 whenever the rod 21 is drawn slightly upward. Long oppositely-projecting guide-bars 25 extend parallel with the road and are provided at their ends with guide-eyes 25^a. A rope or other flexible connection 26 is attached at its intermediate portion to the intermediate arm of the bell-crank 15 and is extended in opposite directions, first through loops 17^a in the free ends of the folding levers 17 and thence through said guide-eyes 25^a in the ends of the bars 25. Light weights 26^a, which afford convenient handpieces, are attached to the depending ends of the rope 26.

The operation of the device for actuating the gate is substantially as follows: A person wishing to open the gate, driving in the direction indicated by the arrow marked on Fig. 1, will take hold of the right-hand end of the operating-rope 26 and by drawing thereon will cause the gate to swing away from him—to wit, in the direction in which he is driving—and when the said gate reaches its extreme open position the left-hand folding lever 17 will be carried into a position at a right angle with the road, as shown by dotted lines in said Fig. 1. The right-hand lever 17 under the above movement of the gate folds into a position parallel with the road, and hence will not project inward into the line of travel of a wide load, such as a load of hay. It will of course be understood that the initial pull on the rope 26 imparts sufficient rocking movement to the bell-crank 15 to cause the same to release the latch-dog 18, and it is of course evident that this releasing movement will be given to the said rod 21 and connection 20 through one or the other of the rods 24, according to which end of the rope 26 is pulled. A

slight movement of the bell-crank 15 brings its intermediate arm into engagement with one or the other of the depending lugs 14 of the head 12, so that further movement imparted thereto by the pull on the rope will positively move the rod 10, its arm 11, and the gate 1. By reference to the dotted-line position of the gate shown in Fig. 1 it will be seen that when the gate is in an open position one of the folding levers 17 will by one of the stops 16 be held in a position at a right angle to the road, so that by a pull on the proper end of the rope 26 the gate may be positively forced into its closed position. It will thus be seen that a person with a team or rig may drive close up to the gate and by pulling on the adjacent end of the rope 26 may cause the gate to swing away from the rig into an open position and then after having driven through the gateway may close the gate by a pull on the opposite end of the said rope.

By endwise adjustments of the hinge-rods 8 the hinge connections and the gate may be easily adjusted and properly centered. The light weights 26^a on the ends of the rope 26 keep the rope drawn taut under light tension, but do not have any further action—that is, they do not interfere with or cause movements of the gate. The mechanism for operating the gate is simple, is of small cost, and is efficient for the purposes had in view.

It will of course be understood that the mechanism described is capable of modification within the scope of my invention as herein set forth and claimed. The gate-latch, for instance, may take various forms and may be applied in a great many different ways.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with a gate mounted to swing in both directions, and provided with a projecting arm, of a bell-crank lever pivoted to, and having a limited movement on, said arm, a flexible operating connection extended in opposite directions from said bell-crank lever, a gate-latch, a latch-releasing connection attached to said bell-crank and arranged to release the latch, under initial movements of said bell-crank lever, in either direction, and a pair of reversely-folding arms acting on said gate, and on said latch-releasing connection, substantially as described.

2. The combination with a gate pivotally mounted at the lower portion of one end, and pivotally supported at its upper portion by a double hinge, having bearings on opposite sides of the gate, of a latch for securing the gate in a closed position, a three-arm bell-crank lever mounted on a part carried by the gate, and having a limited movement with respect thereto, a flexible gate-operating connection attached to the intermediate arm of said bell-crank lever, with its ends extended in opposite directions, and a latch-releasing connection attached to the oppositely-project-

ing arms of said bell-crank lever and arranged to release said latch under initial movements of said gate-operating connection, in either direction, and a pair of reversely-folding arms 5 acting on said gate, and on said latch-releasing connection, substantially as described.

3. The combination with a gate mounted on a pintle 4 and provided with a hinged bracket 6, formed with seats 7 on opposite sides of the gate, of rigidly-supported hinge-rods 8 engaging said seats 7, a projecting arm 11 connected to move with said gate and provided with a head formed with pairs of stops 13 and 14, the three-arm bell-crank 15 pivoted to said 15 head, and having a limited movement between said stops 14, folding levers 17, also pivoted to said head and engaging with said stops 13, the gate-operating connection 26 attached to the intermediate arm of said bell-crank lever 20 15, with its ends extended in opposite directions, through guides on the free ends of said levers 17, a latch for securing the gate in a closed position, and a latch-releasing connec-

tion attached to the oppositely - projecting arms of said bell-crank lever, and arranged to 25 release said latch under initial movements of said bell-crank lever, in either direction, substantially as described.

4. In combination with a gate mounted to swing in both directions, a post to which said 30 gate is hinged, having arms projecting in opposite directions along the roadway, at one side thereof, the crank-like arm secured to move with said gate, a pair of reversely-folding arms pivoted to and cooperating with stops 35 on the crank-like arm of the gate, a gate-latch, and a flexible latch-releasing and gate-operating connection, passed through guides on the free ends of said folding arms and of the arms 40 of said post, substantially as described.

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

WILLIAM W. SANDERS.

Witnesses:

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F. D. MERCHANT.