(No Model.) 3 Sheets—Sheet 1.

# E. S. CRAWFORD.

## GATE.

No. 438,144. Patented Oct. 14, 1890.

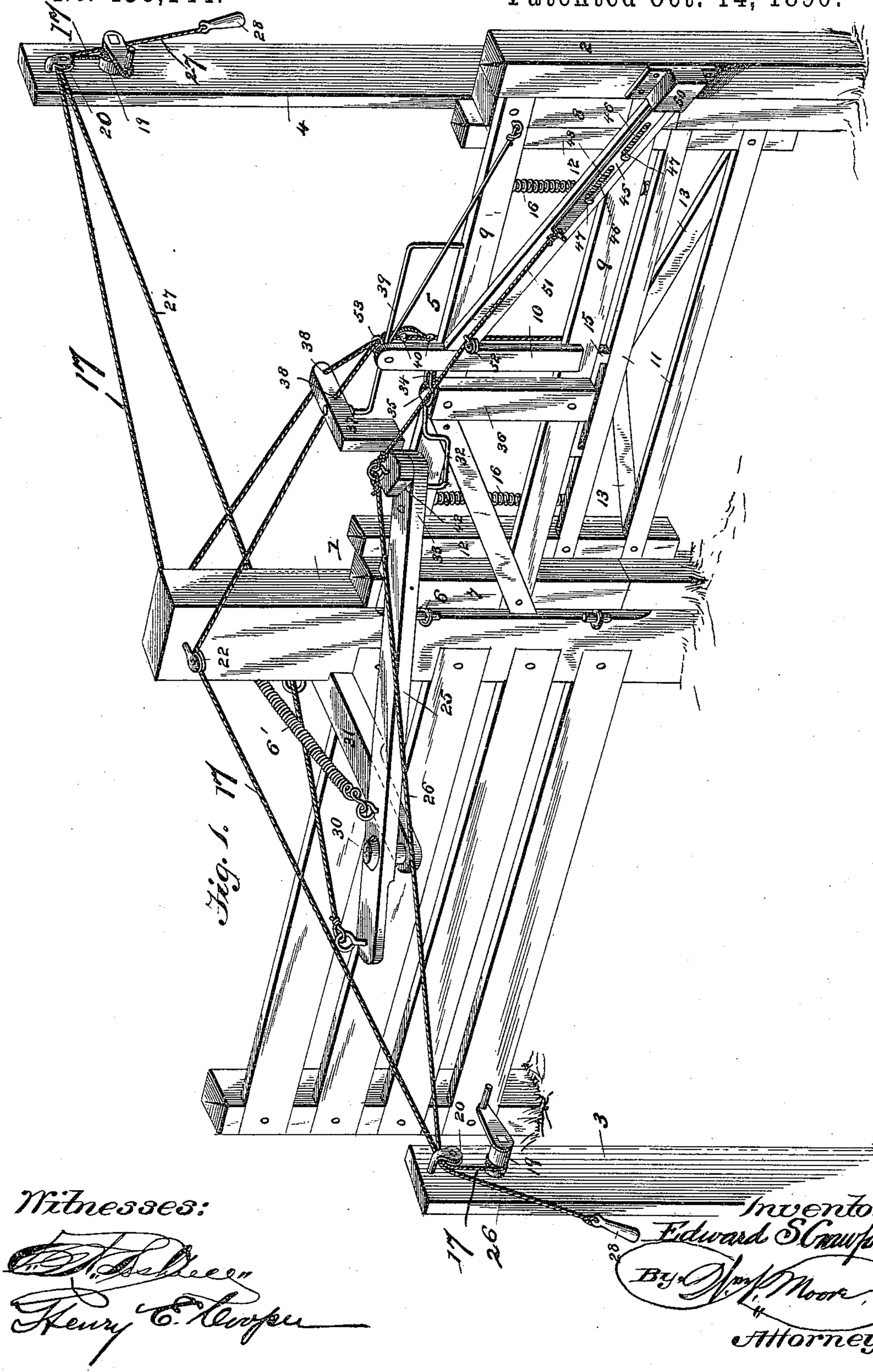

Fig. 1.

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(No Model.)

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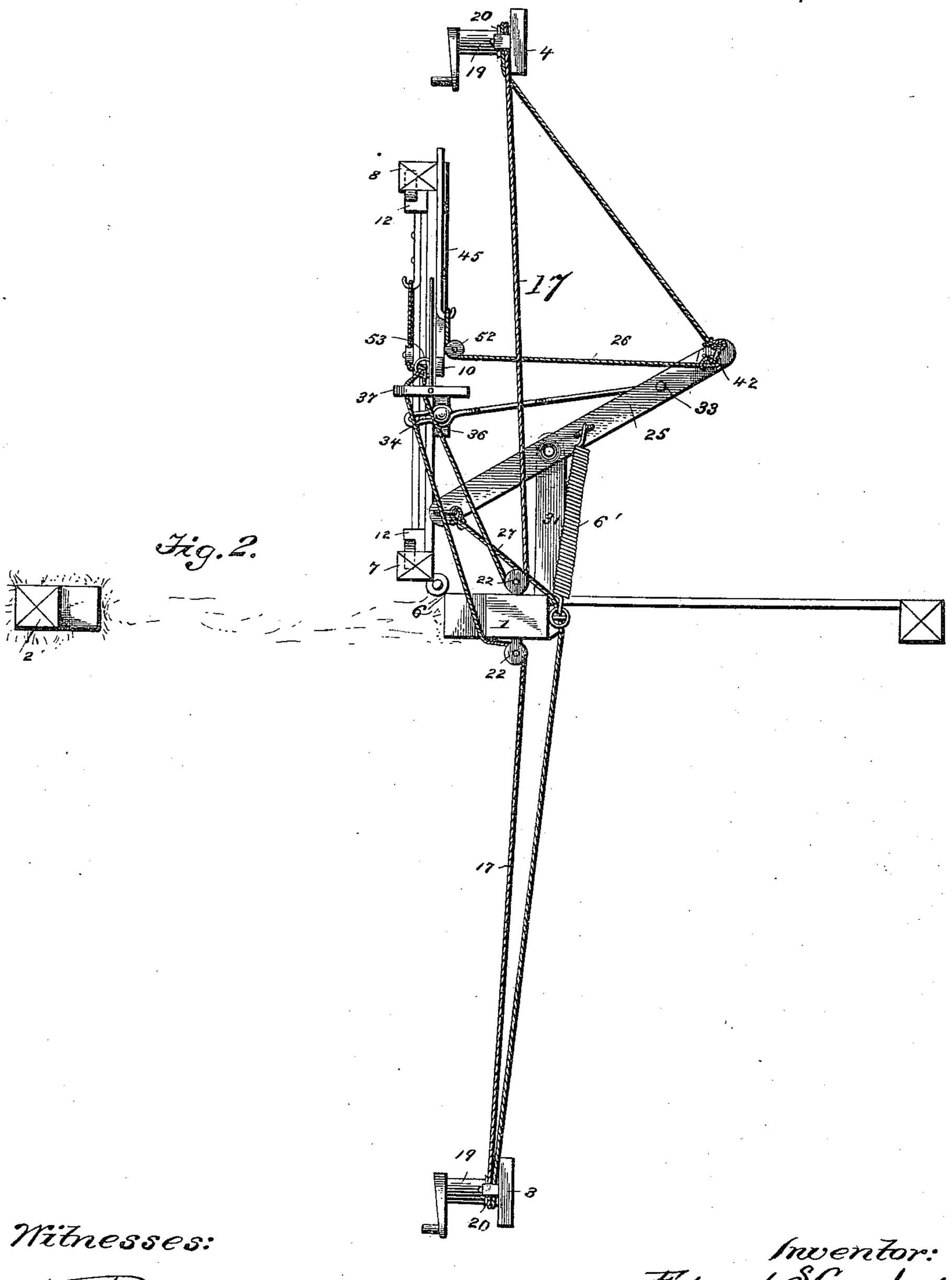


Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

# E. S. CRAWFORD.

## GATE.

No. 438,144. Patented Oct. 14, 1890.

Fig. 3.

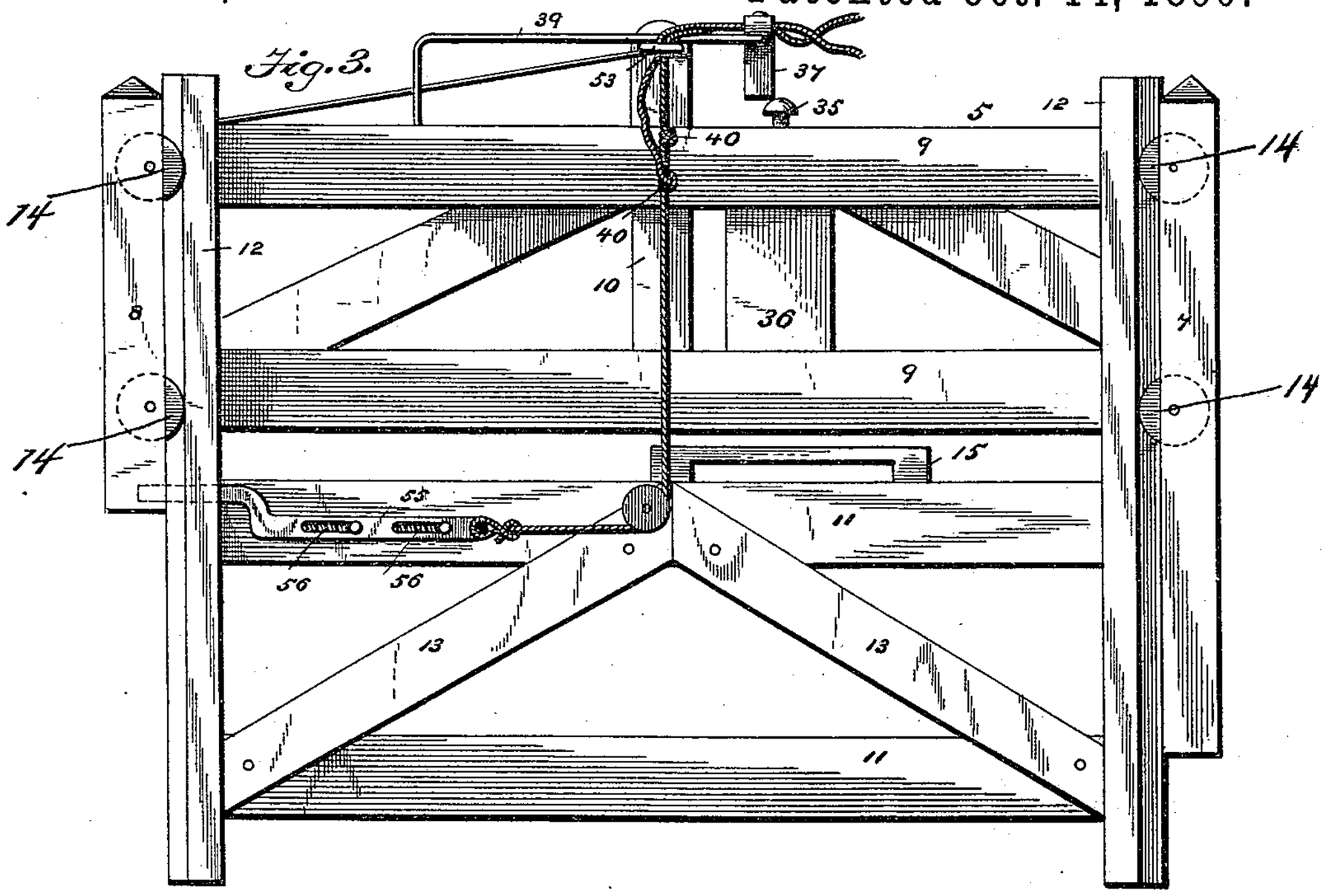
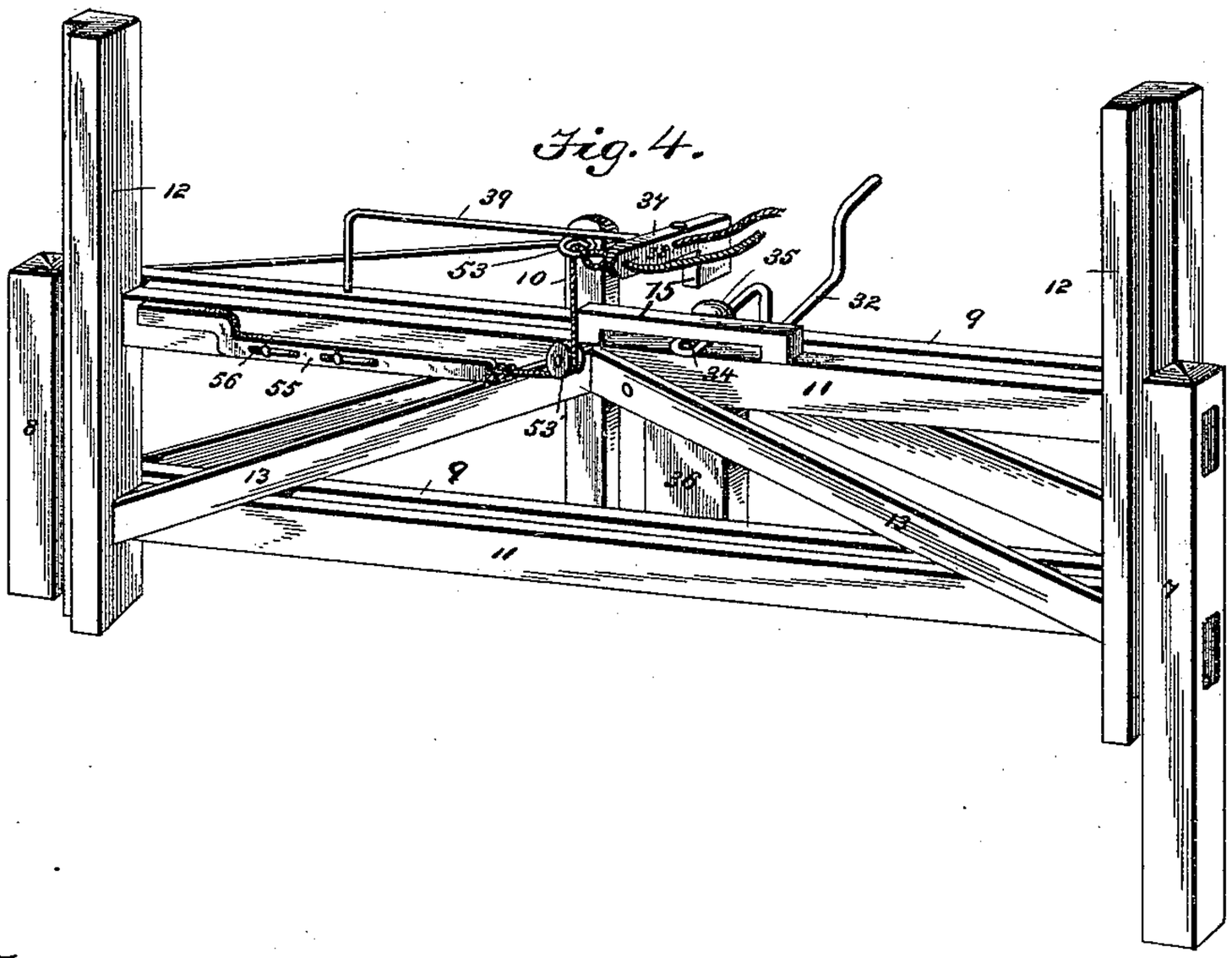



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## GATE.

SPECIFICATION forming part of Letters Patent No. 438,144, dated October 14, 1890.

Application filed March 10, 1890. Serial No. 343,337. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD S. CRAWFORD, a citizen of the United States of America, residing at Milford, in the county of Iroquois and State of Illinois, have invented certain new and useful Improvements in Gates, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in swinging and adjustable gates, and it has for its objects, first, to provide a simple and reliable gate, which is automatically closed by giving the same a slight impetus after the person or vehicle has passed through the same; secondly, to provide simple means for opening the gate at either side without dismounting from a horse or vehicle, which means also serve to lock the gate in a closed or open position; thirdly, to construct the gate proper so that it can be raised or elevated by manipulating devices on either side of the road and swung open to clear snow-drifts, and, finally, to improve the parts in minor details of construction, so as to increase the simplicity and durability of the structure as a whole and promote efficiency of operation.

To attain the desired objects my invention consists in the combinations of devices and peculiar construction and arrangement of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of my improved gate. Fig. 2 is a plan view showing the gate swung open. Fig. 3 is an elevation of the gate proper. Fig. 4 is a view showing the position of the parts when the lower section of the gate is raised and locked in its elevated position in order to swing the gate either open or closed.

Like numerals of reference denote corresponding parts in all the drawings, referring to which—

1 2 designate the gate-posts, which are set in line with the fence, and 3 4 are the road-posts set in the road on opposite sides of the gate 5 at suitable distances from and substantially in line with the gate-post 1. The gate 5 has its stile hinged or pivotally connected at one of the angles or corners thereof at 6 to the gate-post 1. The closing of the gate is assisted by a coiled spring 6′ or its equivalent, to be hereinafter referred to.

The gate 5 comprises the hinged upper section, having the hinged stile 7, the short stile 8, the bars 9, and the vertical bar 10, together with suitable braces, all of which are suitably secured together, and the lower vertically-movable section, which is carried by the hinged upper section and is capable of being moved vertically thereon independently of the position of the same, the lower gate section or member comprising the bars 11, the vertical stiles 12, and the braces 13. The stiles 12 extend above the bars 11 and to the top of the upper part or section of the gate when the lower section thereof is lowered, as shown in Figs. 1 and 3, and these stiles ride against friction-rollers 14, which are arranged on the opposing faces of the stiles of the hinged upper section 5 of the gate. The lower adjustable section or member of the gate is provided with a slotted bar 15, which is fixed to the upper bar of said section and is adapted, when said lower section is raised and the gate swung open, to receive the means for locking or confining it in its raised position while the gate is being opened or closed.

The lower gate-section is suspended from the upper section by means of coiled springs 16, or the equivalents thereof, which operate to take up the jar and strain when it drops or falls, and said lower section of the gate is raised from either side of the road by cords or chains 17, each of which is coiled around a windlass 19 and runs through a suitable guide-pulley 20 on the road-post and through a guide-pulley 22 on the hinge-post 7, said cords or chains being joined together and connected to the middle of the lower adjustable gate-section, whereby said lower gate-section can be raised at will by pulling on either of the cords 17.

The gate is swung open by a beam 25, operated by cords or chains 26 27, one of which is connected to one end of said beam and runs through a guide-pulley on gate-post 1 to road-post 4, and the other cord or chain is connected to the other end of the beam or lever and runs through the guide-pulley on the road-post 3, the free end of each cord or chain having a hand-pull 28. The beam or lever is

arranged in a horizontal position on one side of the gate, and it is pivoted at an intermediate point of its length, as at 30, to a fixed arm or support 31 on the gate-post 1. This swinging beam or lever is connected to the gate by an intermediate pitman or link 32, one end of which is pivoted to the beam or lever at one side of the pivot thereof, as at 33, and the opposite end of said link is connected to the gate (the upper section thereof) in a peculiar manner, so as to permit said link or pitman to have a limited endwise movement when the gate is swung open. This end of the pitman is provided with a longitudinal slot 34, through which passes a headed pin or bolt 35 that is fixed in or secured to a vertical bar 36 on the upper hinged section of the gate, the slotted end of the pitman lying flush with or on one side of the gate when the latter is closed, so that the lower section can be raised without hindrance from the slotted end of the link or pitman.

The operation of my invention is as follows: To open the gate, one of the handles 28 is drawn upon, which operation draws bar 25 into line with its supporting-beam 31, and the momentum of the gate continues the motion past the dead-point, whereupon spring 6 carries it to the position shown in Fig. 2, and after the person or vehicle has passed through the gate the other handle 28 is pulled and the parts are returned to their normal position, as is evident.

To open the gate should snow be piled up against the same, the windlass 19, on one side or the other of the gate, is turned so as to draw one of the cords or chains 17, and thus raise the lower section of the gate until it lies opposite to or parallel with the upper hinged section thereof. In this position of the two members of the gate the slotted bar on the lower member lies immediately opposite to the slotted end of the pitman, and when the gate is swung open by pulling on one of the pulls attached to the cords this slotted end of the pitman enters the slot in the bar 15 on the lower gate-section, whereby the two gate-sections are automatically locked together while in the act of opening or closing the gate, as shown in Fig. 4; but just as soon as the gate is closed, as hereinbefore described, the slotted end of the pitman is automatically withdrawn from the slotted bar and the lower gate-section drops or closes by gravity, the jar being taken up by the springs 16.

Slight changes in the form and proportion of parts and details of construction can be made without departing from the spirit of my invention.

37 designates an L-shaped bar or lever, having two perforations 38 through the same for the passage of the knotted cords or chains 17 for operating the lower section of the gate, and to this bar or lever is attached a rod 39, which is suitably affixed to the gate or one of its uprights and serves as the fulcrum for the L-shaped lever. This L-shaped lever or piece is arranged at right angles to the gate, and the openings or perforations in said arm of the lever are of just sufficient size to enable the cords to slide freely through the lever, but not large enough to permit knots or stops 40 on the cords to pass. The lever is fulcrumed at the angle or juncture of its arms, so that both openings are in one arm of the same, and when either of the cords or chains is drawn upon to elevate the gate-section, or the lower half thereof, the knot or stop 40 on said cord or chain 17 comes against or in contact with the L-shaped lever to throw the perforated arm at a slight angle to the line of the gate, which movement of said lever throws the other arm of the lever against a stop 42 on the top or upper side of the pivoted beam and throws or moves the end of the latter (the beam) slightly away from the gate, so that the beam and pitman are caused to break joints or thrown out of line with each other, the result of which is to open the gate slightly and throw the slotted end 34 of pitman 32 into the slot of bar 15. As the free arm of the L-shaped lever remains against the stop or piece 42 on the swinging beam, the gate is locked or confined in its adjusted position without requiring the operator to hold the windlass with his hand—that is, the gate stands slightly ajar, and the lower half of the gate is confined in its raised position by the end of the pitman entering the slotted bar, because the beam and pitman are thrown out of line and held or confined in such positions by the engagement of the elbow or L-shaped lever with the piece 42 of the beam, so that the gate can be readily opened by simply pulling either of the cords or chains 27. I have also devised novel means for locking the gate against swinging on its hinges and to prevent the lower vertically-movable section from being lifted or raised by animals.

I will first proceed to describe the latch for holding the gate against swinging open on its hinges, which consists of a latch-bar 45, fitted to slide freely on the upper sloping brace of the upper half or section of the gate. This latch-bar is provided with one or more longitudinal slots 46, in which operate fixed bolts or guide-pins 47, that serve to prevent displacement of the latch-bar and at the same time permit of the necessary longitudinal play, and this latch-bar is normally impelled beyond the gate-stile by a coiled spring 48, so that when the gate is closed it readily enters the keeper 50 formed on the latch-post. This sliding latch-bar is automatically withdrawn against the tension of the coiled spring and just before the gate is swung open by means of a pull-cord 51, which is connected to the rear end of the latch-bar, runs from the latter through a guide-pulley 52 on the gate, and is connected to the inner end of the swinging beam, whereby the beam draws on the cord 51 and withdraws the latch-bar from its socket in the latch-post.

In lieu of securing the lifting-cord directly

to the slotted bar on the lower adjustable half or section of the gate, I may run said cord through an eye 53 on the bar 10, and connect the free end of the cord or chain to a bolt 55, which is impelled and kept in place by a spring 56, so as to prevent the lower half of the gate from being lifted or raised by animals. When either cord or chain is drawn upon to pull the cord through the eye 53, the locking-bolt 55 is operated to release the lower half of the gate, and the continued pull on the cord lifts the lower half of the gate in the manner hereinbefore described.

Having thus fully described my invention, what I claim as new, is—

1. The combination of a swinging sectional gate, the lower member of which is made adjustable vertically on the upper member, cords or chains connected to the adjustable gate member for lifting the same, a beam and cords for swinging the gate, and an automatic locking device for temporarily locking the two members of the gate together when the lower member is elevated, as and for the purposes described.

2. A gate consisting of the hinged upper member and a vertically-adjustable lower member carried by said upper member and provided with a slotted bar, in combination with a cord or chain for raising the lower gate member, a beam having cords or chains connected thereto for swinging the same, and a slotted pitman intermediate between the beam and gate and adapted to enter the slotted bar on the adjustable gate-section to temporarily lock said gate-sections together, as herein described.

3. A gate consisting of the hinged upper member having its stiles provided with friction-rollers, a vertically-adjustable lower member carried by said upper gate member between said friction-rollers and having take-up springs, in combination with a cord or chain for lifting the lower gate member, a beam, the pull cords or chains connected to said beam, the slotted bar carried by the lower gate member, and the slotted link intermediate of the beam and hinged gate, substantially as described.

4. The combination of a swinging gate having the lower adjustable section, a beam connected by a pitman to said gate, cords or chains connected to the lower section of the gate to raise the latter, and provided with stops and means operated by said stops to throw or move the beam away from the gate and thereby break joint between the beam and pitman, substantially as described.

5. The combination of a swinging gate, a swinging beam having cords or chains connected to the same, a pitman between the beam and gate, a sliding latch-bar carried by the gate, and a pull-cord connected to said latch-bar and the inner end of the swinging beam, all combined and arranged for service, as herein described.

6. A gate consisting of upper and lower sections, a pivoted beam, a pitman connecting the same to the gate, cords and spring attached to said beam for opening and closing the gate, a latch for securing the lower section when lowered, cords for operating said latch and raising or lowering said lower section, a lever upon the upper section by means of which the elevating-cords act upon the aforesaid beam and move the pitman thereon into engagement with the lower gate-section when raised, substantially as described.

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

EDWARD S. CRAWFORD.

Witnesses:

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H. L. HIX.