

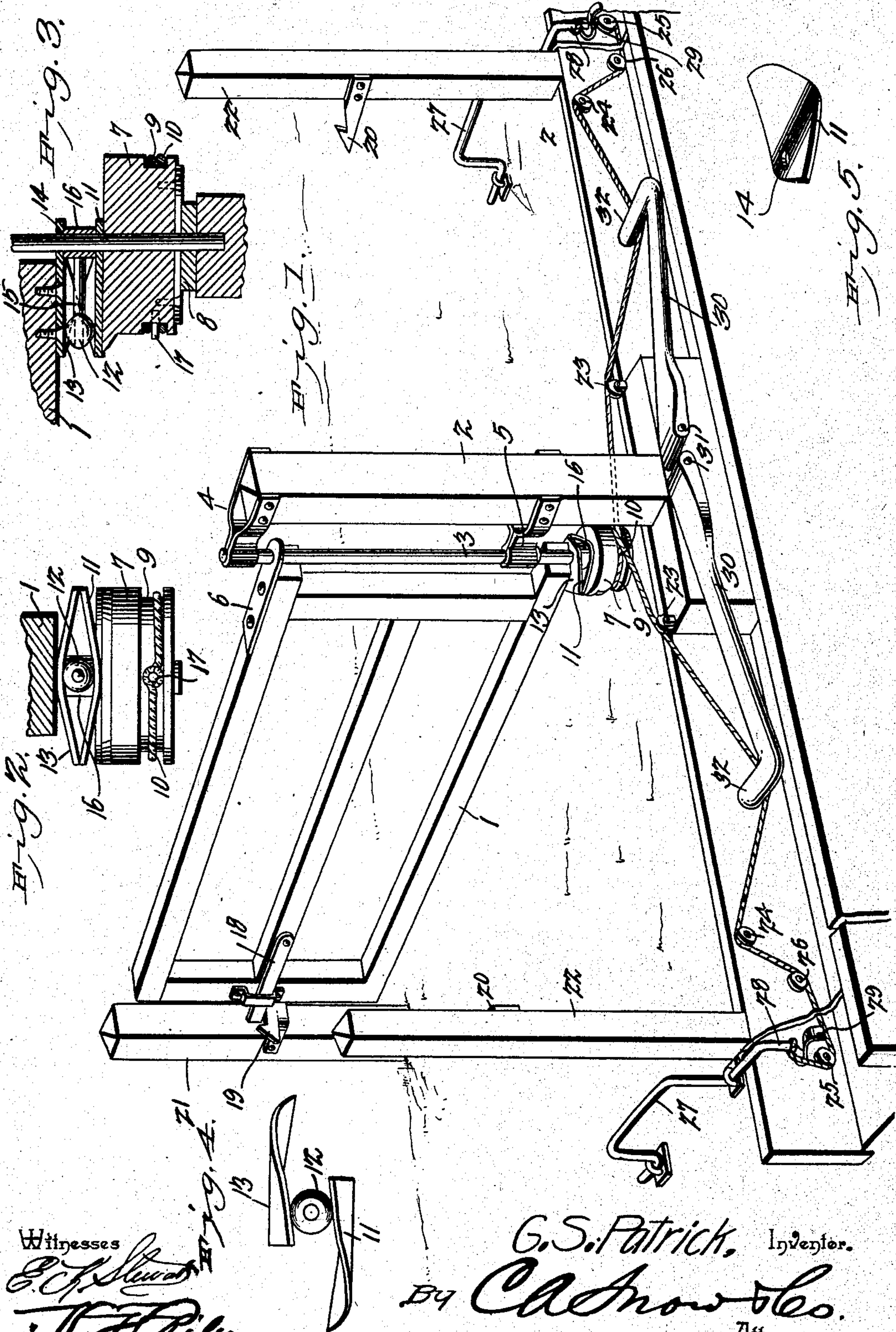
No. 721,600.

PATENTED FEB. 24, 1903.

G. S. PATRICK.  
GATE.

APPLICATION FILED MAY 14, 1902.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE S. PATRICK, OF WATERVILLE, NEW YORK.

## GATE.

SPECIFICATION forming part of Letters Patent No. 721,600, dated February 24, 1903.

Application filed May 14, 1902. Serial No. 107,351. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE S. PATRICK, a citizen of the United States, residing at Waterville, in the county of Oneida and State of New York, have invented a new and useful Gate, of which the following is a specification.

The invention relates to improvements in gates.

The object of the present invention is to improve the construction of swinging gates and to provide a simple and comparatively inexpensive one adapted to be operated by the wheels of a vehicle and capable of being opened and closed at a distance from either side of it.

A further object of the invention is to provide a gate of this character which will always open away from a vehicle, so that the operating devices may be arranged comparatively close to the gate.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a gate constructed in accordance with this invention. Figs. 2 and 3 are detail views illustrating the arrangement of the oscillatory roller and the upper and lower double cam-plates. Fig. 4 is a detail view of the upper and lower cam-plates and the roller, illustrating the arrangement of the parts after the lower cam-plate has been oscillated for actuating the gate. Fig. 5 is a detail view of one of the cam-plates.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a swinging gate, which may be of any desired construction and which is hinged to a post 2 by a vertical pintle-rod 3. The pintle-rod 3, which is offset from the post, is supported by suitable brackets 4 and 5, arranged at the upper and lower portions of the post and having arms or sides secured to the posts. The brackets are also provided with projecting stems having eyes for the reception of the pintle-rod, and each bracket may be constructed of a single piece of metal centrally bent to form the stem and eye and

having the side portions bent outward from the stem to form the sides or arms. The gate is provided at its top with a plate 6, which is extended beyond the gate, and the extended portion is perforated to receive the pintle-rod 3. The bottom of the gate is hinged to the pintle-rod by the means hereinafter described.

Mounted upon the lower portion of the pintle-rod is a drum or pulley 7, arranged on a suitable bearing-plate 8 and provided with an annular groove 9, receiving a flexible connection 10, consisting of a rope or cable having a loop or bight receiving the grooved portion of the pulley or drum and extending from the gate in opposite directions to operating devices hereinafter described and adapted to be partially rotated by the same to open and close the gate. The lower face of the pulley or drum is provided with a metal plate to prevent it from being worn, and, if desired, ball-bearings or any suitable antifriction device may be employed for enabling the drum or pulley to rotate frictionlessly.

Secured to the upper face of the drum or pulley is a double cam-plate 11, having oppositely-inclined side portions extending downward and inward toward the center of the plate and adapted to receive an oscillatory roller 12, which supports a reversely-arranged upper cam-plate 13, secured to the bottom of the gate and having inclined side portions extending downward and outward from the center of the plate. The upper cam-plate is also extended rearward from the gate and is perforated to form an eye 14 for the reception of the pintle-rod, and the lower cam-plate is also perforated to receive the pintle-rod. The roller, which is oval-shaped, is mounted on the outer end of an oscillatory arm 15, having an eye or sleeve 16 arranged on the pintle-rod. When the drum or pulley is partially rotated to open the gate, the lower cam-plate is carried from the position illustrated in Fig. 2, and the upper or outer edge of one inclined side portion is carried to a point directly beneath the lower outer edge of one of the inclined side portions of the upper cam-plate, the roller being also carried outward to the outer edge of the upper plate by such movement. This operates to lift and unlatch the gate, and the two similar inclines



formed by the upper and lower cam-plates cause the gate to open readily. The gate is closed by rotating the pulley or drum in the opposite direction. As the sleeve 16 is entirely independent of the upper and lower cam-plates, the gate is readily lifted preparatory to its swinging movement, and it is enabled to swing frictionlessly.

The pulley or drum is provided at its front with a projection 17, adapted to be engaged by the flexible connection; but any other means may be employed for connecting the same with the pulley or drum. The gate is provided with a pivoted latch 18, adapted to engage keepers 19 and 20 of main and supplemental latch-posts 21 and 22. The pivoted latch is adapted to engage the keepers automatically, and it is disengaged from them by the vertical movement of the gate incident to the operation of the cam-plates and the oscillatory roller.

The flexible connection extends from the gate in opposite directions, and each side portion passes over suitable inner and outer guide-pulleys 23 and 24 and under guide-pulleys 25 and 26 and is secured to an arm of a rock-shaft 27. The rock-shafts forming the operating devices are provided with rectangular bends and are adapted to be engaged by the wheels of a vehicle in the ordinary manner, and they are designed to be located a suitable distance beyond the supplemental latch-post, but for convenience of illustration are shown adjacent to the same in Fig. 1 of the drawings. Each rock-shaft is provided with a depending arm 28, which is connected at its upper portion with the adjacent end of the flexible connection and which is provided at its lower end with a projecting portion or foot 29. The pulley 25 is located slightly beyond the depending arm of the rock-shaft when the latter is arranged in an upright position, and it is adapted to enable the arm to pull upon the flexible connection when the rock-shaft is oscillated in either direction. When the rock-shaft is moved outward away from the gate, the depending arm is carried inward, and when the rock-shaft is moved in the opposite direction the depending arm is carried outward. The depending arm, owing to the foot or extension, is adapted to move the flexible connection twice as far when it is moved outward as when it is swung inward, and this will enable the gate to be operated from either side. The pulley 26 is adapted to offset the flexible connection from the depending arm to permit the latter to swing clear of the same. The side portions of the flexible connection are maintained taut by pivoted weights 30, extending from a point in rear of the hinge-post and pivoted at their inner ends 31 to a suitable support and provided at their outer ends with arms 32, which rest upon the side portions of the flexible connections. The connections between the operating devices and the pulley or drum are designed to be mounted in a suitable trough or

casing, as shown, and any other means may be employed for guiding the side portions of the flexible connection.

What I claim is—

1. In a device of the class described, the combination with a swinging gate, of a pair of oppositely-disposed cam-plates arranged beneath the gate and provided with oppositely-inclined faces, one of the cam-plates being connected with the gate, means for oscillating the other cam-plate, and an oscillatory roller arranged between the plates and mounted independently of the same, substantially as described.

2. In a device of the class described, the combination with a swinging gate, of upper and lower cam-plates having oppositely-inclined faces, the upper cam-plate being connected with the gate, a pulley or drum connected with the lower cam-plate, and a roller mounted independently of either of the cam-plates, substantially as described.

3. In a device of the class described, the combination with a gate, of an upper cam-plate secured to the gate and provided with oppositely-inclined faces extending downward and outward from the center of the plate, a reversely-arranged lower cam-plate having inclined faces extending upward and outward from the center of the plate, and an oscillatory roller interposed between the cam-plates and supporting the upper plate, substantially as described.

4. In a device of the class described, the combination with a gate, of a pintle, upper and lower cam-plates having reversely-arranged inclined faces, the upper plate being connected with and supporting the gate, an oscillatory arm connected with the pintle and provided with a roller interposed between the plates, and means for oscillating the lower plate, substantially as described.

5. In a device of the class described, the combination of a swinging gate, a pintle, upper and lower cam-plates having oppositely-disposed reversely-arranged inclined faces, an arm loosely mounted on the pintle, a roller mounted on the arm and interposed between the plates, a pulley or drum connected with the lower plate, a flexible connection arranged on the drum and extending from the gate in opposite directions, and operating devices for actuating the flexible connection, substantially as described.

6. In a device of the class described, the combination of a swinging gate, a pulley or drum connected with the gate, a flexible connection arranged on the pulley or drum and extending from the gate in opposite directions, guides receiving the flexible connection, operating devices arranged at the ends of the flexible connection, and weights pivoted at one end and provided at the other end with arms supported by the side portions of the flexible connections for holding the same taut, substantially as described.

7. In a device of the class described, the



combination of a swinging gate, a pulley or drum connected with the same, a flexible connection arranged on the pulley or drum and extending from the gate, guides receiving the flexible connection, and a rock-shaft adapted to be engaged by the wheels of a vehicle and provided with a depending arm connected between its ends with the flexible connection and provided at its lower end with an extension, whereby it is adapted to pull upon the flexible connection when the rock-shaft is oscillated in either direction, substantially as described.

8. In a device of the class described, the combination of a swinging gate, a flexible connection extending from the gate in opposite

directions and adapted to actuate the same, guides receiving the flexible connection, rock-shafts provided with arms connected between their ends with the terminals of the flexible connection and provided at their lower ends with means for engaging the same, and weights pivoted at one end and provided at the other end with means for engaging the flexible connection, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE S. PATRICK.

Witnesses:

L. D. EDWARDS,  
E. L. HESKERT.