No. 618,446. Patented Jan. 31, 1899.

H. O. SPARKS.

DOOR OR GATE CLOSER.

(Application filed July 22, 1898.)

(No Model.)

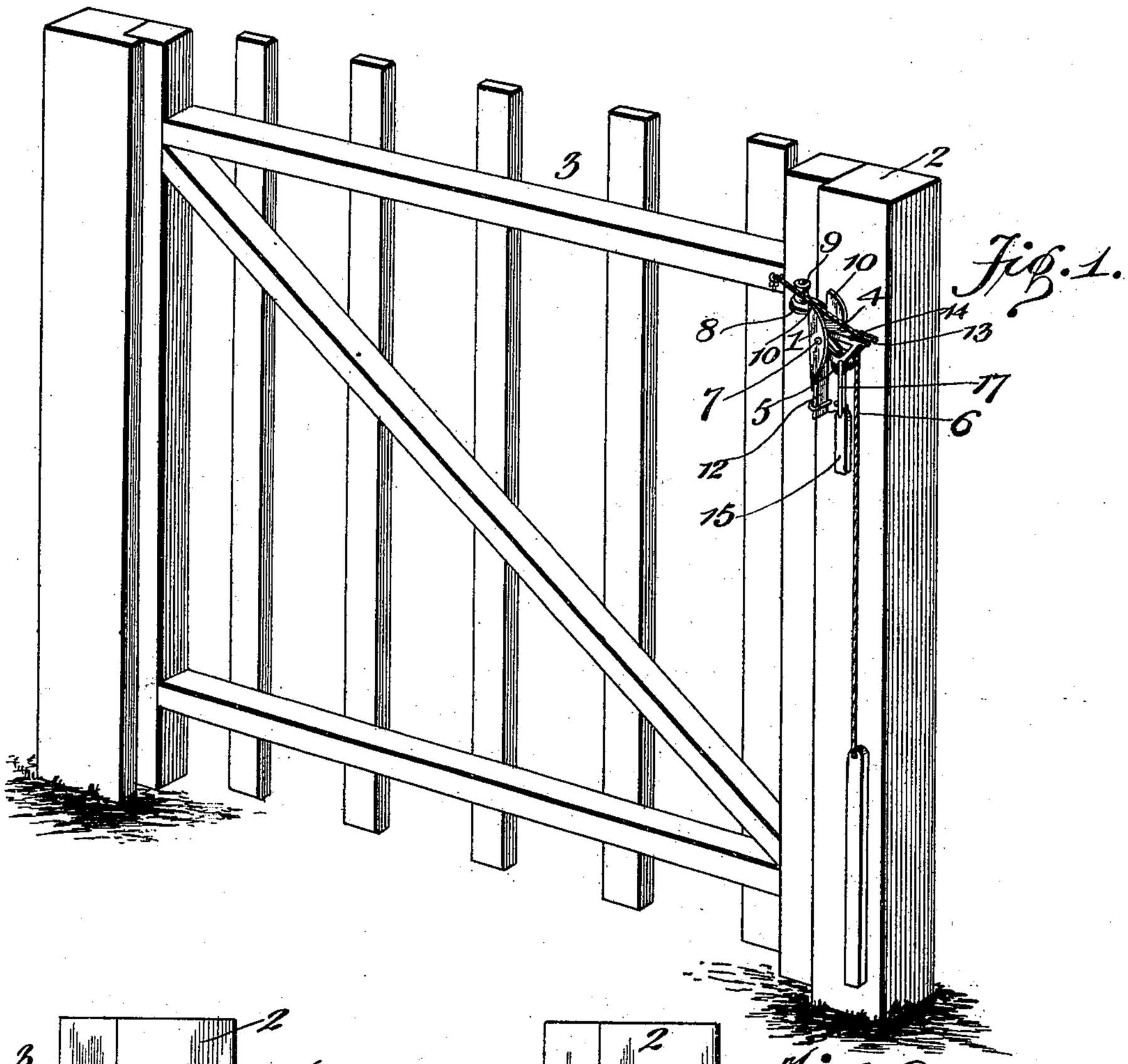

Fig. 1.

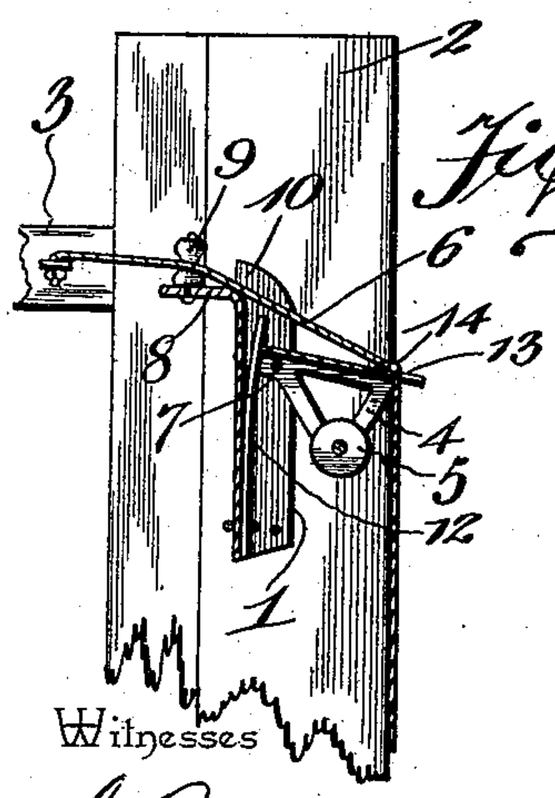

Fig. 2.

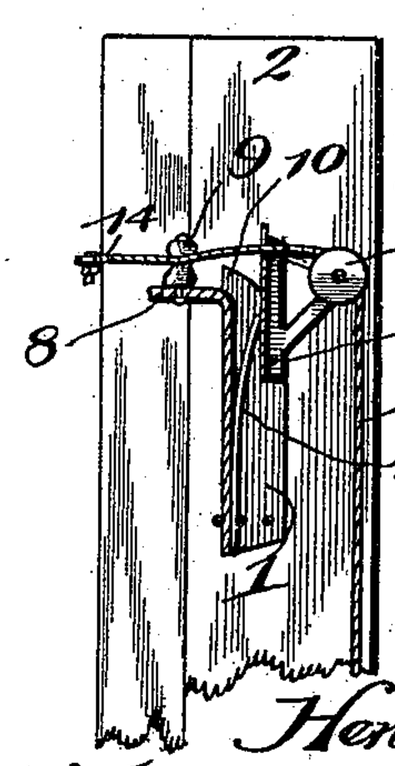

Fig. 3.

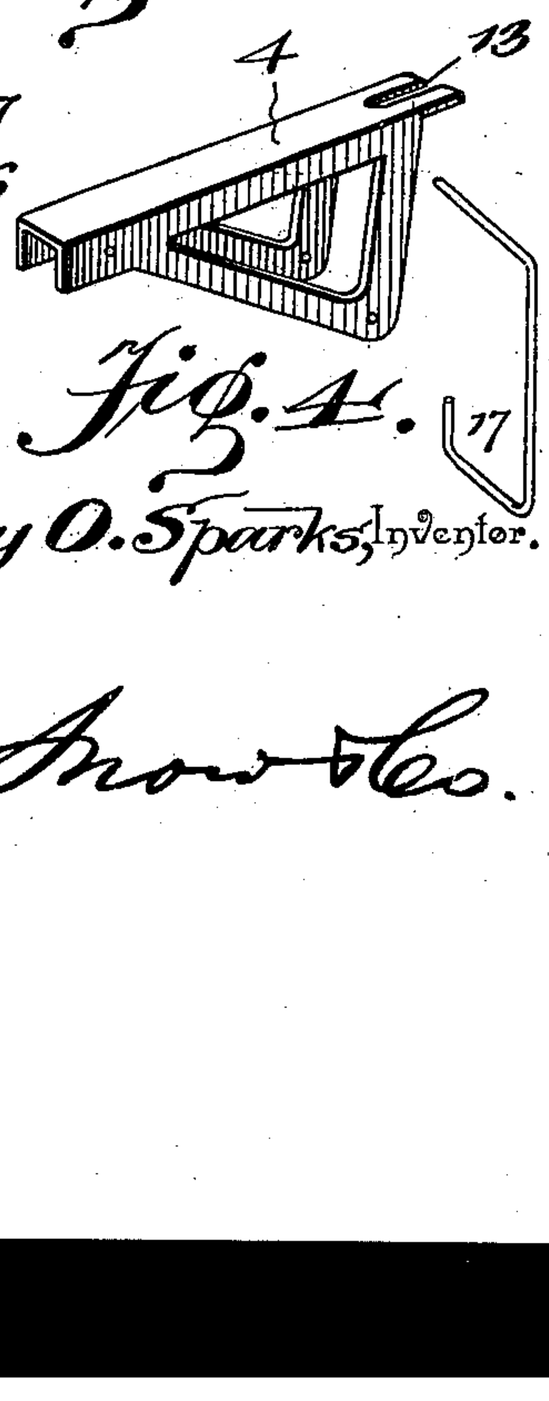

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY O. SPARKS, OF MONROE COUNTY, MISSOURI.

DOOR OR GATE CLOSER.

SPECIFICATION forming part of Letters Patent No. 618,446, dated January 31, 1899.

Application filed July 22, 1898. Serial No. 686,616. (No model.)

To all whom it may concern:

Be it known that I, HENRY O. SPARKS, a citizen of the United States, residing in the county of Monroe, in the State of Missouri, have invented a new and useful Door or Gate Closer, of which the following is a specification.

The invention relates to improvements in door and gate closers.

The object of the present invention is to improve the construction of door and gate closers and to provide a simple and comparatively inexpensive one adapted to be readily applied to swinging doors and gates and capable of automatically closing the same and of preventing a door or gate from being opened by high winds.

The invention consists in the construction and novel combination and arrangement of parts, as 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 provided with a device constructed in accordance with this invention, the gate being closed. Fig. 2 is an enlarged sectional view of the device, the parts being arranged as shown in Fig. 1. Fig. 3 is a similar view showing the position of the parts when the gate is opened. Fig. 4 is a detail perspective view of the oscillating frame.

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

1 designates a casing mounted upon a hinge-post 2 of a swinging gate 3 and forming a support for a pivotally-mounted frame 4, carrying a pulley 5, over which runs a cord or rope 6, and the latter is connected with the gate at one end and provided with a weight at the other, whereby the gate is automatically closed. The casing, which is disposed substantially vertically, is provided with parallel sides, between which the oscillating frame 4 is pivoted by means of a bolt 7 or other suitable fastening device.

The top of the casing is provided with a horizontal lip or flange 8, upon which is mounted a guide-pulley 9 for changing the direction of the cord or rope, and the sides of the casing are extended above the lip or flange 8, as shown at 10. The pivot 7 is located near the lower end of the oscillating frame, which is substantially triangular, and a heel is provided at the pivoted angle or apex and is arranged to engage a spring 12. The spring 12, which is disposed longitudinally of the casing 1, is secured to the same at its lower end, and it has its upper end free and engaging the heel of the oscillating frame, whereby the latter is held against upward movement until a force sufficient to overcome the power of the spring is applied to the gate, thereby preventing the latter from being accidentally opened by high winds.

The pulley 5 is located at the outer or rear end of the top portion of the oscillating frame, which is provided at the inner end of its top portion with a fork 13, through the opening of which passes the cord or rope 6, and the latter is provided, between the frame 4 and the gate, with a projection or stop 14, arranged to engage the inner side of the oscillating frame during the closing operation of the gate in order to swing the said frame downward and return it to the position illustrated in Fig. 2 of the accompanying drawings.

When the gate is closed and the oscillating frame is swung downward to the position illustrated in Fig. 2 of the drawings, the rope or cord 6 rests in the opening of the fork 13 and is held tightly against the frame out of contact with the pulley 5 by the main weight. The friction caused by this contact of the cord or rope with the frame is sufficient when the gate is opened to cause the oscillating frame to swing upward, and the frictional contact is increased by the twist of the cord or rope, although the main weight will produce the necessary frictional contact when a smooth cord or rope is employed. The stop 14 is provided for the reason that when the frame is elevated to the position shown in Fig. 3 the rope is supported by the pulley 5 and moves freely through the fork 13; but when the frame is in its lowermost position the pulley 5 is out of contact with the rope and no stop is necessary to cause the frame to swing upward.

The gate is easy to open after the force of the spring has been overcome, and in order to assist the closing of the gate the oscillating frame is provided with a supplemental weight 15, which is connected with a loop or bail 17, formed by an extension of the pivot

of the pulley 5. When the oscillating frame is arranged as illustrated in Fig. 3 of the accompanying drawings, the power of the supplemental weight is the weakest, and the said supplemental weight greatly facilitates the closing of the gate and the return of the frame to the position illustrated in Fig. 2 of the drawings.

The invention has the following advantages: The door and gate closer, which is simple and comparatively inexpensive in construction, is positive and reliable in operation and adapted to be readily applied to any ordinary swinging door or gate. The oscillating frame, which carries the main guide pulley and which swings upward and downward, is locked against accidental movement, and the power of the spring must be overcome before the gate can be opened. As soon as the opening movement is started and the spring compressed by the heel of the oscillating frame the remainder of the opening movement is comparatively easy.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. In a device of the class described, the combination with a gate, a cord, and a weight attached to the cord, of an oscillating frame designed to be mounted on a hinge-post and provided with a pulley receiving the said cord, substantially as described.

2. In a device of the class described, the combination with a swinging gate, a cord attached to the same, and a weight connected with the cord, of an oscillating frame adapted to swing upward and downward, a pulley mounted on the oscillating frame and receiving the cord, and means for retarding the oscillation of the frame, substantially as and for the purpose described.

3. In a device of the class described, the combination with a swinging gate, a cord attached to the same, and a weight connected to the cord, of an oscillating frame provided with a heel, a pulley mounted on the frame and receiving the cord, and a spring engaging the heel, substantially as and for the purpose described.

4. In a device of the class described, the combination with a gate, a cord connected with the same, and a weight attached to the cord, of an oscillating frame receiving the cord, means for retarding the oscillation of the frame, and a stop or projection carried by the cord and arranged to engage the oscillating frame to return the latter to its initial position, substantially as described.

5. In a device of the class described, the combination with a gate, a cord connected with the same, and a weight attached to the cord, of an oscillating frame provided with a pulley receiving the cord, and a supplemental weight suspended from the frame, substantially as and for the purpose described.

6. In a device of the class described, the combination with a cord designed to be connected with a gate and provided with a weight, of a casing provided at its top with a lip or flange, an oscillating frame pivotally mounted in the casing, and pulleys mounted on the lip or flange and on the oscillating frame and receiving the cord, substantially as described.

7. In a device of the class described, the combination of a casing having a lip or flange, a guide-pulley mounted thereon, an oscillating frame mounted in the casing and provided with a fork, a guide-pulley carried by the frame, a spring mounted on the casing and engaging the frame, a supplemental weight hung from the latter, and a cord provided with a main weight and arranged on the pulleys and having a stop or projection arranged to engage the forked portion of the frame, 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.

HENRY O. SPARKS.

Witnesses:
F. P. HOWE,
T. L. PUCKETT.