2 Sheets—Sheet 1.

J. M. RICHARDSON.

GATE.

No. 181,985. Patented Sept. 5, 1876.

Fig. 1.

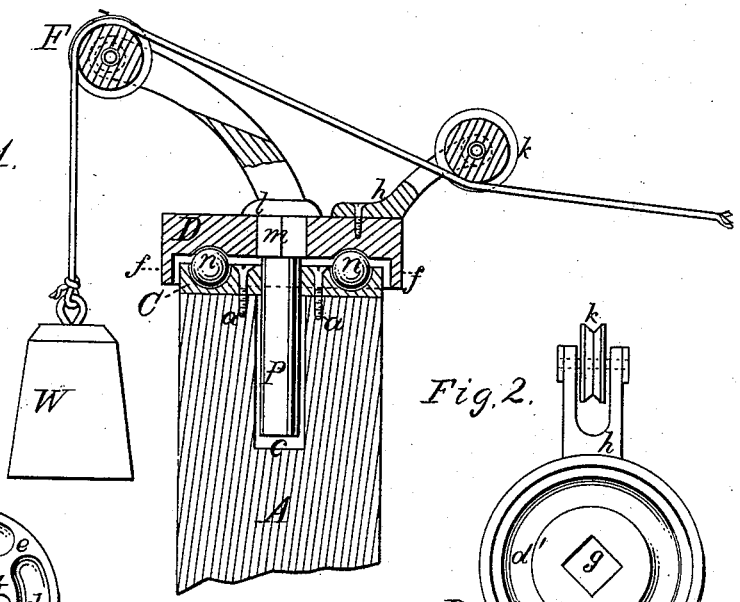


Fig. 2.

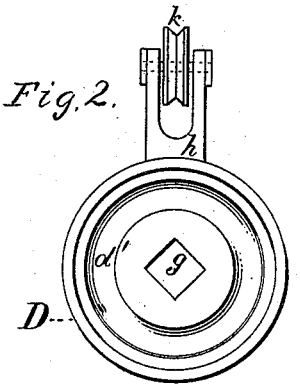


Fig. 3.

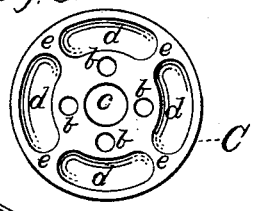
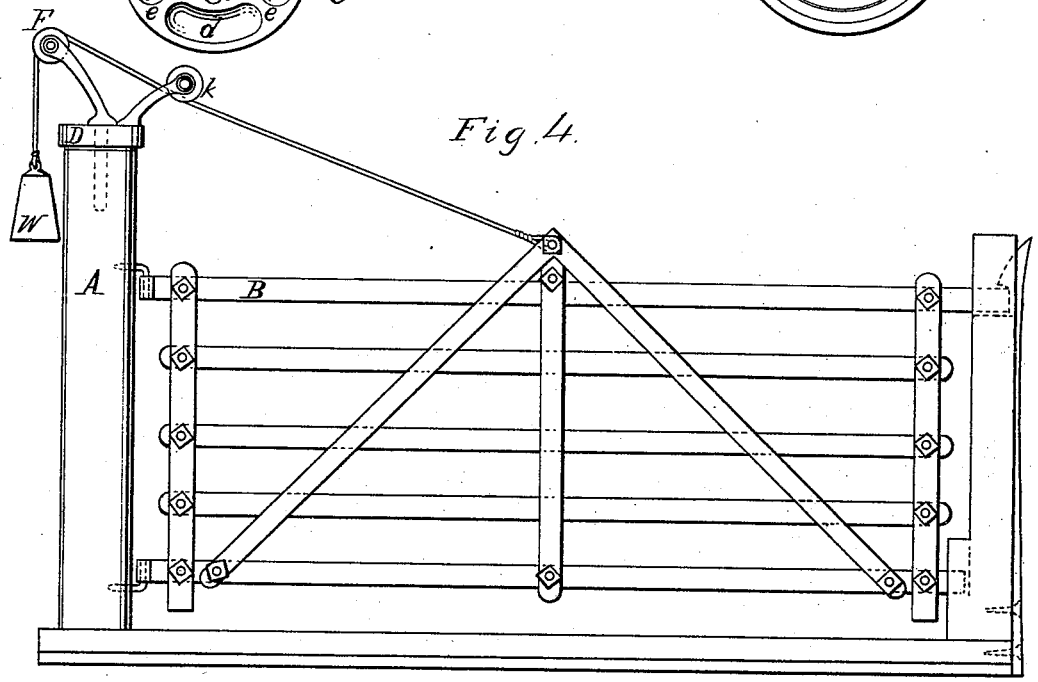


Fig. 4.



WITNESSES

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2 Sheets—Sheet 2.

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GATE.

No. 181,985. Patented Sept. 5, 1876.

Fig. 5.

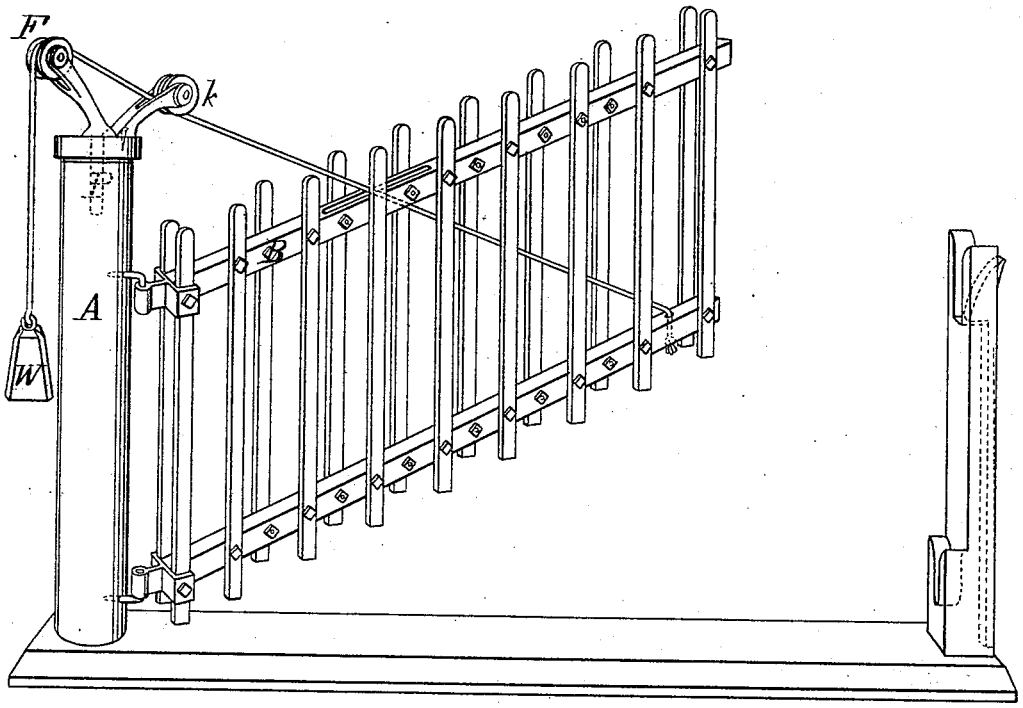
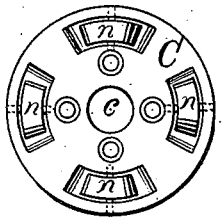


Fig. 6



WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH M. RICHARDSON, OF ELMIRA, NEW YORK.

IMPROVEMENT IN GATES.

Specification forming part of Letters Patent No. **181,985**, dated September 5, 1876; application filed August 24, 1876.

To all whom it may concern:

Be it known that I, JOSEPH M. RICHARDSON, of Elmira, in the county of Chemung and State of New York, have invented a new and valuable Improvement in Gates; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical section of this invention. Fig. 2 is a bottom view of the journal-plate. Fig. 3 is a top view of the bearing-plate. Figs. 4 and 5 are views showing the application. Fig. 6 is a modification of the bearing-plate, showing wheels.

This invention has relation to the counterbalance bearings of swinging, folding, or flexible gates; and it consists, mainly, in the construction and novel arrangement of the grooved bearing-plates, whereof the under plate is secured to the top of the gate-post, and the upper one pivoted to the under one carries the pulleys, small anti-friction balls or rollers being arranged in the circular grooves between the two plates, as hereinafter shown and described.

The object of this invention is to provide a cap-bearing on the top of the post for the connection between the gate and its counterbalancing weight, which shall have a sufficiently broad foundation to prevent binding in the journal or pivot seat, and at the same time shall be free from undue friction between the moving surfaces.

In the accompanying drawings, the letter A designates the gate-post, to which the gate B is hinged. To the top of the post is secured, by a sufficient number of screws, *a*, passing through countersunk holes *b*, the under bearing-plate C. This plate is formed with a central circular hole, *c*, and with concentric quadrant grooves *d*, forming parts of the same circle, but divided from each other by partitions *e*. In each of these quadrant grooves a small ball or wheel, *n*, is designed to be placed, said ball or wheel having sufficient diameter to support the upper plate, so that its adjacent surface will not be in contact with the under plate. D represents the upper plate or journal shoulder. This plate is usually made a little larger in diameter than the plate C, and has a short curtain-flange, *f*, around its margin, covering the edge of the lower plate, and serving, to some extent, to keep out the weather. The center of this plate is provided with a squared opening, *g*, and concentric therewith, and corresponding to the grooves of the lower plate, is formed in the upper plate a groove, *d'*, which is made a full circle without partitions. The front of this plate is provided with an arm, *h*, to which is journaled a small pulley, *k*. E designates the journal pin or pivot. This is provided at its upper end, which extends somewhat to the rear, so that the weight will hang well behind the post, with a bifurcated bearing for the main pulley F, over which the weight-rope runs, underneath the front pulley *k*, to the gate; or the rope may be run over the front pulley, if it be arranged sufficiently high for this purpose. Below the pulley-bearing, and at the upper part of the vertical portion of the pivot, is a collar or shoulder, *l*, immediately under which the pin is squared to fit the square opening *g* of the upper plate tightly, so that said plate and pin are locked together in a rigid manner, with the large pulley F diametrically in line with the small front pulley *k*. Below the squared portion *m* of the pin it is finished in cylindrical form, and serves as the journal or pivot P, which is seated and turns in the central round opening *c* of the lower bearing-plate C.

The balls or wheels having been placed in the quadrant grooves of the lower plate, it is covered with the upper plate D, so that its center pin will engage with its bearing in the lower plate. The upper plate will then rest on the balls or wheels of the lower plate, which will engage with the circular groove *d'*. The rope from the gate is then engaged with the pulleys of the upper plate, and to its end is attached the counterbalancing weight W, which will hang down in rear of the gate-post.

When the gate swings, the broad journal-plate D will move around with it freely on the anti-friction balls of the bearing-plate C, and, because of the diameter of these plates, there will be no lateral binding of the journal-

pin in its seat, or of the plates upon each other.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a folding gate, of the lower journal-seat plate C, fastened to the gate-post, and the upper journal-plate D, carrying the pulley-arms and pivot-pin, said plates being respectively provided with corresponding circular grooves *d d'*, to engage with the interposed anti-friction balls or wheels, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH M. RICHARDSON.

Witnesses:

WILLIAM L. BRAMHALL,

W. C. MASI.