

HINGE.

1,062,437.

Patented May 20, 1913.

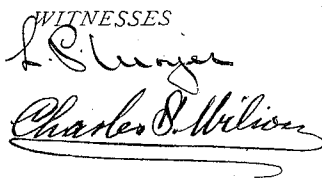


Fig. 1.

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To all whom it may concern:

Be it known that I, WILLIAM CARLSON, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Hinges; 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.

This invention relates to hinges, and is particularly constructed for use in connection with the metal hinges which are used to support two gates constructed of metal tubing, and which coöperate with railing constructed of similar material.

It is a further object of the present invention to provide a hinge which may be attached to the gates and railings constructed as heretofore described which are now in use.

With the above and other objects in view, this invention consists in the construction, combination and arrangement of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary view of a railing illustrating the gate hung thereon through the instrumentality of the spring hinges forming the subject matter of the present invention; Fig. 2 is a central, vertical section taken through one of the hinges; Fig. 3 is a horizontal section taken along line 3—3 of Fig. 2; and Fig. 4 is an enlarged detailed perspective view illustrating the spring spindle and coöperating bushing.

Reference being had more particularly to the drawings, 10 indicates generally a railing having a vertical post 11 at one terminal thereof, to which the gate 12 is hinged by means of the hinges 13 and 14.

Referring particularly to Figs. 2, 3 and 4 which constitute the details of the upper hinge 13, 15 constitutes a dependent section of tubing carried by the upper rail of the railing 10, while 16 indicates the upper terminal of the central section of the post 11. In attaching the hinge forming the subject-matter of the present invention to the vertical post 10, it is necessary to have the sections 15 and 16 spaced as illustrated in Fig. 2. If the hinge is being attached to a railing already standing, it is necessary to saw or remove a section of the vertical post of the

railing. A bushing 17 is mounted in the upper terminal of the tubular section 16 and is provided with a circular flange or collar 18 which bears against the upper edges of the tubular section 16. A tubular spindle 19 rotatable in 18 and fixed in 24 is mounted concentrically on the collar 18, and is provided with the longitudinal slot 20. The bushing 17 is adapted to fit snugly into the upper terminal of the tubular section 16 and be retained from rotation therein, as will clearly be seen in Fig. 2. A similar bushing 21 is mounted on the upper terminal of the spindle 19 by means of a socket 22 formed concentrically in said bushing, said spindle being retained rigidly in said socket by means of the set screw 23. The bushing 21 carries a collar 24 which is identical to the collar 18 and which is rigidly connected to the bushing, and bears against the lower edges of the tubular section 15. From this construction it will readily be seen that the space between the collars 18 and 24 constitutes a housing for the spring which coöperates with the hinge for the purpose of operating the same.

A collar 25 surrounds the tubular post 16 adjacent to the upper terminal thereof, and forms a bearing for the sleeve 26 which encircles both the upper terminal of the tubular section 16 and the lower terminal of the section 15. This sleeve is constructed in two sections, one interengaging with the other, to present a smooth surface; said sections being secured together by the screws 27. One of the sections of the sleeve 26 has formed thereon an arm 28 which is secured to the vertical post of the gate 12. The section of the sleeve 26 carrying the arm 28 is provided with an annular depression 29 for the purpose of engaging a spring hereinafter more fully described, as the gate 12 swings in one direction. A leaf coil spring 30 encircles the spindle 19 and is engaged by the groove 20 at its inner terminal. The outer terminal of the spring 30 is provided with an angularly bent portion 31 which projects into the recess 29 formed in the sleeve 26 adjacent to the arm 28. A pin 32 is interposed between the collars 18 and 24 adjacent to the section of the sleeve 26 carrying the arm 28 and is rigidly secured to said collar 18, said pin adapted to engage the angularly bent portion 31 of the spring 30 when the gate is stationary.

From the foregoing description and by referring to Fig. 3 it will clearly be understood that as the gate swings in the direction of the arrow A in said figure, the terminal of the groove 29 will engage the angular projection 31 of the spring 30 and wind said spring forcibly about the spindle 19, thereby creating tension. When the gate is released this tension will cause the same to return to its normal position, namely,—until the angularly bent portion 31 engages the pin 32 which will disengage the spring from its connection with the sleeve 26. Should the tension of the spring become weak, it is possible by removing the hinge and loosening the set screw 23, to rotate the spindle 19 sufficiently to increase said tension, after which the set screw is again tightened. A counterpart of spindle 19 is mounted on the lower hinge by which means the tension of the spring 30 permits the same to be so adjusted that the gate 12 will stop upon a dead center.

The lower hinge 14 is the exact reverse of the hinge 13 and is so constructed that as the gate 12 swings in the direction opposite to the arrow A, the opposite terminal of the depression 29 will engage the spring and operate the same. This provides a means whereby the gate may be swung in both directions, at the same time returning it to its normal position.

Having thus fully described my invention,

what I claim as new, and desire to secure by U. S. Letters Patent, is:

1. In a hinge, the combination with a pair of bushings, of a spindle provided with a longitudinal channel interposed between said bushings, a leaf spring encircling the said spindle and having one terminal thereof secured thereto, a sectional sleeve encircling said bushings and spindle, means whereby the sleeve may engage the outer terminal of said spring for increasing the tension thereof, and an adjustable screw whereby the tension of said spring is increased or decreased by rotation of said spindle.

2. In combination with a hinge, an upper and lower tubing, a collar mounted on the lower tubing, a casing surrounding said tubing, members adapted to be supported by said collar, bushings formed in the ends of the tube members, a spindle mounted on the lower bushing, a recess formed in the upper bushing adapted to receive one end of said spindle, a leaf spring having one of its ends attached to the spindle and a groove formed in said casing adapted to receive the other end of said spring.

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

WILLIAM CARLSON.

Witnesses:

EDWARD CARLSON,
OLOF A. OLSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."