

J. Miller. Gate Hinge.

No. 120,762.

Fig. 1.

Patented Nov. 7, 1871.

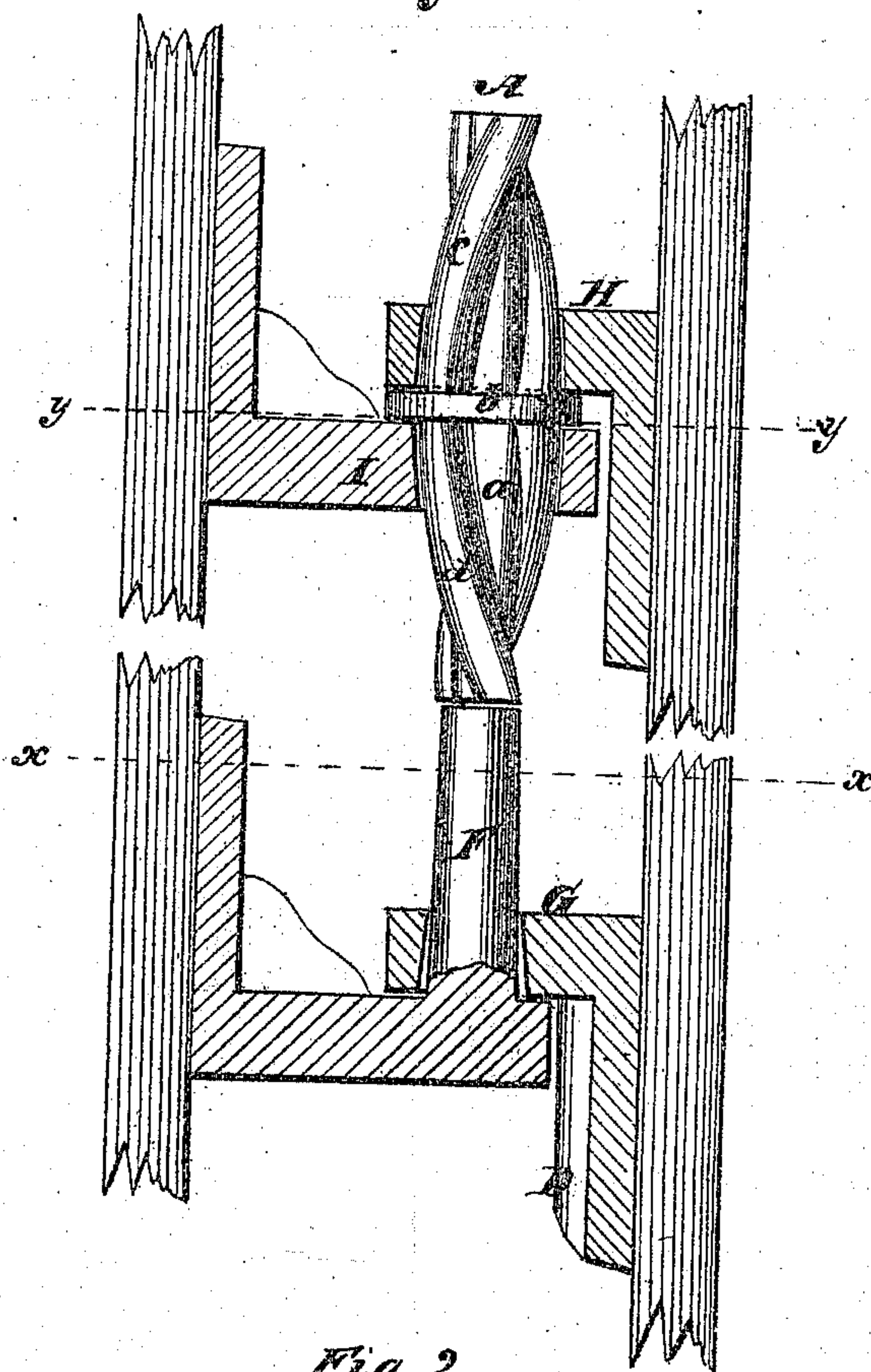


Fig. 2.

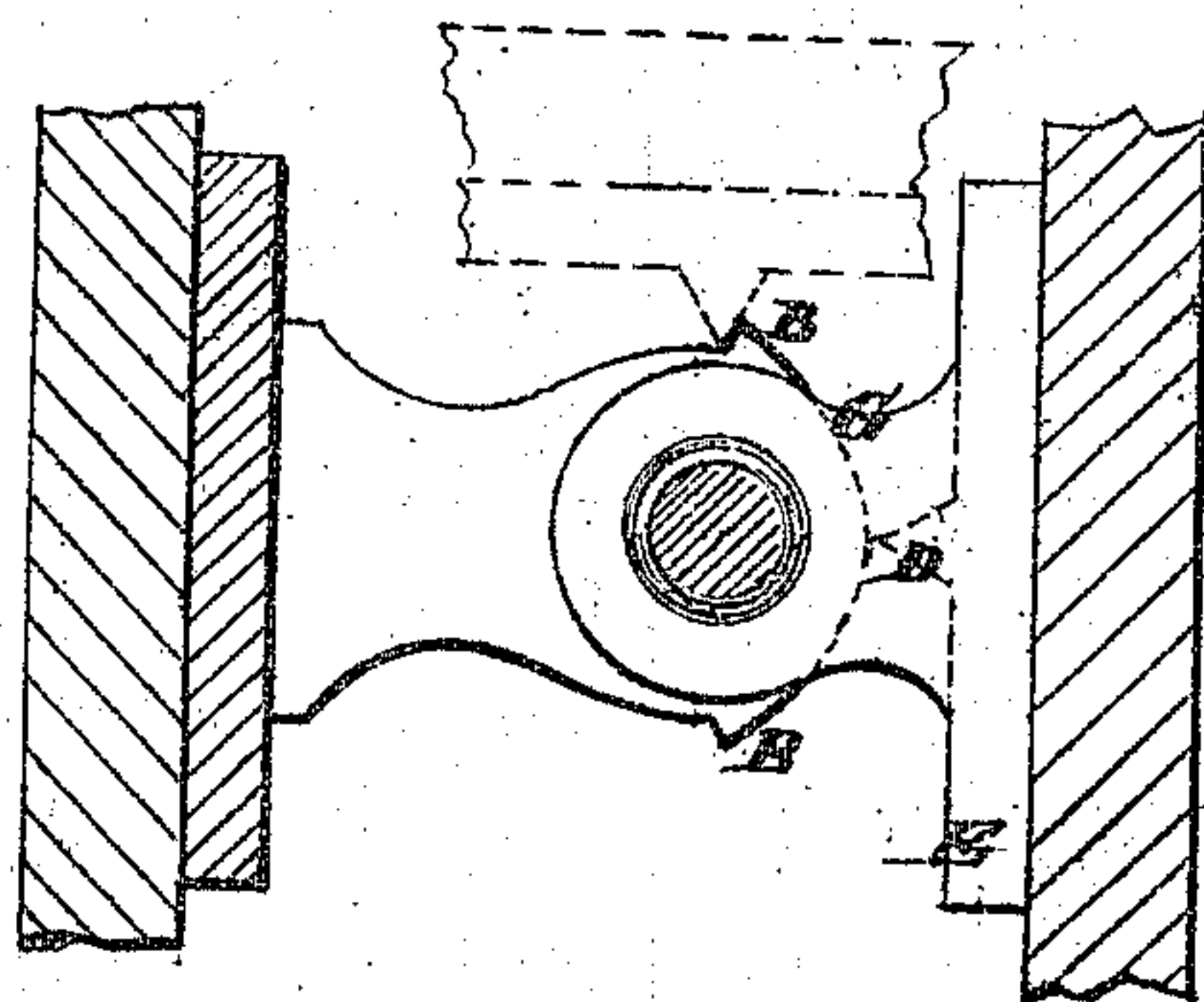
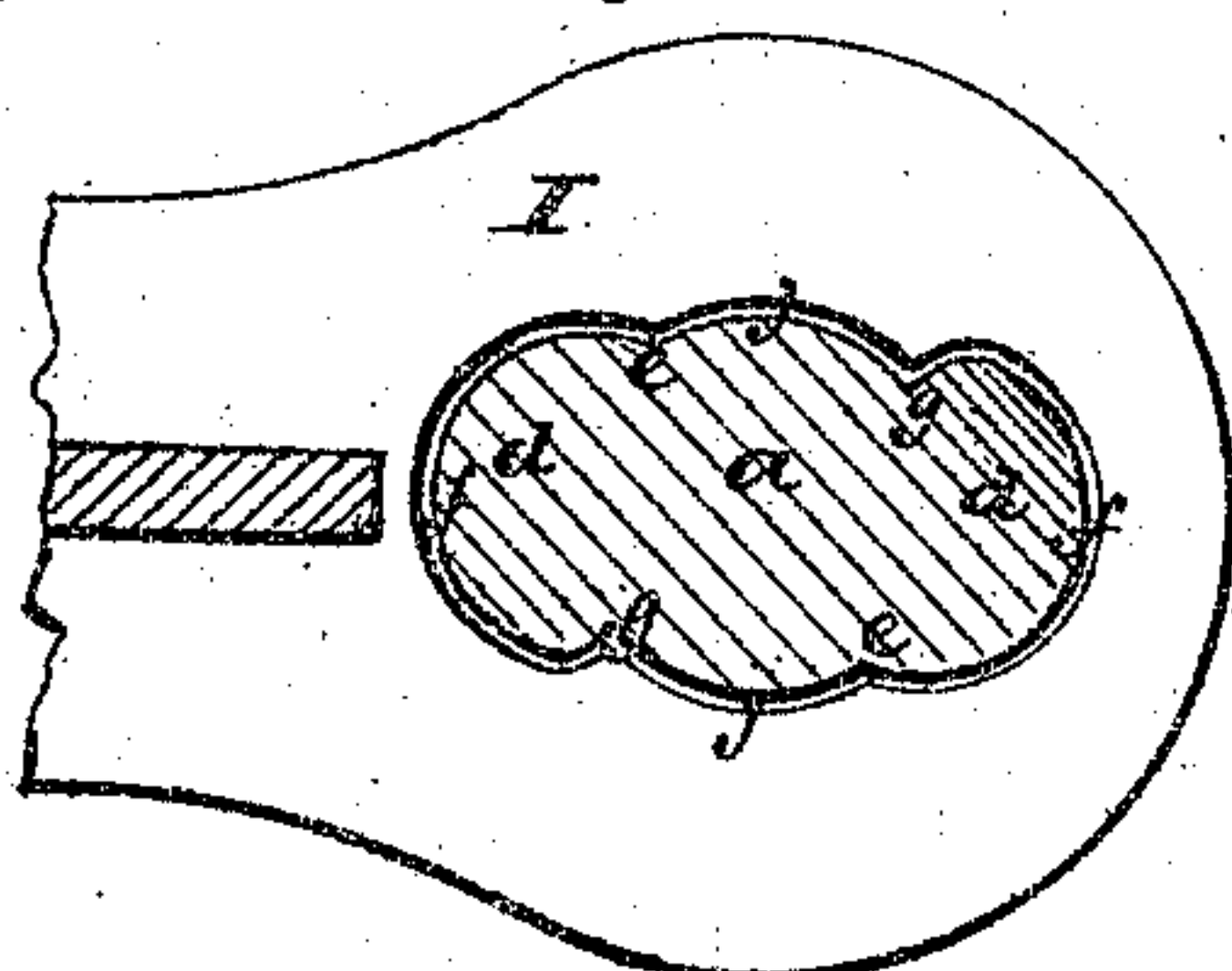


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JONATHAN MILLER, OF WATKINS, NEW YORK.

IMPROVEMENT IN HINGES.

Specification forming part of Letters Patent No. 120,762, dated November 7, 1871.

To all whom it may concern:

Be it known that I, JONATHAN MILLER, of Watkins, in the county of Schuyler and State of New York, have invented a new and useful Improvement in Gate-Hinges; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification.

My invention relates to the hinges of gates which swing both ways; and consists in the locking device hereinafter fully described and substantially pointed out in the claims.

Figure 1 is a sectional elevation of a pair of hinges for a gate having my improvements. Fig. 2 is a horizontal section on the line *x x* of Fig. 1, and Fig. 3 is a horizontal section on the line *y y*.

A is a loose cast-metal pintle, constructed in the form of a cylindrical rod, *a*, with a wide flange or collar, *b*, at the center, and the right-hand spiral ribs *c* at one side of the collar, extending to the end, and the corresponding left-hand spiral ribs *d* at the other side, also extending to the end, said ribs being formed in cross-section, as represented in Fig. 3—that is, on a true circle or thereabout—on the side acting against the wall of the hole in the knuckle, to cause the rising of the gate from the point *e* at the junction with the cylindrical part *a*, as far as the surface of said rib can bear on the wall of the hole in the knuckle—say to the point *f*—or it may be considerably beyond, if preferred; and the hole in the knuckle is shaped to correspond, so as to provide a greater amount of bearing-surface, while employing the cylindrical part *a*, than can be had when the bearing-surfaces are made on straight lines; but more particularly to prevent the rapid wearing off of the corners of the spiral ribs, which takes place when made on straight lines, and which has heretofore prevented the successful use of hinges constructed on this plan. On the opposite sides of these ribs they are so shaped, by flattening them to some extent, as to form a groove, *g*, between them and the cylindrical part, one wall of which—that formed by the side of the rib—acts against its counterpart in the hole of the knuckle, to

hold the pintle on one side of the collar when the part on the other side is turning in its knuckle, or the knuckle turning on it, as the case may be. The holes through the knuckles for the pintle are provided with spiral concavities, *j*, for the cylindrical portion *a* of the pintle, between the spiral grooves for the ribs *a* or *c*, and the knuckles are cast on chill-cores to harden the walls of the holes so as to withstand the great wear they are subjected to. The patterns for the molds and the chill-cores for these holes are so formed that the castings are made in molds formed on whole patterns and similar chills, so that the fins common to two-part molds are avoided.

For locking the gate open, I arrange a projection, B, on each of the two sides of one of the fixed knuckles, preferably the lower one, in the axial plane of the pintle, perpendicular to the gate when closed, and the long A-shaped rib D on the knuckle-plate E on the gate. I also form the pintle F on such a taper that when the gate is swung open and raised, so that the knuckle G is nearly at the upper end of the pintle and the rib D has passed beyond the projection B, there will be sufficient freedom in the eye of the knuckle G to allow the rib D to fall behind the projection and lock the gate. I make the sides of the projections B, which hold the rib D, on such angles that, while they will hold the gate against the tendency of its gravity to close it, also some force in addition thereto, yet they will not hold it so securely as to withstand a strong breeze of wind or a vigorous push on the gate by hand; wherefore it may be readily disengaged from the locking device without lifting the free end up.

The spiral pintles A are tapered toward the ends, so that ample space will be afforded for the necessary vibration of the gate at the lower hinge for locking and unlocking, in the manner described.

When the gate swings one way, say to the right, the knuckle H rises upon the pintle, which remains stationary; but when it swings the other way, the pintle rises in the knuckle I.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The spiral pintle A comprising the cylin-

drical part *a*, the flange *b*, and spiral ribs *c* and *d*, combined with the knuckles *H I*, when said ribs and the walls of the holes in the knuckles are arranged in the forms substantially as described.

2. In combination with a rising and falling gate-hinge, the locking device herein described, consisting of the projections *B* and the tapered pintle *F* on the knuckle *I*, and the eye in the horizontal and the long rib *D* on the perpendic-

ular portion of the knuckle *G*, substantially as set forth.

The above specification of my invention signed by me this 29th day of April, 1871.

JONATHAN MILLER.

Witnesses:

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