T. CRANE.
Gate-Hinge.

No. 218,494. Patented Aug. 12, 1879.

Fig. 1.

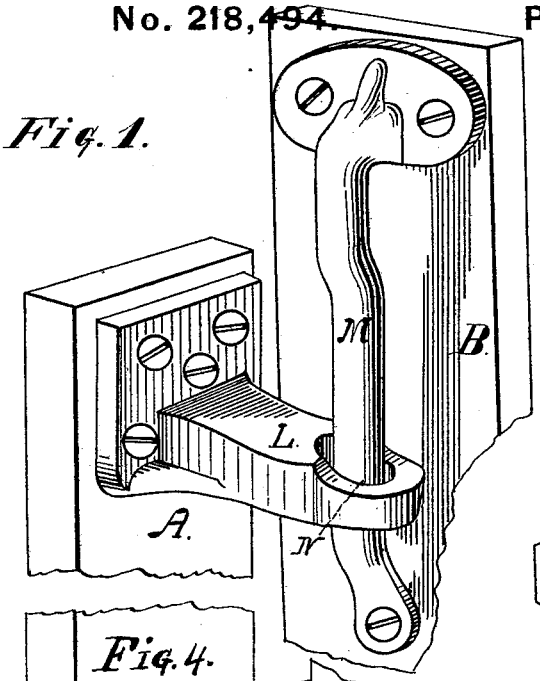


Fig. 2.

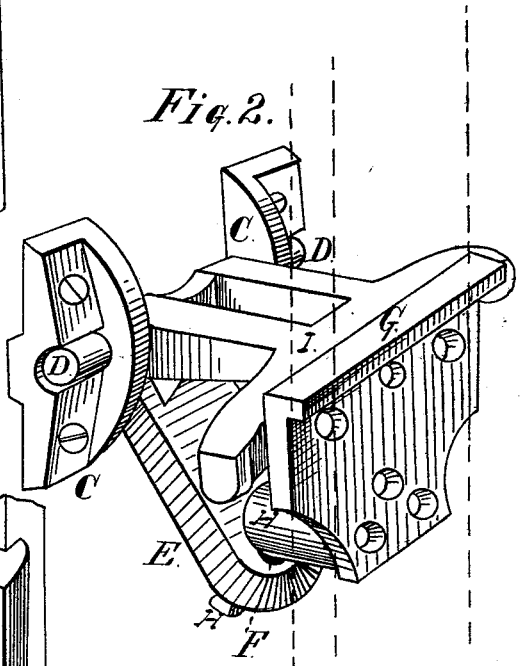


Fig. 4.

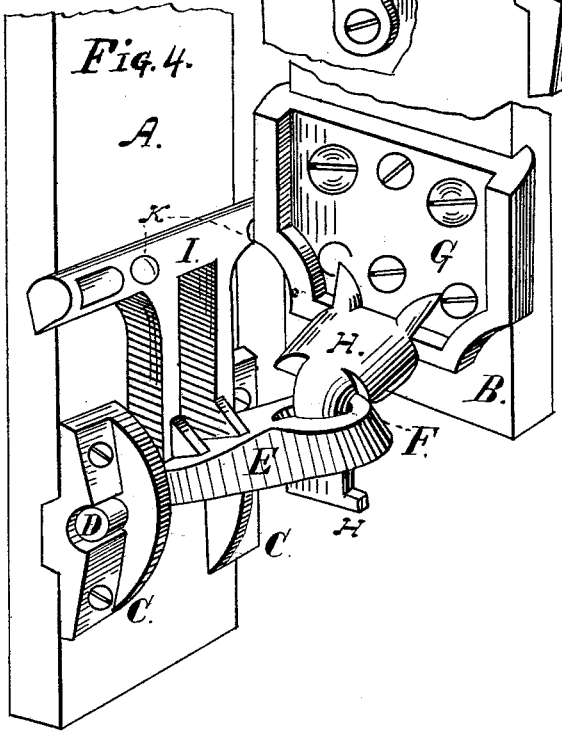
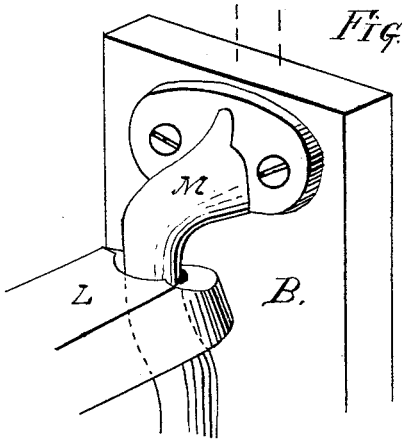


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS CRANE, OF FORT ATKINSON, WISCONSIN.

IMPROVEMENT IN GATE-HINGES.

Specification forming part of Letters Patent No. **218,494**, dated August 12, 1879; application filed November 30, 1878.

To all whom it may concern:

Be it known that I, THOMAS CRANE, of the city of Fort Atkinson, State of Wisconsin, have invented an Improvement in Gate-Hinges, of which the following is a specification.

In the accompanying drawings, Figure 1 represents the upper hinge in position as when open to the left; and Fig. 4 represents the lower hinge, also open to the left. Fig. 2 represents the position of the lower hinge when closed; and Fig. 3, the position of the upper hinge, also closed.

This invention relates to certain novel improvements in the class of gate-hinges which close the gate automatically, the manner of doing which I now will proceed to describe, so that others skilled in the art may understand the same.

In the drawings, Figs. 1 and 4, A A represent each a section of the fence-post. The bracket L, which forms one half of the upper hinge, is secured to the upper section by means of screws.

To the lower section is secured the boxes C C for the reception of bearings D D of knuckle-link I E, Figs. 2 and 4.

In Figs. 1 and 4, B B represent each a section of the gate-stile, to which are secured pintle M of the upper hinge and plate G, with its shouldered projection H H, which forms the pintle of the lower hinge, and which works freely in eye F of link E, while the opposite end of link E is supported by its trunnion-bearings D D, which work in boxes C C, while the bracket I (which forms a part of link E) limits its vibration, and performs and controls the operation of closing the gate. The bracket I is cast solid with link E; but it may be cast separate and secured tight to link E, so as to operate conjointly the same as one piece.

In Figs. 1 and 4, post A and gate-stile B are shown cut through their center, to contract them for convenience in drawing.

The hinges as attached (shown in perspective in Figs. 1 and 4) are complete and in position as when the gate is open to the left. When opened to the right the position and operation of the link are the same.

It will be observed that plate G has a raised rim upon each edge, and that the bracket I rests against it at one side, K, Fig. 4; also, the pintle H, being loosely fitted in eye F, its shoulder resting upon the end of link E, the link receives the whole weight of the gate, but is checked in its downward tendency by bracket I coming into contact with the rim of pintle-plate G. The pressure of bracket I against the rim of plate G turns the gate upon its axis. The pintle H H is so loosely fitted in link E as to form a universal joint and allow link E to turn upon its axis D D, and gradually fall during the closing of the gate until the opposite end of bracket I comes into contact with the opposite rim of plate G, as in Fig. 2, when the gate is fully closed.

It will also be observed that while the gate is being closed and lowered by means of its own weight upon knuckle-link I E, the upper hinge-pintle is freely sliding down through the hole in bracket L until the gate is closed, when the oblique angle of the pintle M rests in the hole, as shown in Fig. 3, while the lower hinge is at rest, as in Fig. 2.

When the angle of pintle M, in its downward course, reaches the eye of bracket L, the lateral pressure upon the angle (produced by the whole weight of the gate resting upon the lower hinge) increases the downward pressure upon the knuckle-link E, thereby increasing its power in the last movement, closing and holding the gate when at rest, and thereby removing the necessity of a latch.

K indicates two depressions in bracket I for the reception of the rim of plate G when the gate is fully opened right or left, for the purpose of holding it open when desired, as in Fig. 4.

The natural swing of the gate locks and unlocks it at the given point—that is, when fully opened.

Having fully described the construction and

operation of my improved hinge, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In hinges, the combination of link E, journaled upon post A and provided with eye F, and pintle H, secured firmly to the gate-stile, substantially as described.

2. The pintle M, having its upper portion bent at an oblique angle, in combination with bracket L, having eye N, substantially as described, and for the purpose set forth.

3. The bracket I, with or without notches K, and forming one piece with journal-link E, in combination with pintle H and plate G, all arranged in relation to each other and operating substantially as described.

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Witnesses:
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