(No Model.)

H. EBERHARDT.

GATE HINGE.

No. 406,412. Patented July 2, 1889.

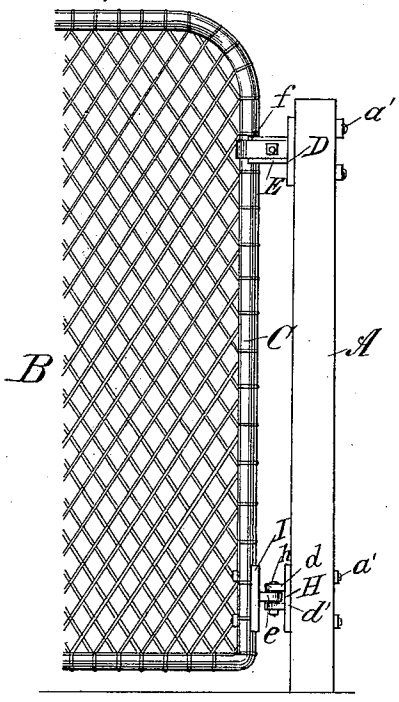


Fig. 1.

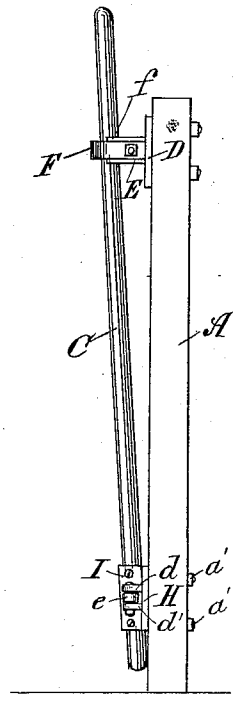


Fig. 2.

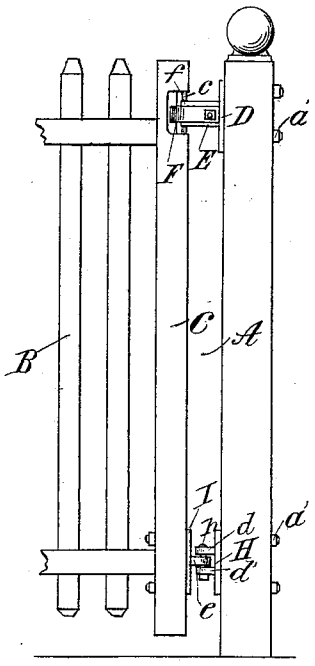


Fig. 3.

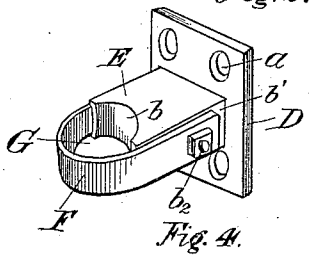


Fig. 4.

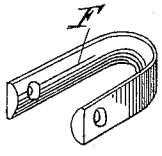


Fig. 6.

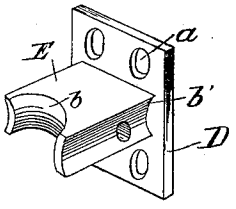


Fig. 7.

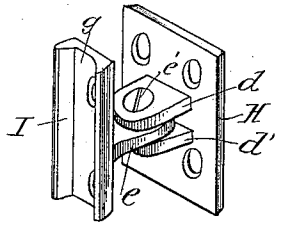


Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

HENRY EBERHARDT, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE GILBERT & BENNETT MANUFACTURING COMPANY, OF GEORGETOWN, CONNECTICUT.

GATE-HINGE.

SPECIFICATION forming part of Letters Patent No. 406,412, dated July 2, 1889.

Application filed March 20, 1889. Serial No. 304,026. (No model.)

To all whom it may concern:

Be it known that I, HENRY EBERHARDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hinges, of which the following is a specification.

My invention relates to improvements in hinges which, while capable of a more general use, are especially adapted and intended for gates, and, while they may be applied to any kind of gate, they are especially suited for woven-wire gates and others having iron frames; and the objects of my improvements are to provide a hinge whereby the gate may be opened to either side and will close automatically by reason of its own gravity, and also to secure the gate against displacement by being lifted vertically by stock, &c. I attain these objects by certain peculiarities of the construction and arrangement of my hinge, as will be hereinafter particularly set forth and specifically claimed.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a front view of a gate and fence-post with my hinges in place, and shows the gate in a closed position. Fig. 2 is a front view of the post and an end view of the gate when opened. Fig. 3 is a front view of the post and a gate having a square bar or batten, and illustrates how the upper hinge may be applied thereto. Fig. 4 is a perspective view of my upper hinge, and Fig. 5 is a perspective view of the lower hinge. Figs. 6 and 7 are detail views of upper hinge.

Similar letters refer to corresponding parts throughout the different views of the drawings.

A represents an ordinary fence-post of any desired form or material, to which a gate may be hung.

B is a gate, and C is the vertical bar or stile thereof. This bar may be of any form and material; but I preferably make it of iron and cylindrical in shape, as this form is best adapted to my upper hinge, and as it is the form generally used as a frame for wire gates. It is evident, however, that it can be a square bar and formed at the proper point, near the top, with a cylindrical bearing for engagement with the upper hinge; or it may be formed with a mortise having a rod inserted and secured therein for a pintle for the upper hinge, as shown in Fig. 3 of the drawings, or in various other ways.

In Fig. 4 I have shown my upper hinge, which is formed in two parts and provided with suitable holes a, through which the necessary screws or bolts a' are passed to secure the plate D to the fence-post, as is seen. The plate D is provided on the side adjacent to the gate with a projection or arm E of suitable size and length, which arm extends from the plate D at a right angle and has its end formed with a curve, as shown at b, thus forming a portion of the circular bearing for the bar C or rod or pintle c. On either side of this arm I preferably form a curved recess b' or depression for the reception and retention of the bent strap F. This recess or groove extends longitudinally with the arm, and I prefer to form it the entire length of the same, and while I prefer the curved or semicircular groove I may use it of other forms or may dispense with it entirely. Horizontally through this arm, and at suitable distance from the plate D, I provide a suitable hole, through which is passed the pin or bolt b^2, for firmly securing the strap F to the arm E, as is shown in Fig. 4. The strap F is formed of one piece of metal and bent, as shown, so that when placed in the grooves of the arm and secured thereto by bolt the circle or eye G is completed. It will be seen from Fig. 6 that I form the strap F with its inner side convex, which permits it to fit snugly in the concave groove b', thus preventing the strap from moving either up or down. This construction of the strap also lessens the amount of friction when engaged with the bar C or pintle c, as will be readily understood. While I prefer this construction, it is obvious that I may use a flat strap or other form.

The lower hinge, as seen in Fig. 5, is composed of two pieces, the plate H being provided near its center with lips or projections d d', between which the tongue e on plate I

is inserted and secured loosely by pintle e', passing through suitable holes in said tongue and lips or projections. Each of the plates H and I is provided with a sufficient number of suitable holes, through which are passed bolts or screws for securing them to the post and bar. The plate I is preferably formed, as shown, with a concave groove g on its side to fit the convex gate-bar; but I may dispense with this groove and form the plate with a flat surface, when desired to be applied to a flat gate-bar.

It will be seen and readily understood from Fig. 1 of the drawings that the axis of the upper hinge is at f and about four times a greater distance from the fence-post than the axis of the lower hinge, which is at h, and also that the bar of the gate is the pintle for the upper hinge, while the lower one has a removable pintle e', and that the tongue e on plate I, being secured between the projections d d', prevents an upward displacement of the gate. When the gate is opened, it will be vertically inclined, as shown in Fig. 2, thus giving it the tendency by its own gravity to swing back in vertical alignment with the fence-post, as at Fig. 1.

In Fig. 3 I have shown a modified form of applying my device to a gate having a square bar or batten, and it is obvious that I may use other methods of adjusting the upper hinge to such a gate.

It is evident that the distance of the axes of the upper and lower hinge from the fence-post may vary, and that no arbitrary proportion is required; but I have found that for ordinary yard gates the distance of the center of the axis of the lower hinge from the post is about one-half an inch, while that of the upper one is about two inches. It is also obvious that by placing the lower hinge close to the bottom of the bar C the bar will be kept a short distance from the post, thus preventing the post being marred by contact with the lower end of said bar.

In employing the above-described construction I am enabled to cast the parts of my hinge, if I so desire, thus making it inexpensive and yet strong and durable.

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

1. A gate-hinge composed of the plate D, the projection E, formed with recess b and grooves b', and the bent strap F, secured to the arm or projection E, forming the eye G, substantially as set forth.

2. A gate-hinge composed of a plate D, the projection E, formed with a curved recess b and concave grooves b', and a bent strap F, having its inner surface convex and secured to the projection E, forming the eye G, substantially as shown and described, and for the purpose set forth.

3. The combination of an upper hinge having a plate D, projection E, formed with a curved recess b, concave grooves b', a bent strap F, having its inner surface convex and secured to the projection E, forming the eye G, with a cylindrical bar or rod C, and a lower hinge attached to said bar, substantially as shown and described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand and affixed my seal this 16th day of March, 1889.

HENRY EBERHARDT. [L. S.]

In presence of—

PAUL DRENAUL,

CHAS. F. CRANZ.