No. 865,243. PATENTED SEPT. 3, 1907.

J. V. DUNN.

GATE HINGE.

APPLICATION FILED MAY 3, 1907.

Fig. 2

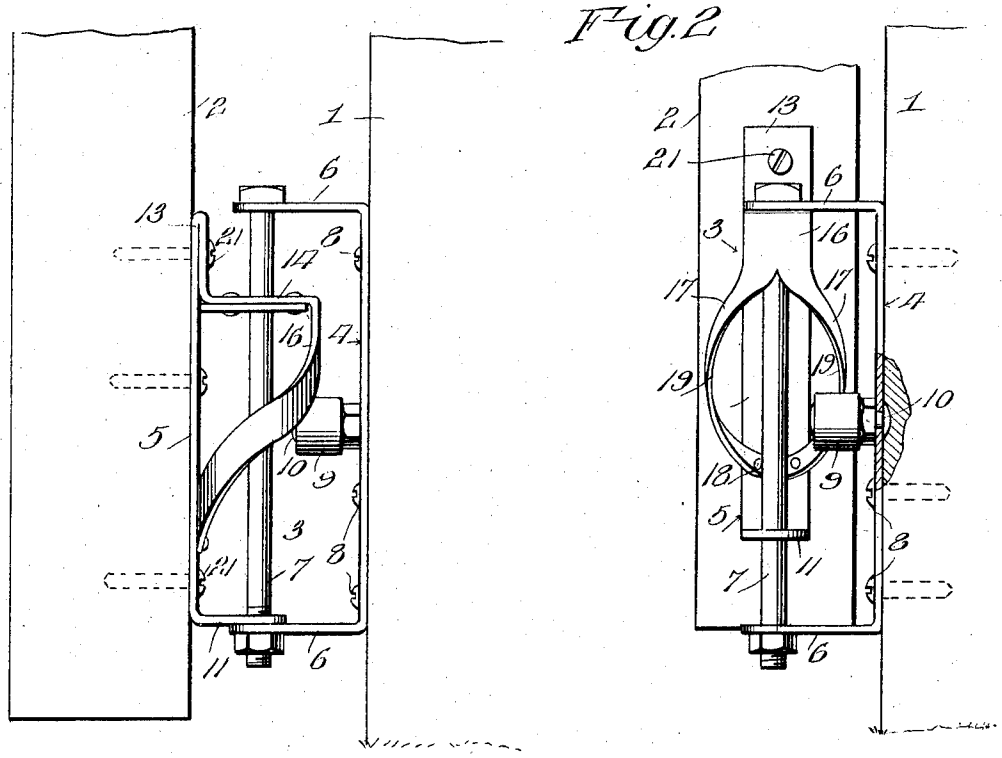


Fig. 1.

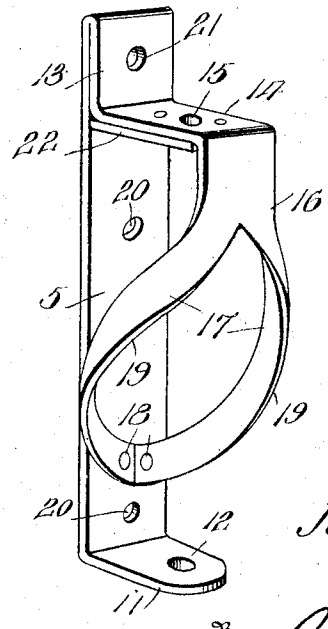


Fig. 3.

Witnesses

Frank Hough

C. Bradway.

Inventor

John V. Dunn,

By Victor J. Evans

Attorney

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN V. DUNN, OF PROVO, UTAH.

GATE-HINGE.

No. 865,243. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed May 3, 1907. Serial No. 371,724.

To all whom it may concern:

Be it known that I, JOHN V. DUNN, a citizen of the United States, residing at Provo city, in the county of Utah and State of Utah, have invented new and useful Improvements in Gate-Hinges, of which the following is a specification.

This invention relates to a gate hinge of that type which will cause the gate to automatically swing back to closed position after the same is released from open position, and it relates more particularly to a hinge of this class that will permit the gate to open and close in either direction. The invention has for one of its objects to improve the construction and operation of devices of this character so as to be comparatively easy and inexpensive to manufacture, composed of few parts, of substantial and durable design, and thoroughly reliable in use.

A further object of the invention is the provision of a gate hinge having its post and gate members made of wrought iron strips bent into the desired shape and hingedly connected by a pintle bolt, one of the members having cam arms working on an anti-friction roller and arranged to cause the gate to automatically close by its own weight.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a side elevation of the hinge shown applied and holding the gate in closed position. Fig. 2 is a similar view showing the gate in open position. Fig. 3 is a perspective view of the member of the hinge having the cams for causing the gate to automatically close.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, 1 designates a portion of an ordinary gate post, and 2, the inner vertical bar of a swinging gate that is hingedly connected with the post by at least one hinge designated generally by 3, although, if desired, two such hinges may be employed, but for ordinary purposes, it will be found that a simple form of hinge may be used in connection with the hinge 3. The hinge 3 is employed for the purpose of permitting the gate to close automatically by its own weight and remain in closed position until deliberately opened when it is desired to pass through the gateway. The hinge 3 comprises a post member 4 and a gate member 5, both of which may be, and preferably are, constructed of sheet metal of suitable gage and width. The member 4 has its ends bent laterally into parallel horizontally extending arms 6 that are apertured to receive the pintle-bolt 7 extending vertically or parallel with the body portion of the said member. The post member 4 is secured against the post in any suitable manner, as for instance, by screws 8 and arranged midway between the arms 6 and supported on the member 4 is an anti-friction roller 9 journaled on a stud 10 riveted to the member 4.

The gate member 5 is considerably longer than the member 4 and has one end bent outwardly and apertured to form a pintle-receiving arm 11 disposed above the lower arm 6 of the member 4, the aperture 12 being clearly shown in Fig. 3. Adjacent the middle of the member 5, the same is bent flat against itself, as indicated at 13, and then outwardly into an arm 14 disposed parallel with the arm 11 and provided with an aperture 15 for receiving the pintle-bolt 7. From the extremity of the arm 14 the member is bent downwardly into a vertically-extending portion 16 that divides into two branches 17 that are produced by splitting one end of the strip from which the member 5 is made. These branches 17 are symmetrically curved and extend downwardly between the arms 11 and 14 toward the body portion of the member 5 to which their extremities are secured by rivets 18. Each portion 17 is curved through 180°, the center of curvature being the axis on which the gate turns, namely, the bolt 7. The bottom edges 19 of the curved element 17 constitute cams that engage the roller 9 whereby the weight of the gate will cause the latter to swing closed from open position on either side. The flat portion or back plate of the member 5 is provided with apertures 20 for receiving screws 21 for securing the members to the gate, the upper screw-receiving aperture extending through the doubled portion 13 of the member, as shown in Fig. 3. If desired, the upper arm 14 and cam portion of the member may be reinforced as by a plate 22 secured under the arm and bearing against the back or plate portion of the member 5. This reinforcing plate 22 is riveted to the arm 14 and is provided with an aperture for receiving the pintle-bolt.

In practice, the hinge is applied by securing the members 4 and 5 respectively, to the gate post and gate in the desired position and then the members are secured together by the pintle-bolt 7. Normally the parts are in the position shown in Fig. 1, the roller 9 being engaged in the crotch formed by the cam members 17. As the gate is swung open in either direction, one of the cams 19 runs upwardly on the roller 9, thereby bodily lifting the gate until it is fully opened, which position is reached when the arm 14 of the member 5 abuts the top arm 6 of the member 4, as shown in Fig. 2. As soon as the gate is released, it will automatically return by its own weight from the position shown in Fig. 2 to that shown in Fig. 1, and will come to rest by the roller engaging between the two cam members.

From the foregoing description, taken in connection

with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired, as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. A hinge of the class described comprising a pair of members having laterally extending arms, a pintle passing through the arms for hingedly connecting the members, a pair of inclined cams extending from a point between the arms of one member outwardly toward one of the arms thereof, and a device supported on the other member at a point between its arms for engagement with the cams.

2. A hinge of the class described comprising a pintle-carrying member, a second member having one end bent into an arm to engage the pintle and the other end divided into downwardly inclined cams, and a roller on the first member arranged in coöperative relation with the cams.

3. A hinge of the class described comprising a member having one end provided with an apertured arm and bent back upon itself and the other extremity split and shaped into symmetrically inclined cams with their extremities secured to the body portion of the member, a pintle extending through the said arm, a second member supporting the pintle, and a roller on the second member engaging the cams.

4. A hinge of the class described comprising a strip of metal having one end bent laterally to form an arm and an intermediate portion bent laterally to form a second arm and provided with a divided extremity inclined toward the body portion of the strip and secured to the latter to form cams, a pintle slidable through the arm and between the cams, a member supporting the pintle, and a device on the latter member engaging the cams.

5. A hinge of the class described comprising a strip of metal having an apertured arm at one end and doubled back on itself at an intermediate point and bent into an arm thereat and having its other extremity split longitudinally and the split portions symmetrically curved and inclined with their ends secured to the body of the strip intermediate the said arms, a second strip having its ends bent into arms, a pintle extending through the arms of both strips, and an anti-friction roller arranged on the second strip to engage the inclined and curved portions of the first strip, the said portions being curved around the axis of the pintle as a center.

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

JOHN V. DUNN.

Witnesses:
WALTER PARKES,
JULIUS C. ANDERSEN.