(No Model.)

# R. B. CARRAN.

## HINGE.

No. 346,264. Patented July 27, 1886.

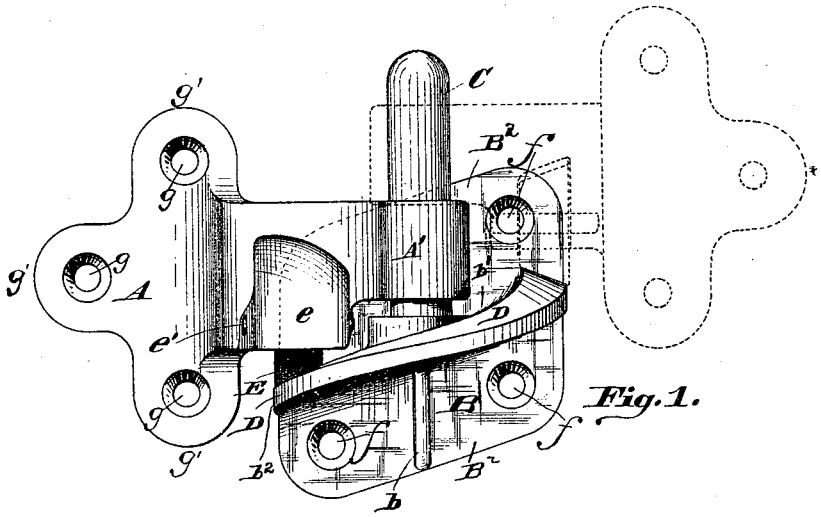


Fig. 1.

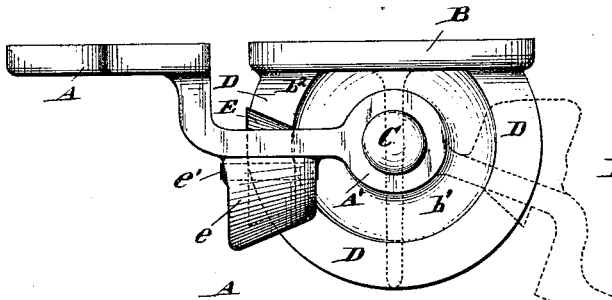


Fig. 2.

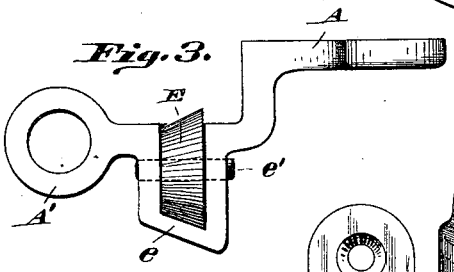


Fig. 3.

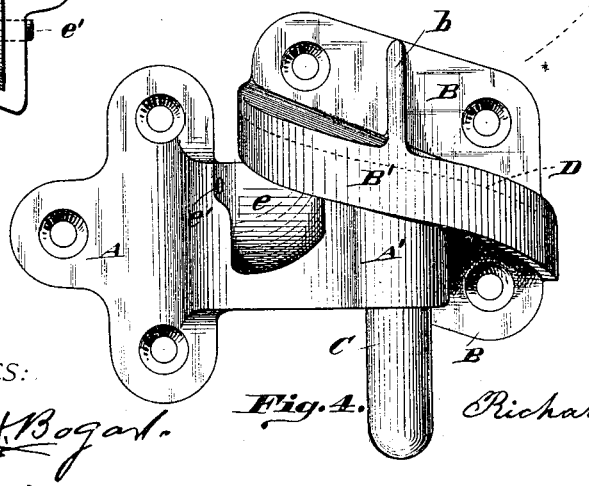


Fig. 4.

WITNESSES:

John H. Bogart.

E. A. Flemming.

INVENTOR

Richard B. Carran

# UNITED STATES PATENT OFFICE.

RICHARD B. CARRAN, OF LUDLOW, KENTUCKY.

## HINGE.

SPECIFICATION forming part of Letters Patent No. 346,264, dated July 27, 1886.

Application filed November 12, 1885. Serial No. 182,626. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD B. CARRAN, of the city of Ludlow, county of Kenton, State of Kentucky, have invented a new and useful Improvement in Hinges, which is fully set forth in the following specification, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of hinges that are self-closing.

The object of my invention is to provide a self-closing hinge which is simple in construction, has few working parts, easily applied, durable in its action, and with less liability to become disordered from rusting of the working parts.

Figure 1 is a side elevation of a hinge embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail view. Fig. 4 shows a modification.

My invention consists in the construction and combination of parts hereinafter described and claimed, reference being made to the accompanying drawings.

B is the stationary part, or that part which is fastened to the gate or door post. It consists of a flange or face-plate, B″, having a circular shelf or projection extending to the front of the face-plate about three-fourths of its diameter. On the upper edge it is beveled off toward its periphery and forms a beveled spiral incline similar to the segment of one thread of a screw. This projection is made on the face-plate at an angle of about twenty-five degrees from a horizontal line across the face. The pin or pintle C is made in the center of the circle of the shelf or projection in a vertical line, and a bracket, *b*, is placed directly under the pintle, for the purpose of giving strength and support to the projection. Screw-holes *f* are made in the face-plate or flange B″, for the purpose of attaching the hinge to the gate or door post.

D is the beveled incline, (the pitch or inward inclination of which is upward and central toward the center of the pin C) which pin C forms the pivot around which the roller and movable part of the hinge travel.

E represents a beveled friction wheel or roller, the pitch or periphery of which corresponds with that of the beveled spiral incline D, on the upper surface of which it rolls when the part A is swung to and fro, thereby giving an upward and downward motion to the part A when in position, as shown in Fig. 1. (The beveled incline travels upon the roller when in position as shown in Fig. 4.) The axle of the beveled roller is on a line horizontally at a right angle with the center line of the pin or pintle C.

*e* is the casing or hood that incloses the roller E and supports the axle *e′* of said roller E.

*b′* is a circular or spiral groove or depression, for the purpose of carrying off the water from rain &c., which flows off at the lowest point, $b^2$.

In order to protect the roller E in the casing *e* from dirt and any foreign substances getting in, to interfere with the operation of the beveled roller E, I provide a guard or rim, B′, that overhangs the beveled spiral incline D, which prevents the insertion of substances that would obstruct the beveled roller E. In this position of the hinge the relation of the roller to the beveled spiral incline is the same as in Fig. 1, except that the beveled spiral incline travels upon the roller.

My invention may be applied to gates, doors, shutters, blinds, &c., when the object is to have them self-closing, and it is clearly to be seen that where a door or gate is hinged with this device the opening of the gate or door causes the part A to rise by means of the beveled roller E ascending the beveled spiral incline D, and when the door or gate is released it descends by gravitation and closes.

I am aware that inclines and rollers have been used in the manufacture of hinges, and also that a beveled incline and beveled roller are used; but in these cases the construction is quite different from that in which I make my hinge.

In my hinge the beveled incline and the beveled roller are made with the periphery of the roller E to exactly correspond and match that of the spiral incline, and the axle of the roller is at right angle with the center line of the pin or pintle C, and also the angle of these bevels is the same as would be required to make a beveled gear (pinion and wheel) of the same relative proportions to operate at right angles to each other, the beveled roller representing the pinion resting on or traveling upon the wheel, the wheel being represented by the spiral incline in my hinge. This part

of the hinge is made in one casting. The angle or inclination of the bevel of the spiral incline being less than forty-five degrees, there is but little tendency to slip down or sag with the weight of the gate or door, and consequently little frictional contact upon the pintle C with the eye A′. The swinging-arm movable part of the hinge A is made with an eye, A′, to fit the pintle C. On one side of this eye A′ is the extension in which the casing or hood *e* is formed, said casing or hood extending forward of the front line of this part of the extension a sufficient distance to permit the insertion of the pin *e′*, which forms the axle of the beveled roller, through from one side to the other of the casing or hood, and fastening it by riveting or otherwise. Then this extension or arm diverges from this straight line backward to a line even with the rear line of the face-plate, and then it takes the line parallel to that on which it starts from the eye A′, as shown in Figs. 2 and 3. It is then provided with lugs or extensions *g′*, in which are screw-holes for fastening it to the gate or door. The rear line of the face-plate B″ and the rear surfaces of the flanges or projections *g′ g′ g′* being on a line gives great facility for applying the hinge, as it is screwed to the front face of both gate and post.

Having thus fully described my invention, what I claim as new, and for which I desire Letters Patent, is—

The combination of the face-plate having the incline D, bracket *b*, and pintle *c*, formed as a part thereof, with the swinging arm A, having an eye, A′, formed at its inner end to catch over the pintle, and a casing, *e*, the beveled roller E, and journal *e′*, substantially as shown and described.

RICHARD B. CARRAN.

Witnesses:
JOHN H. BOGART,
E. A. FLEMMING.