No. 833,818. PATENTED OCT. 23, 1906.

A. A. ADAMS.

GATE HINGE.

APPLICATION FILED MAY 28, 1906.

2 SHEETS—SHEET 1.

Fig. 1

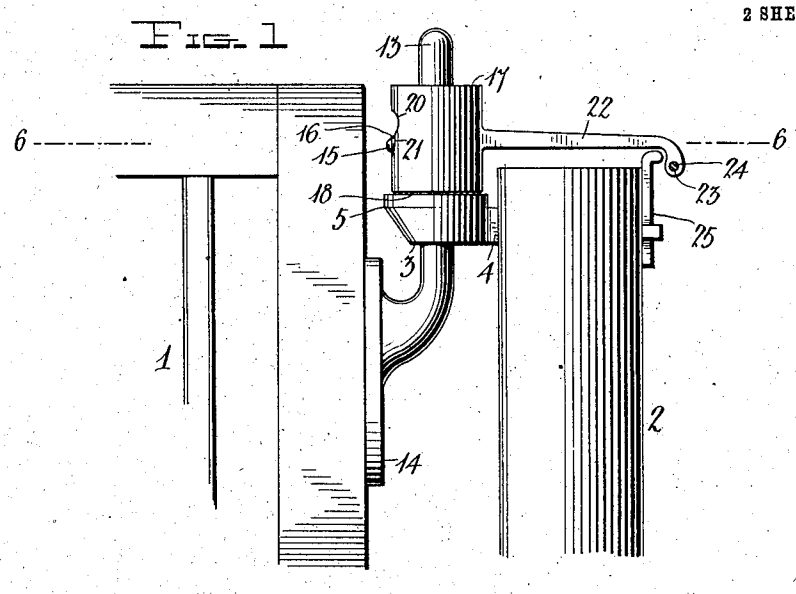



Fig. 2

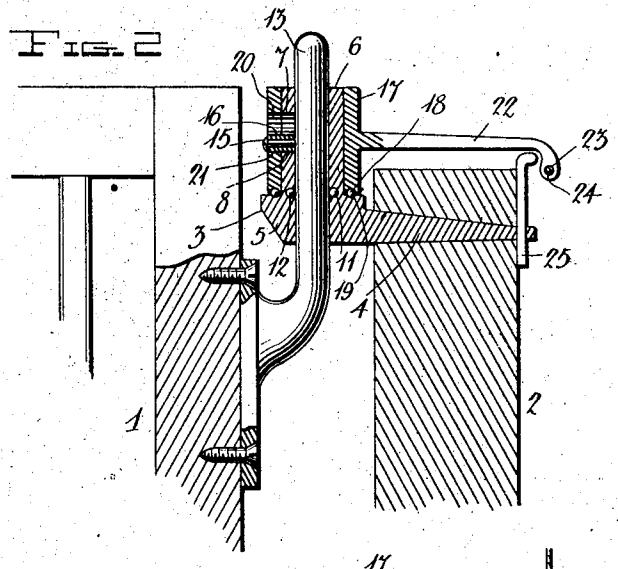
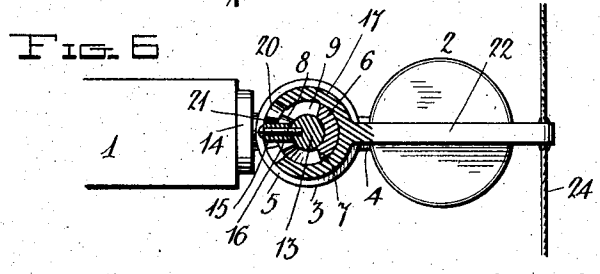



Fig. 6




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2 SHEETS—SHEET 2.

FIG. 3

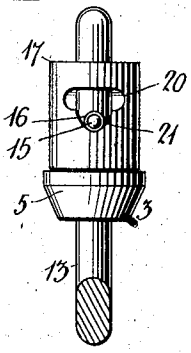



FIG. 4

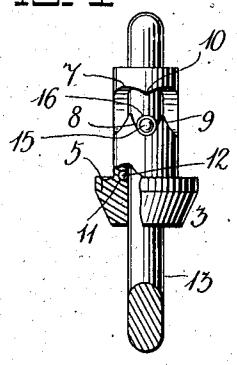



FIG. 5

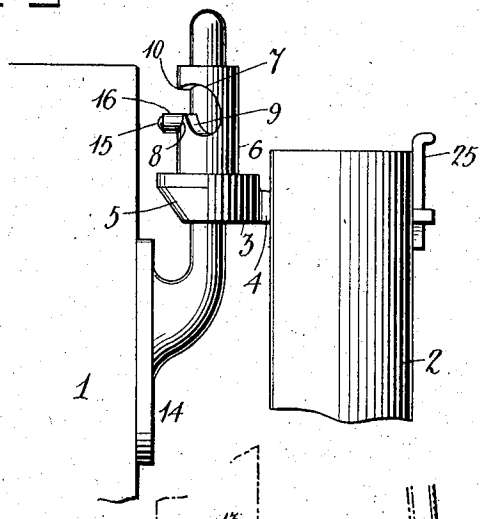
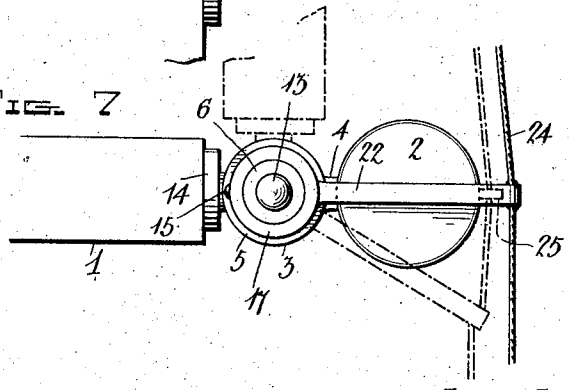



FIG. 7




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# UNITED STATES PATENT OFFICE.

ALLEN A. ADAMS, OF BERRYTON, KANSAS.

## GATE-HINGE.

No. 833,818. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed May 28, 1906. Serial No. 319,187.

*To all whom it may concern:*

Be it known that I, ALLEN A. ADAMS, a citizen of the United States, residing at Berryton, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Gate-Hinges; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in gate-hinges.

The object of the invention is to provide a gate-hinge having means whereby the same is operated to cause the gate to automatically open or close.

A further object is to provide a hinge of this character which will be simple, strong, and durable in construction, efficient in operation, and well adapted to the purpose for which it is designed.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of a portion of a gate and hinge-post, showing the application of the hinge, the gate being in closed position. Fig. 2 is a vertical longitudinal sectional view through the hinge with the gate in closed position. Fig. 3 is a front view of the hinge. Fig. 4 is a similar view with the outer sleeve removed and parts broken away. Fig. 5 is a side view of the hinge with the outer sleeve removed. Fig. 6 is a horizontal sectional view on the line 6 6 of Fig. 1. Fig. 7 is a top plan view of the gate and hinge-post, showing in full lines the position of the parts when the gate is closed and in dotted lines the position of the parts when the gate is open.

Referring more particularly to the drawings, 1 denotes a portion of the gate, and 2 denotes the hinge-post. To the hinge-post 2 is to be secured the socket member 3 of the hinge, said socket member being provided with a shank adapted to be driven into the post, as shown. On the outer end of the shank 4 is formed a cylindrical bearing-head 5, on which is formed an upwardly-projecting cylindrical socket 6, the hole or bore of which is continued on through the head 5, as shown.

In the front side of the socket 6 is formed a slot or opening 7, in the lower wall of which is formed a centrally-disposed substantially V-shaped recess 8, from the upper corners of which the lower wall of the slot 7 inclines downwardly in opposite directions to form cam-guide tracks 9. The upper wall of the slot 7 over the center of the recess 8 is provided with a downwardly-projecting point 10, the purpose of which will be hereinafter described. In the inner wall of the bore of the socket 6, near the lower end thereof, is formed an annular ball-race 11, in which is arranged a series of antifriction-bearing balls 12.

Slidably and revolubly mounted in the ball-bearing 12 of the socket 6 is a pintle 13 of the gate member 14 of the hinge. Rigidly connected to the pintle 13 is a laterally-projecting stud 15, on which is revolubly mounted an operating-roller 16, said stud and roller being adapted to project through the slot 7 of the socket 6 and to engage the recess 8 in the lower wall thereof when the gate is in a closed position.

Revolubly mounted on the socket 6 is an operating-sleeve 17, the lower end of which is adapted to engage and to turn on a series of bearing-balls 18, arranged in an annular ball-race 19, formed in the upper side of the head 5 adjacent to the outer wall of the socket 6, as shown. In one side of the operating-sleeve 17 is formed a slot 20, in the lower wall of which is formed a segmental recess 21, in which the end of the bearing-roller 16 on the stud 15 is adapted to rest when the gate is in a closed position. Connected to or formed integral with the sleeve 17 on the side of the same opposite the slot 20 is an operating-arm or lever 22, said lever being adapted to project in a horizontal plane over the top of the hinge-post, as shown. The outer end of the lever is turned downwardly and is provided with an eye 23, which is adapted to be connected with an operating cord or cable 24, which extends in opposite directions from each side of the lever, as shown. Secured to one side of the post 2 is an upwardly-projecting curved guide arm or bar 25, by means of which the operating-cords are held in proper position.

When it is desired to open the gate, one end or the other of the cord or cable 24 is pulled, which will cause the lever 22 to turn the operating-sleeve 17 in one direction or the other, thereby engaging the walls of the recess 21 in the slot 20 with the roller 16 on the stud 15, thereby raising said stud and roller and the

pintle to which the same are attached upwardly, together with the gate, and turning the same until said roller engages one end or the other of the slot 20, after which a further turn of the pintle will bring said stud and roller over the upper corners of the recess 8 in the slot 7 of the socket 6 and into engagement with the inclined tracks 9 on one side or the other of the recess 8, thus allowing the weight of the gate on the pintle to cause the roller and stud to travel down the incline cam-track, and thereby swinging the gate to an open position, as will be understood. The weight of the gate is supplemented by the operating-cords and lever, if necessary. After the gate has been thus turned to an open position the same may be closed in a similar manner by a pull on the opposite end of the operating-cord, which will cause the movable parts to be turned in the opposite direction. When the gate has been swung to an open position in either direction, the operating-cords will be held in proper position by the curved bar or arm 25, so that a leverage-power will be maintained for operating the lever 22, as clearly shown in the last figure of the drawings.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined by the appended claims.

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

1. A hinge comprising a socket, a pintle adapted to work therein, cam-guide tracks in said socket, a gate-opening roller journaled on said pintle to engage said guide-track, and an operating-sleeve adapted when turned to bring said roller into engagement with the cam-guide tracks in said socket, substantially as described.

2. A hinge comprising a cylindrical socket member adapted to be secured to the hinge-post, oppositely-inclined guide-tracks arranged in said socket member, a pintle secured to the gate and adapted to work in said socket, an operating-roller journaled on said pintle to engage said inclined guide-tracks, an operating-sleeve arranged on said socket member, said sleeve having means to engage said roller whereby when the sleeve is turned, said roller and pintle together with the gate will be raised and the roller engaged with the inclined tracks in said socket, and means to turn said sleeve in one direction or the other, substantially as described.

3. A hinge comprising a cylindrical socket member adapted to be secured to the hinge-post, oppositely-inclined guide-tracks arranged in said socket member, a pintle secured to the gate and adapted to work in said socket, an operating-roller journaled on said pintle to engage said inclined guide-tracks, an operating-sleeve arranged on said socket member, said sleeve having means to engage said roller whereby when the sleeve is turned, said roller and pintle together with the gate will be raised and turned and the roller engaged with the inclined tracks in said socket, a lever arranged on said sleeve, operating-cords connected to said lever, and means to guide said cord, substantially as described.

4. A hinge comprising a cylindrical socket member adapted to be secured to the hinge-post, an antifrictional bearing arranged in said socket, a gate-pintle slidably and revolubly mounted in said bearing, a locking-recess and oppositely-inclined guide-tracks formed in said socket, a laterally-projecting operating-roller mounted on said pintle and projecting into said locking-recess, an antifrictional bearing on said socket member, a revoluble operating-sleeve mounted on said bearing, said sleeve having a cam-slot to receive said operating-roller, an operating-lever on said sleeve, cords connected to said lever and a guide to support said cords in operative position, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALLEN A. ADAMS.

Witnesses:
O. K. SWAYZE,
L. K. LEWIS.