No. 650,658. Patented May 29, 1900.

G. W. RILEY.

HINGE.

(Application filed Dec. 29, 1898.)

(No Model.)

Fig. 1.

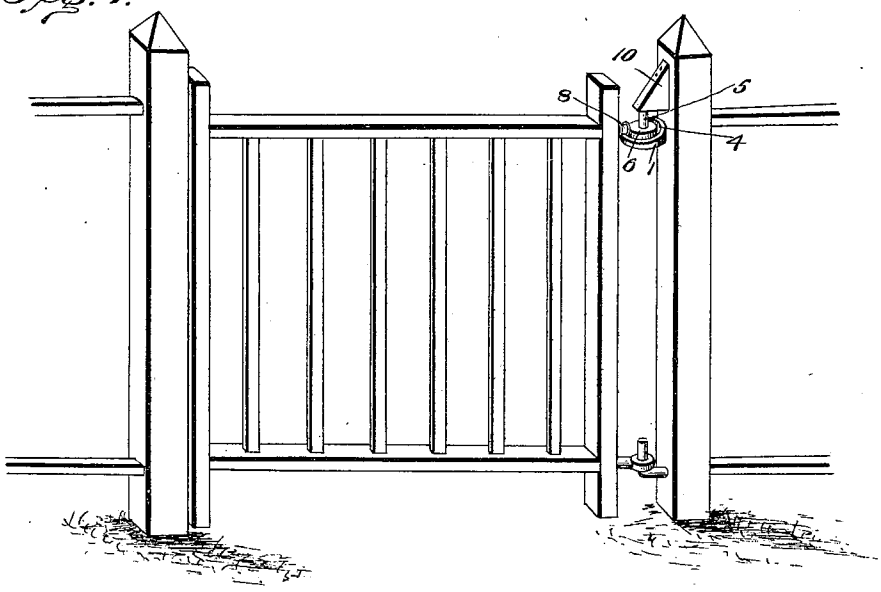


Fig. 2.

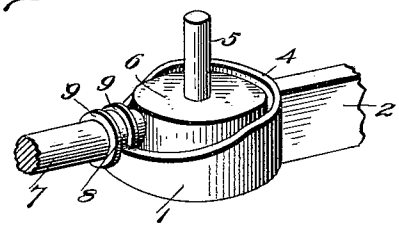


Fig. 3.

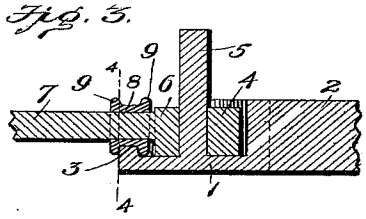
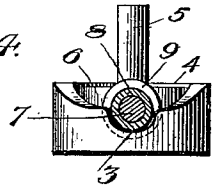


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. RILEY, OF WILLIAMSON, WEST VIRGINIA.

HINGE.

SPECIFICATION forming part of Letters Patent No. 650,658, dated May 29, 1900.

Application filed December 29, 1898. Serial No. 700,634. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. RILEY, a citizen of the United States, residing at Williamson, in the county of Mingo and State of West Virginia, have invented certain new and useful Improvements in 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.

My invention relates to improvements in gate-hinges; and the object is to provide a simple, inexpensive, and effective device of this character.

To this end the invention consists in certain features of construction and combination of parts, as will be hereinafter fully described, and particularly pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of my improved hinge as it appears in use on an ordinary garden-gate. Fig. 2 is an enlarged detail perspective view of the hinge detached from the gate. Fig. 3 is a central longitudinal section through both members of the hinge. Fig. 4 is a transverse section on the dotted line 4 4 of Fig. 3.

1 indicates the socket, which is preferably cylindrical in shape, with a portion of the wall upon one side, substantially about half the circumference, cut away, so as to form an inclined track, the remaining portion 4 of the circumference being flat and parallel with the bottom and the center of the cut-away portion being notched or recessed, as shown at 3. The socket is provided with a radially-extending tang or shank 2, diametrically opposite the recess 3, by means of which the socket is secured to the post. The bottom of the socket is provided with a centrally-located pintle 5, which extends above the top of the socket.

7 indicates a cylindrical bolt one end of which engages with the gate, and the other end is provided with a perforated head 6 to engage with the pintle within the socket. Loosely mounted upon the bolt between the gate and the head in position to engage with the track or top of the socket is a grooved roller 8, the flanges 9 9 of which retain the roller in place while the gate is being opened or closed. By always retaining the center of the bolt above the corners or shoulders formed by the recess 3 with the inclined portion of the track the roller can always be raised out of the recess by pushing against the gate; but owing to the wear of the parts if there were no means taken to prevent it the bolt in time would sink below said corners and render the operation of the gate more difficult. I obviate this difficulty by locating the axial center of the bolt at such a distance above the bottom of the head that when the gate is closed the head will rest upon the bottom of the socket and hold the bolt in the same position relatively to the corners. In addition to this I make the flanges of the same depth as the distance from the bottom of the recess to the floor or bottom of the socket, so that when the gate is closed the roller will retain its original position relatively to said corners irrespective of the amount of wear that has taken place between the roller and the bolt. In this manner I can utilize the greatest depth of recess relatively to the size of roller used, thereby securing the greatest amount of resistance to the movement of the gate when it is closed with the least possibility of the parts wearing to such an extent as to render the hinge inoperative.

10 denotes a bracket fixed to the gate-post above the pintle 5 to prevent the head 6 from accidental displacement on the pintle.

When the gate is in the closed position, the roller 8 rests in the recess 3 to retain the gate in this position, and if the gate be opened in either direction the roller will ride up the inclined rail, and when the gate is released its weight, due to gravity and the elevated position of the bolt 7 and its roller 8 on the inclined face of the rail or track, causes the gate to swing to, and when it comes to rest the roller seats itself in the notch or recess formed in the lowermost point in the rail. As the flange on the roller and the head on the bolt only touch the bottom of the socket when the gate comes to rest, it is impossible for them to become worn or changed to any appreciable extent, and as the flange holds the axis of the roller and the head holds the axis of the bolt always in the same position when at rest it is impossible for the wear upon the contacting surfaces, as the surface of the bolt, the bore of the roller, the periphery of the

roller between the flanges, the top of the track, and the corners of the recess, to prevent the hinge from operating successfully at all times.

If it is desired to retain the gate in an open position—as, for instance, when the driver leaves his team to open the gate, which must of course be held open while the driver is leading his team through—the gate is thrown open, so that the roller rests upon the level or horizontal portion 4, and is thereby held against closing. It is, however, only necessary to give the gate a push to carry the roller off of the level portion and onto the inclined portion to cause the gate to close.

It will be noted that the vertical walls of the recess 3 are approximately parallel, so as to form such resistance as would prevent the gate being opened accidentally, while at the same time offering no barrier to its manipulation by hand.

It will of course be understood that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

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

In a gate-hinge, the combination with a substantially-cylindrical socket, one side of the wall of which is cut away to form an oppositely-inclined track extending substantially half-way around the socket, the remaining portion being flat and substantially parallel with the bottom, and the bottom of the inclined portion being provided with a recess extending nearly to the bottom of the socket and forming shoulders at the bottom of the inclined portion, the wall of the socket opposite the recess being provided with a radially-projecting tang, and the bottom of the socket being provided with a centrally-located pintle, the top of which projects above the top of the wall, of a cylindrical bolt, the inner end of which is provided with a perforated head to engage with the pintle and the bottom of which is adapted to rest upon the bottom of the socket when the gate is closed and hold the axial center of the bolt above said shoulders, and a grooved roller upon the bolt, the depth of each of the flanges of which is equal to the distance between the bottom of the recess and the bottom of the socket, whereby the flange upon the inner side of the socket will rest upon the bottom of the socket and keep the axial center of the roller above said shoulders when the gate is closed.

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

GEORGE W. RILEY.

Witnesses:
MONT. RILEY,
BERT SHUMATE.