Sept. 15, 1953 J. M. THOMPSON 2,651,806

ADJUSTABLE GATE HINGE

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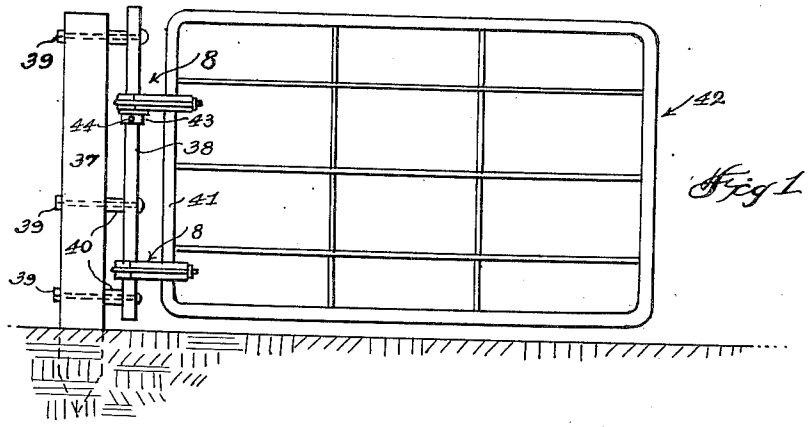


Fig. 1.

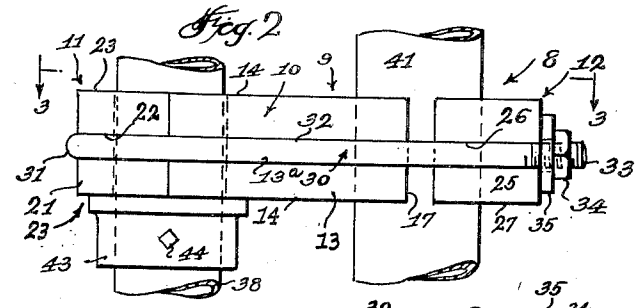


Fig. 2

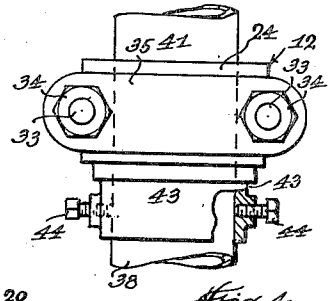


Fig. 4

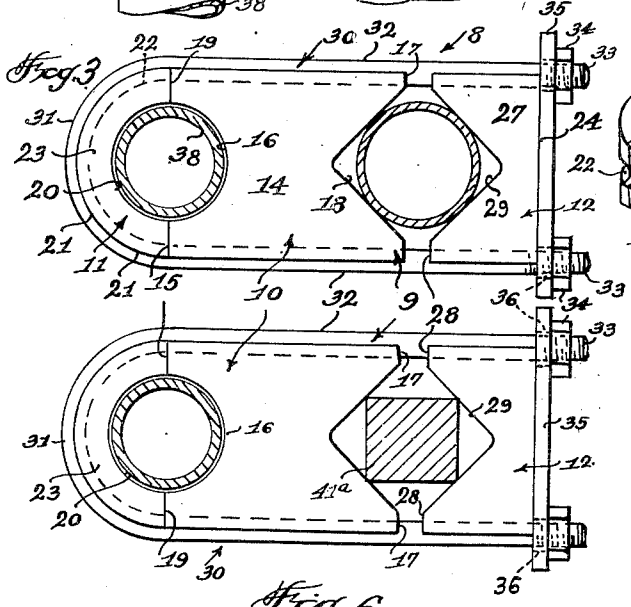


Fig. 3

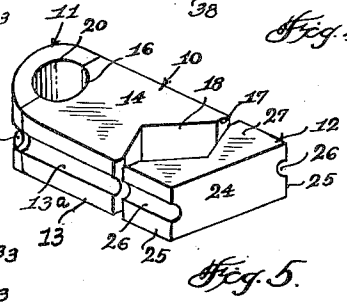


Fig. 5.

Fig. 6.

Inventor

JOHN M. THOMPSON

By John M. Randolph

Attorney

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ADJUSTABLE GATE HINGE

John M. Thompson, Manchester, Iowa

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5 Claims. (Cl. 16—158)

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This invention relates to a novel construction of gate hinge primarily intended for farm gates although capable of use with other types of gate, and more particularly has reference to a gate hinge which may be readily clamped to an end rail from a gate and swivelly supported on an upright supporting member of a gate post for swingably mounting the gate relatively to the gate post.

More particularly, it is an aim of the present invention to provide a gate hinge having means for clamping engagement with end rails of gates of various cross sectional shapes and without requiring that the gate hinge pass through the gate end rail, so that the gate hinge is especially adapted for metal gates.

Still a further object of the invention is to provide a gate hinge of extremely simple construction capable of being readily assembled, including fastening means for assembling the sections thereof and which cooperate with the end rail of a gate engaged by the hinge, for rigidly retaining the sections in adjusted assembled relationship to one another and for swivelly mounting an end portion of the hinge on an upright of a gate post.

Various other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a side elevational view of a gate and gate post showing the gate swingably supported relatively to the gate post by a pair of the adjustable gate hinges;

Figure 2 is an enlarged fragmentary side elevational view of a portion of the gate and gate post supporting member showing the hinge applied thereto;

Figure 3 is a top plan view thereof, partly in section, taken substantially along a plane as indicated by the line 3—3 of Figure 2;

Figure 4 is an end elevational view, partly in section, looking from right to left of Figures 2 and 3;

Figure 5 is a perspective view of the three sections of the gate hinge with the fastening unit thereof removed, and

Figure 6 is a view similar to Figure 3 showing the gate hinge clamped to an end rail of a gate of a different cross sectional shape.

Referring more specifically to the drawing, the novel adjustable gate hinge in its entirety is designated generally 8 and includes a body portion, designated generally 9 composed of an intermediate section 10 and end sections 11 and 12. The three sections comprising the body 9 may be formed of any suitable metal of sufficient strength to support a gate and may be casted, stamped or otherwise produced. The intermediate section 10 has longitudinally extending parallel side edges 13 which are provided with grooves 13a which extend from end to end thereof and which are disposed intermediate of the opposite parallel sides 14. One end 15 of the intermediate section 10 is provided with a semicircular recess 16 which extends from one side 14 to the opposite side 14 thereof and which is disposed intermediate of the longitudinal edges 12. The opposite end 17 of the intermediate section 10 is provided with a substantially V-shaped notch 18 which likewise extends from side to side thereof and to adjacent each of the side edges 13.

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The end section 11 is of semicircular shape and includes an inner end portion 19 having a semicircular recess 20, corresponding to the recess 16 and an outer semicircular edge 21 which is disposed concentrically around the recess 20 and which is provided with a groove 22 extending from end to end thereof and which is likewise disposed intermediate of the opposite sides 23 of the end section 11.

The section 12 includes a substantially flat straight outer end portion 24 which is disposed at a right angle to the side edges 25 of said section 12. The side edges 25 are provided with grooves 26 intermediate of the opposite sides 27 of said section and which align with the grooves 13a and groove 22 when complementary sides of the sections 10, 11 and 12 are in the same plane and when the complementary edges 13 and 25 are in the same plane and the edges 13 merge with the ends of the outer edge 21. The opposite, inner end 28 of the section 12 is provided with a V-shaped recess or notch 29, corresponding to the notch 18 and which notches combine to form opposed jaw faces.

The gate hinge 8 also includes a U-shaped bolt 30 having an intermediate or bight portion 31, which is of proper diameter and cross sectional size to fit the groove 22 of the section 11 and the legs 32 of which are spaced apart a proper distance to receive the sections 10 and 12 therebetween and are of proper cross sectional diameter to fit into the aligned grooves 13a and 26 thereof, as illustrated in Figures 2, 3 and 6. The said legs 32 are made of sufficient length to extend a substantial distance beyond the outer end 24 of the section 12, when the sec-

tions are assembled as illustrated in Figures 1 to 4 and 6 the terminals of said legs 32 are each threaded as seen in 33 to receive a nut 34. Before the nuts 34 are applied to the threaded ends 33, a bar 35 having openings 36 adjacent the ends thereof and which are spaced apart a distance corresponding to the spacing of the legs 32 is applied to said legs over their threaded ends 33 and disposed against the outer end 24 of the section 12.

Figure 1 illustrates a gate post 37 on which an upright gate supporting member 38 is supported in an upright position and substantially parallel to the gate post 37 by a plurality of nut and bolt fastenings 39. The gate supporting member is spaced from the gate post 37 by spacing sleeves 40, interposed therebetween and mounted on the fastenings 39. As illustrated in Figures 2 to 4 and 6, the gate supporting member 38 is of circular cross section and sized to be received in the circular opening formed by the recesses 16 and 20 when the hinge 8 is assembled. Accordingly, the sections 10 and 11 are assembled around a portion of the supporting member 38 and the bolt 30 is then applied to said sections, as illustrated in Figures 1 to 4 and 6. The notch 18 of the section 10 is then positioned against an upright end rail 41 of a conventional gate 42 and the section 12 is then inserted between the bolt legs 32 so that its notch 29 will abut against said end rail 41 in opposed relationship to the notch or recess 18. The cross head 35 is then applied to the ends 33 of the bolt 30 and the nuts 34 are then applied to the said ends and tightened so that the surfaces of the recesses 18 and 29, forming clamping jaw faces, will be drawn into clamping engagement with the gate end 41, as illustrated in Figures 1 to 4, and with the adjacent ends 17 and 28 of the sections 10 and 12 spaced from one another. This will likewise draw the section 11 towards the opposite end of the section 10 so that the inner end portions 19 will abut against the complementary end portions 15 and the recesses 16 and 20 will be disposed in opposed relationship to form a circular opening of somewhat larger diameter than the external diameter of the supporting member 38, as illustrated in Figures 3 and 6, so that the hinge 8 may swivel about said supporting member 38 while clamped to the gate end 41. Each of the two hinges 8, as illustrated in Figure 1, is thus applied to the supporting member 38 and gate end 41 and if desired and for larger gates additional hinges could be employed. The supporting member 38 carries a supporting collar 43 which is adjustably secured thereto by one or more set screws 44 and which is positioned below the upper hinge 8 when said hinge is applied to the supporting member 38. After the hinge has also been secured to the gate end 41 and said gate is elevated to a desired level, with the set screw 44 loosened, the collar 43 is displaced upwardly and against a portion of the undersides 14 and 23 of the sections 10 and 11, respectively, and the set screw or set screws 44 is then tightened so that the upper hinge 8 will be swivelly supported on the supporting member 38 and will rest on and turnably engage the upper end of the collar 44 for supporting the gate 42. If desired, the supporting member 38 may be provided with a second collar 43, not shown, which may be similarly secured thereto below the lower hinge 8. The gate hinge 8 is especially adapted for use with metal gates and eliminates drilling a hole through the gate to receive a gate hinge.

In Figures 1 to 4, the gate end 41 has been shown as being circular in cross section as is most common in metal gates. However, the jaw surfaces 18 and 29 are likewise adapted to clamp gate ends of other cross sectional shapes, for example, the gate end 41*a* of rectangular cross section, as illustrated in Figure 6.

It will also be readily apparent that the gate hinge 8 may be made in various sizes to accommodate gate supporting members and gate ends of different sizes and various other modifications and changes are likewise contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A gate hinge comprising a body portion including an intermediate section, a first end section and a second end section, said intermediate section and first end section having adjacent end portions provided with corresponding semicircular recesses combining to form a circular opening when said adjacent ends of the intermediate section and first end section are in abutting engagement and in which an upright gate supporting member is adapted to loosely fit for swivelly mounting the gate hinge thereon adjacent to one end of said hinge, said second end section having an inner end disposed adjacent the other end of said intermediate section, said last mentioned end of the intermediate section and the inner end of said second end section having corresponding notches forming opposed jaw faces when the gate hinge is assembled and between which an upright end rail of a gate is adapted to be disposed in engagement with said jaw faces for spacing the inner end of the second end section from the adjacent end of said intermediate section, and fastening means extending along side edges of each of the sections and abutting the ends of the end sections and adjustable for clamping the intermediate section and second end section to the gate end and for securing the first end section in abutting engagement against the first mentioned end of the intermediate section.

2. A gate hinge as in claim 1, said fastening means comprising a U-shaped bolt having a bight portion engaging around the outer end of the first end section and substantially parallel legs disposed against the side edges of the intermediate section and second end section and between which the said sections are disposed and having terminal portions extending beyond the outer end of said second end section, a cross head detachably engaging against the outer end of said second section and having openings through which the parallel legs of the bolt extend, said bolt legs having threaded terminal portions, a nut engaging each threaded terminal and bearing against the cross head, said sections being disposed between the bight portion of the bolt and said cross head and being clamped therebetween and in engagement with the end of the gate by tightening of said nuts.

3. A gate hinge as in claim 2, said side edges of the intermediate section and second end section having grooves extending from end to end thereof and disposed in alignment for receiving the parallel legs of the bolt, the outer edge of the first end section having a groove extending from end to end thereof and communicating at its ends with corresponding ends of the grooves of

the intermediate section for receiving the bight portion of the bolt.

4. A gate hinge as in claim 3, said bight portion of the bolt being substantially semicircular, and the outer grooved edge of said first end section being substantially semicircular to fit the bight portion of the bolt.

5. An elongated gate hinge comprising an intermediate section, a first end section and a second end section, said sections being disposed in end-to-end relationship when assembled, fastening means surrounding the remote ends and the side edges of the hinge sections and adjustable for urging the sections thereof toward one another endwise of the gate hinge, and the adjacent end of the intermediate section and first end section being recessed to define an opening adapted to loosely engage an upright supporting member around which the gate hinge is adapted to swing in a horizontal plane about the supporting member as an axis, said intermediate section and second end section having adjacent ends normally

disposed in spaced end-to-end relationship and having complementary opposed recesses each forming a plurality of jaw faces between which an upright end portion of a gate is adapted to be clamped by tightening of said fastening means for securing the gate end to the hinge and for swingably supporting the gate for swinging movement with the hinge relatively to the upright gate supporting member.

JOHN M. THOMPSON.

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