D. SHERMAN.

GATE HINGE.

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1,063,745.

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Fig. 1.

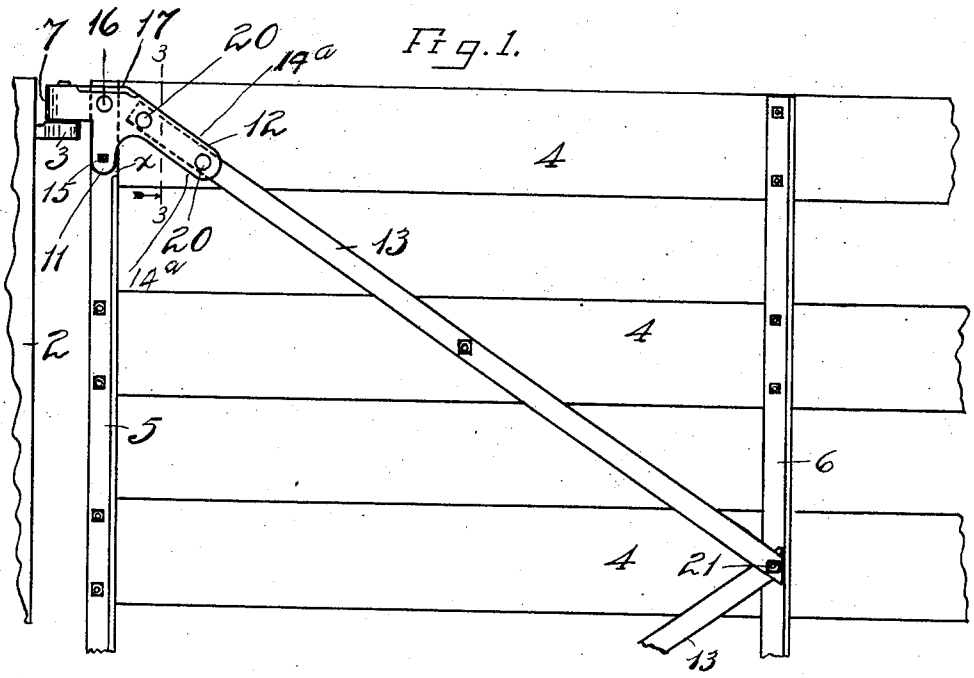


Fig. 2.

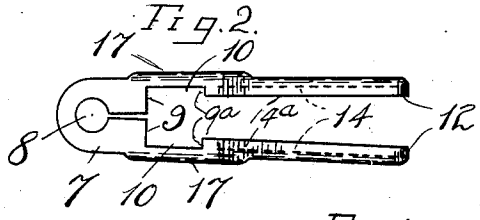


Fig. 3.

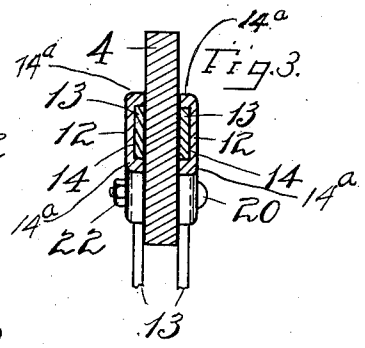
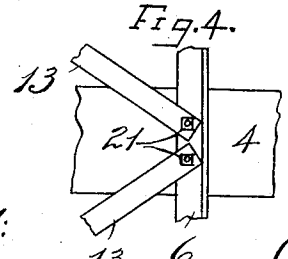


Fig. 4.



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UNITED STATES PATENT OFFICE.

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GATE-HINGE.

1,063,745. Specification of Letters Patent. Patented June 3, 1913.

Application filed January 2, 1913. Serial No. 739,714.

To all whom it may concern:

Be it known that I, DAVID SHERMAN, a subject of the Czar of Russia, but who has made application for citizenship of the United States, and a resident of Galesburg, in the county of Knox and State of Illinois, have invented a new and useful Gate-Hinge, of which the following is a specification.

My invention relates to hinges, and particularly to that class thereof by and on which two-way-swinging farm-gates of the non-sagging or truss type may be suspended.

The principal object of the invention is to provide a unitary hinge to which the gate-body may be secured in a manner which insures a maximum of strength and rigidity, the attachment being not only to the slats but also to the truss straps and to one or more of the gate-standards or ties, whereby practically all danger of sagging is eliminated.

Other objects consist in providing structural details hereinafter described and pointed out in the appended claims.

I may at this time state that some of the features of the hinge herein disclosed—more specifically, the divergence of the truss-strap-engaging arms—are described in my co-pending application Serial No. 736,990.

In the accompanying drawings, which illustrate a preferred embodiment of my invention secured on a portion of a gate body, Figure 1 is a side elevation, some of the old or common parts broken away; Fig. 2, an enlarged top plan of my improved hinge; Fig. 3, an enlarged transverse section, taken in the plane of the line 3—3 in Fig. 1; and Fig. 4, a modification illustrating another manner of securement of the truss members to the body, the upper ends of the trusses not shown.

Referring to the drawings by numerals, the same one of which indicates the same part in each of the views, 2 represents a post to which is secured a bent pintle 3. 4 designates each gate slat, and 5 and 6, the standards or ties for securing the slats together. The ties 5 and 6 are preferably of angle iron, the outstanding angle of the inner one being cut away at x, Fig. 1. Being common in the art, these parts need not be herein more fully described.

7 designates the pintle-receiving portion or heel of my improved hinge, and 8 is an eye therein. At its forward end the heel is divided, and at the terminal of the division the forks thus provided are, on their inner faces, each formed rectangularly to said division line and in an outward direction therefrom to provide a slat-end abutment 9, thence extended forwardly a short distance and again turned at right angles to provide abutments 9^a, 9^a, whereby channels 10, in which the upper end portions of the standards 5 have placement, are afforded. This median or body portion of the hinge is provided with vertical arms or extensions 11. The forwardly extending arms or leaves of the hinge are preferably inclined, the degree of inclination being dependent upon that at which it is desired that the truss members (or brace members) 13 be inclined. Each arm 12 is provided with an upper and a lower longitudinally arranged rib or inturned edge 14^a, 14^a, affording a channel 14, as shown in Figs. 2 and 3, and the pair is provided with coinciding apertures for the reception of the usual securing bolts 20 which are engaged by nuts 22. These channels are afforded by thickening the upper and lower edges of said arms. The pair of arms 11 is apertured for the reception of a bolt 15 (shown in section) and the intermediate portions are similarly apertured to receive a bolt 16. The usual nuts are of course provided.

17, 17 represent reinforcing ribs.

The truss-strap or straps may be variously secured to the gate body. In Fig. 1 they are shown as united at their apex by a bolt 21 which passes also through one of the slats, while in Fig. 4 they are shown as secured each by a like designated bolt which fastens them to the standard 6.

It will be evident that the hinge portions 7 and 11 form a right angled triangle, and that the pairs of arms 11 and 12 form an acute angled triangle. It will be observed also that by reversing the hinge shown it becomes a lower one than if they were in line or at the same distance from the edges of the slot. Moreover, when it is secured in place the bolts 20 are out of alinement with the longer dimension and grain of the wood slat, and that the strain being thus diversified there is much less tendency to split the wood. A very important feature is that the stress or "drag" is in a direct line between the bolts 20 and 21, and being so, downward strain or torsion is absolutely prevented. Again, the hinge is bolted not only to the brace or truss, but to another me-

tallic part also—the standard or standards 5, as well as to the slat 4.

In order that the leaves 12 may have a tendency to frictionally bind the bolts 20 and nuts 22, said leaves are preferably normally slightly divergent, as more fully described in my said co-pending application. When drawn into taut engagement, said bolts and nuts bind the said leaves against the sides of the slat, and inasmuch as the abutment 9 primarily assists in keeping the slat in proper position, and the pair of offset bolts through said leaves and slat bind the members as above described, a structure of extreme rigidity is provided. Should it be desired, either of the leaves 12 may be omitted, in which event a single truss or brace strap 13 is used.

The vertically arranged channels 10 provide each a seat in which a standard 5 is firmly locked by the wall and shoulders affording them. Thus said standards are held immovable with relation to each other and to the hinges.

Having thus described my invention I claim as new the following, namely:—

1. A hinge having a pintle-receiving portion and a body portion extended to form a leaf, the body portion provided with a rectangular, vertically arranged channel adapted to receive a gate standard and to lock it from forward, rearward, and outward movement, the front and rear portions of said channel being afforded by abutments.

2. A hinge member having a pintle-receiving portion and a body portion extended diagonally to form a leaf, there being a vertical projection provided with a rectangular channel which is coextensive with said body portion, the front and rear portions of said channel being afforded by abutments.

3. A hinge member having a pintle-receiving heel and having both a vertically and a diagonally arranged arm each of which is provided with a channel, each of said channels afforded by thickening the upper and lower edges of said arms.

4. A hinge structure comprising a casting having a heel portion provided with a pintle-receiving aperture and having a vertically extended midlength projection provided with abutments 9, 9, and 9^a, 9^a, the forward portion being extended diagonally to provide a leaf, said leaf provided with inturned edges 14^a to provide a channel 14.

In testimony whereof I hereto sign my name in presence of two subscribing witnesses.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."