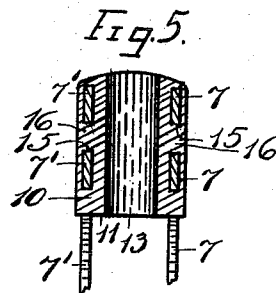
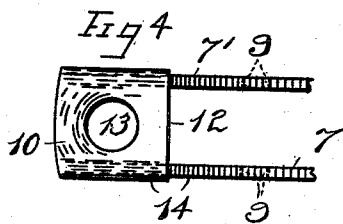
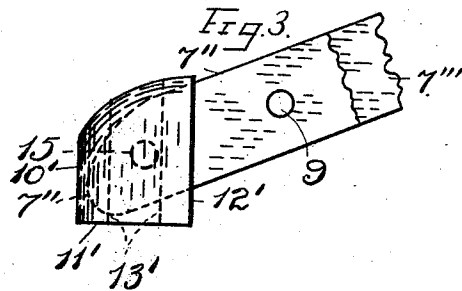
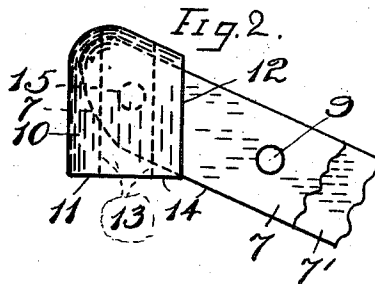
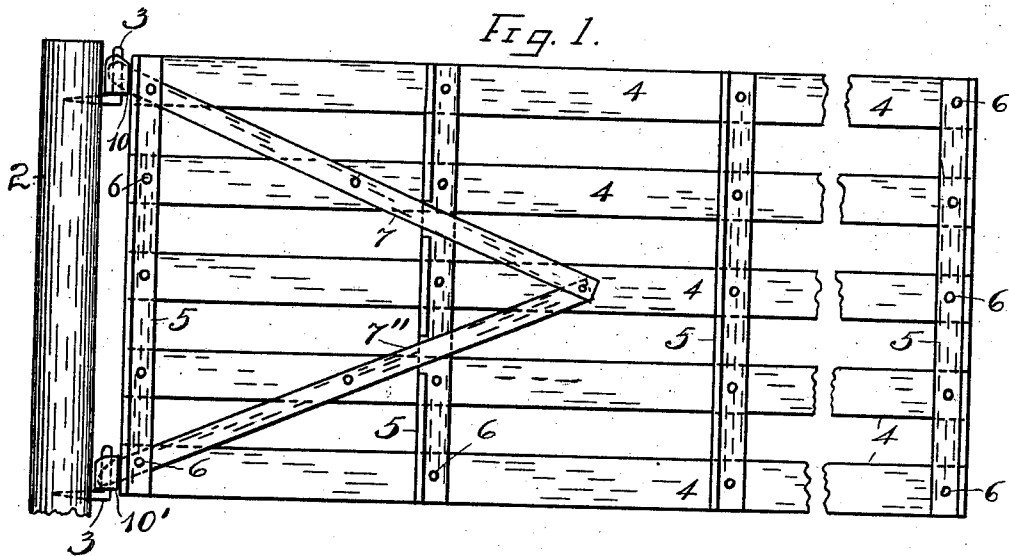


W. A. WEBSTER.
GATE HINGE MEMBER.
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Patented Mar. 5, 1912.



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UNITED STATES PATENT OFFICE.

WILLIAM A. WEBSTER, OF GALESBURG, ILLINOIS.

GATE-HINGE MEMBER.

1,019,389.

Specification of Letters Patent.

Patented Mar. 5, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM A. WEBSTER, a citizen 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 Member, of which the following is a specification.

My present invention concerns gates of the swinging type, and my improvements are directed particularly to one of the hinge members which constitutes a part thereof. It has not to do with the particular structure of the other parts of the gate, nor does it relate to the pivot or pintle on which the gate is hung, except only in so far as these last mentioned members are combined with that portion of the hinge which is fixed to and on the gate and which sustains it. In gates of this character, especially long ones, the main object in devising hinges and elements connected therewith has been to provide against sagging of the free end thereof. Various constructions have been marketed, but all such of these which have come within my knowledge are lacking in some one—at least—particular, and the main object of this invention is to provide a hinge member, or a plurality thereof, which when applied to an ordinary swinging gate will overcome every objection which has hitherto been urged against hinges of this class or type. The more successful ones of this type of hinges are known to the trade as the "truss" or the "brace" type, in which a strap, in some manner connected, engaged, or integral with the pintle-receiving member or part of the hinge, is fixed to the slats and arranged diagonally thereof. All such constructions have necessitated horizontally bending the diagonally arranged elements, thus not only greatly weakening them and causing an extreme strain or sagging stress at the angles thus formed but further causing a substantial additional expense incident to the forge work required to form the pintle-receiving eyes and the bends, as well as the additional strap-material required, and the additional bolts and labor required in assembling the pieces. Not only this—a more serious difficulty, perhaps, arose in assembling. The twin or parallel pairs of brace members are, before assembling, punched for the reception of the bolts by which they are united, and the holes in the boards, registering therewith, afterward bored. The utmost care and skill

was required to so punch the holes that they would when assembled coincide, and more often than not, even when such care and skill were exercised, the attempts were futile. It then became necessary to enlarge the holes, (by means of a reamer or the like,) in order that the bolts might be inserted, or else to bore other or enlarged holes through the boards, thus allowing movement and defeating the very object of the invention. And where the pintle-receiving element and the brace or braces are connected by bolts the tendencies are to strip the threads thereof because of turning the nuts too taut, and to shear the bolts off. The nuts become loosened and fall off from the bolts. If loosened but not disengaged, the bolt and nut rust together and become practically useless. To provide a hinge-member which is devoid of even one of these objectionable qualities is a special object.

A further object is to provide a hinge-member which while in fact comprising a plurality of parts originally distinct, is in its completed form an inseparable and indivisible structure.

It is an object to so unite pre-punched parallel brace or truss elements that the holes will in the act of permanently uniting said elements be brought into coincidence.

It is an object to provide a pintle-receiving element which is extremely strong and durable, simple, efficient, and economic of construction.

It is an object, and a special one, to provide a hinge-member the truss element or elements of which are without bends.

Subsidiary objects will be in part obvious and in part specifically noted.

The accompanying drawings illustrate a preferred embodiment of my invention as applied on a gate, post, and hangers. Therein, Figure 1 is an elevation; Fig. 2, a fragmental side elevation, partly broken away, of the upper hinge-member; Fig. 3, a similar view of the lower hinge-member; Fig. 4, a top plan of either member; and Fig. 5, a transverse, vertical, central sectional view, partly broken away. Figs. 2 to 5 inclusive are greatly enlarged with reference to Fig. 1.

Considering the drawings by numerals, 2 indicates a post; 3, 3, bent pintles secured therein and constituting hinge-members; 4, 4, gate slats; 5, angle-iron standards; and 6, bolts uniting the slats and standards, the usual nuts thereon not shown. These parts

may be of any suitable construction and require herein no further description.

7, 7' indicate a pair of parallel strap-iron pieces which constitute the truss or brace elements of the upper hinge member, 14. They are provided with coinciding apertures 9.

10 indicates the knob-like head or pintle-receiving element of the upper hinge-member, which has a plane lower face 11 and a plane forward face 12, and is provided with an approximately central vertically arranged pintle-receiving aperture 13.

In order to provide the greatest efficiency, perfection in manufacture and consequently ease of assemblage, as well as economy of manufacture, I provide a die in which the elements 7, 7' are positioned and secured by any means which holds the prepunched apertures in coincidence, and in said die casting the pintle-receiving head 10 on the adjacent ends thereof, with the cast metal completely enveloping the end portions of the straps and so firmly adhering thereto that they are inseparable therefrom. In a brace or truss style hinge the straps are disposed at an acute angle with reference to the pintle-receiving aperture. In straight hinges the straps are placed at right angles thereto. The die-casting process permits of "chilling" the head 10, thus rendering it practically insusceptible to wear.

In order to render loosening or separation of the gate-sustaining member from the head into which it is cast, I prefer to provide each brace with an aperture 15 into which the molten metal will run, as shown at 16.

Inasmuch as the structures are, with the exception of certain details of construction, identical, I shall for convenience designate the corresponding parts of the lower hinge-member, 15, by the corresponding numerals 7'', 7'', 10', 11', 12', and 13'.

The preferred mode, above described, of uniting the straps and head into a composite, integral structure, is of course the same in both the upper and lower members. I have contemplated extending the inner ends of the straps entirely through the head, and there bending them over. Also I have contemplated making both straps of a single piece of metal, bent at its midlength, but neither of these methods adds strength or utility, while both add expense.

It will be evident that a hinge-member comprising only a head and one strap, united as above described, would be all sufficient for a very light gate, but for those of ordinary construction the companion members 7, 7' and 7'', 7'' are greatly to be

preferred, inasmuch as the gate is then equally sustained from both of its sides and there will be no torsional stress as is inevitable when a single truss or brace element is employed. However, whether the straps be used in pairs or singly, the sagging strain will be in a direct line from the pintle and not around a curve or bend, or first horizontally and then diagonally therefrom, as in former devices.

Other than to state that it is preferable that the ends of the truss elements be all united at the apex of the double triangle which they form; that bolts or rivets be employed to secure the pairs of parallel straps to the proper slats, to the inner pair of standards, and to each other; that the inner ends of the top and bottom slats rest against the plane faces 12, 12' and between the parallel straps; and that the plane faces 11, 11' rest upon the respective horizontal arms of the bent pintles, further description is unnecessary, as the general construction and assemblage of the parts of the gate depend upon the necessities and conveniences of each individual case.

It will be apparent that the outline of the head 10 may be altered at will and that the straps might be cast to its sides instead of being enveloped thereby; and further apparent that my invention in its broadest aspect contemplates a weight-sustaining or brace element (preferably of strap iron, which is bendable and easily adaptable for various kinds of standards,) to and on one end of which is cast a pintle-receiving element.

The invention is not limited in its scope to gate hinges alone.

It has not been thought necessary to encumber this specification and the accompanying drawings with descriptions and illustrations of modifications or adaptations which would at once present themselves to a skilled mechanic.

Therefore, without limiting myself to particularities of construction, I claim as new and desire to secure by Letters Patent the following, to-wit:

A hinge-member comprising a gate-sustaining element having a pintle-receiving element cast on one of its ends.

In witness whereof I hereunto sign my name at Galesburg, Knox county, Illinois, this 4th day of January, 1912.

WILLIAM A. WEBSTER.

In presence of—

F. R. DICKERSON,
J. H. BAIRD.