

B. F. WARNER.

GATE.

(Application filed June 8, 1899.)

(No Model.)

Fig. 1.

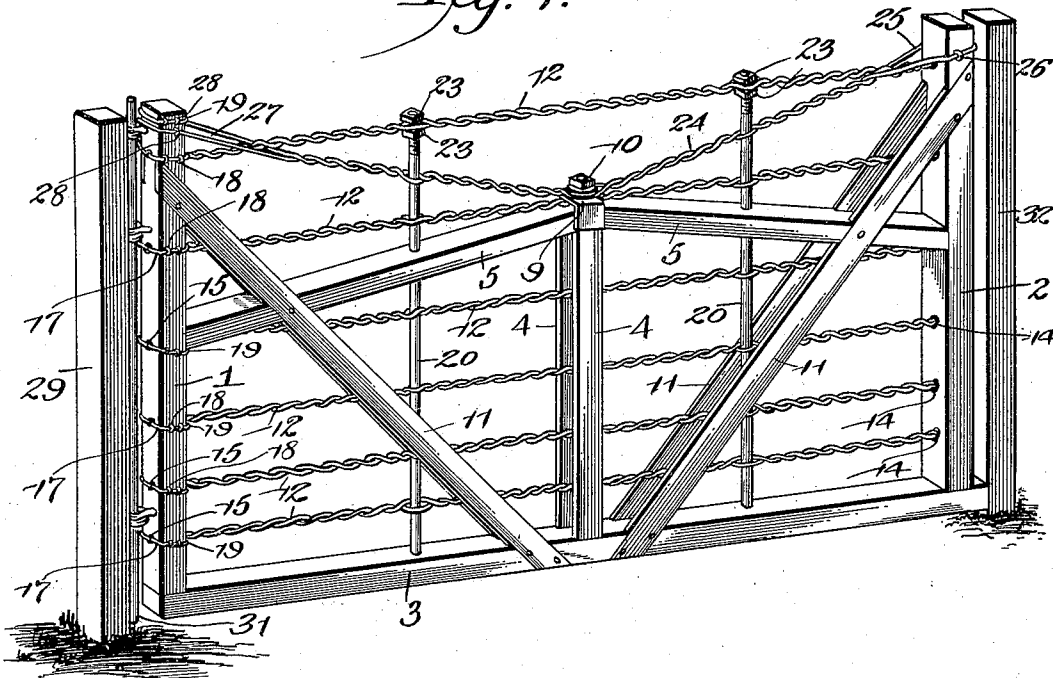


Fig. 2.

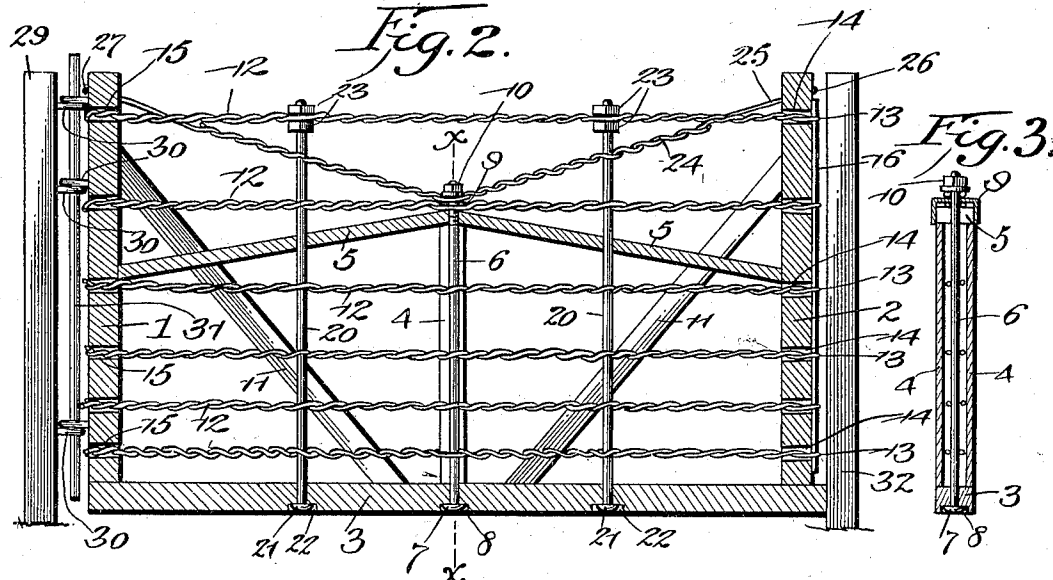
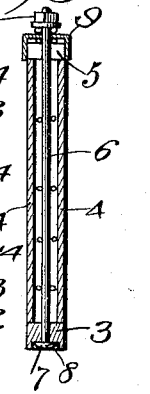


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN WARNER, OF BRONSON, MICHIGAN, ASSIGNOR TO
DANIEL WARNER, OF SAME PLACE.

GATE.

SPECIFICATION forming part of Letters Patent No. 643,175, dated February 13, 1900.

Application filed June 8, 1899. Serial No. 719,807. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN FRANKLIN WARNER, a citizen of the United States, residing at Bronson, in the county of Branch and State of Michigan, have invented a new and useful Gate, of which the following is a specification.

This invention relates to gates, and has for its object to provide an improved wooden frame structure with longitudinal wire braces and vertical bolts connecting the several parts in a substantial manner, so as to prevent sagging and loosening of the parts of the gate.

To this end the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that the improvement is susceptible of various changes in the form, proportion, size, and the minor details of construction without departing from the spirit or sacrificing any of the advantages of this invention.

In the drawings, Figure 1 is a perspective view of the improved gate. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a transverse sectional view taken on the line *xx*, Fig. 2.

Corresponding parts are designated by like reference characters in all the figures of the drawings.

Referring to the accompanying drawings, 1 and 2 designate, respectively, the opposite end pieces of the gate, which are connected by means of a suitable lower rail 3. Located intermediate of the ends of the rail 3 and extending upward from the upper face thereof is a pair of transversely-spaced intermediate upright bars 4, each of which has its upper end beveled in opposite directions toward the respective end pieces of the gate. Fitted flush upon the upper beveled ends of the intermediate bars and extending in opposite directions therefrom is a pair of truss-braces 5, inclined downwardly and connected to the inner faces of the respective end pieces 1 and 2. Located longitudinally between the intermediate bars 4 is an upright bolt 6, having its head 7 seated in a recess 8, provided in the lower side of the rail 3, and its upper end

extending between the adjacent ends of the truss-braces 5, the latter being provided with longitudinal notches to accommodate the bolt. Embracing the contiguous ends of the truss-braces 5 is a substantially U-shaped cap-plate 9, which receives the upper projecting end of the bolt 6 centrally therethrough, and a nut 10 is provided upon the projecting end of the bolt and adapted to bind against the upper face of the cap-plate, so as to firmly clamp the truss-braces to the upper ends of the intermediate bars 4 and also hold the latter firmly to the lower rail 3. The upper end of each end piece of the gate is braced by means of a pair of inclined braces 11, which are located at opposite transverse sides of the gate and extend from near the top end of the end piece downwardly and forwardly to a point adjacent to the intermediate bars 4. At the points of intersection with the end pieces, the adjacent truss-braces 5, and the lower rail 3 the braces are let into the same, so as to fit flush therewith, and are connected thereto by means of any suitable or preferred fastening devices. The wooden frame structure thus provided is braced by means of a plurality of longitudinal brace-wires 12. These braces are alike in construction and are each formed from a single length of heavy wire bent intermediate of its ends and twisted together to form a substantial strand. The bent end 13 of the brace is received within an opening 14, formed transversely through the end piece 2, and the opposite end of the brace extends through a similar opening 15, formed in the opposite end piece 1. It will be noted that the loops formed at the bent end of each brace project a suitable distance beyond the end of the piece 2 and are alined vertically, so as to receive the wire key 16, whereby all of the braces are effectually fastened at their bent ends to the end piece 2. The respective free ends 17 of each brace project through the same opening 15 in the end piece 1 and are bent in opposite directions, so as to embrace the opposite sides of the piece, and are connected thereto by means of staples 18. To prevent the free end 17 from being displaced longitudinally from the staples, it is preferable to bend the extremities 19 thereof transversely across the inner face of the piece, so as to pro-

vide a stop which will effectively prevent longitudinal movement of said free ends.

To prevent the brace-wires from becoming untwisted, I provide a pair of vertical bolts 5 20, located at opposite sides of the intermediate upright bars 4 and extending from the lower rail 3 to the upper brace. Each of these bolts has its lower end provided with a suitable head 21, which is seated in a recess 22, 10 formed in the lower face of the rail 3 and extends upwardly through the adjacent truss-brace 5 between the strands of the several brace-wires and is provided in its upper end with a pair of clamping-nuts 23, which are 15 adapted to clamp upon the upper wire brace and hold the same in position. The upper ends of the end pieces 1 and 2 are further connected by means of a wire truss-brace 24, which is connected intermediate of its ends 20 to the intermediate bolt 6, so as to extend or be inclined opposite to the adjacent truss-braces 5. This wire truss-brace is formed from a single length of wire bent intermediate of its ends into a loop 25 and twisted together to 25 form a wire strand. The loop 25 embraces the upper end of the piece 2 and is connected thereto by means of staples 26, while the opposite free ends 27 are bent about the upper end of the opposite piece 1 and connected thereto 30 by staples 28 in a manner similar to that employed for fastening the longitudinal wire braces. The intermediate portion of this brace embraces the upper end of the intermediate bolt 6 and is held in place against the 35 cap-plate 9 by means of a nut 10, whereby the upper ends of the end pieces are firmly connected together and also to the intermediate bolt 6, so as to prevent sagging and loosening of the several parts of the gate.

40 The gate thus constructed is hinged to the hinge-post 29 by means of eyes 30, carried by the latter post and the adjacent end piece 1 of the gate and adapted to receive a vertical pintle-rod 31, whereby the gate is conveniently hinged and is capable of being swung 45 in opposite directions. It will be noted that the eyes carried by the gate rest upon the eyes carried by the hinge-post, so that the gate is held thereby, and the position of the eyes may be changed so as to adjust the gate vertically 50 and accommodate the same to uneven ground or accumulated snow and ice. Any preferred form of latch may be provided to lock the gate to the latch-post 32.

55 It will be understood that it is not essential that two intermediate upright bars 4 be provided, as a single bar may be employed, which is provided with a longitudinal bore to receive the intermediate bolt 6, and also transverse 60 openings to accommodate the several longitudinal wire braces.

What I claim is—

1. The combination in a gate having opposite end pieces, and a lower rail connecting 65 the same, of an intermediate bar projecting

upwardly from the rail and between the end pieces, opposite truss-braces fitted to the upper end of the intermediate bar and extending to the respective end pieces of the gate, and a bolt extending from the lower rail to the contiguous ends of the truss-braces and adapted to hold the latter to the upper end of the intermediate bar, substantially in the manner shown and described.

2. The combination in a gate comprising 75 opposite end pieces, and a lower rail connecting the same, of a pair of intermediate upright bars projecting upwardly from the lower rail and having their respective upper ends beveled in opposite directions toward the respective end pieces of the gate, opposite inclined truss-braces fitted flush across the respective beveled portions of the upright bars and connected to the respective end pieces of the gate, a substantially U-shaped cap-plate 85 embracing the contiguous ends of the truss-braces, and a bolt having its head seated in a recess provided in the under face of the lower rail and projecting upwardly through the same between the intermediate upright 90 bars and the contiguous ends of the braces, and provided with a nut adapted to clamp against the clamping-plate, substantially as and for the purpose set forth.

3. The combination in a gate composed of 95 opposite end pieces and a lower rail connecting the same, of longitudinal braces formed of twisted wires and connected at opposite ends to the respective end pieces of the gate, and vertical bolts carried by the lower rail and 100 projecting upwardly between the strands of the wire braces so as to prevent untwisting thereof, each bolt being provided at its upper end with a pair of clamping-nuts adapted to clamp upon the upper brace to hold the same 105 in position, substantially as shown and described.

4. The combination in a gate comprising opposite end pieces and a lower rail connecting the same, of an intermediate upright bar 110 projecting upwardly from the lower rail and between the end pieces, truss-braces fitted to the upper end of the intermediate upright bar and extending in opposite directions therefrom to the respective end pieces, a bolt having 115 a nut adapted to hold the contiguous ends of the truss-braces to the intermediate upright bar, and a wire truss-brace connected at opposite ends to the upper ends of the respective end pieces of the gate, the intermediate portion of the wire truss-brace being held 120 in place by means of the nut carried by the bolt, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 125 the presence of two witnesses.

BENJAMIN FRANKLIN WARNER.

Witnesses:

DANIEL WARNER,
FLOYD BILLINGS.