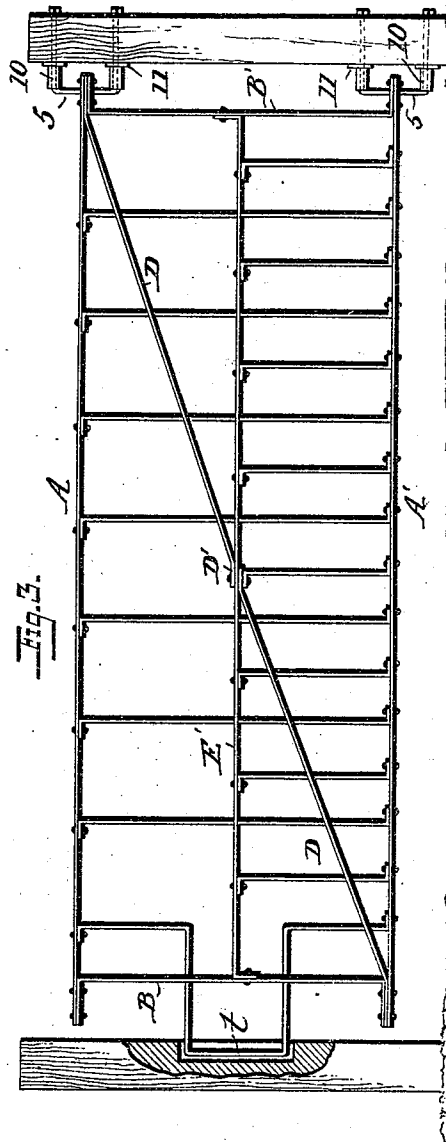
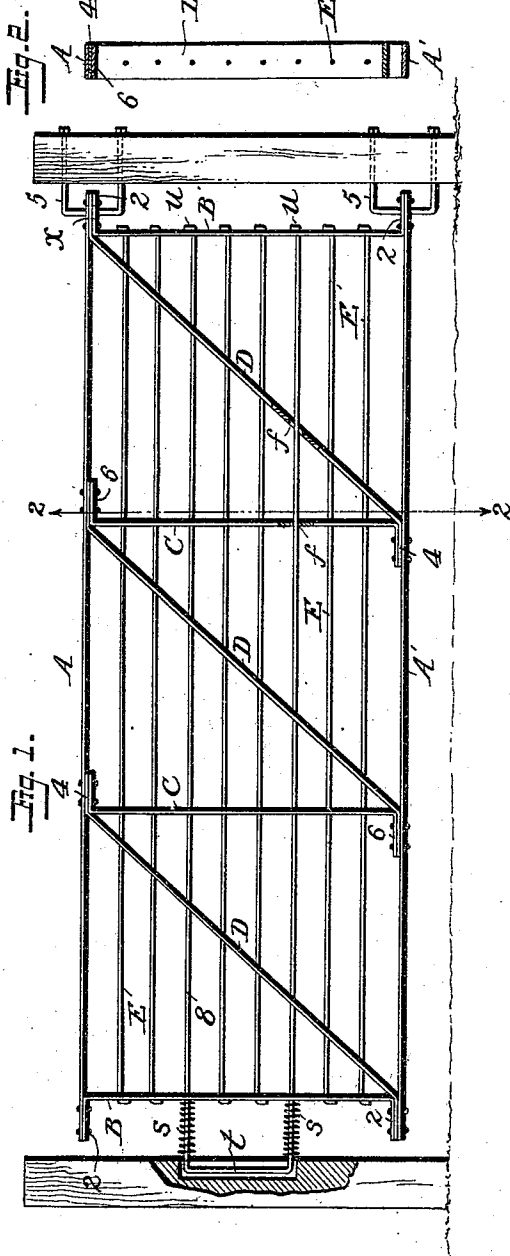


(No Model.)

W. R. WHITE.
GATE.

No. 553,662.

Patented Jan. 28, 1896.



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UNITED STATES PATENT OFFICE.

WILLIAM RICHARD WHITE, OF BLOOMINGTON, ILLINOIS.

GATE.

SPECIFICATION forming part of Letters Patent No. 553,662, dated January 28, 1896.

Application filed December 9, 1893. Serial No. 493,259. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM RICHARD WHITE, a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Gates, of which the following is a specification.

A common objection to wooden gates as ordinarily manufactured is the extent of surface which they present to the air, which in case of high winds causes such a force to be exerted that women, children, and feeble men cannot operate them and the locks are bent and broken and the gate forced open or else entirely torn from its supports in many instances, while another objection to gates of this material and ordinary construction is the want of rigidity and the tendency of the gates to become shackling and loose in consequence of the working of the fastenings, nails, screws, or whatever it may be, after the gate has been used for some time and the wood begins to rot around the fastening devices. To overcome these objections and to secure other advantages, I make use of metal in the construction of my improved gate, and to this end I construct the same as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a gate embodying my invention. Fig. 2 is a transverse sectional view on the line 2 2, Fig. 1. Fig. 3 is a side view showing a slightly-different construction of the gate.

My gate has the top and bottom bars A A', the end bars or standards B B', and when the gate is of sufficient length there are intermediate standards C C and diagonals or braces D, of which there may be one or more, as may be desired.

The top and bottom bars A A' and the end bars B B' are made of flat strips of metal, the upper bars being simple straight strips of, say, eight or ten feet in length and of two, three, or four inches in width, and the end bars are of metal, generally of the same width; but instead of being straight throughout each end bar is bent so as to form a flange 2 at right angles to the body of the bar.

It is desirable that there shall be at the rear end of the gate two lugs perforated to receive the pintles upon the gate-posts, and of course

it is desirable that these lugs shall be as strong and rigid as possible in order to support the requisite wear and strain. In order to make such lugs upon a gate of this character without the expense of forging or riveting the parts to the gate, I form the same by applying the end standard B' so that its flange 2 shall underlie the end of the upper bar, A, the lower flange overlying the end of the lower bar, A', and I rivet the two together and punch the same, forming an opening x through which may pass the pintle 5 on the gate-post.

In order to secure still greater strength, an intermediate plate or piece 4 may be inserted between the upper plates or bar A and the flanges 2. When diagonals are used, however, I prefer to make each diagonal from a strip of preferably the same width as the other strips and bend it at the ends to form the plates or flanges 4, which are then inserted between the top and bottom plates and the flanges 2 of the standards, as shown, and then all are riveted together. By this means the lugs are made of the desired strength and rigidity without any forging or the application of extra pieces. At the same time the end standard is secured rigidly to the top and bottom plates.

The outer end standard B may have its flange riveted to the upper and lower plates or bars in the same manner, either with or without intervening pieces; but when the diagonal extends to the front the lower flange of the said diagonal will constitute a strengthening-piece between the flange 2 and the lower bar, as shown.

It will be observed that the diagonals D have their upper ends nearest to the hinged or rear end of the gate, as I have found that greater strength is thereby secured.

When the intermediate standard or standards C are used, they consist of plates of the same width as the other plates, bent at the ends to form flanges 6 at right angles, which flanges are bolted to the top and bottom plates or strips, and when the diagonals are used the flanges of the diagonals extend between the flanges 6 and the upper and lower plates, as shown.

The bars E of the gate may be horizontal or vertical, as desired, and may be arranged at any suitable intervals and of any suitable

material. I prefer, however, to construct them of heavy wire or metal rods and to extend these rods through openings *f* formed in the standards and diagonals.

5 By making the gate of strips set in a horizontal position their edges are presented to the wind, so there is a minimum of surface, and I have found by actual test that such gates will remain without injury exposed to
10 wind-blasts that would actually destroy gates of ordinary construction. It will also be seen that by the use of flat strips for the horizontal bars of the gate and by using flat strips bent to form flanges, each of which is riveted
15 by a number of rivets to the adjacent top or bottom bar, I am enabled to secure a great rigidity with the expenditure of comparatively a small amount of material and labor in connecting the parts and that by extending
20 the flanges of the diagonals between the flanges of the verticals or standards and the top and bottom bars this rigidity is greatly increased with but little corresponding increase in the amount of material used or labor
25 expended.

A most effective, durable, and inexpensive form of bolt is illustrated in the drawings, the same consisting in taking a metal rod or bar
30 8, bending it twice at right angles, so as to form the two longitudinal parts and the intermediate vertical portion *t*, placing coiled springs *s* around the horizontal portions between the part *t* and the end standard B, and bending up the inner end *u*, so as to limit the
35 outward movement under the action of the spring. Thus the two horizontal portions and the vertical portion *t* constitute a wide bolt which will take a wide bearing against the post, affording a very secure and firm
40 support that will prevent the gate from swinging or tilting out of a vertical plane and such a bearing as will not readily wear away and affording a bolt of such strength and durability that it will resist all ordinary
45 pressures against the gate. At the same time it can be readily carried in either by seizing the horizontal portion or the vertical portion, whichever is most accessible to the hand.

It will be evident that the end standard B
50 may be set with the vertical portion outside and the flanges 2 inside, if desired. It will also be seen that the uprights C can be placed so close together that the longitudinal rods will not be needed, as shown in Fig. 3, and
55 as the offset at each end gives the gate great strength few diagonal braces D will be necessary. The shoulders or offsets at the end of these rods or strips will prevent the outside frame from being drawn inward by nuts or
60 rivets. When the uprights are rod-iron and form the body of the gate they should be

threaded and double nuts used at the ends; but I prefer an offset near the ends at right angles and the ends riveted. In large gates I prefer to have one middle strip *E'* parallel
65 with the top and bottom bars, and the uprights can be alternate long and short rods extending from the bottom bar of gate to the top and to the middle strip, respectively, keeping small animals from passing. I then prefer diagonals
70 D cut near the middle, passing over the top of one of the short uprights, which may be bent as shown at D'.

The pintles 5 are shown as being made of U-shaped rods, the ends passing through the
75 posts and being secured, as by nuts, and in order to maintain the vertical parts of the pintles away from the face of the posts I provide collars 10, which may be sections of pipes, and washers 11 may be placed between the ends
80 of the collars and the face of the post.

In some instances the latch may be formed, as shown in Fig. 3, in the form of an upright rod, having the central portion bent at two
85 right angles and connected by the vertical portion *t*.

Without limiting myself to the precise construction and arrangement of parts shown, I claim as my invention—

1. The combination with a gate, of a bolt
90 consisting of a rod bent at two points to form horizontal portions and a vertical portion *t*, the horizontal portions sliding in an opening in the standards of the gate and spiral springs upon the horizontal portions between the end
95 standard and the portion *t*, substantially as set forth.

2. The combination in a gate of three parallel flat strips, composing an upper, lower and middle bar, uprights arranged between
100 the said bars, each upright having its ends bent to form right angled shoulders which are riveted to the said bars, each alternate upright extending from the lower to the upper bar, and the remaining uprights extending
105 from the lower to the middle bar, and the diagonal D divided near its middle, where it is secured to the middle bar, substantially as set forth.

3. A bolt or latch for a gate formed of a
110 metal rod or bar bent twice at right angles so as to form two longitudinal parts and an intermediate vertical portion *t*, whereby there is formed a wide bearing part to engage with the post, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM RICHARD WHITE.

Witnesses:

J. A. GREGG,

LILA E. WHITE.