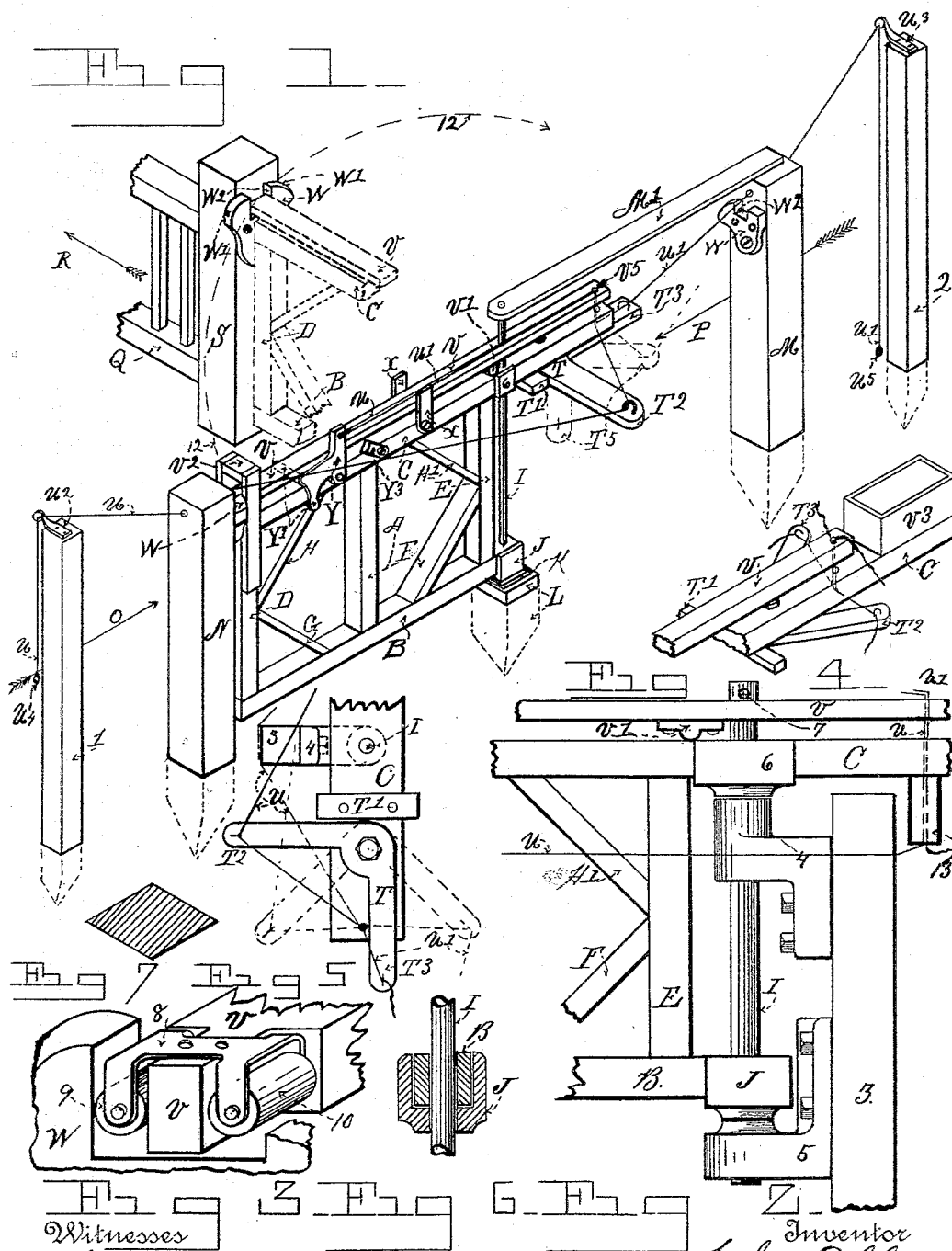


(No Model.)

J. ALLEN.
FENCE GATE.

No. 531,760.

Patented Jan. 1, 1895.



Witnesses
Nathaniel H. McCall
Robert May

Inventor
John Allen
By his Attorney
Howard S. Bailey

UNITED STATES PATENT OFFICE.

JOHN ALLEN, OF BOULDER, COLORADO.

FENCE-GATE.

SPECIFICATION forming part of Letters Patent No. 531,760, dated January 1, 1895.

Application filed January 29, 1894. Serial No. 498,309. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALLEN, a citizen of the United States of America, residing at Boulder, in the county of Boulder and State of Colorado, have invented certain new and useful Improvements in Fence-Gates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to that class of fence swinging gates arranged to be operated from vehicles approaching from either side, and the objects of my invention are, first, to provide a gate simple in construction and durable and efficient in use; second, to provide a gate of minimum cost and one that can be easily operated from either approach and from carriages and from the top of loaded wagons. I attain these objects by the mechanism illustrated and described in the accompanying drawings and specification, in which—

Figure 1 is a perspective view of my improved fence gate. Fig. 2 represents a fragment of the gate showing a modification of the pivoting mechanism. Fig. 3 represents a fragment of the latch showing a modification of its end. Fig. 4 represents a fragment of the gate showing a method of counterbalancing the gate. Fig. 5 represents also a fragment showing in plan a view of the swinging rope-guide. Fig. 6 is a section through the lower shaft box J. Fig. 7 is a section of a modified form of the gate and brace rails.

Similar letters and numerals of reference refer to similar parts throughout the several views.

Referring to Fig. 1, A, B, C, D, E, F, G, H, and H' designate the frame of my improved gate, although I do not confine myself to the exact detail construction here shown. The spaces or panels between the rails and braces can be filled with barbed wire or wire netting or slats, or boards, as a farmer prefers. Barbed wire would offer the least resistance to the wind and would answer every purpose. I carry the rail B, and also the top rail C beyond the end of the gate to form the bearings

for the pivoting shaft I. Around the end of the lower rail B, I secure a metal box J, to prevent the rails splitting, and also to make a suitable bearing for the gate. This box J, rests on the top of the cast plate K, which is secured to the top of the post L. Through the top rail C, and through the lower rail B, and through said box and plate I pass a vertical shaft I, which is the pivot on which the gate swings. This shaft may be made of wood, and if so should be a turned part of the post extending through said box or it may be of metal and should have strength enough to support the gate without supports. Wrought iron tubing would answer the purpose very well, and if used should be let into the post far enough to make it perfectly rigid. The top of this shaft may however, be supported if necessary by braces extending from it to the posts M, and N.

In Fig. 1 I show but one brace M' to avoid confusion. The road-way in this view runs in the direction of the arrows O, and P, and the fence Q, at right angles to them in the direction of the arrow R. Fig. 1 consequently shows the gate open, it having been opened from the arrow P, side.

S, is the main fence post and when the gate is shut it extends from the shaft I, to this post, the fragmentary portions in dotted lines showing its position.

The top rail C, extends several feet rearward of the gate, and on the under side of it I pivot a swinging angle lever T. At the end of the arms T² and T³ I make loops for the operating ropes U, and U' to pass through. These ropes also pass through the rail C, and through the latch V, at V³. Back of this lever T, I secure a stop block T' which operates to prevent the lever from swinging too far toward the head of the gate in either direction, as shown more clearly in Fig. 5 which is a bottom plan view of the rail and lever. This latch is held in place by the shaft I, which passes through it, and also by the guide clip X, which is secured to the top rail C, and by the yoke V² which is attached to the front of the gate. The latch extends the whole length of the gate and a short distance rearward of it. The front end lodges in the catches W, which are preferably of metal, and are secured one to each of the posts M, N, and S.

These catches are provided with inclined edges W' which lie in the path of the latch as it swings around with the gate and guide it to the recesses W^2 of the catches. The latch is fulcrumed at or near the shaft I. by a projection V' on which it rocks vertically; enough to allow the locking end to rise out of the catches W . when the rearward end is drawn down as will be hereinafter explained.

Near the head of the gate I pivot to the top rail C. a rock-arm Y. which is provided with a weighted crank-arm Y^2 , a part of which extends under the latch. I also attach a stop Y^3 to the rail for the arm to move against when drawn back by the ropes U. and U' . These ropes I attach to it and carry them through the opening V^5 in the latch; also through the end of the top rail, and one through the arm T^2 and the other through the arm T^3 of the swinging angle lever. From this lever the ropes run in opposite directions to the posts N. and M. The ropes pass through these posts or through cleats attached to them to the top of the posts 1 and 2, which should be high enough to enable a driver on a load of hay or straw to reach them.

In Fig. 2 I show in a fragmentary view a modification of the pivoting mechanism, which is preferable for heavy gates to that shown in Fig. 1. 3 designates a post, 4 and 5 are metal castings bolted to it. I also secure a box 6, to the top of the rail C. similar to the box J. of the lower rail. The shaft I. passes through these castings and is secured in vertical position by a pin 7, or other convenient means. Fig. 6 shows a section through the box J. and rail B.

In Fig. 4 I show the top rail C. extended beyond the latch V. and provided with a box V^3 which may be weighted with stone to counterbalance the weight of the gate, which is sometimes necessary with very long gates. This box may be made by nailing a board on each side of the rail C. allowing them to extend above the rail. The intervening space can then be filled with rock. This box serves a double purpose. If properly weighted, it counterbalances the gate, and it also forms a surface against which the wind strikes, and thus greatly assists in manipulating the gate by counteracting the wind pressure on the gate proper.

In Fig. 3 I show a modification of the end of the latch V. For small gates a plain, square end is sufficient, but for very large, long gates, it is sometimes difficult to raise the latch when the wind is blowing strongly against it on account of the friction caused by lateral pressure. To overcome this I cut away the latch on each side and hang in a metal clasp 8, which I secure to the top of the latch two rollers 9 and 10 as shown. When the latch is raised they roll against the sides of the catches W. thereby making it easy to raise the latch against lateral pressure.

In Fig. 7 I show a modification of the gate rails and braces which will diminish the wind

pressure. This form is in cross section a diamond and can be used to advantage in localities where the wind is troublesome. N. and M. as before stated are posts located on the side of the road-way to which the gate locks when it is opened in either direction from the post S. 1 and 2 are high supports for the ropes U. and U' which pass through clips U^2 and U^3 attached to their tops. The ropes should be so arranged that they can be easily reached from a vehicle in the roadway. The gate is shown open. To close it, the rope U. must be pulled. This swings the rock-arm Y. against the stop, Y' , and raises the latch V. out of the catch W. on post N. The angle lever T holds the rope far enough away from the gate to give it a good leverage on the end of the gate, and as the rope is pulled the gate is swung around in the direction of the arrow 12 to the post S. As the gate is about to close the rope should be slackened, which allows the rock-arm to fall back out of the way of the latch, which will then rest on the top of the rail C. until it strikes the inclined surface of the catch W. on the post S. It is lifted by this incline and drops into the recess W^2 of the catch, thereby closing and locking the gate, as shown by the dotted lines. If the gate is to be opened toward the post M. the same rope must be pulled. The angle lever T. would occupy the position shown by the dotted line fragment T^5 . The rail C. would stand where the angle arm T^2 of the lever T. now stands in the drawings, and as the lever swings independent of the rail C. the pull of the rope would be directly on the end of the said rail. The angle lever is only useful to start the gate, to close it from the posts N. and M. The arm T^3 of this lever lies under the rail when the gate is open, but as the gate swings from the post S. to the post M., the arm is swung around by the rope against the stop T^4 and occupies the position occupied in Fig. 1 by the arm T^2 . In Fig. 5, I show in dotted lines a position frequently occupied by this lever, to illustrate the angle the rope forms when the lever is in this position. If the rope U is tightened, it draws on the end of the angle arm T^2 , causing it to swing against the stop T' as shown in full lines. If the gate is opened to the post M. this lever operates the same way, but through the medium of the arm T^3 and the rope U' to close it.

In Fig. 2, I show a modified arrangement of the rope which I sometimes use in connection with the modification shown in Fig. 2 which dispenses with the lever T. and while it does not give as much leverage as the lever, answers the purpose nicely, and cheapens the cost of the gate, which is a matter of importance. Instead of the lever T. and block T' I suspend from the rail a block or arm or projection 13, as in Fig. 2 and pass through it and the rail and latch the ropes, or I may prefer to give the end of the rail a downward turn, the object being to bring the ropes below the top of the post 3. The ropes U. and

U' are carried around the post by the sweep of the rail and latch as the gate swings from S. to N. or from S. to M., that is when the gate swings from S. to N. the rope U. is carried around or by the post 3, and when the gate latches in the post N. the rope lies against the post as shown in the fragmentary view Fig. 5 in which the ropes are shown both ways; that is, with the lever T. and without it. When the lever is used the ropes can bear against the post or go over the top of it; it is immaterial which. It would be the same with the rope U', if the gate swung from S. to M. The rope would lie against the post as the weights U⁴ and U⁵ on the ends of the ropes would keep them taut. Consequently the post holds the ropes far enough from the gate when opened in either direction to give leverage enough to start it in closing.

Another modification which I wish to adopt in short gates is to stop the rope at the end V⁵ of the latch, doing away with the rock arm which is only necessary on long gates.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a pivotal shaft and a gate pivoted to said shaft of a latch fulcrumed at or near said pivotal shaft, and extending along the gate to the post catch and also to rearward of the gate, guides secured to the top of said gate adapted to hold the latch parallel with said gate, and ropes attached to said latch and arranged on each side of the road-way to raise said latch and unlock the gate, and to swing the gate on the pivotal shaft, as specified.

2. The combination with a vertical, pivotal shaft, of a gate pivoted to said shaft having its lower and top rail extended rearward of the gate, and provided with metal clamps forming bearings for the said shaft the lower box or clamp being pivoted on a plate secured to a post; an angle lever pivoted to the extension of the gate top; a stop secured to the said extension adapted to prevent the arm of said angle lever from swinging too far forward; cord guides at the ends of said lever; a latch fulcrumed to said shaft and to said gate, extending the length of said gate and to rearward of it, and having a cord passage in said rearward end; a rock-shaft provided with a crank arm pivoted to the gate and arranged to lift the forward end of said latch; posts located and arranged to receive and hold the gate when it is swung open or closed; and cords attached to said crank arm and guided to suitable posts or supports in the road-way on each side of the gate; the com-

bination operating to raise the latch free from the catches on the said posts and to swing the gate to open or close it, as specified.

3. The combination with posts by the road-way, one of which has a vertical shaft pivoted in bearings secured to it; additional posts arranged to receive the gate, and means for securing the latch of said gate to the said posts when closed or open, of a gate pivoted to swing on said pivotal shaft; a rearward extension on said gate; a two-armed angle lever pivotally attached to said extension and arranged to confine the movement of said lever; a latch fulcrumed to said shaft and gate and extending rearward; two cords attached to said latch, and guided through said gate extension, and through the guides in said angle lever in opposite directions to suitable supports on the road-way, for the purpose specified.

4. The combination of a vertical shaft I. pivoted to a post; with a gate pivoted to said shaft; a rearward extension C. on said gate provided with a cord-guide in its end; a two-armed angle lever T. pivoted to said extension and also provided with cord-guides at the end of each arm; a stop T' attached to said extension adapted to stop said arms at right angles thereto; a latch V. fulcrumed to the gate and to said shaft; a rock-arm Y; a stop Y'; rollers 9 and 10 journaled in the end of the latch and adapted to overcome the friction caused by side pressure; the posts N. M. and S.; the catches W. attached thereto; and the cords attached to said rock-arm and guided through the latch, gate extension angle lever, and posts to the standards 1 and 2, as herein specified.

5. In a gate a latch cut away at the end and sides for the reception of the rollers 9 and 10 and a saddle or clasp 8 attached to said latch adapted to support said rollers, as set forth.

6. The combination with a vertical shaft attached to a post, of a gate pivoted to said shaft, a rearward extension to said gate provided with a free passage for the operating ropes; a latch fulcrumed to said gate and shaft and connected to said operating ropes, and means for holding said operating ropes away from said post as the gate swings open in either direction, as herein specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ALLEN.

Witnesses:

NATHANIEL H. MCCALL,
ROBERT MAY.