

L. T. NICHOLS.

FARM GATE.

No. 327,894.

Patented Oct. 6, 1885.

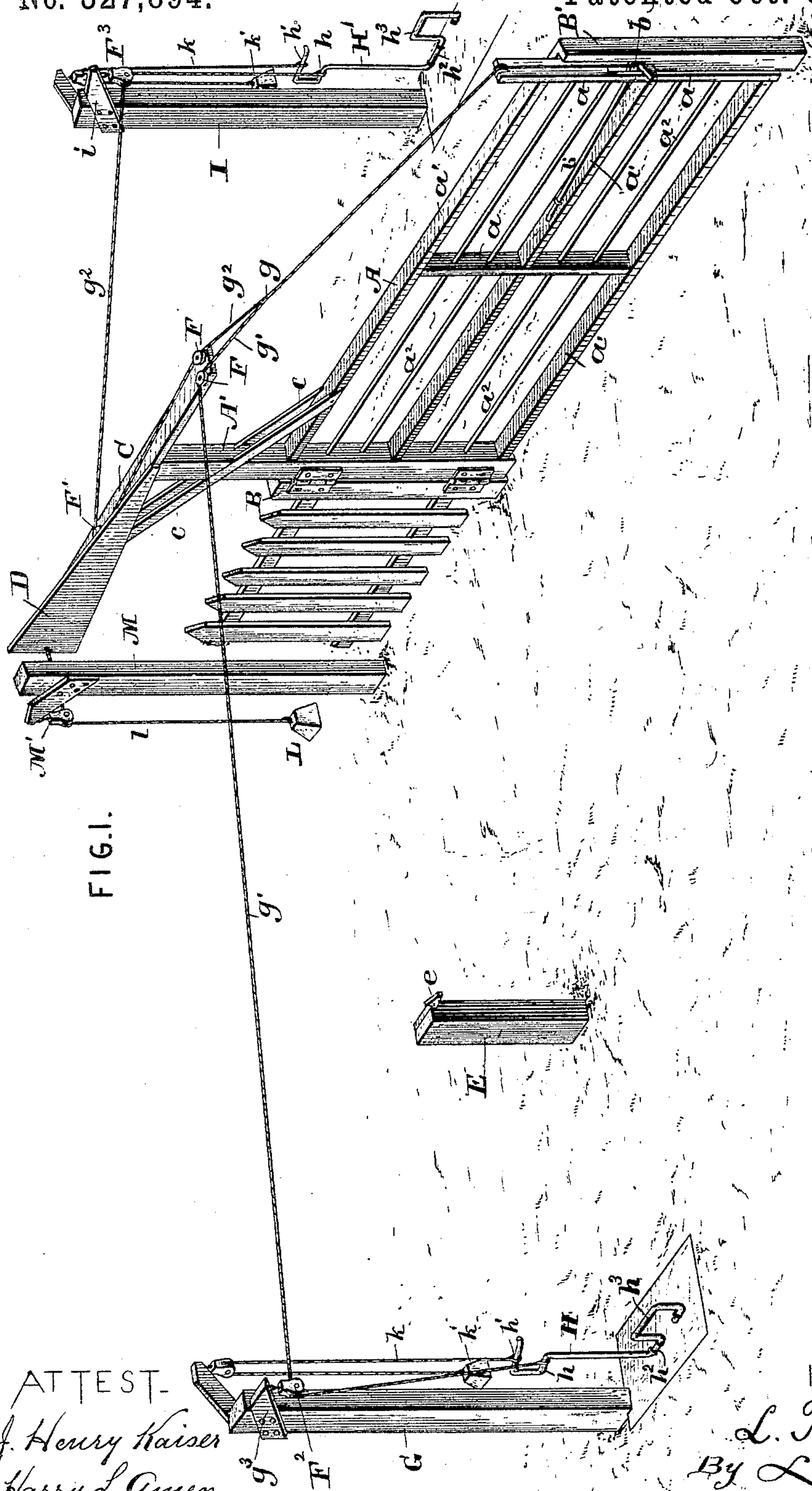


FIG. 1.

ATTEST.
J. Henry Kaiser
Harry L. Amer.

INVENTOR.
L. T. Nichols
By L. Deane
Atty.

(No Model.)

2 Sheets—Sheet 2.

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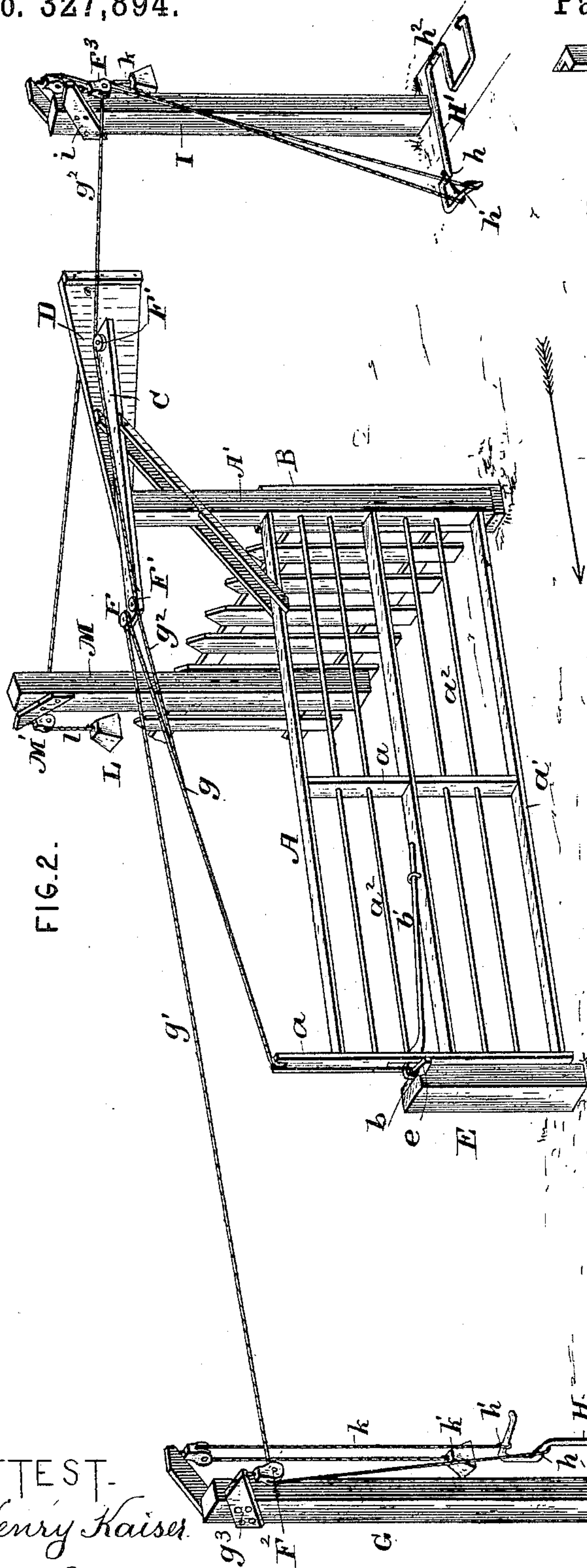


FIG. 3.

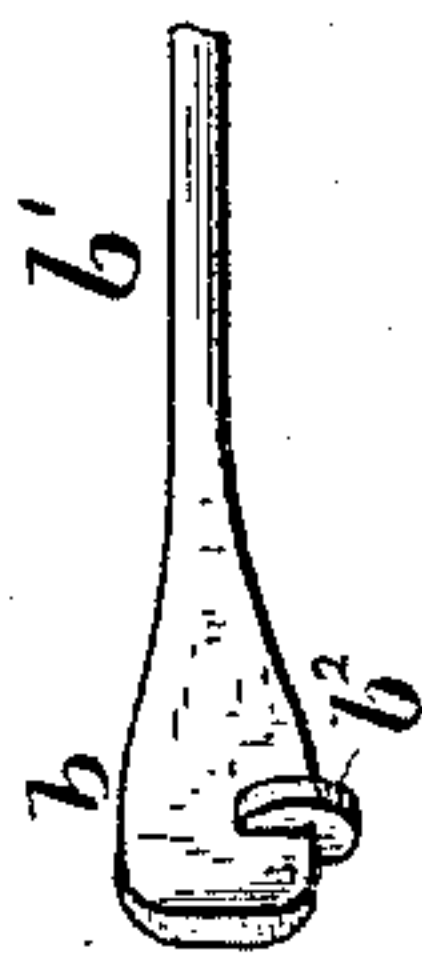
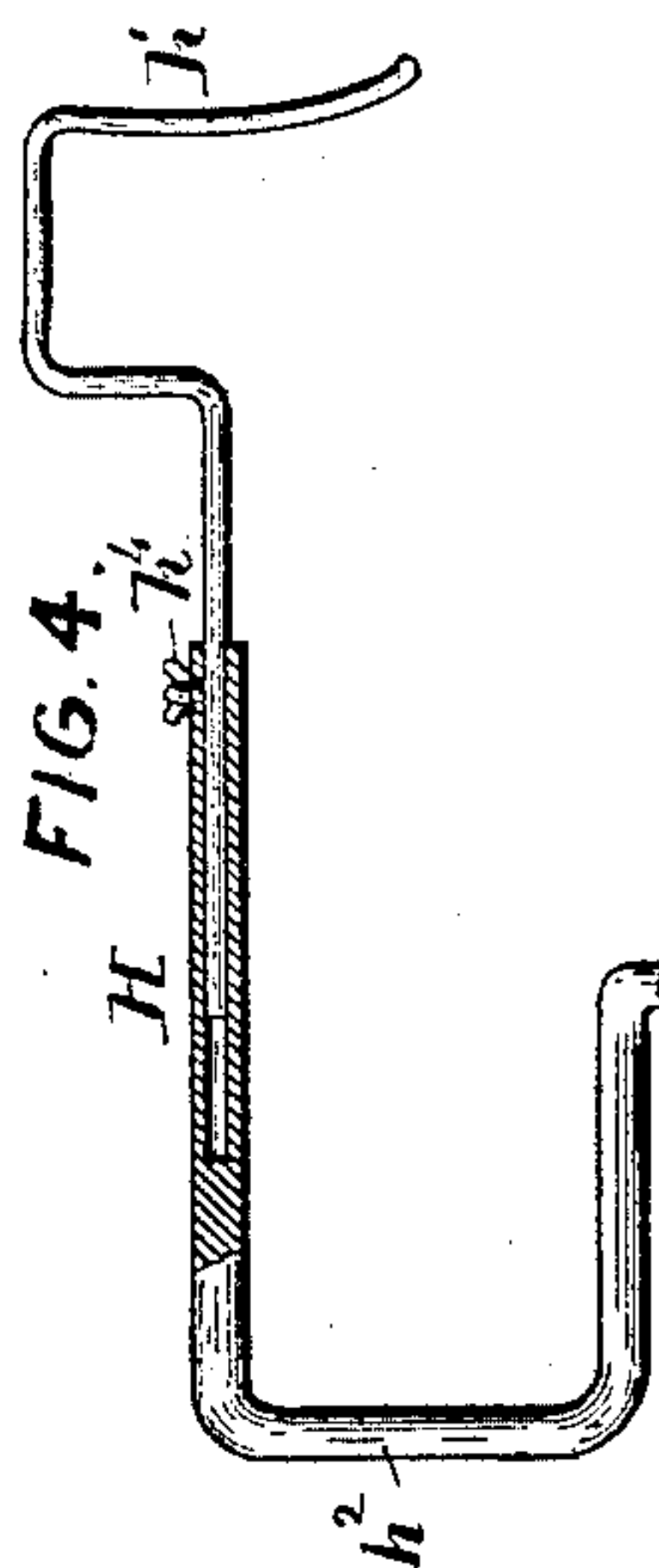


FIG. 4.



ATTEST.
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INVENTOR.

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Att'y.

UNITED STATES PATENT OFFICE.

L. T. NICHOLS, OF ELLINGTON, MINNESOTA.

FARM-GATE.

SPECIFICATION forming part of Letters Patent No. 327,894, dated October 6, 1885.

Application filed June 9, 1885. Serial No. 168,172. (No model.)

To all whom it may concern:

Be it known that I, L. T. NICHOLS, a citizen of the United States, residing at Ellington, in the county of Dodge and State of Minnesota, have invented certain new and useful Improvements in Farm-Gates, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a perspective view showing the gate closed. Fig. 2 is a like view showing the gate open. Fig. 3 is a detail of the latch. Fig. 4 is a detail of the trip, showing it extensible.

This invention relates to farm or like gates, and is of that particular class known as "swinging gates;" and the points of novelty relate to such construction and combination of parts as will produce a well-balanced and easily opened or closed gate, and that shall be especially adapted to avoid exposure to the wind, and that can be operated by hand or carriage-wheel, and is peculiarly simple and strong in structure and efficient in operation, all as will now be more fully set out and explained.

In the accompanying drawings, A denotes the gate, and B the rear post, to which it is suitably hinged by its rear vertical piece, A', and B' the front post, on which it is fastened or latched when closed, as by latch *b*. This is preferably the outer end of a spring, *b'*, which projects through the front vertical piece, *a*, of the gate, and is secured at the other end in the middle horizontal rail, *a'*, of the gate. On this latch there may be a roller, *b''*, to insure the greatest efficiency of operation. This gate is made of any suitable number of vertical strips or pieces, *a* and A', and horizontal pieces or strips *a'*. These pieces *a* and A' are all quite wide and rather thin, and are set edgewise—that is, with their thinnest parts at right angles to the length of the gate. The object of thus placing these pieces is to secure the greatest strength, and also that the gate shall offer the least possible surface to the wind. This is a matter of very large moment in prairie country, where the winds are at times so severe as to be very destructive on fences, gates, and all such structures. In order further to lessen the resistance to the wind, I use longitudinal or horizontal wires *a''*, ex-

tending between the end pieces, *a* and A', and through the central vertical piece or pieces. There may be as many of these as desired.

The rear vertical piece, A', of the gate is extended some distance higher than the upper rail of the gate, and on or to its top is fastened in the same line with the gate the horizontal piece C, which extends a short distance over the gate in one direction and beyond it in the other. This piece C constitutes the lever by which the gate is operated, as will be hereinafter described. It may be further supported by the inclined braces *c c*, which connect it with the frame of the gate.

To or upon the outer end of the piece C is fixed the broad piece D, so as to present its full surface to the wind. I denominate this the "wind-board" or "vane." This is of a generally triangular shape, its widest portion being most distant from the gate. It will afford very considerable aid in the opening or closing movements of the gate, as its surface will act as an equalizer when the wind is blowing, since there will be about the same wind-pressure on it as on the gate. It will also serve in a very useful degree as a counterbalance to the gate. This shape is of peculiar advantage, as the apex of the triangle which is toward the gate is very sharp, while the body of the wind-piece is extended out beyond the gate to a considerable distance, thus insuring the results just mentioned.

When the gate is fully opened, it is held open by means of the catch *e* on the post E placed by the side of the driveway.

The operation of opening and closing I will now explain.

Upon the outer and inner ends of piece C are placed pulleys F and F'. Round these are passed the chains or cords *g' g''*, which, united, as at *g*, are extended forward and over the top of the front vertical post, *a*, of the gate, which is extended a little above the upper line of the gate and then secured to the end of the latch *b*. If desired, there may be a staple or roller on the top of this piece *a*. The chain or rope *g'* extends on one side of the gate from the pulley or block F to the pulley or block F' on the arm *g''* of the post G. Said post is placed by the side of the driveway and about or exactly in line with the

posts B and E, and thence said rope or chain extends down to and is fastened upon the trip H at its bend h , which is at a suitable distance from the end, for a purpose to be hereinafter explained. This trip is suitably fastened upon a level with the driveway, so that it turns upon its horizontal lower end portion, h^2 , while the bent portion h^3 nearest the roadway is designed, when up, to be met and turned down by the approaching carriage-wheel. It will be noted that this trip is not at all below the surface of the ground. In like manner as above described, the chain or rope g^2 extends from a pulley, F, to the pulley or block F' on or near the rear end of the piece C, and thence to block or pulley F³ on arm i , attached to the upper end of the post I, placed by the side of the driveway on the side of the gate opposite to the post G, said post being preferably in line with posts B, E, and G. At the foot of said post I is a trip, H', in all details of construction like the trip H, before described.

To open the gate, the cord or chain g' or g^2 beneath the pulley or block F² or F³ is pulled by hand, or operated by the carriage-wheel through the trip H or H'. This pressure acts eventually upon the latch b , which is released from its catch, and the continued pressure or pull upon the said cord or chain opens the gate wide till its latch engages on the catch e on post E and the gate is held open. The motion of opening, as well as of closing, is very materially assisted by the counterbalancing weight of the wind board or vane, as before suggested. The traveler on horseback or in a carriage now passes through the gate. In the former instance he pulls on the cord g' or g^2 , as the case may be, and thus releases the latch from catch e ; but if in a carriage, the wheel on that side will strike against the upwardly-projecting bent part h^3 of the trip H, and turn the trip down, and thus drawing on the cord or chain will release the latch in the same manner.

It will be observed that the cord k , attached to the outer free end of the trip H and passing through the pulley or block K on an arm on the upper end of the post G, has at its other end a weight, k' . By this means the trip H will always be automatically returned to a vertical position after the gate has been opened or closed, and thus be always ready to be struck by the wheel approaching in either direction, so that the action of the wheel on it will open the gate, and afterward the wheel acting on the trip on the opposite side will release the gate. The operation on the trip H or H' is the same and the result is the same.

The automatic closing of the gate is caused by the weight L, and not by the trip mechanism, as usual. This weight is on the end of rope or chain l , which passes through the pulley or block M', on an extension of the top of the post M, and thence to the outer end of

the fan D, where it is secured. In this way the fan is made to act as a lever. The post M is placed conveniently near to the rear gate-post, B.

To the trips H and H' the cord or chain is fixed at h , a short distance from its end, so that when the trip is turned outward—that is, away from the gate—the cord or chain will be caused to pass over and rest on the upper bent end, h' , of the trip, and thus be taken up by the upper bend in the trip, so that it shall be sufficiently taut for accomplishing its functions, as above described. If this arrangement were not made, the cord or chain, when the trip is so turned, would be too slack. I may use staples instead of the pulleys or blocks F F' F² F³. The upper end of the trip H is made to slide in the tubular lower portion, as shown in Fig. 4, so that the length of the trip can be adjusted to suit all conditions by means of set-screw h^4 .

It will be noted that the structure of the parts of the gate and the combination thereof are such as to insure not only extreme facility in operating the gate, but that in accomplishing this end there has been no sacrifice in the strength or the durability of the gate and its attendant parts. On the contrary, its structure is exceptionally strong. It will also be observed that in many details there may be merely mechanical changes in the several parts, which shall not in any wise change the nature or scope of my invention.

What I consider new and patentable is—

1. The gate A, having strip C, fixed to its rear vertical piece, and the triangular wind piece or vane D, secured thereto, combined with the chain or rope g , and ropes g' g^2 , passing, respectively, over pulleys F F², F F', and F³, and posts G and I, upon which pulleys F² and F³ are placed, substantially as and for the purposes set forth.

2. In a gate-actuating mechanism, the trip H, bent at its upper end at h and h' , and in its lower part at h^3 and at h^2 , where it is journaled to the ground, combined with a rope or chain attached to said bend h , and connecting with the gate-latch and with the weighted cord or chain k , attached to its upper part, h' , substantially as shown, and for the purposes described.

3. The trip H, having two upper bends, h and h' , journaled to the ground at h^2 , and attached at its upper bend, h , to the rope or cord connecting with the gate-latch, and the pulley on the upper end of the contiguous post, in combination with the weighted cord K, passing over the same and attached at one end to the bend h' of the trip, whereby, when the trip is turned outward or away from the gate the said rope is kept taut and ready for action, substantially as described.

4. The combination of the gate, its latch b' , and the rope g , connected thereto, with the pulleys F F' F' on piece C, the wind-board D, the automatically-closing weighted cord l , at-

tached to wind-board D, and passing over the pulley on post M, and opening cords or chains $g' g^2$, operated as described.

5 The gate-trip H, made in two parts, one of which is tubular and into which the end of the other slides, in combination with means for securing the parts when adjusted, substantially as described.

10 6. In a farm-gate constructed substantially as described, and having an upwardly-extended rear post, A', a lever-piece, C, fixed thereto and provided with pulleys F F F' and cords for operating the gate, and having at its

rear the triangular vane D, combined with the post M, cord or chain l , and weight L, where- 15 by the gate will present the least space to the wind and be balanced by the wind-vane and automatically closed by the weight, all as shown and described.

In testimony whereof I affix my signature in 20 presence of two witnesses.

L. T. NICHOLS.

Witnesses:

WM. A. GARNER,

B. LEWIS BLACKFORD.