

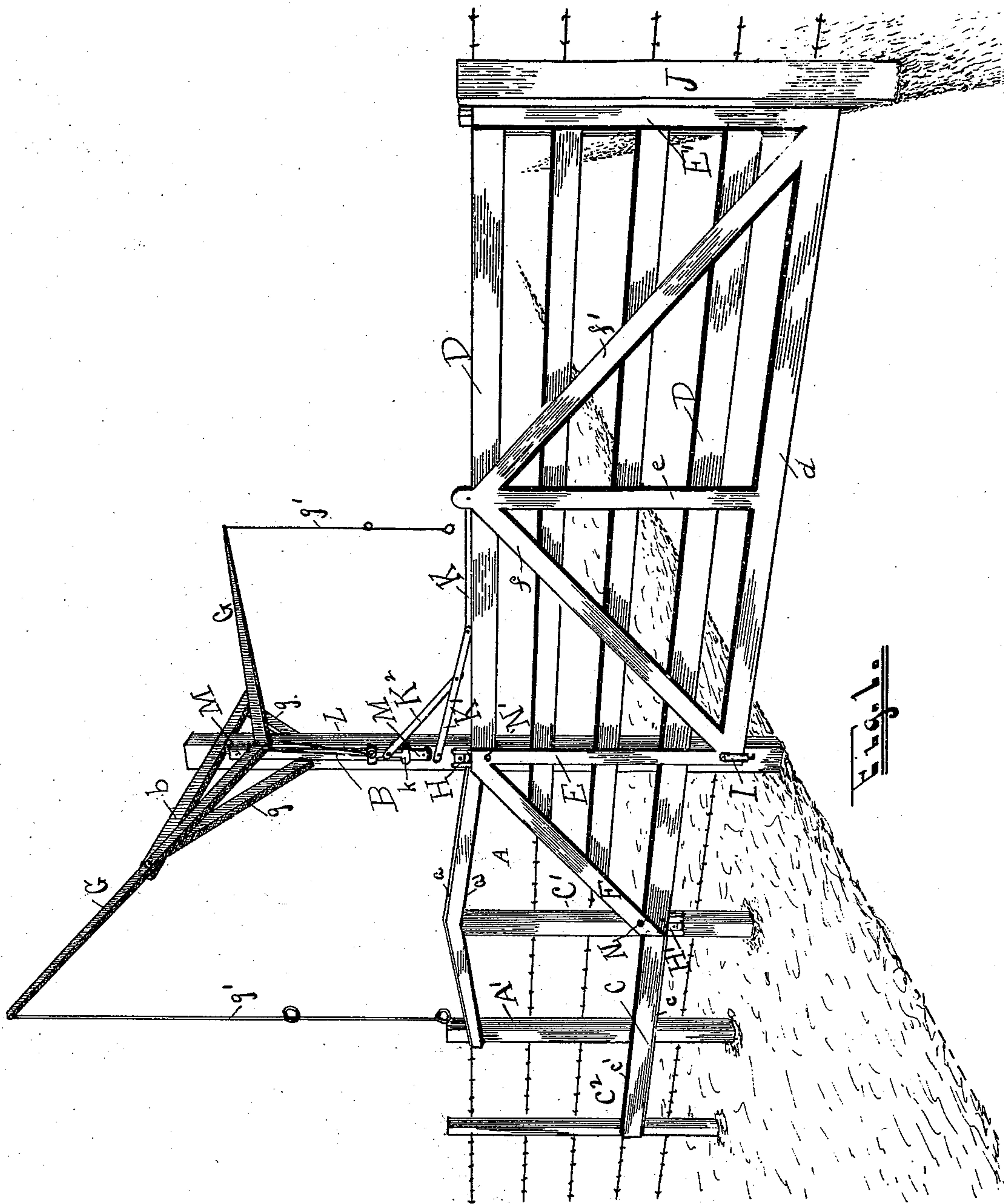
(No Model.)

2 Sheets—Sheet 1.

R. HOOVER.  
GATE.

No. 549,793.

Patented Nov. 12, 1895.



Attest:

Wm. Newman.  
Atty. & Coun.

Inventor:

Reuben Hoover

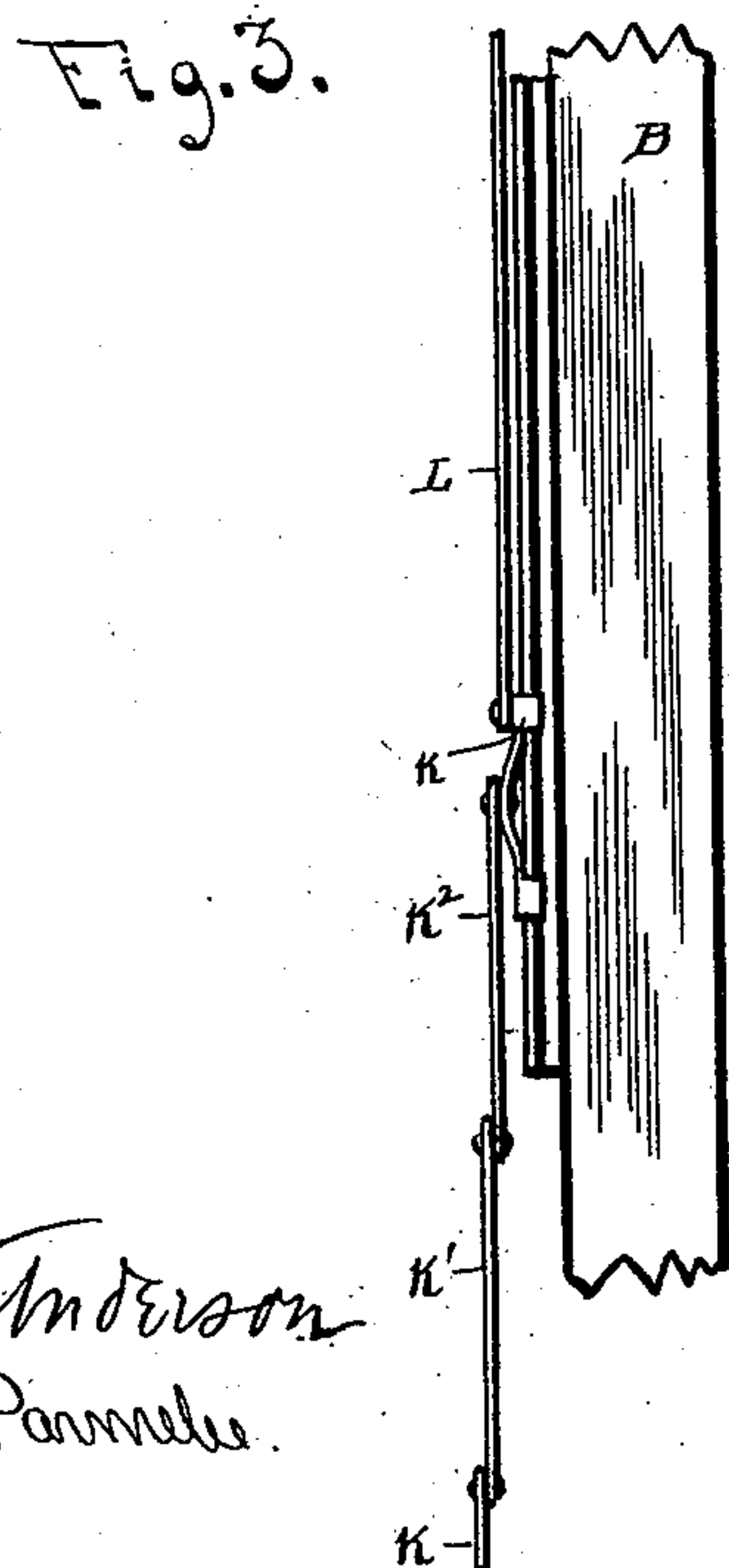
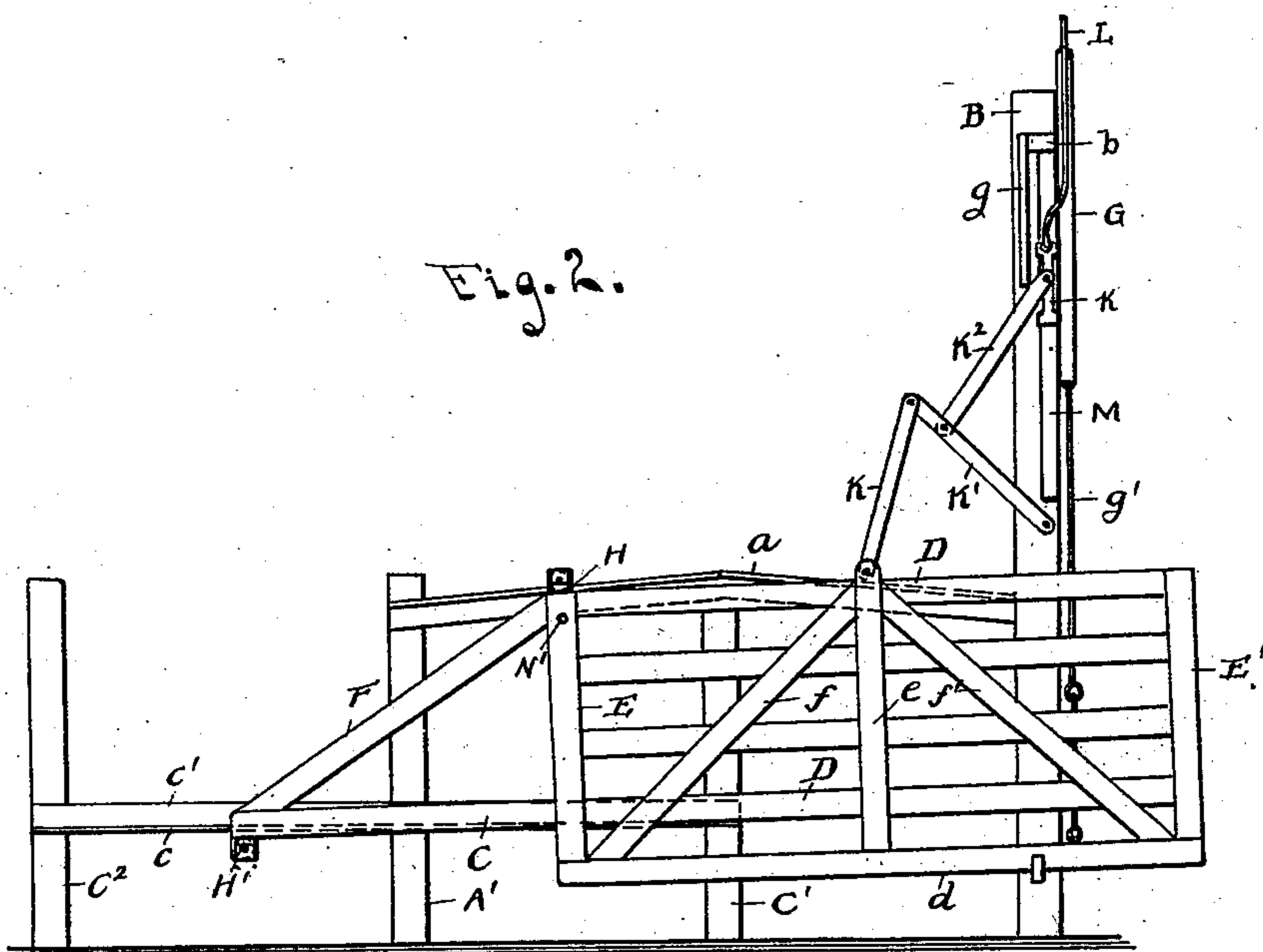
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2 Sheets—Sheet 2.

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**WITNESSES**

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INVENTOR

R. Hoover  
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# UNITED STATES PATENT OFFICE.

REUBEN HOOVER, OF BOONE, IOWA.

## GATE.

SPECIFICATION forming part of Letters Patent No. 549,793, dated November 12, 1895.

Application filed December 18, 1894. Serial No. 532,275. (No model.)

*To all whom it may concern:*

Be it known that I, REUBEN HOOVER, a citizen of the United States, residing at Boone, in the county of Boone and State of Iowa, have invented certain new and useful Improvements in Gates; and I do hereby 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.

My invention relates to improvements in gates for farm and other uses, the object being to provide a gate that will open and close at the will of the operator without any possibility of failure, and that is not incumbered with many high posts or any obstruction over the roadway, such as an elevated track.

A further object of the invention is to provide a gate of the above character which is extremely simple in its construction, there being comparatively few parts, and those so located as to be entirely out of the way; and the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claim.

In the annexed drawings, explaining my invention, Figure 1 is a perspective view of my completed gate, all parts being shown in position as when closed. Fig. 2 is a side elevation showing the gate almost open, some of the operating parts being left off, so as to not obscure the view of the others. Fig. 3 is a side view of post B and slide M and cross-head  $k$  and pivoted link  $k^2$ , attached thereto.

Similar letters of reference designate corresponding parts in all the different drawings.

In putting my invention into practical use, if it is to be attached to a gate already in use, I first rear a high post B at that side of the driveway to which I wish the gate D to move. This high post B takes the place of the gate-post already there. To this post B, I attach one end of a track-bar A as high up as the top of the fence. This track-bar A is made in form a double incline, the top edge sloping either way from the center, as shown in Figs. 1 and 2, and the under edge corresponding to it. The other end of this track-bar is attached to post A' and the center to post C'. On top of and in under this double inclined track-bar A, I put rails  $a$  and  $a'$ , suitable for

an ordinary barn-door roller to travel upon. I put the one on under edge  $a'$  to act as a keeper or guide to upper roller H. To accomplish this, I have a bolt through gate D near roller H. (Indicated by N.) The head of this bolt N reaches over this under rail  $a'$  and moves close to it, so as to keep the roller from leaving the track if the front end of the gate should be lifted up by stock or other means. These two rails  $a$  and  $a'$  may be made of small angle-iron fastened to the upper and lower edges of track-bar A; but it is cheaper to fasten a plate of strap-iron to the front side of the track-bars, this iron being wide enough to extend a little above and below the edges of the bar, and these projecting edges will form the two rails  $a$  and  $a'$ , on which the roller and guide-bolts move. The guide-bolts N and N' are shown in position just below and above the rollers H and H' in Figs. 2 and 3. It is better to have the incline of unequal pitch at different points, greater near its apex and less near and at its outer ends, as the momentum acquired will carry it to its destination over a less incline on the latter part of its journey than what is required to cause it to start down said incline from the top thereof. I put a second track-bar C, which is straight, about one foot or more from the ground and half of its length farther from the roadway than the inclined track A is placed, as shown in Fig. 2. This straight track C is made exactly as the double inclined track is made, excepting that it is straight, but has the rails  $c$  and  $c'$  the same for roller H' and guide-pin N, the barn-door roller H' pressing upward against the under side of rail  $c$ , and thus acting as a counterbalance to the gate D. This straight track-bar C is fastened at one end to the post C', the center to post A', and the other end to post C<sup>2</sup>, thus overlapping the double inclined rail one-half their lengths. Now if I am to hang an old gate I build to its length, as shown at F from E, an extension of about one foot more than half of its original length; but if I build a new gate D, I build it as shown in all of these gates with the extension F of over one-half longer than the width of opening between the posts B and J.

In the figures, D, represents the gate proper;  $d$  double lower rail made so that a roller



will roll on either side without meeting any obstruction. E is the back end rail of gate; E', front end rail; e, center rail; F, end brace on extension; f, rear brace on gate; and f', front brace on gate. I now attach two barn-door rollers, one H at top of back end rail E, the other H' at extreme lower end of extension-brace F. I put a guide-roller I at bottom of high post B to guide the gate D. I now hang my gate up with the roller H on top of double inclined rail a and the one H' in under the under straight rail c and my gate is ready to roll by hand. I now put in my bolts N N' for guides or keepers and the gate can only be taken off of the rails at the ends thereof. Now this roller H' at the end of extension pushes up against the rail c and serves as a counterbalance to the gate D, causing all its weight to be carried on barn-door roller H. This, together with the force exerted in pushing up the roller H against the rail c, causes the upper roller H to respond readily to gravitation and run freely down the incline A either way from its summit. It might be supposed that it would be proportionately hard to overcome this gravitation in pulling the gate up to the top of this double incline; but it is not so, as by looking at my combination of levers and pivoted links K, K', and K<sup>2</sup> it will be seen that I lift at the top of the center bar e of gate D, and all the force I exert at this point has a tendency to lift and carry the gate D up the incline A, and thus make it easy to get to the top. Now when the whole double weight comes on this roller H down the incline track A it will go with a rush and it will no more stand still and thus form a dead-center than an egg will stand on its end. It will be seen that link K is pivoted to top of center bar e. The link K' is pivoted at one end to this link K and the other to the high post B at a height corresponding to the height of the pivot in the upper end of this center bar e when it is passing said high post B. These two pivoted links K K' in the position seen in Fig. 1 form a lock to the gate D, owing to their pivotal point being below a straight line formed by the two links instead of above it. To open the gate, this position has to be changed, either by the hand, as when you are close to the gate and wish to push it open, or by the pulling of them up by the link K<sup>2</sup>, which is pivoted at its lower end to the link K' about one-third the length thereof from where the links K and K' are pivoted. The other end of this link K<sup>2</sup> is pivoted to a sliding cross-head k, which slides up and down on a flat bar M, to which it is movably attached by having its arms bent around the edges of said flat

bar M, as shown in Fig. 3. This sliding cross-head k is moved by means of a short pendent rod L being hooked or pivoted to its upper end, as shown in Fig. 2. There are two of these short pendent rods, each attached by hook and eye to one of the long levers G and G, as shown in Fig. 1. These long levers are pivoted to the two ends of the cross-beam b, which is fastened securely to the top of high post B. To the outer ends of each of these long levers G G is attached by hook and eye a long pendent rod g', which hangs in reach of any person, either in wagon or carriage or on horseback or on foot, who may desire to open or close the gate, and all he or she has to do is to give a long steady pull on either of the long pendent rods G G, and it will set the whole mechanism in motion and bring the upper roller H up to and over the top of the double incline A, and then it will go down the other side of incline with considerable force, the degree of which can be regulated by holding on gently to the rod till the roller reaches the bottom of incline. If the first pull is not of sufficient force to cause the roller H to pass the summit of the incline, it will willingly return to its original position at the bottom of the incline, and thus give you as many equal chances to pull it over as you may desire; but it will never find a dead-center on which to stop out of your control, and this is more than can truthfully be said of any other known gate.

Having thus fully described my invention, what I claim, and wish to secure by Letters Patent, is—

The combination with the gate, having the rearward extension, and the rollers H, H', carried thereby, of the track bar A having the double incline and track on which the roller H travels, the lower straight track bar C, having the rail against the under edge of which the roller H' travels, the guide bolts N N', the high post B, the link K connected to the upper end of the center post of the gate at one end, the link K' connected to said link K, and to the post B, the sliding cross head M, movable upon a vertical guide of said post, the link K<sup>2</sup> attached to said cross-head and to the intermediate portion of the link K', the pendent rods L, the operating levers G, and the operating rods g', all arranged to operate substantially as described.

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

REUBEN HOOVER.

Witnesses:

GEO. C. NEWMAN,  
H. D. ENSIGN.