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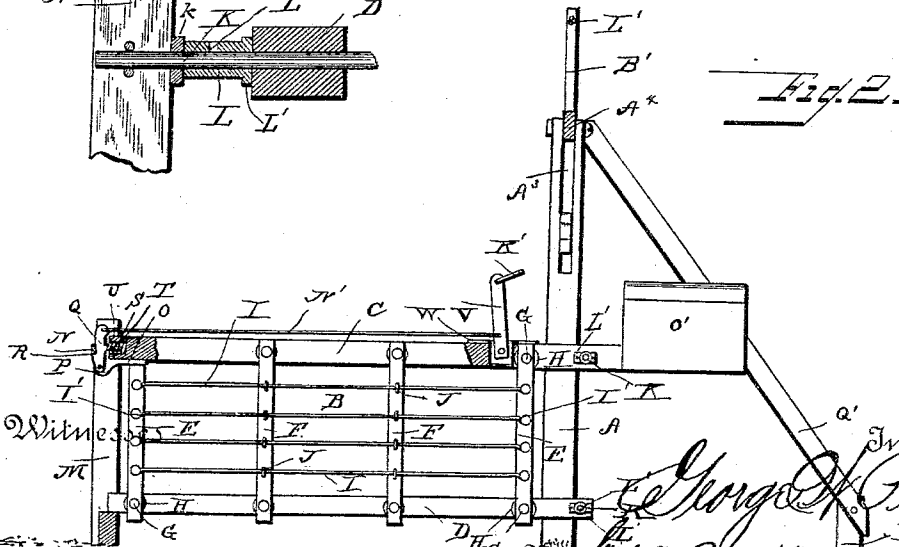
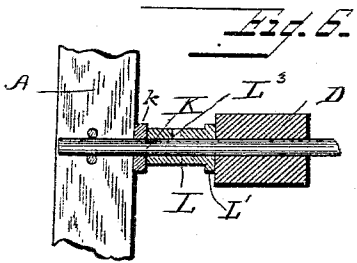
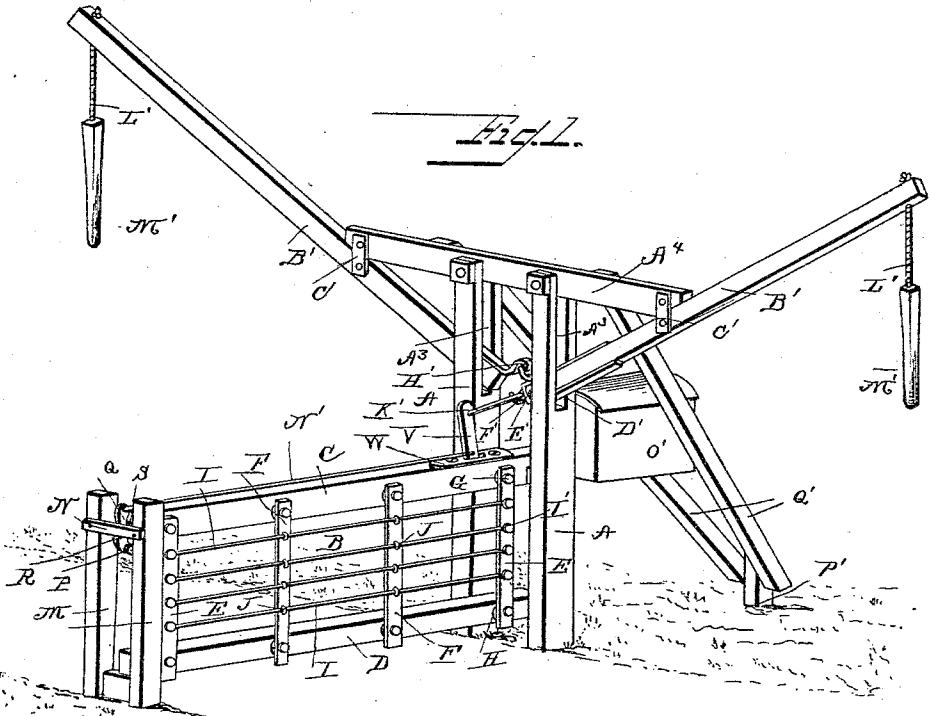
2 Sheets—Sheet 1.

G. W. PERRY.

SWINGING AND FOLDING GATE.

No. 373,752.

Patented Nov. 22, 1887.



Witness:
 F. L. Curraud.
 Benj. Y. Cowl.

Inventor
 George W. Perry,
 Louis Dinger & Co.

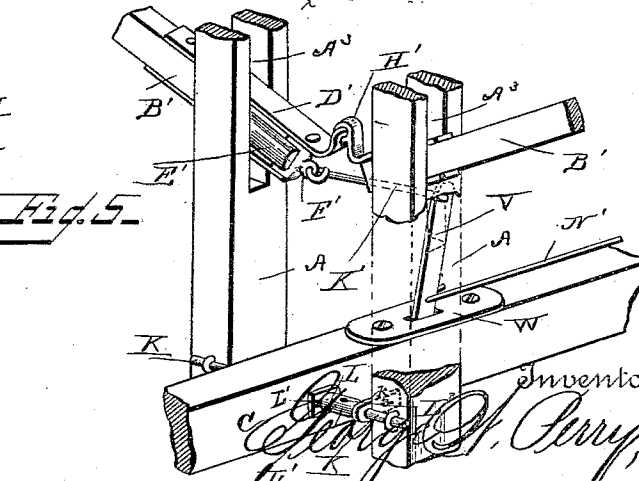
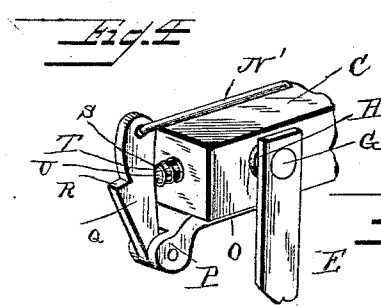
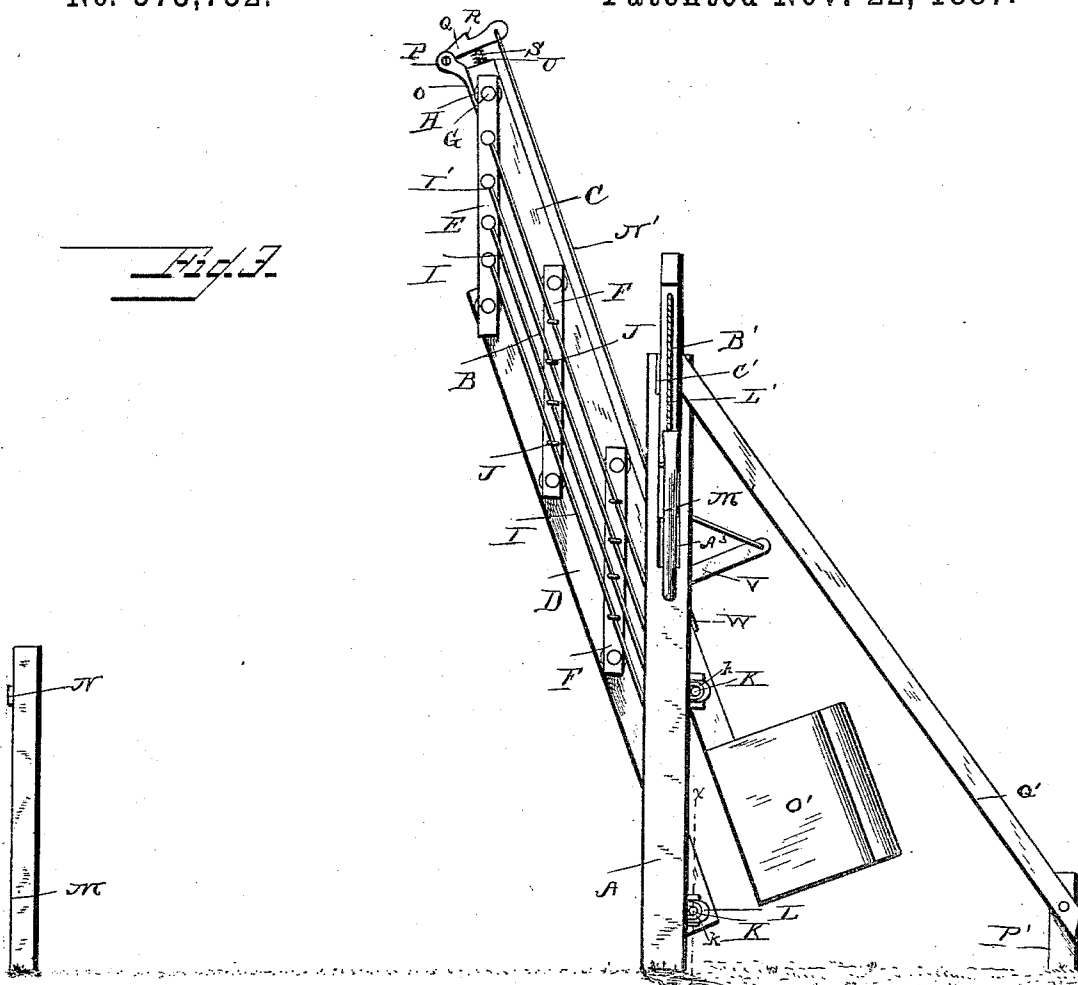
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UNITED STATES PATENT OFFICE.

GEORGE W. PERRY, OF BURLINGTON, ILLINOIS.

SWINGING AND FOLDING GATE.

SPECIFICATION forming part of Letters Patent No. 373,752, dated November 22, 1887.

Application filed April 18, 1887. Serial No. 235,202. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PERRY, a citizen of the United States, and a resident of Burlington, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Swinging and Folding Gates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved swinging and folding gate, showing the same in its lowered closed position. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a side elevation showing the gate swung up and folded to admit of the passage of rider or vehicle. Fig. 4 is a detail view of the spring-actuated latch. Fig. 5 is a detail view of the inner ends of the two levers and the parts adjacent thereto; and Fig. 6 is a sectional view taken through one of the gate-hinges or pivotal points on line *x x*, Fig. 3.

The same letters of reference indicate corresponding parts in all the figures.

My invention consists in an improved swinging and folding gate, which is especially adapted for farms and public roads, &c., which can be opened and closed from either side without dismantling from the horse or vehicle, and which will be hereinafter fully described and claimed.

Referring to the several parts by letter, A A indicate the parallel rear posts, between which the rear end of the gate is pivotally secured. This gate B consists of the top bar or piece, C, and the lower piece or bar, D, these top and bottom bars extending parallel with each other, and being pivotally connected by the end uprights, E E, and the two or more inner uprights, F F, the upper ends of these uprights being pivoted on the transverse pivot-bolts G to the upper or top bar, C, while their lower ends are pivotally secured in a similar manner to the lower bar, D, a metal washer, H, being placed on each pivot-bolt between the inner side of the upright and the side of the bar to which that end is secured, the object of this arrangement being to obviate

the difficulty which would ensue when the bars become coated with sleet, &c., during bad weather, which would interfere with the folding of the gate, as hereinafter described, the washers forming a space between the inner side of the uprights and the bars, thus reducing the friction between those parts to the minimum.

To the end uprights, E, are pivoted the ends of rods I I, of which I here show four, although any desired number may be employed, the pivots which secure the ends of these rods to the end uprights passing through the eyes I, formed on the ends of the rods, and the central portions of these rods pass through eyes J on the inner uprights, F, the rods lying parallel with one another. It will be seen that these eyes J prevent the rods from sagging, and assist in causing the gate to work smoothly and easily, besides strengthening the gate against any side pressure.

The gate is pivotally hinged at its rear end between the parallel rear posts, A A, on transverse pivot rods or hinges K K, the ends of which are supported in bearings *k k*, secured by screws to the inner sides of the posts A, the said pivot bolts or hinges K respectively passing through transverse apertures in the rear ends of the top and bottom bars, C D, of the gate; and to each side of the rear end of each of the said bars is secured, by means of screws passing through its end flange, L', into the wood of that side of the gate-bar, a sleeve, L, having the end flange, L', formed on its inner end, the said sleeve being mounted on and encircling the pivot-bolt K on its side of the gate-bar, as shown. The outer ends of these metallic sleeves come in contact with the bearings *k*, and thus hold the swinging gate in the exact center between the said bearings and the parallel posts A, to which they are secured, and between which the gate is hung and works, the two sleeves, two on each side of the rear end of the gate, materially aiding in preventing the gate from swinging or being blown by the action of the wind to either side while it is being swung up or down in operation, as will be readily understood. Each sleeve L is formed in what is normally its upper side with a transverse opening, L³, through which oil may be introduced into the space between the

interior of the said sleeve and the rod or pivot on which it turns, thus lubricating the bearing in a moment without disturbing the gate in the least. These oiling-apertures in the sleeves are clearly shown in Fig. 6 of the drawings.

The front end of the gate rests, when in its lowered closed position, between two shorter parallel front posts, M M, which serve to strengthen the forward part of the gate against side pressure, preventing it from being blown to one side by the pressure of heavy winds, or from being pushed open to one side by stock, &c. Across the upper part of these forward posts, M, is also secured a transverse bar, N, which serves as a catch for the gate-latch, which will be now described.

To the lower side of the forward end of the top bar, C, of the gate is secured, by screws, a plate, O, which is formed with a double eye, P, at its forward projecting end, and in this double eye is pivoted the lower end of the gate-latch Q, which is formed at about its center with the outwardly-projecting lip or shoulder R, having a straight upper side and being beveled on its lower side, so that while it may readily slide down over the transverse catch N, its straight upper face will engage firmly with the lower edge of the said catch-bar, and thus prevent the gate from being swung open until the latch has been drawn back. The upper part of the latch is pressed out to adapt it to engage with the catch by means of a suitable spring, S. I have shown in the accompanying drawings a spiral spring, the rear portion of which is seated in an aperture, T, in the front end of the gate-bar, while its forward portion encircles a rearwardly-projecting pin, U, on the back of the latch Q; but any other desired form of spring may be employed for the same purpose.

In the upper part of the top bar, C, of the gate, toward the rear end thereof, but in advance of the rear posts, A, as shown, is pivoted the lower end of a short lever, V, which I shall call the "latch-lever," as its main function is to operate the latch in the manner hereinafter described, a slotted metal plate, W, being secured upon the top of the top bar at this point, its slot registering with the top of the opening in which the latch-lever is pivotally secured, and the rear end of the slot of this plate regulates the backward movement of the latch-lever.

The upper ends of the rear posts, A, are deeply slotted above the gate, and at right angles thereto, as shown, and in the tops of these slotted rear posts is secured the long transverse top piece, A⁴, the ends of which extend on each side of the gate at right angles thereto, as shown. Through these slots A³ extend the inner ends of the long gate-levers B' B', these levers being centrally and pivotally connected to the outer ends of the top piece, A⁴, by means of the pivoted links C', as shown; and upon the inner end of one lever is secured a light frame, D', in which is jour-

naled longitudinally an anti-friction roller, E', the sides of which extend through the sides of the open frame D', so as to come into contact with the sides of the slotted post A, and thus take up friction in swinging the gate, causing the levers to work lightly and easily; and the inner end of this frame D' is formed with an eye, H', in which hinges a hook on the inner end of the other lever, the inner ends of the levers being thus hinged together, so that when one is raised, by drawing down upon its outer end, the other will also be swung up. The inner end of the frame D' is also formed with an eye, F', and this eye and the perforated upper end of the latch-lever V are pivotally connected by a short connecting-rod, K', which is formed with an eye at each end.

To the outer end of each gate-lever is secured an operating-cord, L', which is of sufficient length to extend down within convenient reach of a person mounted on horseback or seated in a vehicle, the lower end of each cord being provided with a convenient handle, M'.

The latch-lever V is connected immediately above the upper side of the plate W with the upper end of the spring-actuated latch Q by means of a wire, N', which is formed with an eye in each of its ends.

The rear end of the top bar, C, of the gate is extended back, and upon it is secured a weight-box, O', in which the requisite amount of weight is placed to balance the gate, and thus cause it to swing easily and with a slight downward pull upon either of the operating-cords.

To the rear of the posts A A is placed a short post, P', and braces Q' Q' run from this post to the top piece, A⁴, at either side thereof, as shown, to strengthen the top bar; A⁴, from being swayed by the wind, and also to support against the side pull from the handles.

It will be seen that the gate being in its closed position, as shown in Fig. 1 of the drawings, in order to open it a person approaching the gate from either side, whether on horseback or seated in a vehicle, takes hold of the handle of the operating-cord of the lever on that side of the gate, and drawing down the same the inner end of the lever—of both levers, in fact—is swung up. Now it will be seen that at the moment this upward movement of the inner end of the lever commences it will pull the connecting-rod K' upwardly and backwardly, and the connecting-rod will thus draw back the upper end of the latch-lever V, as will be readily understood, until the rear edge of the said lever comes in contact with the rear end of the slot in the metal plate W, through which it works, and as the latch-lever is thus drawn back it of course draws back the wire N', which connects it with the upper end of the spring-actuated latch Q, and the wire in turn pulls back the upper end of the latch Q until the straight upper side, o, of the shoulder R of the latch is freed from the transverse catch-bar N. It will be seen that at the beginning of the downward movement

of the outer end of the gate-lever the gate will be unlatched, in the manner just described, and that as soon as the rear edge of the latch-lever V comes in contact with the rear end of the slot in plate W the backward movement of the said lever on its pivot stops, and as the upward swing of the inner ends of the gate-levers continues (for the gate is unlatched, as described, at the very beginning of this upward movement) the further upward movement of the inner ends of the levers, drawing up and back upon the upper end of the latch-lever, will swing the gate up and back until it stands in its open position, as shown in Fig. 3 of the drawings, the weighted box O' balancing the gate and causing it to work easily and by a light pull upon the handle of the operating-cord.

It will be seen that as the gate swings up and back the uprights E and F will turn on their end pivots, so that when the gate reaches its uppermost position the uprights will stand at a considerable angle to the top and bottom bars of the gate, the said bars being then close together and the rods I also lying close together, the distance or space between them having been diminished at least one-half, as shown in Fig. 3. And it will be seen that the gate is thus not only swung up so as to leave clear the gateway, but is also folded together, as shown, so as to reduce its width at least one-half, and thus assist in clearing the gateway. The pivoted or hinged rear ends of the top and bottom bar of the gate of course remain in the same vertical plane, while the forward end of the top bar is projected forward in advance of the forward end of the lower bar as the gate folds up, as shown.

The inner ends of the gate-levers reach their highest point when the gate is raised about one-half of the upward space through which it passes, and at that moment the latch-lever and the connecting-rod K' are in one straight line, and as the forward end of the gate continues to rise the upper end of the latch-lever V passes back of this straight line and below the level which it occupied when in the straight line, thus drawing down with it the inner ends of the gate-levers, which are not, however, lowered as far as when the gate is in its closed position; and it will be seen that after the passenger has passed through the gateway he can close the gate without dismounting from his horse or vehicle, by merely drawing down upon the handle of the operating-cord upon that side, which, raising the inner ends of the gate-levers, raises the upper end of the latch-lever, which is now back of and below the inner ends of the gate-levers, as shown in Fig. 3, thus throwing the gate back into its closed position by the impetus thus given, the beveled lower end or edge of the latch Q sliding over the catch-bar until the straight upper face

of the shoulder R springs beneath and engages with the lower edge of the said catch, thus locking the gate in its closed position, ready to be unlatched and swung up and back from either side in the manner just described.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my invention will be readily understood. It will be seen that my improved swinging and folding gate is simple and strong in construction, and therefore not liable to break or get out of order, and that it is easy to open and close, and exceedingly efficient in its operation.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the parallel rear posts having the longitudinally-slotted upper ends, the top piece, the levers centrally connected by the pivoted links to the outer ends of the top piece, having the operating-cords at their outer ends, one of the said levers having the light frame at its inner end and the anti-friction roller journaled therein, and the eyes on the inner end of the said frame, and the other lever having the hook or hinge on its inner end engaging with one of the said eyes, the folding gate pivoted at its inner end between the rear posts, the forward posts having the catch-bar, the spring-actuated latch, the latch-lever, the connecting-wire, and the rod pivotally connecting the upper end of the said latch-lever with the eye on the inner end of one of the gate-levers, all substantially as and for the purpose herein set forth.

2. The combination of the parallel rear posts having the longitudinally-slotted upper ends, the top piece, the levers centrally connected by the pivoted links to the outer ends of the top piece, having the operating-cords at their outer ends, one of the said levers having the frame on its inner end, in which is journaled the anti-friction roller, and the eyes on the inner end of the said frame, and the hook or hinge secured on the inner end of the other gate-lever, the folding gate pivoted at its inner end between the said rear posts, the weighted box secured to the rear end of the top gate-bar, the forward posts having the catch-bar, the spring-actuated latch, the latch-lever, the connecting-wire, and the rod pivotally connecting the upper end of the said latch-lever with the eye on the inner end of one of the gate-levers, all substantially as and for the purpose herein set forth.

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

GEORGE W. PERRY.

Witnesses:

JOHN B. WHALEN,
B. F. WINDERS.