E. F. LEE.

GATE.

APPLICATION FILED JULY 11, 1913.

1,123,766.

Patented Jan. 5, 1915.

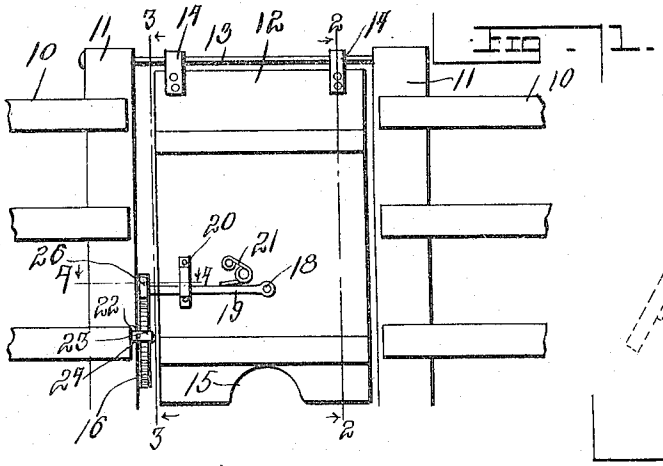


Fig. 1.

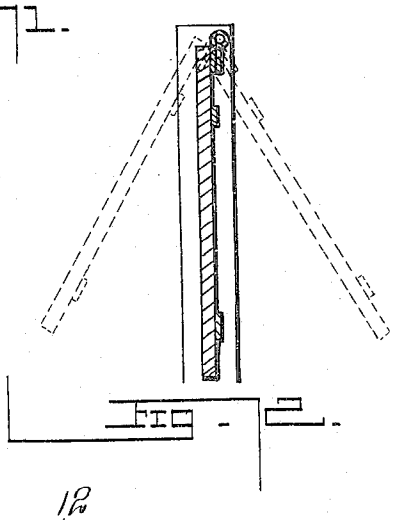


Fig. 2.

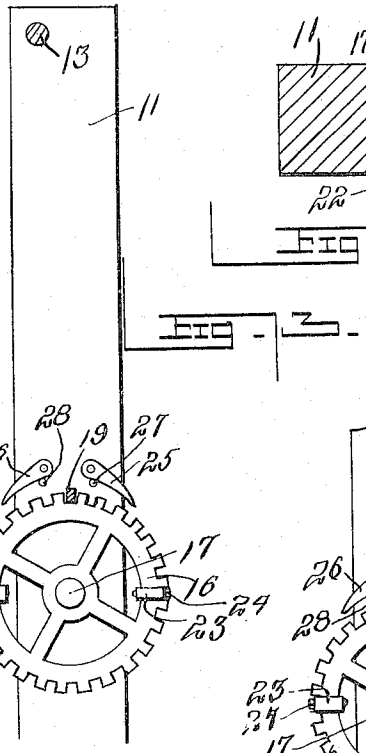


Fig. 3.

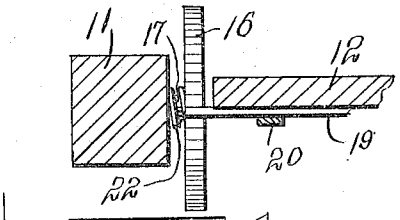


Fig. 4.

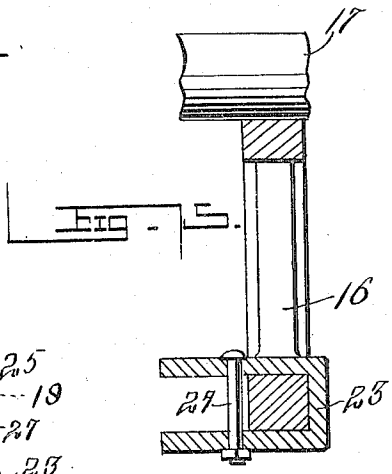


Fig. 5.

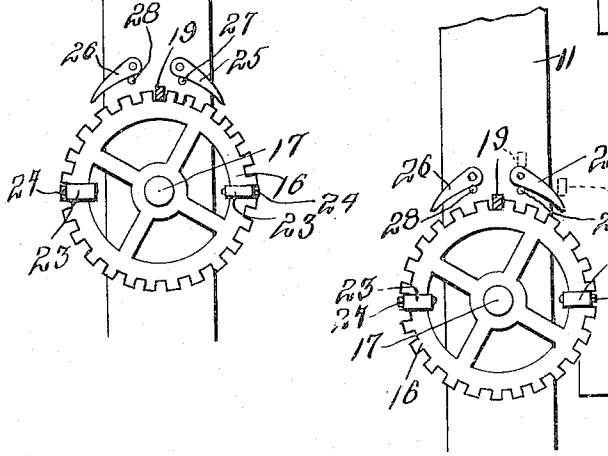


Fig. 6.

Witnesses.

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GATE.

1,123,766. Specification of Letters Patent. Patented Jan. 5, 1915.

Application filed July 11, 1913. Serial No. 778,558.

To all whom it may concern:

Be it known that I, EDWARD F. LEE, a citizen of the United States, residing at Leigh, in the county of Colfax, State of Nebraska, 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.

This invention relates to gates and has for an object to provide a gate especially designed to permit of a predetermined number of hogs passing therethrough.

A further object is to provide an extremely simple mechanism which will permit of the gate being opened a predetermined number of times and will then lock and prevent the gate being again opened.

A further object of the invention is to provide a gate controlling mechanism which will permit of the gate being opened in either direction and will permit of the gate being opened a predetermined number of times in one direction and then locked against further opening in this direction while at the same time permitting of the gate freely opening in the oposite direction without obstruction.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawing illustrating this invention:—Figure 1 is a front elevation of my improved gate. Fig. 2 is a vertical sectional view on the line 2—2 Fig. 1 showing the gate in full lines in closed position and in dotted lines swung open in both directions. Fig. 3 is a vertical sectional view on the line 3—3 Fig. 1. Fig. 4 is a cross sectional view on the line 4—4 Fig. 1. Fig. 5 is a cross sectional view through the rim of the sprocket gear showing the stops thereon. Fig. 6 is a fragmentary view showing three positions assumed by the latch as the gate is being closed by its weight after passage of an animal therethrough.

Referring now to the drawing in which like characters of reference designate similar parts, 10 designates a fence, 11 gate posts, 12 a gate suspended for swinging movement in both directions from a horizontal rod 13 by means of starp hinges 14 that straddle the rod as shown in Fig. 2, the gate having a semi-circular opening 15 in the bottom edge to permit of the hogs starting the gate, the gate being swung open by passage of the animal therethrough as will be understood.

The primary object of this gate is to permit of only a certain number of hogs passing therethrough into the pen so that crowding of hogs in the pen with consequent smothering is prevented, it being contemplated to so construct the controlling mechanism of the gate that if after entering the pen a few of the hogs or all of the hogs should come back out, others can go through and take their places, but only a predetermined number can gain access at one time to the pen. To attain this end, a gear 16 is journaled on a stub shaft 17 secured in the inner face of one of the gate posts 11, and pivotally mounted at one end on the gate as at 18 is a latch bar 19 the end of which is designed to engage with the gear teeth and upon swinging open of the gate by an animal passing therethrough, the latch bar will rotate the gear one cog or tooth. The latch bar is held within a strap guide 20 and a spring 21 exerts a downward pressure upon the latch bar. A spring washer 22 is interposed between the gear and the inner face of the fence post 11 and holds the gear against turning but one cog at a time.

A pair of U-shaped clamps 23 are bolted as shown at 24 on to the gear rim and project laterally therefrom is such a manner as to strike the front face of the post and limit rotation of the gear. Suppose the parts to be in the position shown in Fig. 3, in which the latch bar 19 is resting in the valley between two teeth, six teeth in advance of the stops 23. After six hogs have passed through the gate the gear will have been rotated six steps and the stops 23 arrive at the post and the gear locked against further rotation. The latch bar of the gate being now engaged between two teeth of the gear, the gate is locked closed so that no more hogs can enter the pen. However, should say three hogs pass out of the pen through the gate, the gear wheel will be rotated backward three teeth and consequently three more hogs can enter to take the place of the three hogs departed. It will thus be

seen that at any one time only a predetermined number of hogs can be within the pen, and thus crowding will be positively prevented.

For guiding the latch upon swinging closed of the gate to proper position between the two uppermost teeth of the gear wheel, I provide a pair of curved pawls 25 and 26 which are pivoted on the inner face of the post 11 above the gear wheel and are normally held raised to released position by pins 27 and 28 or otherwise, the pawls extending downward on opposite sides of the gear wheel. When the gate is being rocked open, the latch passes under one of the pawls, and upon return of the gate, the latch strikes against said pawl and rides upwardly thereupon finally dropping into engagement with the two uppermost teeth on the gear wheel as will be seen by reference to Fig. 5. When it is desired to lock the gate against being opened in but one direction, the corresponding pawl is dropped into operative engagement with the gear wheel by removing its pin as will be understood.

From the above description it will be seen that I have provided an extremely simple and inexpensive gate controlling mechanism which when used as a hog gate will prevent only a predetermined number of hogs being housed within the pen closed by the gate.

It will be noted that should a second hog follow closely behind a hog passing through the gate and attempt to squeeze himself into the pen, when the first hog has passed almost entirely through, the gate will swing downwardly over the curvature of the rear portion of the first hog's back and will by gravity strike forcibly against the snout of the second hog, thereby deterring the second hog from squeezing into the pen.

What is claimed, is:—

1. The combination with gate posts of a gate hinged at the top on said posts and adapted to swing therebetween in both directions, a gear wheel on the inner face of one of said posts, a latch bar on said gate engaging with the teeth of said gear wheel and adapted to rotate said gear one step in a direction corresponding to the direction of opening of the gate, and a stop on said gear engageable with said post and serving to prevent rotation of said gear in one direction at a predetermined time.

2. The combination with gate posts, of a gate hinged at the top on said posts and adapted to swing therebetween in both directions, a gear wheel on the inner face of one of said posts, means for retarding rotation of said gear wheel, a latch bar on said gate engaging with said gear and adapted to rotate said gear one step at each opening of the gate in either direction and to rotate said gear in a direction corresponding to the opening of the gate, and a stop adjustably secured on said gear and adapted to contact with said posts and stop rotation of said gear after rotation of the gear a predetermined number of steps in one direction.

3. The combination with gate posts of a downwardly swinging gate adapted to swing open in both directions, a gear carried by one of said posts, a spring washer carried by said posts engaging said gear and retarding rotation of the gear, a spring pressed latch bar pivoted on said gate and engaging with its free end between teeth of said gear and adapted upon opening of said gate in either direction to rotate said gear in a corresponding direction one step, and a pair of normally released gravity pawls on said posts above said gear, said latch bar being adapted to lift one of the pawls upon opening of the gate in one direction and to ride up on said pawl upon closing of the gate and drop into the valley between the two uppermost teeth on said gear upon the gate arriving at closed position.

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

EDWARD F. LEE.

Witnesses:
FRANK L. VLACH,
OTTO G. TABKE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."