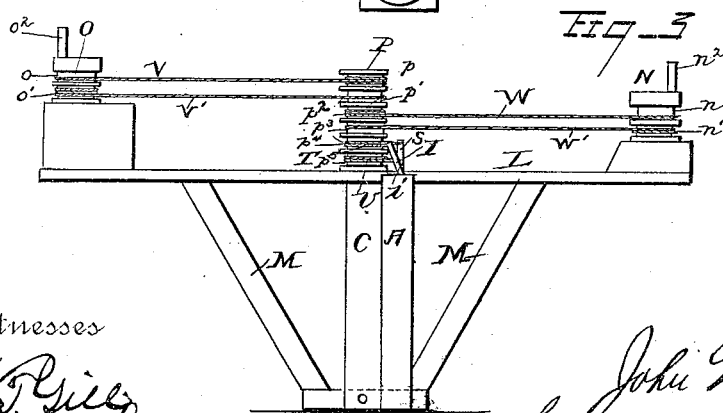
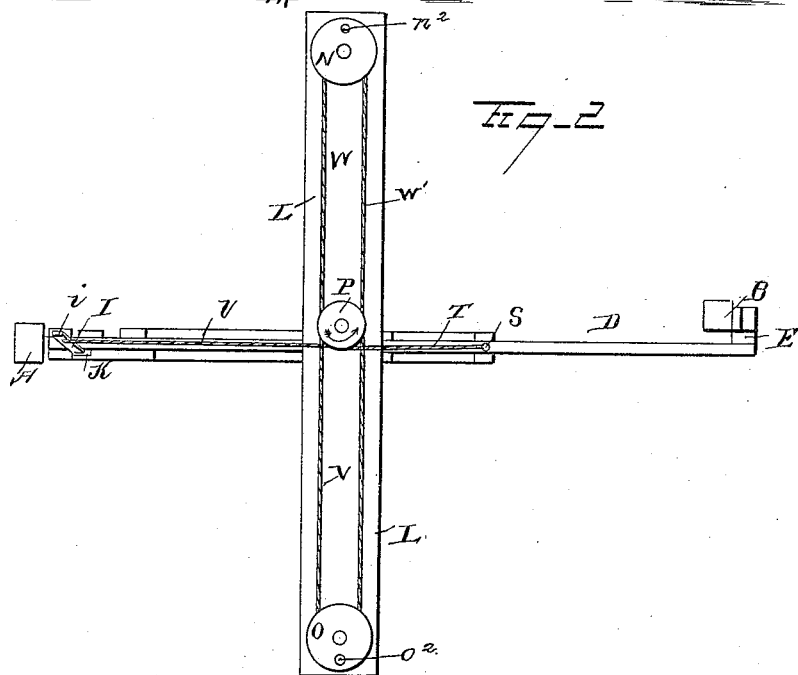
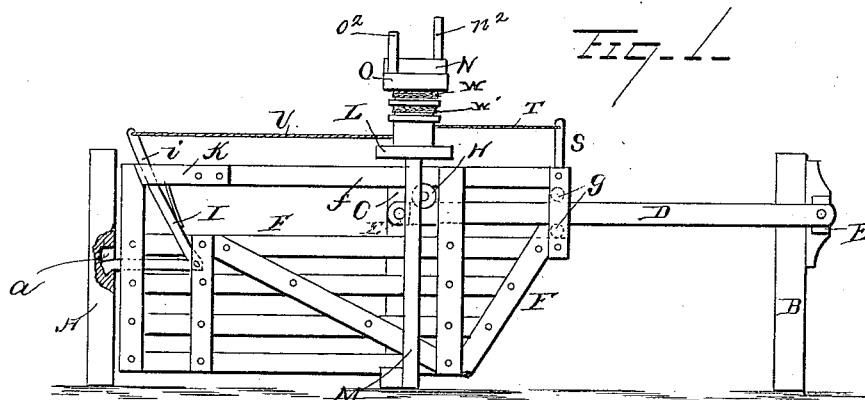


(No Model.)

J. W. COFFIN.
SLIDING AND ROLLING GATE.

No. 348,108.

Patented Aug. 24, 1886.



Witnesses

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SLIDING AND ROLLING GATE.

SPECIFICATION forming part of Letters Patent No. 348,108, dated August 24, 1886.

Application filed April 24, 1886. Serial No. 200,093. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. COFFIN, a citizen of the United States, residing at Oskaloosa, in the county of Mahaska and State of Iowa, have invented a new and useful Improvement in Sliding and Rolling Gates, of which the following is a specification.

My invention relates to an improvement in sliding and rolling gates; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my invention. Fig. 2 is a top plan view of the same. Fig. 3 is an elevation taken at right angles to Fig. 1.

A represents the post against which the gate closes.

B represents the post against which the gate opens, and C represents the post which is located intermediate between the posts A and B. A horizontal supporting-rail, D, connects the posts B and C, the said rail being supported at a slight distance from one side of each of the said posts by interposing blocks E which are secured between the ends of the rail and the adjacent sides of the post.

F represents a sliding gate, which may be of any suitable construction, and is provided at its rear end with rollers *g*, which bear upon the upper and lower edges of the rail D. A flanged roller, H, is loosely placed on the upper side of the supporting-rail D, and bears between the said rail and the lower side of the top rail, *f*, of the gate.

I represents a spring-actuated latch, which is pivoted to the gate, and is adapted to engage an opening, *a*, in the post A. The said latch is provided with an upwardly-extending arm, *i*, which works in a guide, K, secured to the top rail of the gate, at the front end thereof.

On the upper end of the post C and extending from opposite sides thereof, at right angles to the gate, is a beam, L, which is braced by means of inclined brace-bars M.

Upon the outer ends of beam L are journaled vertical drums N and O, and upon the center of said beam is journaled a drum, P. The drum N is formed with two grooves, *nn'*, while the drum O is formed with two grooves, *oo'*,

the central drum, P, being formed with six grooves, *p p' p'' p''' p'''' p'''''*. The drums N and O are also provided with suitable crank-handles, *n'' o''*, by means of which said drums are operated.

Upon the rear end of the gate is mounted a vertical rod, S, to which one end of a wire rope, T, is attached. The opposite end of said rope is coiled in the groove *p''* of drum P, and is secured at its extremity in said groove.

To the upper end of arm *i* of the latch is secured one end of a rope, U, the opposite end of which is coiled in the groove *p'''* of drum P in a direction opposite to that of the rope T.

In the groove *n* of pulley N is coiled and secured one end of a rope, *w*, the opposite end of which is coiled in groove *p* of pulley P in a direction opposite to its coil in groove *n*, the end of said rope being secured in said groove *p*. One end of a cord, *w'*, is coiled in the groove *n'* in pulley N in a direction opposite to that of the rope *w* in groove *n*, and the extremity of said rope is secured in said groove. The opposite end of rope *w'* is coiled in groove *p''* of pulley P, and secured therein, the direction of this coil being opposite to that of the coil in groove *n'*. One end of a rope, *v*, is coiled and secured in groove *o* of pulley O, and the opposite end of said rope is oppositely coiled and secured in the groove *p* of pulley P, while one end of a cord, *v'*, is coiled and secured in groove *o'* of pulley O, oppositely to the coil in groove *o*. The opposite end of rope *v'* is coiled in groove *p'* of pulley P in a direction opposite to that of the coil in groove *o'*. It will thus be seen that by virtue of the vertical position of the drums all crossing of the cords is avoided, and that the pulling strains are direct. By having the cords separate, as described, the frictional wear and resistance of the cords are reduced to a minimum, so that less power is required to operate the gate.

The operation of my invention is as follows: In order to open the gate, the person approaching it rotates either the drum N or O, by means of the crank-handles provided for the said drums, and thereby rotates the drum P in the direction indicated by the arrow in Fig. 2. This causes the said drum to unwind the rope T, and to wind or coil the rope U, which is attached to the latch. As soon as the said rope begins to wind upon the drum, it draws upon

the latch, and releases the gate from the post A, and as the drum continues to rotate and wind the rope U the latter pulls upon the gate and opens it, as will be very readily understood. When the person has passed through the gateway, he turns the opposite drum in the reverse direction, thereby causing the drum P to uncoil and release the rope U, and to draw upon the rope T, and thus close the gate.

When the gate closes against the post A, the latch I engages the notch *a* in the said post, and thus locks the gate securely thereto, and prevents hogs or other animals from sliding the gate open. By providing the inclined supports M for the beam L no necessity exists for supporting the outer ends of the said beam upon posts, which would be unsightly and very much in the way.

I have herein described wire ropes employed for connecting the gate to the drum P, and for connecting the drums N and O to the said drum P; but it will be readily understood that belts, cords, ropes, or chains may be used for this purpose, if preferred.

A gate thus constructed is cheap and simple, is very easily operated, is not likely to get out of order, and may be opened and closed by a person in a vehicle or on horseback without dismounting.

I am aware that it is not broadly new to provide a sliding gate with two slotted vertical posts which are arranged on opposite sides of the gate, a loosely-journaled guide-pulley arranged in the slot of each post, an actuating drum or pulley having a suitable handle and arranged on one side of each of the guide-pulleys, and endless cords coiled around the driving or actuating drums and passing over the guide-rollers and connected to the gate.

I am also aware that the guide-rollers have been affixed, so as to rotate in horizontal planes, to the tops of parallel guide-posts between which the gate slides, and the driving-drums on opposite sides of the gate have been connected with the guide-rollers by a single cord, one end of which is connected to the gate and then passes over one guide pulley and drum, then to the other drum on the opposite side of the gate and the guide-pulley therefor, and finally connected to the gate, thus adapting both drums and pulleys to be operated

simultaneously when one drum is operated to open or close the gate.

I am also aware that a drum (or drums) has been arranged above a gate to rotate in vertical planes, and provided with suitable operating mechanism for rotating it, which extends on opposite sides of the gate, the drum being connected to the rear end of the gate by an intermediate cord, and also connected by a cord to a suitable latch at the front of the gate, whereby when the drum is rotated in one direction the latch will be actuated to release the gate, and the latter be drawn rearward to open the gate.

In my improved device I provide the central vertical drum with a series of grooves, and arrange the operating-cords for the gate and its latch which lead from the driving-rollers in a peculiar manner, hereinbefore set forth, and pointed out in the claims.

Having thus described my invention, I claim—

1. The combination, with the beam L, carrying the vertical end pulleys, N O, with their grooves *n n' o o'*, and the vertical central pulley, P, with its grooves *p p' p² p³ p⁴ p⁵*, of a sliding gate having arm S, and latch I, having arm *i*, the cords T and U, leading from arms *i* and S to the grooves *p⁴ p⁵*, the cords *v v'*, leading from grooves *o o'* of pulley O to grooves *p p'* of pulley P, and the cords *w w'*, leading from grooves *n n'* of pulley N to grooves *p² p³* of pulley P, said cords being separately wound and attached in said grooves, as described.

2. The combination, with posts A, B, and C, the sliding gate F and beam D, and the braces M, supporting beam L, of vertical end drums, N O, having grooves *n n' o o'*, central vertical drum, P, having grooves *p p' p² p³ p⁴ p⁵*, arm S and latch I upon gate F, and ropes T U *v v' w w'*, connected with the arm and latch and central and end drums, as specified.

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

JOHN W. COFFIN.

Witnesses:

F. E. KELLY,

O. H. ANDREWS.