

(No Model.)

2 Sheets—Sheet 1.

I. M. SMITH.  
REVERSIBLE DRIVE GATE.

No. 604,921.

Patented May 31, 1898.

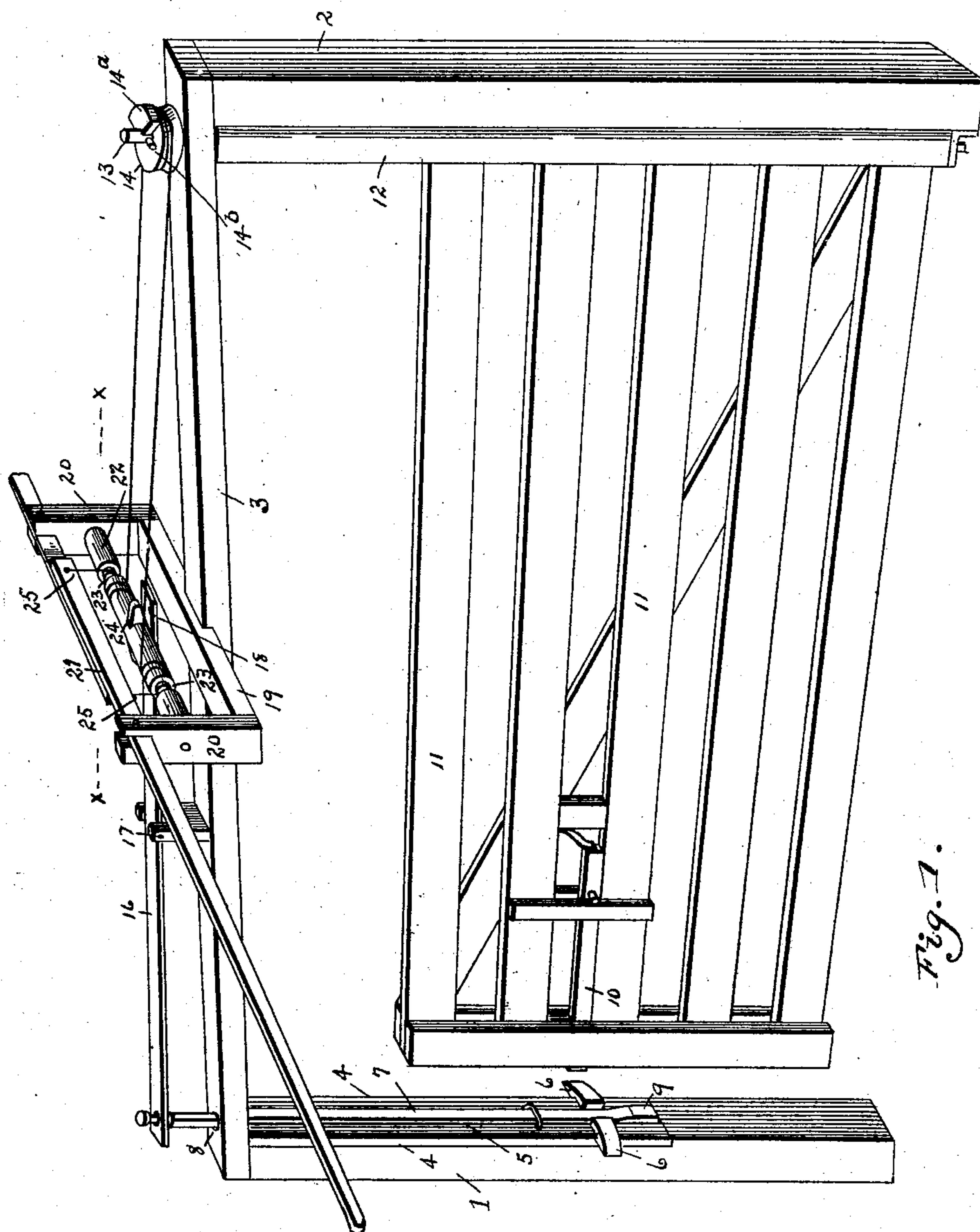


Fig. 1.

witnesses:

Lee J. Van Horn  
Victor J. Evans

inventor :-

Irby Morgan Smith  
By John Wedderburn  
attorney.

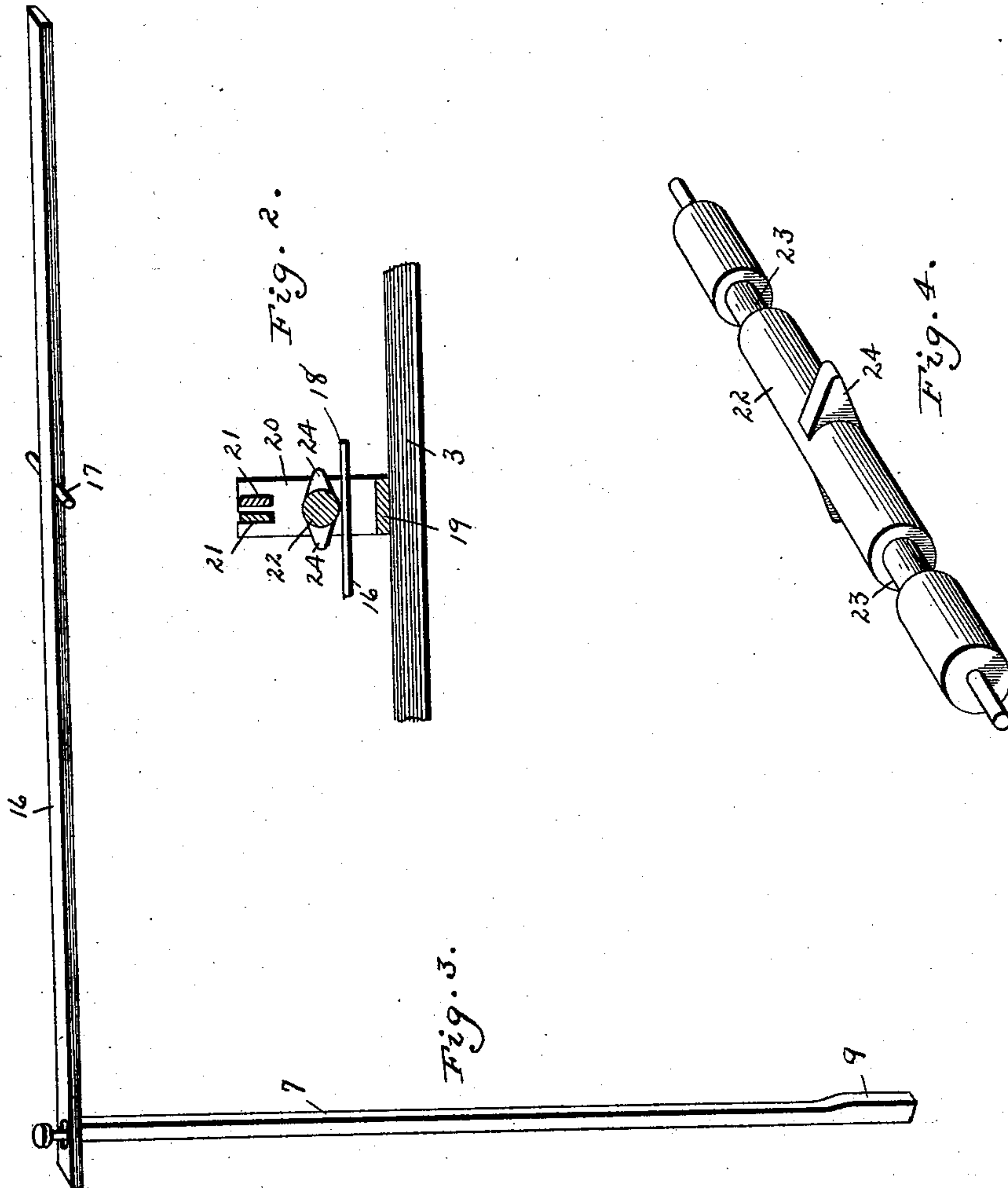
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Victor J. Evans

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Attorney



# UNITED STATES PATENT OFFICE.

IRBY MORGAN SMITH, OF PASQUO, TENNESSEE.

## REVERSIBLE DRIVE-GATE.

SPECIFICATION forming part of Letters Patent No. 604,921, dated May 31, 1898.

Application filed June 9, 1897. Serial No. 640,042. (No model.)

*To all whom it may concern:*

Be it known that I, IRBY MORGAN SMITH, of Pasquo, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Reversible Drive-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 it consists, essentially, of mechanism simultaneously operated for releasing the latch-bar and turning the gate in either direction in opening and closing the same.

The invention further consists of the details of construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

The object of the invention is to facilitate the opening or closing of a gate by a simple and effective attachment which is direct acting in its operation, strong and durable, and easily and readily operated.

In the accompanying drawings, Figure 1 is a perspective view of a gate embodying the invention. Fig. 2 is a section on the line *xx*, Fig. 1. Fig. 3 is a detail perspective view of the lever and latch mechanism disconnected and shown on an enlarged scale. Fig. 4 is a detail perspective view of a shaft used in connection with the device.

Referring to the drawings, wherein similar numerals of reference are employed to indicate corresponding parts in the several views, the numerals 1 and 2 designate uprights or posts connected at their upper ends by a beam 3. On the inner side of the post 1 two strips 4 are secured and spaced apart to form a guide, and at the lower ends thereof are oppositely-situated outwardly-projecting striker-plates 6. In the said guide is vertically mounted a catch-bar 7, which passes upwardly through an opening 8 in the beam 3, adjacent to the post 1, and at its lower end is formed with an enlargement 9, which is normally situated below the striker-plates and coacts with the projecting end of the spring-actuated latch-bar 10, carried by a gate 11. The said gate is of any preferred form of construction and has its rear post 12 thereof extending upward and terminating in a vertical pintle 13, which

projects loosely through an opening in the beam 3, and has loosely mounted thereon a sheave 14, with a projection 14<sup>a</sup>, adapted to strike a pin 14<sup>b</sup> adjacently situated.

The lower end of the post 12 has a turn-pin extending therefrom, which is seated in a suitable bearing adjacent to the post 2, or, if desired, the said turn-pin may pass through a bracket or other analogous device supported by the said post, which is a well-known form of construction. To the upper end of the catch-bar 7 a lever 16 is loosely attached, supported by a fulcrum 17 and projecting a suitable distance beyond the fulcrum, the part thereof extending beyond the fulcrum being formed with an upper plane surface, as at 18. Extending transversely across the beam 3 is a support 19, having arms 20 secured to the opposite ends thereof and projecting vertically. The upper ends of the arms 20 are slotted, and therein are movably mounted oppositely-extending operating-levers 21, and between the arms, below the levers, is journaled a shaft 22, having outer grooves 23 and centrally-disposed oppositely-projecting cams 24, adapted to act upon the plane surface 18 of the extended portion of the lever 16, which is located under the shaft in convenient engaging position. Connected to the inner oppositely-extending ends of the levers 21 is a rope, cable, or chain 25, wound in opposite directions in the grooves 23 of the said shaft 22 and from thence extended outwardly in the form of a belt surrounding the sheave 14.

The inner ends of the levers extend past each other, and when either is operated it revolves the shaft 22 by unwinding the rope, cable, or chain therefrom and causes one cam to engage the lever 16 and raise the catch-bar 7, and by its continued movement the rope, cable, or chain, a portion of which surrounds the sheave 14, is made to turn the gate in accordance with the direction of approach of the operator thereto. After passing through the gate the opposite lever is in like manner drawn down, and thus unwinds the end of the rope, cable, or chain attached thereto and swings the gate closed.

The catch-bar 7 is so mounted that after being raised to release the spring-actuated latch-bar 10 of the gate it will automatically drop back to a locking position, so that the



enlargement 9 is always below the striker-plates 6, and thereby permits an automatic locking of the gate when it is swung in a closed position. To permit the levers 21 and  
5 shaft 22 to have a slight start before operating the gate is the function of the projection 14<sup>a</sup> on the sheave 14, and by this means said sheave is allowed to loosely rotate on the pin-  
10 tle 13 until the said projection strikes the adjacently-situated pin 14<sup>b</sup>, when it will be held fast and open the gate.

If desired, the levers 21 may have suitable pull-cords or analogous devices applied thereto extended any distance from the levers, so  
15 that the gate may be operated in sufficient time to permit a team to pass therethrough and also located high enough above the gate so as not to interfere with a load.

It is obvious that any minor changes in the  
20 details of construction and arrangement of the several parts might be made and substituted for those shown and described without in the least departing from the nature or spirit of the invention.

25 Having thus described the invention, what is claimed as new is—

1. In a gate, the combination of a gate proper, a sheave attached to a portion thereof, a shaft having cams thereon, operating-  
30 arms having their inner ends located adjacent to said shaft, ropes, cables or chains attached to the inner ends of said operating-arms, reversely wound on the said shaft, and

extended outwardly in the form of a belt to engage the said sheave, a latch-releasing bar 35 having a lever attached to the upper end thereof adapted to be engaged by the said cams, and a spring-actuated latch-bar in connection with the gate, substantially as and for the purposes specified. 40

2. The combination of a gate having a spring-actuated latch-bar, a vertically-movable latch-releasing bar, a lever attached to the upper end of said bar, a shaft having cams thereon engaging the said lever, and means 45 for operating the said shaft, substantially as and for the purposes specified.

3. The combination of a gate, a sheave keyed to the pivot-bar thereof, a shaft, operating-arms having their inner ends extend- 50 ing over the said shaft, and connected to opposite ends of a rope, cable or chain wound in reverse directions on the shaft and extended in the form of a belt to engage the said sheave, whereby one of the arms will unwind 55 one end of the rope, cable or chain, and wind the opposite end, to thereby turn the gate in different directions, substantially as and for the purposes specified.

In testimony whereof I have signed this 60 specification in the presence of two subscribing witnesses.

IRBY MORGAN SMITH.

Witnesses:

W. M. FOREHAND,  
SAMUEL MAYS.