(No Model.)

F. A. BASCOM.

Automatic Gate.

No. 239,360. Patented March 29, 1881.

Fig. 1.

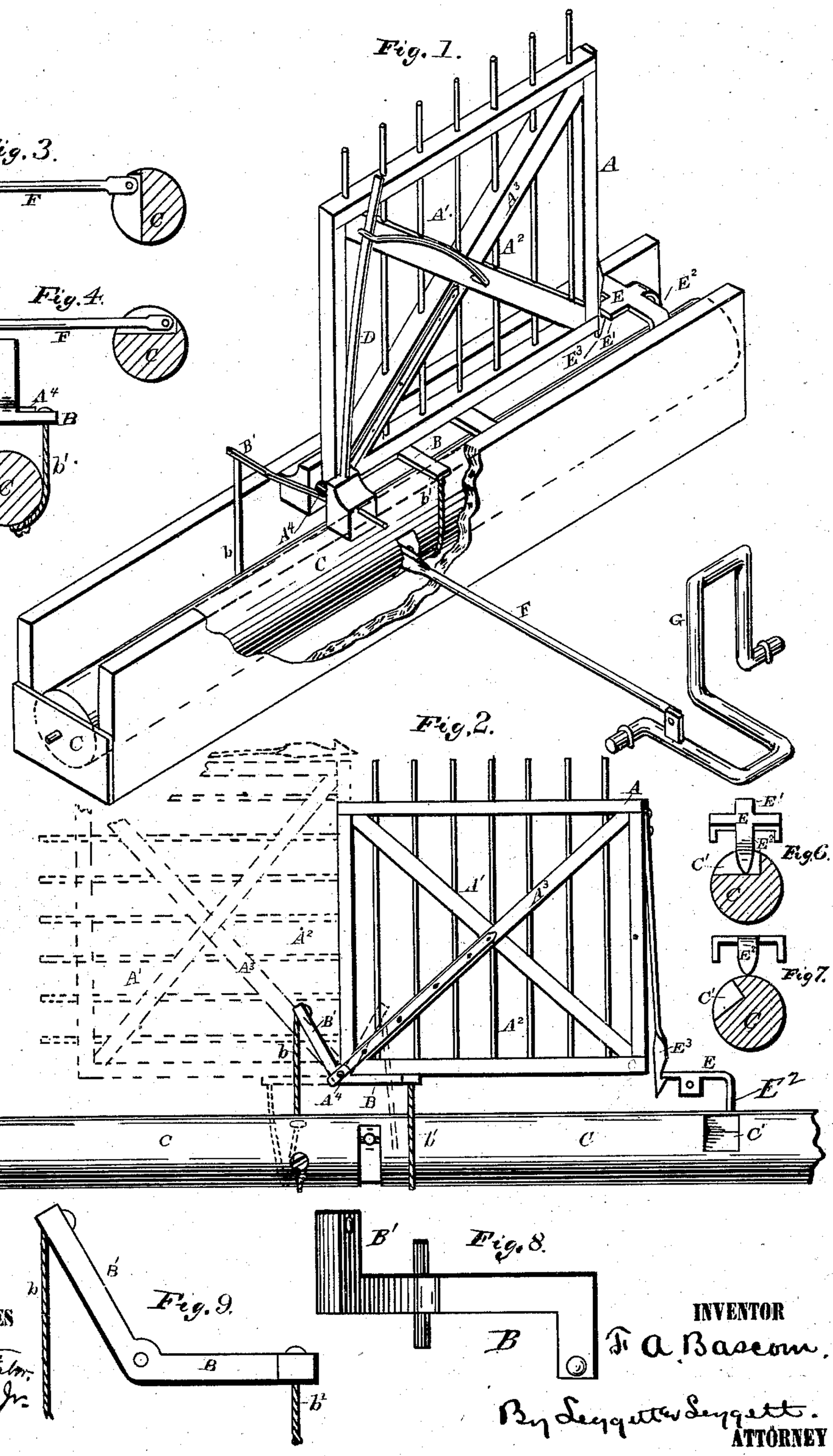

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 2.

Fig. 6.

Fig. 7.

Fig. 9.

Fig. 8.

WITNESSES

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AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 239,360, dated March 29, 1881.

Application filed September 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. BASCOM, of Leech's Corners, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Automatic 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to automatic gates; and it consists substantially in the following-described mechanism and combination of parts, as hereinafter specified.

In the drawings, Figure 1 is a perspective view of a device constructed according to my invention with the cylinder exposed to show its construction and application to neighboring parts. Fig. 2 is a view in side elevation, showing the construction and relation of the roller, gate, and connecting mechanism. Figs. 3 and 4 are views in transverse cross-section of the cylinder or roller, showing its manner of attachment and operation with its actuating-rod. Fig. 5 is a view in transverse cross-section of the cylinder or roller, and showing its cord or pulley connections with the gate opening and closing lever. Figs. 6 and 7 are views in transverse vertical section of the roller or cylinder, illustrating its connection and operation with the gate-locking lever. Fig. 8 is a plan view of the gate opening and closing lever, and Fig. 9 is a view in side elevation of said lever, showing its cord or pulley connections that unite it with the cylinder or roller.

A is the gate, which so far as its construction goes may be of any size or fashion to suit individual taste or convenience, and may be made to swing either vertically or horizontally. I shall describe my invention, however, as applied to a vertically-swinging gate, and in gates of this class the following is a peculiar feature.

For the sake of convenience of description the gate may be divided into two parts, A′ and A^2, separated by the strip A^3. The section A′ should be constructed to be as heavy as the section A^2, and this may be accomplished in any manner. The object of this construction is that when the gate is swung upward beyond forty-five degrees its own gravity will operate, if necessary, to complete the opening, thus relieving the turning mechanism of the necessity of swinging the gate through an arc of ninety degrees, or thereabout, as would be necessary were it not for the construction just mentioned.

This gate, as will have been already observed, is of the type that swings vertically instead of horizontally in opening. It is suitably pivoted at A^4, and upon this pivot the gate swings in opening and closing. Upon the pivot or shaft A^4 is placed the angular opening and closing lever B B′, and to each end of the lever B B′ is attached a cord, chain, or belt, *b b′*, which passes down respectively around opposite sides of the roller C. This roller C is placed beneath the roadway, and is journaled at its ends in suitable bearings. The gate A and lever B B′ swing independently of each other on the pivot or shaft A^4, so that in opening the gate, when the opening-arm B of the lever raises the lower edge of the gate beyond an angle of forty-five degrees, said gate will of its own gravity leave said arm B and drop over so as to rest upon the closing-arm B′ of the lever. Likewise in shutting, the closing lever-arm B need only lift its edge of the gate beyond an angle of forty-five degrees, when gravity will act to finish the closing operation.

It is evident that the turning in one direction or the other of the roller C is all that is necessary to open or close the gate A. For instance, if the roller is turned so as to draw down the cord *b*, and with it pull down the closing lever-arm B′, it will operate to raise the opening-arm B of the lever, and thus lift the gate to its open position, whereas if the roller C be turned in an opposite direction the cord *b′* will be pulled down, carrying its lever-arm B and raising the closing lever-arm B′.

In order to prevent the gate from falling too heavily in either its opening or closing motion, any suitable cushion or spring, D, may be employed, and this cushion or spring may be placed in any manner or position to accomplish its easily-understood function. The varieties wherein this feature of my invention may be modified are numerous and too obvious to need specific description.

When the gate is closed it should be locked

in that position, and a device, E, is intended to act as a lock. This device E consists of a plate or casting pivotally attached to the framework that carries the roller C. It has two tongues, E′ and E². The tongue E′ is constructed to engage with a spring-latch, E³, attached to the gate, and the tongue E² is bent down to or rests upon the surface of the roller C. When the spring-latch E³ has engaged with the tongue E′ it cannot be loosened and the gate opened without tilting the plate or bed E, and this is prevented by the tongue E² resting upon the roller C. However, when the roller C is turned in the direction indicated to open the gate, its slot or cut-away portion C′ is brought under the tongue E², thus allowing the bed or plate E to tilt and permit of the disengagement of the spring-latch E³ and tongue E′.

It will be readily perceived that if the turning of the roller C can be made automatic it may be opened and closed by a wagon passing through it. This is effected by connecting the roller C, through any suitable rod or pitman F, with a crooked iron, G, bent substantially as indicated, and pivotally attached to the road-bed in such a position that the wheels of a vehicle in passing shall turn it to open the gate as approached and close it when leaving.

In practice the roller C and its attached mechanism are closely covered over, so as to be protected from dirt or injury.

I have thus far described my invention as applied to a single gate; but it is evident that the roller C can be so extended that a double gate or two or more gates can be connected with and operated by it. Likewise it is apparent that said roller C can be so connected as to be operated by hand instead of the wheels of a vehicle, or connection can be made to the inside of the house in such a way that the gate can be opened or shut from the house, and so that it cannot be opened or shut without giving an alarm.

I have described my invention as suitable to vertically-swinging gates; but I desire to be distinctly understood that I do not limit my invention to this type of gates, as the roller C may be so connected with the horizontal swinging gate as that the cord *b b′*, in pulling downwardly as the roller is turned one way or the other, shall, with suitable connection with the gate, open and close it.

What I claim is—

1. The combination, with a pivoted gate and a bell-crank one arm of which is adapted to bear against the bottom edge of the gate and the other arm of which is adapted to bear against the back edge of the gate, of devices connected, respectively, with both arms of the bell-crank for vertically swinging the gate into open or closed position, substantially as set forth.

2. In an automatic gate, the combination, with a bell-crank lever located in the same plane with the gate, and a roller, of two flexible connecting devices, each of the latter having one end secured to the appropriate arm of the lever and its opposite extremity secured to the roller, substantially as set forth.

3. In an automatic gate, the combination, with a bell-crank lever the arms of which are adapted to engage, respectively, with the lower and the back portions of a gate, of a roller and two flexible connecting devices, each of the latter having one end secured to the appropriate lever-arm and the opposite end secured to the roller, substantially as set forth.

4. In an automatic gate, the combination, with a crank-shaft, a roller located substantially parallel therewith, and a link connecting the two, of a bell-crank lever the arms of which are adapted to engage, respectively, with the bottom and back portions of the gate, and two flexible connecting devices, each of the latter having one end secured to the appropriate lever-arm and the opposite end secured to the roller, substantially as set forth.

5. The gate A, spring-latch E³, and lock E E′ E², and roller C C′, combined and operating substantially as set forth.

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

FRANK A. BASCOM.

Witnesses:
L. L. LEGGETT,
ALBERT E. LYNCH.