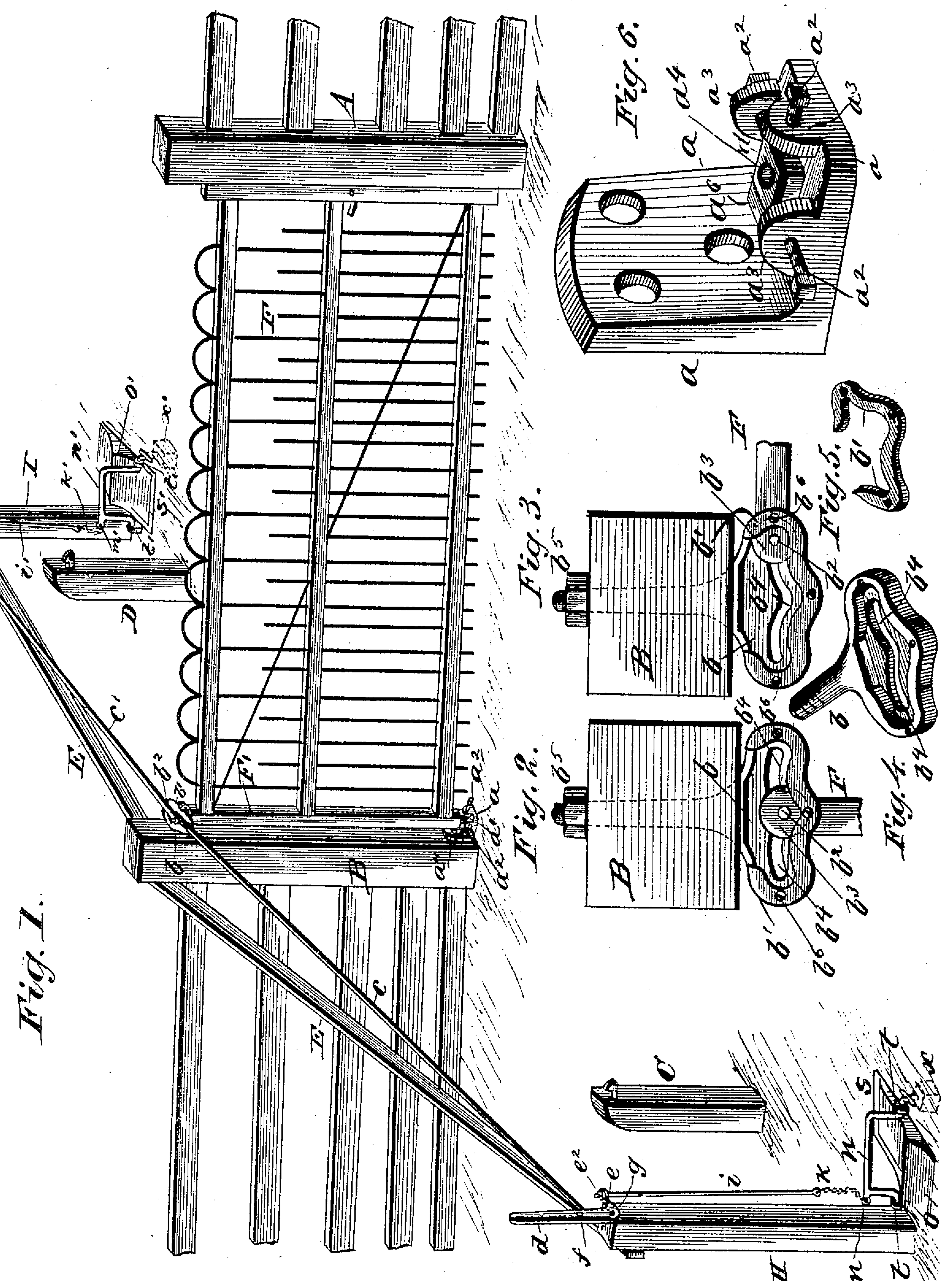
(No Model.)

2 Sheets—Sheet 1.

T. E. WILSON.

AUTOMATIC GATE.

No. 339,249. Patented Apr. 6, 1886.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 7.

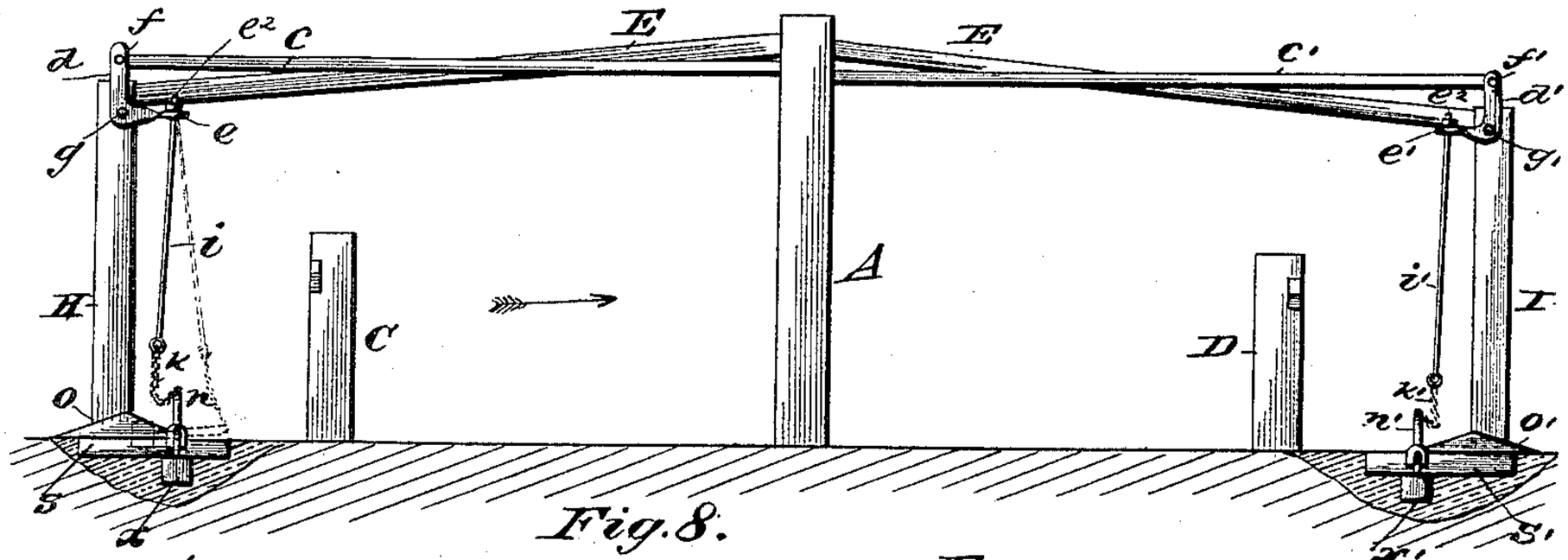


Fig. 8.

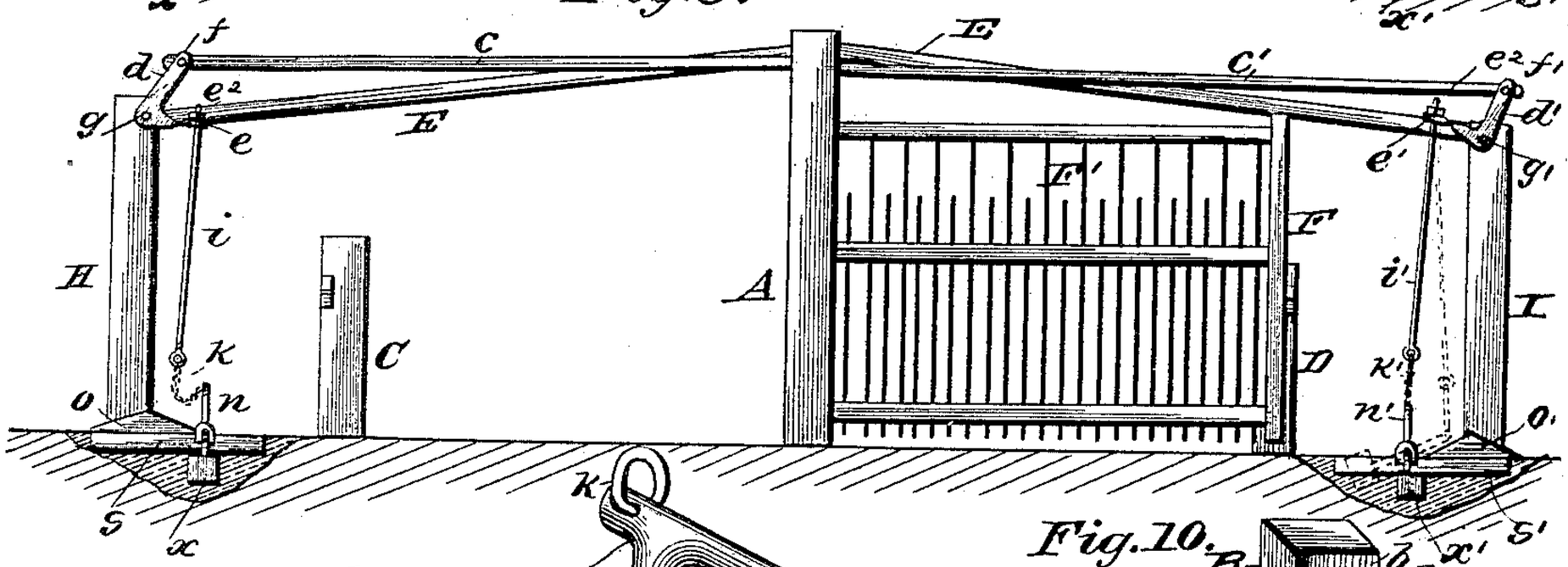
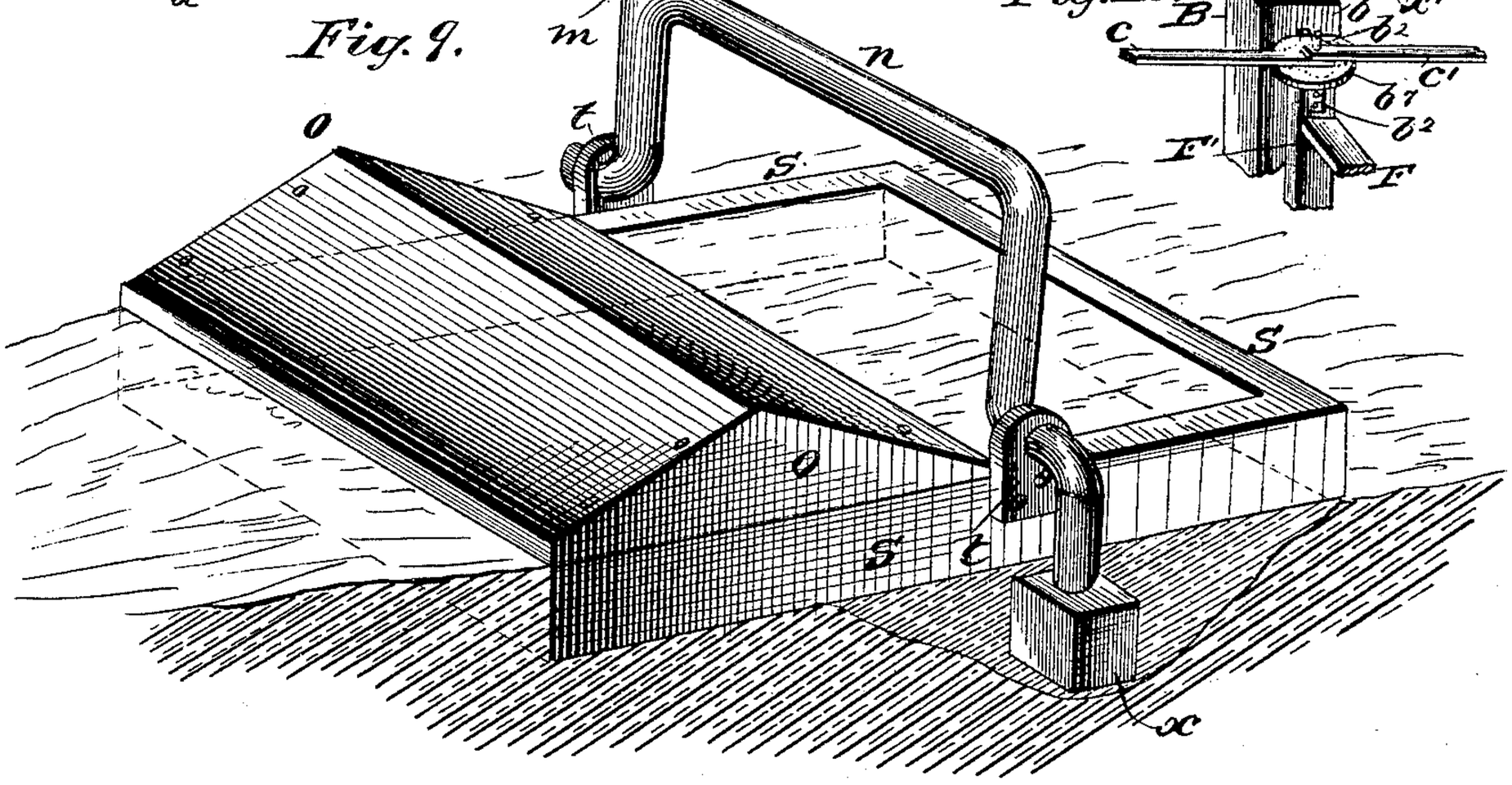


Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE.

THOMAS E. WILSON, OF FARMLAND, INDIANA.

AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 339,249, dated April 6, 1886.

Application filed December 18, 1884. Serial No. 150,692. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. WILSON, a citizen of the United States, residing at Farmland, in the county of Randolph and State of Indiana, have invented a new and useful Improvement in Automatic Gates, of which the following is a description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to improvements in self-opening or automatic gates, and the objects of my invention are to facilitate the operation of automatic gates and to construct a gate that will be durable and inexpensive. I attain these objects by the mechanism illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view. Figs. 2, 3, 4, and 5 are detail views of the upper hinge mechanism. Fig. 6 is a view of the lower hinge-bracket. Fig. 7 is a view taken on a line with the gate and fence, showing the position of the trip-rods on each side of the gate when it is closed. Fig. 8 is a view taken from the same point when the gate is open. Fig. 9 is a view of the trip-rod and frame, and Fig. 10 is a perspective, on an enlarged scale, of the upper hinge with its covering.

Similar letters refer to similar parts throughout the several views.

The gate-frame F F′ is made in any style desired, and hinged to post B and closed against post A. The rear bar, F′, is provided at the bottom with a stud, which rests on the lower hinge-bracket, *a*. The said bracket *a* is secured to the post B by screws or bolts, and the lower part turned outward and provided with ears a^3, all as shown in Fig. 6. Adjusting-screw a^2 pass through the said ears against a nut, *a′*, on three sides, and a block of wood or rubber, a^6, is placed back of it, so that it can be moved in any direction to plumb the gate, and held firmly in place by tightening said screws against it. The stud at the bottom of the rear bar, F′, passes through the hole a^4, and rests on the outward-turned part of the hinge-bracket. The upper end of the bar F′ is also provided with a stud or pin, b^2, projecting up through the hinge mechanism. The upper hinge-bracket, *b*, is made in a shape best shown in Fig. 4, the round part of which passes through the post B and is held firmly by a nut, b^5, as shown in Figs. 2 and 3.

The gate is first set on the lower bracket, *a*, and the top bracket, *b*, is then placed over the top of bar F′, the pin b^2 projecting up through the slot b^4, allowing the bracket *b* to rest on top of said bar. It is then secured to the post by the nut b^5, so that the gate cannot be raised up. A small iron wheel is placed over said pin b^2, and made to work in the recess within said bracket, as shown in Figs. 2, 3, and 4. A rim, *b′*, is secured over said recess or to the upper side of the said bracket *b* by screws b^6, so that the said wheel cannot rise up or work out. The bracket is made so that the wheel can move from one side to the other, with a resting place or stop at each side and at the center, so that the wheel will stand in whichever place it is moved by the connecting-arms *c c′*. When the gate is closed, it will stand or rest at the center, as shown in Fig. 2, and when open it will stand at one side, as shown in Fig. 3.

Over the rim *b′* and bracket *b* a sheet-iron cover, b^7, is placed to prevent ice or snow from filling up the recess in said bracket. The pin b^2 passes up through the said cover and through the arms *c c′*, all as shown in Fig. 10. The said cover moves with the pin from one side to the other; but it is larger than the bracket, therefore it covers it at all times.

Posts C D are placed on each side of the gate at equal distances from the post B, so that the gate will strike against and latch to one of them each time it is opened.

The trip-rods *n n′* are placed on each side of the gate in the frames *s s′*, as shown in Fig. 1. Posts H I are also placed on each side of the gate, and held at the top by the strips E, which prevent them from spreading outward.

One end of each of the arms *c c′* is attached to the pin b^2, and the other end of each to the cranks *d e d′ e′*. The said cranks are attached to the top of the posts H I by bolts *g g′*, as shown in Figs. 1, 7, and 8. From the pins *g g′* the cranks are turned outward, and one end of rods *i* or *i′* passes through each of them, with a nut, e^2, on the said end to adjust the slack in the chains *k k′*, secured to the lower end. The said chains are also attached to the projections *m m′* on the trip-rods *n n′*. The said trip-rods are secured in the ears *t t′*, attached to the frames *s s′*, so that

they can turn down when a vehicle wheel passes over them, and one end extends down below the frame, with a weight, *x x'*, secured to the lower end, which causes the said trip-rod always to return to a vertical position.

On one side of the rods *n* and *n'* are placed blocks *o o'*, having their upper surfaces made as double inclines When a vehicle approaches the gate from either direction the wheels mount the incline and thus strike the rods less abruptly.

As thus constructed, my invention is complete and ready to operate as shown in Figs. 1 and 7.

When the gate is closed, everything stands, as shown in Fig. 7, and the wheel b^3 rests in the center of the bracket, as shown in Fig. 2. When a vehicle approaches the gate, moving in the direction indicated by the arrow in Fig. 7, the wheel first passes over the trip-rod *n*, pressing it down, as indicated by dotted lines in said figure, and pulls down the end *e* of crank *d e*, moving the upper part, *d*, toward the gate and pushing on arm *c*. This moves the wheel and pin to the opposite side of bracket *b*, as shown in Fig. 3, which causes the gate to swing around and latch to post D, as shown in Fig. 8.

It is shown in Figs. 1, 7, and 8 that each chain *k k'* is slack (say three inches) when the gate is closed, so that either of the trip-rods moves three inches down before it pulls on or the rod *i i'*; but when one is pressed down six inches to open the gate it pulls up three inches of the other chain, which tightens it, as shown at *k' i'*, in Fig. 8.

When the vehicle passes over the other trip, it is pressed down on the block *o'*, as indicated by dotted lines, which only allows it to pull down three inches of the chain. It therefore only pushes back the arm *c'* far enough to move the wheel b^3 back to the center of the bracket, which raises the front end of the gate up out of the latch on post D, and causes it to swing back to the center or latching post, A, and leaves everything as before it opened.

The trip-rod frames are set in the ground, as shown in Figs. 1 and 9, with the rod between the block *o o'* and the gate, so that the rods *n n'*, which are always moved toward the gate to open it, can move down six inches in that direction, but only three inches in the other direction, (to close the gate,) before striking the blocks *o o'*.

The opening of the gate by one trip-rod always draws up the three-inch slack in the opposite trip-rod chain, so that when it is pressed down on the block to close the gate the chain is already tight, as shown in Fig. 8, at *k'*, and the three inches pulled down by the trip rod, as indicated in dotted lines in said figure, closes the gate and makes everything stand as before it opened. The same operation is performed by the mechanism whenever the gate is opened, and it always opens from the team.

My invention can also be applied to a double gate by connecting the gates on each side of the roadway by underground connections, and it can also be made to open and close by pressing the foot on a treadle when used as a yard-gate.

The gate can be opened by a person on horseback when the cranks *d d'* are extended up, as shown at d^2 in Fig. 1, for convenience in moving the arms *c c'*, as heretofore described.

Having thus described my invention, I claim the following and desire to secure the same by Letters Patent—

1. The combination, with the gate-frame provided with the hinge-pin, substantially as herein described, of the bracket *a*, composed of the horizontal plate provided with ears a^3 and the vertical fastening-plate, a bearing-block supported on said horizontal portion of the block, and adjusting-screws passing through said ears and bearing against the said block, as set forth.

2. In an automatic gate, the combination, with the gate-post and the gate provided with the pin b^2 and roller b^3, of the upper bracket herein shown, consisting of the plate secured to the post having the double-curved slot, as shown, a flange surrounding said plate, and the rim *b'*, secured to said flange, all substantially as shown and described.

THOMAS E. WILSON.

Witnesses:
T. J. BLOUNT,
CHAS. E. ADAMSON.