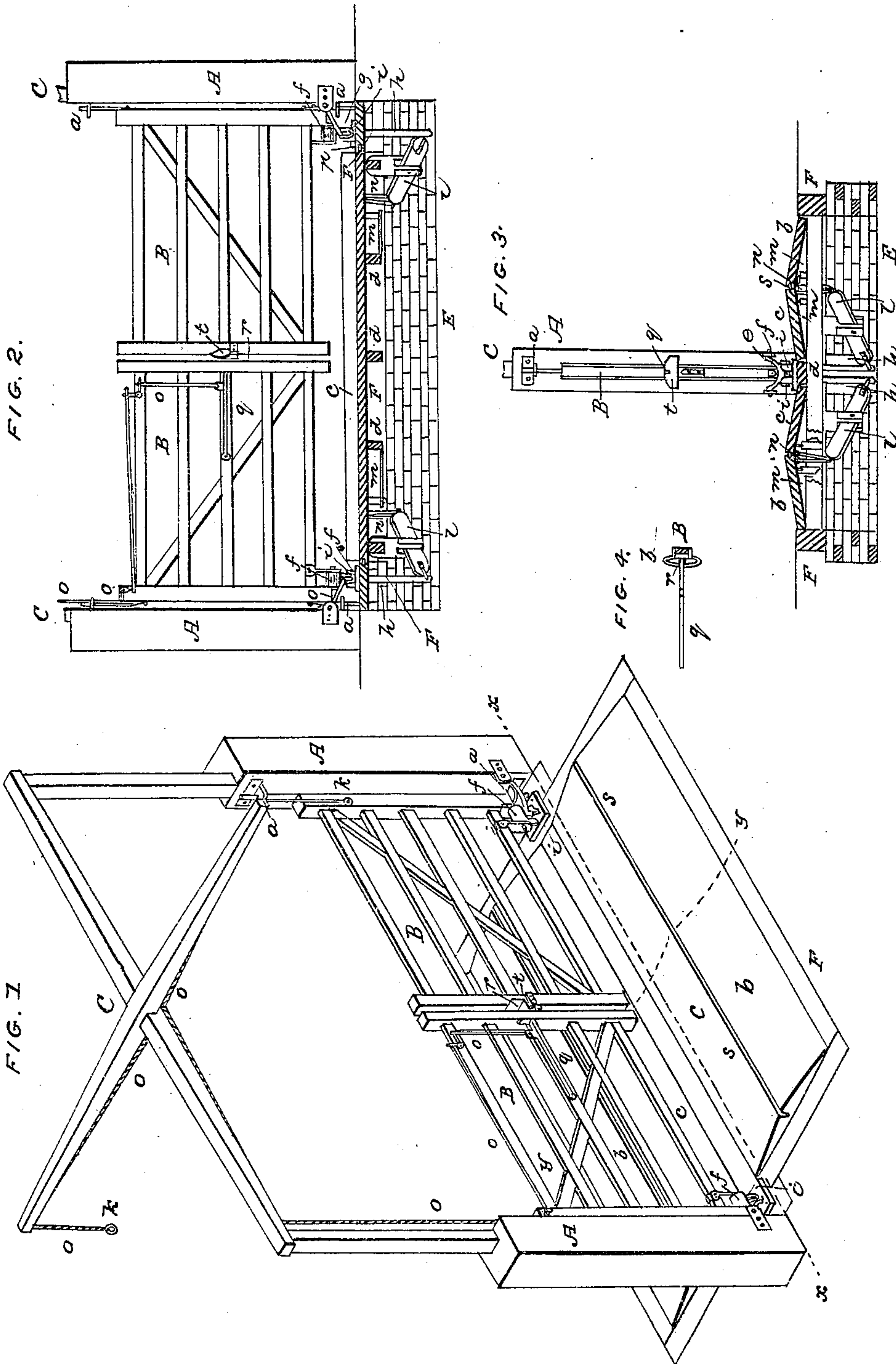


J. S. BROWN.
Automatic Gate.

No. 9,176.

Patented Aug. 10, 1852.



UNITED STATES PATENT OFFICE.

J. S. BROWN, OF WASHINGTON, DISTRICT OF COLUMBIA.

DOUBLE GATE.

Specification of Letters Patent No. 9,176, dated August 10, 1852.

To all whom it may concern:

Be it known that I, J. S. BROWN, of Washington, in the District of Columbia, have invented a new and Improved Automatic Gate; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a view, in perspective, of my improved automatic gate; Fig. 2, a vertical section thereof in a plane indicated by the line *x*, in Fig. 1; Fig. 3, a vertical section of the same in a plane indicated by the line *y*, in Fig. 1; and Fig. 4, a plan of a part of the gate detached.

Similar parts are designated by similar letters in all the figures.

I first prepare two posts A, A, in the ordinary manner, and set them firmly in the ground at a suitable distance from each other. I then construct two gates B, B, in any convenient way, of a proper size to fill the space between the said posts. The gates are then hung to the posts with hinges *a*, *a*, &c., in such a manner that they will turn with ease horizontally either way, and will slide up and down as far as desired. Then, having made an excavation of sufficient depth, reaching nearly, or quite, from post to post of the gate, and the other way a suitable distance (say 3 or 4 feet) on either side of the center line between the posts, and having lined it with a wall E, of brick, stone, or other suitable material, I fix upon the said wall of the excavation a firm frame F, whose upper surface shall be even with the surface of the ground. Joists *d*, *d*, &c., are then extended across the excavation, and secured firmly in the outer frame F, the tops of said joists being all horizontal and of equal heights; upon which, platforms *b*, *b*, and *c*, *c*, are to rest. The outer edges of the platforms *b*, *b*, and the inner edges of the platforms *c*, *c*, are hinged, in any convenient way, to the inclosing frame F, (as shown at *p*, *p*, Fig. 2;) and the adjacent edges of each pair *b*, *c*, of platforms may be connected by loose dowel pins *s*, *s*, or other suitable device, which will keep the edges together, but allow them to rise and sink simultaneously as far as desired. Each pair of platforms will ordinarily rise a few inches in the middle, (as shown in the drawings,) but, when a proper weight is put upon them, they will sink upon the joists

d, *d*, &c., and then be in a horizontal position. Springs *m*, *m*, (or counterweights,) arranged in any convenient way, are to be applied under said platforms, and should be only of sufficient power to readily raise the platforms to the proper height when there is nothing pressing thereon.

To the lower side of each gate B, is attached, a short distance from the lower hinge *a*, or axis of the gate, a friction roller *f*, whose axis extends horizontally lengthwise of the gate. A semicircular metallic track *e*, is then so hinged to each post that it will vibrate, on its ends as axes, up and down, while the center of the circle, of which its periphery is an arc, shall nearly or exactly coincide with the axis of the gate; and so that the roller *f*, shall rest upon said track, and roll thereon when the gate is opening and shutting. When each track is at its lowest position, its middle part is allowed to rest upon a prop *g*, and should then be sufficiently low to cause the gate, which rests upon the track by the roller *f*, to swing readily, by its own weight, over said middle of the track, and thence remain shut. And, when the track is raised to its highest position, the inclination of its plane should be reversed, and sufficiently great to cause the gate to swing open by its own weight pressing thereon. A semicircular shape is not necessary to the proper action of said track; but its form may be somewhat angular at the middle and curved thence to the ends, or it may be a portion of an ellipse, the long diameter of which terminates at the middle, or otherwise varied, provided it remains such that the roller *f*, will fall thereon throughout its whole length; the object of which variations should be to cause the gate to shut with more certainty; and begin to swing open more readily, when raised to its highest position, than with the semicircular form.

Perpendicular rods *h*, *h*, one on each side of the center line between the posts, and quite near it, are inserted in suitable guides, under each track *e*, so that they will move freely up and down. The upper end of each rod is forked (as seen in the drawings) so as to receive the track-piece *e*, therein, and project a little above the track when said track sinks into the bottom of the fork. The lower end of each rod *h*, is attached, by a hinge, to one arm of a lever *l*. Said levers vibrate upon a fulcrum attached, in any con-

venient manner, to the frame, which supports the platforms. The other arm of each lever is connected, in a suitable manner, by rods *n, n*, with the adjacent edges of the pair of platforms above it, so that, when the platforms are depressed, they will also depress the said arms of the levers under them, and consequently raise the opposite arms of these levers. The arms of each lever are so arranged and proportioned that, when the platforms are at their highest positions, the rods *h, h*, shall be low enough to allow the rollers *f, f*, to move on their tracks, over the forks of said rods without touching them; and, when the platforms are depressed to their lowest positions, the rods *h, h*, will rise high enough to raise the tracks *e, e*, to a reverse inclination sufficient to cause the gates to readily swing open by their own weight.

The gates, when shut, are held together in the following peculiar manner:—A latch *q*, is attached to one gate, its vibrating end projecting a little from the gate toward the other gate. A catch *t*, so constructed as to lift the latch, when approaching on either side, is attached to the other gate. The projecting end of the aforesaid latch is made to fall into the notch in said catch, and is enlarged toward its extremity, immediately beyond where it enters said catch, enough to prevent its slipping endwise through the notch of the catch. This enlarged extremity has a perpendicular aperture in its center, which, when the gates are closed, exactly fits over a perpendicular pin *r*, attached to the catch gate and projecting upward directly behind the notch of the catch, and holds the gates together in that position. The notch of the catch is so constructed that, as the gates swing by each other, the latch will readily fall therein even when the gates are partially open, and, when exactly shut, that the latch will invariably fall over the pin *r*. This is easily accomplished by making it just wide enough to admit the latch at the bottom, and a little flaring upward (as shown in Fig. 3).

A suitable frame *C*, is constructed over the gate; and, by a proper arrangement of wires, or cords, *o, o*, attached to the latch *q*, and ascending by the said frame *C*, so as to be suspended in such a position, (as shown in Fig. 1,) on either side of the gateway, that the driver or rider may reach rings (or tassels) *h, h*, attached to said cords, as he sits in the carriage or on his horse; he will thereby be enabled, without dismounting, to

lift the latch and permit the gates to swing open.

When the driver, or rider, approaches the gate on either side, he allows the horse to step upon the platforms *b, c*, which therefore immediately sink to a horizontal position, thereby reversing the inclinations of the inclined tracks *e, e*, by means of the two nearest rods *h, h*, and lifting both gates, so that they will swing open by their own weight the moment the latch is raised as above described. The forks of the two nearest rods *h, h*, which only are raised, project, at the same time, above the tracks *e, e*, and pressing against the rollers *f, f*, cause them always to move in the direction from the driver, and consequently the gates will always open away from the driver on whichever side of the gateway he comes. The gates being open, the rider drives through, one or both of the pairs of platforms meanwhile remaining pressed down by the weight of the horse or carriage, and consequently keeping the gates open till the carriage has cleared the last platform, which then is immediately raised by the force of the springs, or counterweights, underneath. The inclined tracks consequently sink back to their original positions, and the gates swing together by their own weight, and are caught and held there by the automatic action of the above described manner of latching. Thus the rider can pass through the gate without dismounting, and the driver, without leaving the carriage.

I usually employ two gates, which I consider preferable to one; but a single gate may be used, acting precisely as one of the gates above described; in which case any common latch may be employed, which fastens it to the opposite gate-post.

What I claim as my invention and desire to secure by Letters Patent is—

1. The arrangement of the forked rods *h, h*, or their equivalents, in combination with the inclined track *e*, and roller *f*, for the purpose of causing the gate always to swing in the direction from the rider, substantially as herein set forth.

2. I also claim the combination of the latch *q*, catch *t*, and pin *r*, or their equivalents, substantially in the manner and for the purpose herein set forth.

J. S. BROWN.

Witnesses:

T. P. BALDWIN,
T. S. SMITH.