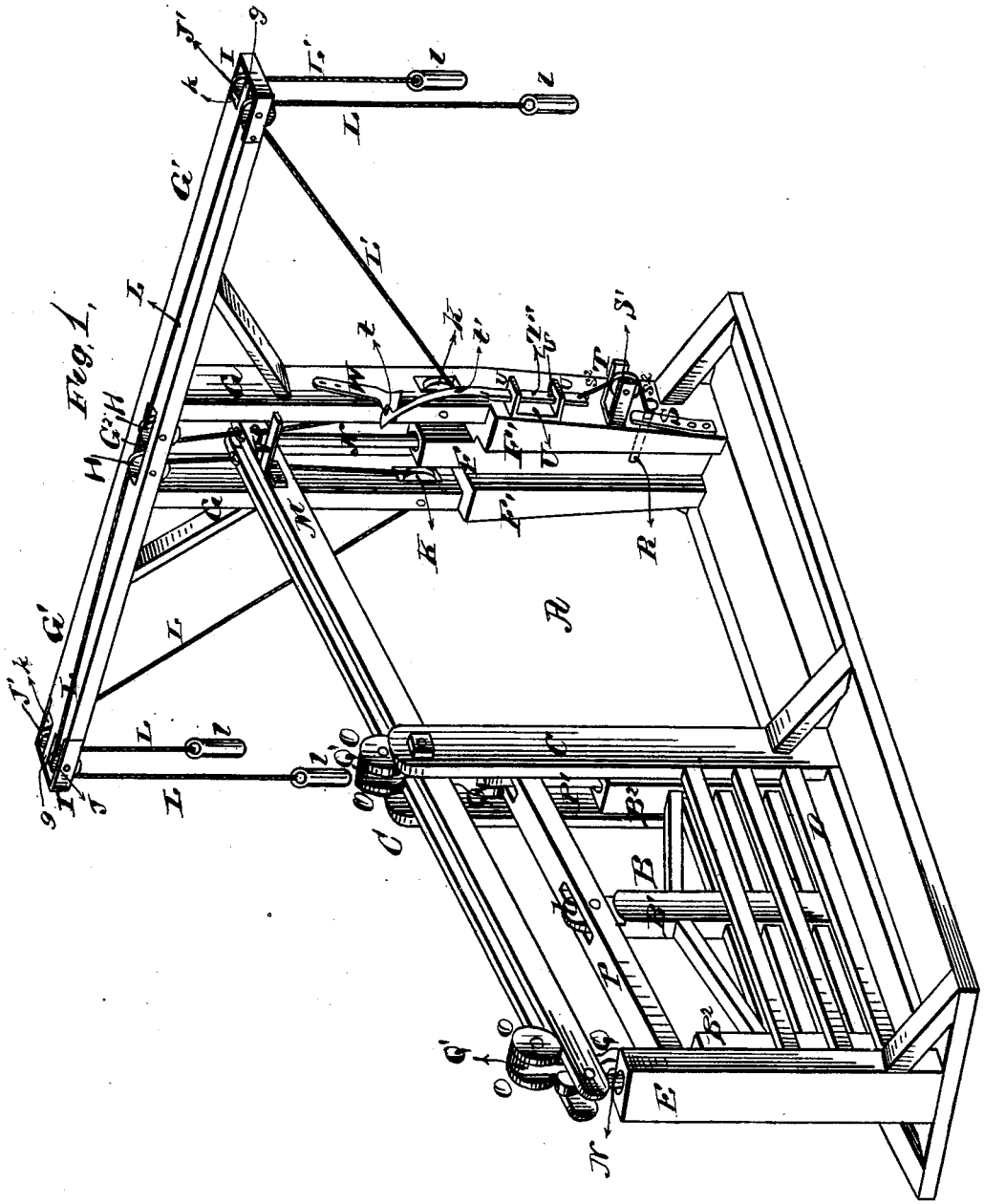
2 Sheets—Sheet 1.

B. R. BAKER.

GATE.

No. 191,637. Patented June 5, 1877.



WITNESSES

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2 Sheets—Sheet 2.

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Fig. 3.

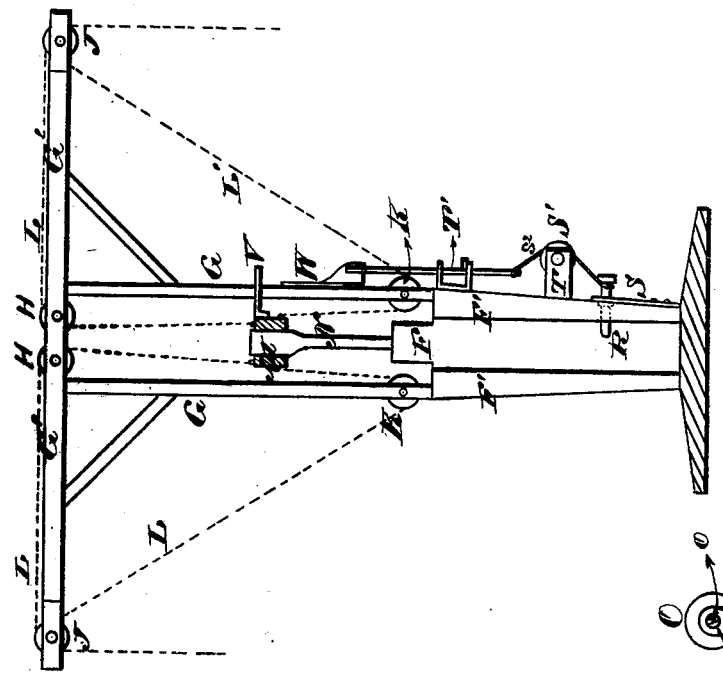


Fig. 4.

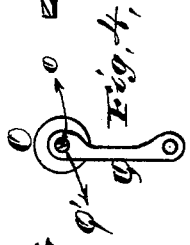
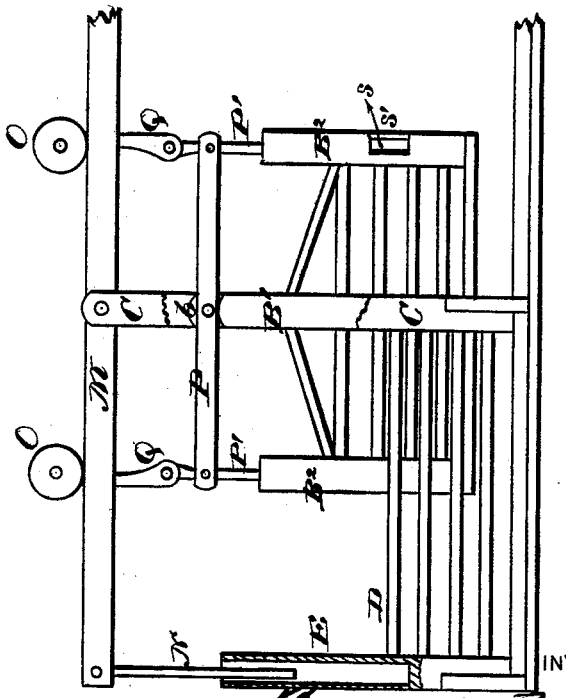


Fig. 2.



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UNITED STATES PATENT OFFICE.

BENJAMIN R. BAKER, OF NORTHFIELD, MINNESOTA.

IMPROVEMENT IN GATES.

Specification forming part of Letters Patent No. **191,637**, dated June 5, 1877; application filed January 20, 1877.

To all whom it may concern:

Be it known that I, BENJAMIN R. BAKER, of Northfield, in the county of Rice and State of Minnesota, have invented a new and valuable Improvement in Gates; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective view of my gate, and Fig. 2 is a side view of the same. Fig. 3 is a transverse vertical sectional view thereof, and Fig. 4 is a detail view.

This invention relates to gates which are opened and closed without touching them.

The nature of said invention consists in combining with said gate a vertically-vibrating guideway, pivoted thereto, said guideway being provided with plunger-rods, operating in hollow posts. Also, it consists in certain devices for locking said gate when the same is closed, and in the combination therewith of sundry other devices for unlocking the same automatically when the front end of the guideway is raised for the purpose of opening the said gate, as will be hereinafter particularly described.

In the annexed drawings, A designates a gateway, and B a sliding gate adapted to close the same. When said gate is withdrawn from said gateway it sets between a pair of posts, C C, having a double line of fencing, D, corresponding in length to that of the gate, extending backward therefrom. E designates a hollow guide-post, which closes the rear end of the space between said lines of fencing D. On the opposite side of gateway A is another hollow guide-post, F, and on each side thereof stands a solid post, F′, which sustains a crane, G. The horizontal arms G^1 G^1 of said cranes G G extend, respectively, up and down the road, away from each other. Said arms are connected across the space between the upright parts of said cranes by an intermediate part, G^2, with which they may, if preferred, be formed in one piece. Said intermediate part G^2 is slotted longitudinally to receive two journaled grooved pulleys, H H, which are arranged, respectively, on each side of a line passing vertically through the middle of post F. The end of each arm G^1 is provided with a projecting tongue, *g*, and a metallic approximately rectangular band or strap, I, which forms an outer bearing for two grooved pulleys, J J′, that are arranged on each side of said tongue *g*—their inner bearing. In a vertical slot, *k*, in the lower part of the upright or standard of each crane G, I place a similar pulley, K. L designates the raising-cord of each crane, which passes over pulley J and pulley H, and is attached to the top of the front end of a track or guideway, M, which is pivoted by its middle to posts C C, like the walking-beam of a steam-engine. L′ designates the lowering-cord of each crane, which passes over pulley J′ and under pulley K, and is attached to the under side of the front end of said guideway M. The arrangement and operation of said raising and lowering cords are the same on each side of the gate. They hang so as to be conveniently reached by persons approaching the same; and each one of them is provided with a weight, *l*, to prevent it from kinking.

Guide-posts E and F are lower than pivot-posts C C, and guideway M is provided at each end with a vertically-operating pivoted plunger-rod, N, that sets in one of said guide-posts. Said plunger-rods reciprocate in said posts E and F, and brace and guide the said vibrating track M. On said guideway M run two rollers, O O, whereby sliding gate B is suspended, as hereinafter set forth, so that when the front end of said track or guideway is raised the said rollers will run down to the rear end thereof, carrying backward said gate B and leaving gateway A open. When the front end of track M is lowered the reverse action takes place, and the said gateway is closed.

I employ the following devices to keep gate B horizontal while sliding backward and forward, as above described: Said gate is provided with a middle pivot-post, B^1, on the top of which is pivoted a vertically-vibrating bar, P, arranged like the walking-beam of a steam-engine. To the cleft ends of said bar P are pivotally attached two plunger-rods, P′ P′, which work in hollow end posts B^2 B^2. Said

end posts are lower than middle pivot-post B^1. Said plunger-rods P′ P′ are extended above said vibrating bar P, and their upper ends are connected to rollers O by means of links Q, (shown in detail in Fig. 4,) which are provided with perforated top pieces or hooks Q″, that set on the journals *o*, connecting each pair of rollers O, so as to allow the free rotary movement of said rollers. When guideway or track M is vibrated, as above described, the said bar P conforms to said movement, and remains parallel to it; but the gate B moves backward and forward horizontally, the plunger-rods P′ at the same time moving up and down in hollow posts B^2 B^2, so as to guide and brace the said vibrating bar P. Said bar may be slotted to receive a tongue, *b*, on the top of middle post B^1, as shown, or any other pivotal attachment may be employed.

Said gate is secured against being opened by cattle by means of a lock rod or bolt, R, which works transversely through one of the crane-supporting posts F′, and enters a recess in the side of the front gate-post B^2. Said recess extends to the front of said gate-post, and is there provided with a vertical beveled metal piece, s^1, which forces back said lock rod or bolt R when the said gate is closing. As soon as the said metal piece s^1 forces back the said lock rod or bolt, the latter is thrown forward into said recess *s* by means of a spring, S, attached to said post F′.

When gate B is opened said locking rod or bolt R is automatically withdrawn by the following mechanism: From the outer end of said bolt a cord, s^2, extends over a pulley, S′, journaled in a bracket, T, to the lower end of a vertical slide, T′, which works through perforations in two flanges, *u u*, of a metal guide-piece, U. Said slide is provided with a stop-pin or stud, *w*′, which prevents it from falling too far. Bracket T and guide-piece U are secured to the same post F′, through which works the rod or bolt R. The upper part of slide T′ is tapered or diminished, so as to form a spring, *t*′, which has at its upper end a beveled catch, *t*. V designates a rigid bar attached to the side of the front end of said gate, and extending at right angles therefrom, so as to force said beveled catch outwardly or rearwardly when said gate descends, and to engage with said catch when said gate is raised. Thus the same movement which slides backward the gate B also operates simultaneously through parts V, *t*, *t*′, T′, and s^2 to withdraw bolt R.

On reaching a certain point in its upward motion catch *t* is freed from bar or arm V by a fixed freeing-plate, W, which is rigidly attached to the upright part of crane G, and is twisted outward and downward, as shown, so as to come into contact with spring *t*′ when the latter is raised. Spring S then restores locking rod or bolt R to its previous position.

The cranes G G may be set into the ground, or they may be secured to the top of gate-posts, as shown. The locking and unlocking devices hereinbefore described may be arranged on either side of said gate. On approaching said gate the raising-cord L is pulled, and the gate B slides back, opening gateway A. After passing through the said gateway the lowering-cord L′ is pulled, and the gate is closed. Said gate may be operated with equal facility from either side. It will be found especially convenient for persons who are riding or driving, since it obviates the necessity of dismounting or getting out of the vehicle.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of gate B with vibrating guideway M, rollers O O, links Q, vibrating bar P, plunger-rods P′ P′, and hollow posts B^2 B^2, substantially as and for the purpose set forth.

2. The combination of rod R with cord s^2, slide T′, spring *t*′, catch *t*, bar V on vibrating track M, and gate B, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

BENJAMIN ROBERT BAKER.

Witnesses:
MASON WHEELER,
FRED. ALEXANDER.