(No Model.)

A. HALSTENBACH.

SELF ACTING GATE.

No. 333,409. Patented Dec. 29, 1885.

Fig. 1.

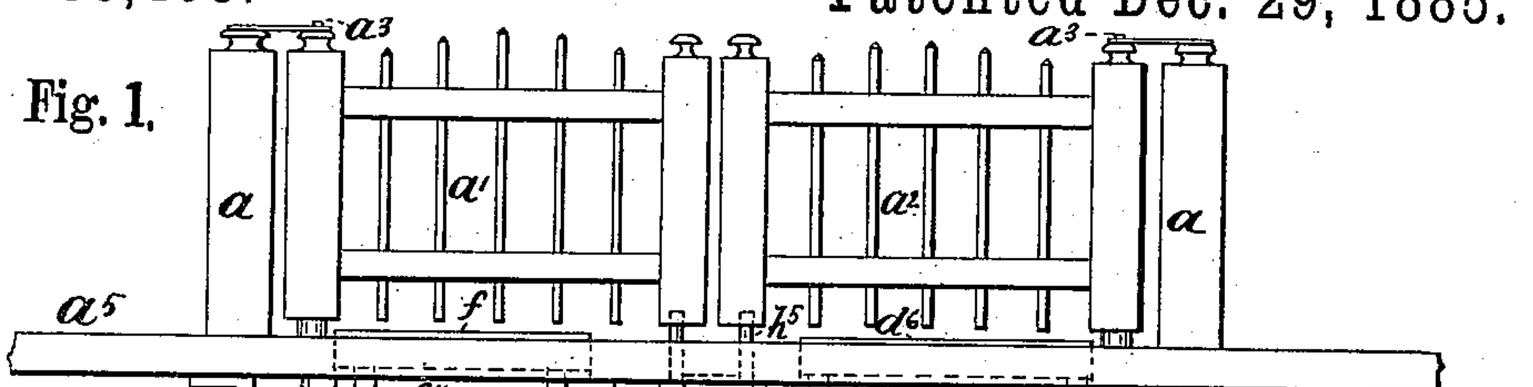


Fig. 2.

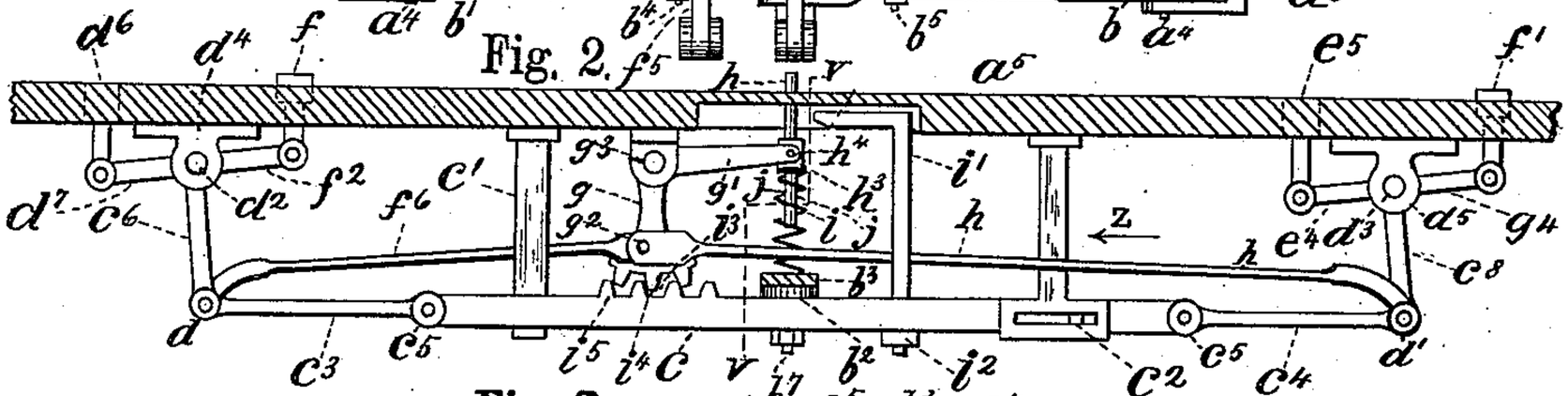


Fig. 3.

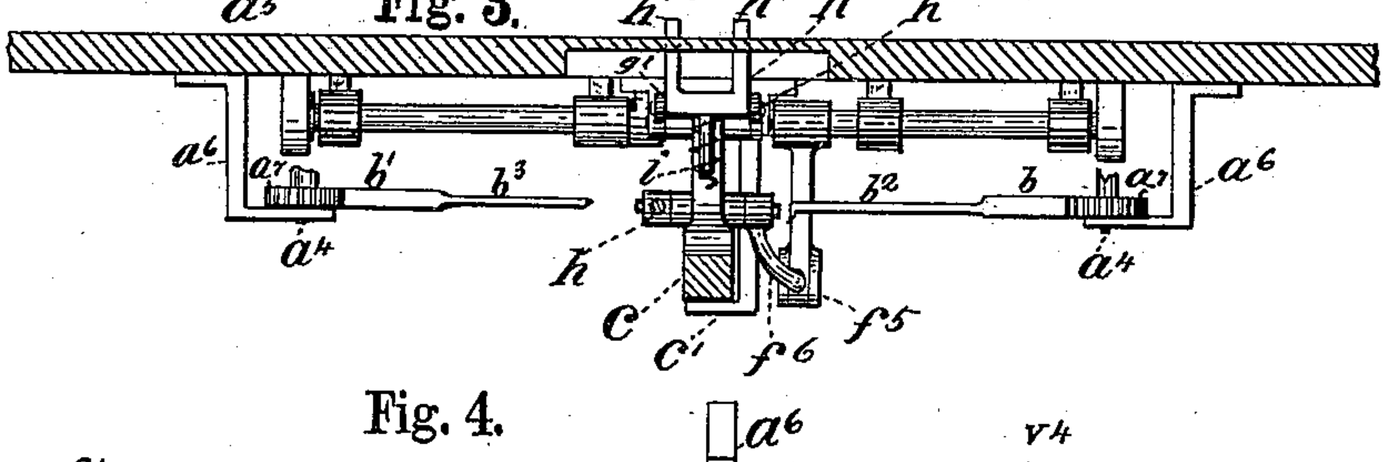


Fig. 4.

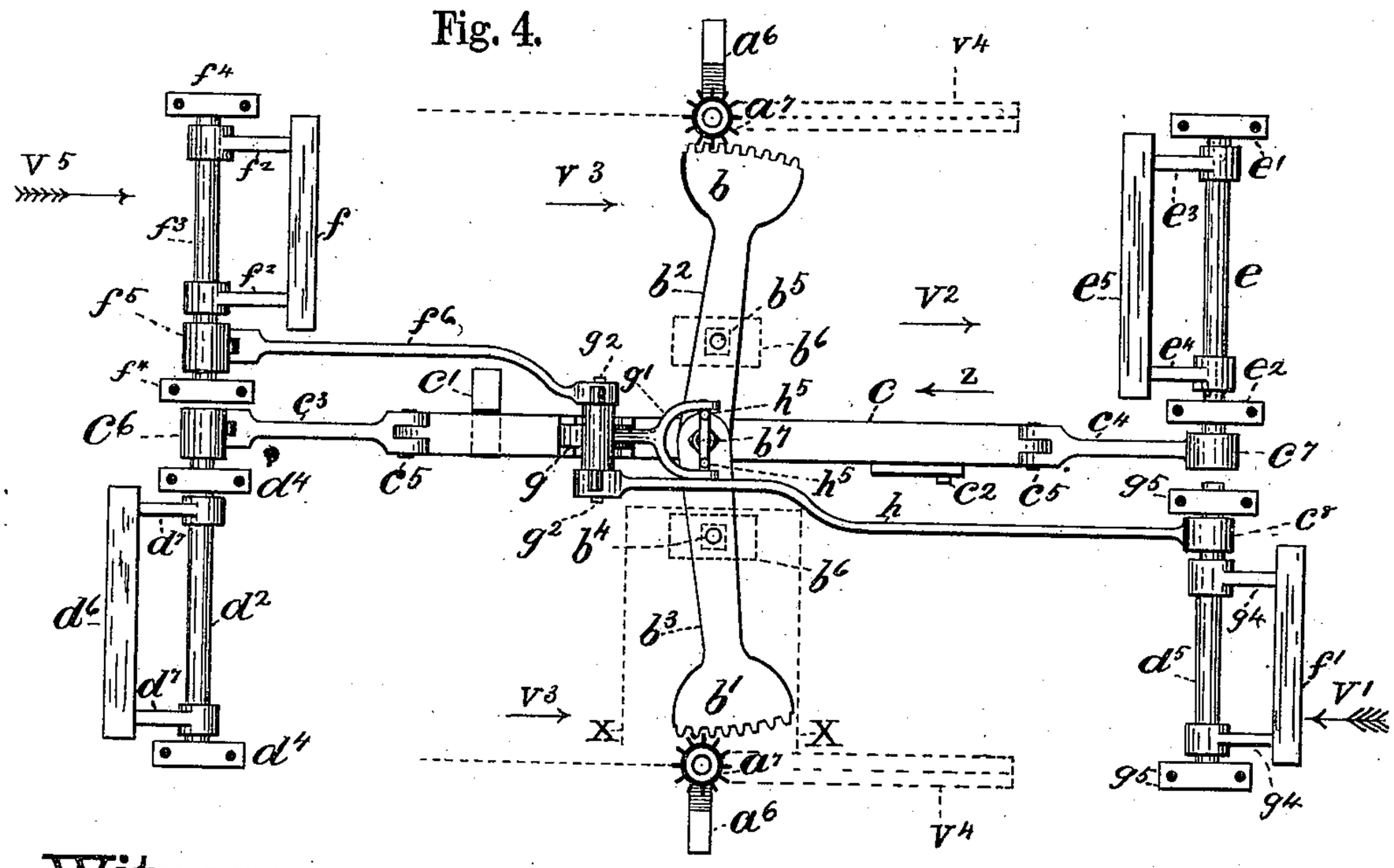


Fig. 5.

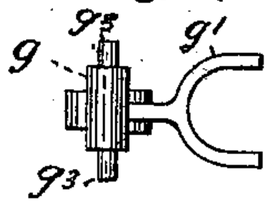
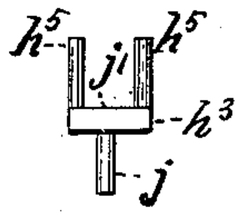


Fig. 6.



Witnesses.

Jennie M. Caldwell.

Arthur J. Sangster.

Inventor.

August Halstenbach,

By James Sangster

atty.

UNITED STATES PATENT OFFICE.

AUGUST HALSTENBACH, OF BUFFALO, NEW YORK.

SELF-ACTING GATE.

SPECIFICATION forming part of Letters Patent No. 333,409, dated December 29, 1885.

Application filed January 26, 1885. Serial No. 153,980. (No model.)

To all whom it may concern:

Be it known that I, AUGUST HALSTENBACH, a subject of the Emperor of Germany, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Self-Acting Gates, of which the following is a specification.

The object of my invention is to produce an automatically-acting gate operated by the weight of the vehicle or horses as they pass through it. The construction is such that when the horses and vehicle approach the gate and are sufficiently near, it will open automatically, and when the vehicle has passed through it, it will close as it leaves it, which operation will be repeated while moving either in or out of the inclosure, all of which will be fully and clearly hereinafter shown, described, and claimed by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the gate and a similar view of its operating mechanism. Fig. 2 is a vertical longitudinal section through the platform upon which the gate stands, cutting through also the arm b^3 in line $x\ x$, Fig. 4, so as to show more clearly the parts for locking the gates. Fig. 3 is a cross-section through the platform and operating mechanism in line $v\ v$, Fig. 2, certain portions being broken away so as to show the other parts more clearly. Fig. 4 is a plan view of the mechanism below the platform. Fig. 5 is a detached top view of the forked bar and sector-gear for lifting the lock-bolts, and Fig. 6 is a detached front view of a portion of the mechanism for locking the gates when closed.

The frame-posts a (see Fig. 1) of the gate are made in the usual way and firmly secured in place.

$a'\ a^2$ are the gates, secured by bearings or hinges a^3 at the top and by pivots a^4 at the bottom. (See Fig. 1.) They are arranged one for driving in and the other for driving out.

a^5 is the platform, below which the mechanism for operating the gate is suspended. The lower portions of the gate-posts a, having the pivots a^4, are secured in bearings in the supports a^6, and are each provided with a pinion, a^7, (see Figs. 1 and 3,) which gear into the sector-gears $b\ b'$. These sector-gears are provided with arms $b^2\ b^3$, and are pivoted by bolts $b^4\ b^5$ (see Fig. 1) to the supporting-pieces b^6. These bolts and supporting-pieces are shown in dotted lines in Fig. 4, and both arms are pivoted together by bolts b^7 to the longitudinally-movable bar or beam c. This beam c is supported and kept in place by the supports $c'\ c^2$, so that it may be moved longitudinally back and forth.

$c^3\ c^4$ are connecting-rods connected by joints c^5 to the beam and to the vertical arms $c^6\ c^7$ by joints in the usual way. (See Figs. 2 and 4.) The arm c^6 is rigidly secured to a shaft, d^2, which shaft is mounted in bearings d^4. To this shaft d^2 is secured the vertically-movable step d^6, secured thereto by arms d^7. The vertical arm c^7, (see Fig. 4,) at the opposite end of the beam c, is connected rigidly to the shaft e, which shaft is secured in bearings $e'\ e^2$. To this shaft is secured the vertically-movable step e^5 by arms $e^3\ e^4$.

The steps for operating the gate while the vehicle is going in an opposite direction from that for operating the steps (or treadles) $d^6\ e^5$ are designated by the letters $f\ f'$. The step f is secured by arms f^2 to the shaft f^3, which shaft is mounted in bearings f^4, secured to the platform. To the shaft f^3 is secured a downwardly-projecting arm, f^5, the top of which is shown in Fig. 4. It is the same in construction exactly as the arm c^6. To this arm f^5 is jointed in the usual way a connecting-rod, f^6, having its opposite end connected to the sector-gear g and forked bar g' by pivots g^2. (See Figs. 2 and 5.) This sector-gear and forked arm are mounted in bearings g^3, which are secured to the platform in any well-known way. The step f' is secured by arms g^4 to the shaft d^5, which shaft is mounted in bearings g^5, secured to the platform. A downwardly-projecting arm, c^8, is keyed or otherwise fastened to the shaft d^5. To the arm c^8 is jointed by a pin, d', the connecting-rod h, having its opposite end secured by a pin, g^2, to the sector-gear g. (See Figs. 2 and 4.) To one side of the sector-gear g is rigidly secured, or in one piece with it, a forked arm, g'. (See Figs. 2, 3, and 5.) The forked ends of this arm are pivoted to the locking-bar h^3 by pins h^4. The locking-bar is provided with two vertical bolts, h^5, for locking the gate when closed, the bolts being adapted to pass up into holes in the bottom of each gate-post when locking them, as shown by dotted lines, Fig. 1. The locking-bar is

provided with a spiral spring, *i*, which surrounds the downwardly-projecting portion *j*, for suddenly forcing the bolts upward into the gate-posts when released from the releasing-bar *i'*. This bar *i'* is secured to the beam *c* by a bolt and nut, i^2. It will be seen the sector-gear *g* is provided with teeth i^4, that gear into the teeth i^5 on the beam *c*, and that a certain amount of lost motion (i^3, see Fig. 2) is left between said teeth, so as to allow the locking mechanism to act before the gate commences to open, as will be hereinafter shown.

The operation of the invention is as follows: When a team is advancing in the direction of the arrow *v'*, Fig. 4, it will depress the step *f'*, and through the downwardly-projecting arm c^8, connecting-rod *h*, and sector-gear *g* cause the beam *c* to move in the direction of the arrow *z*. This movement of the beam *c* will cause the arms b^2 b^3 and sector-gears *b b'* to move in the direction of the arrows v^3, which operation will cause the pinion a^7 to turn and open the gates into the position shown by the dotted lines v^4 in Fig. 4. As the team advances out of the gate, it will pass over and depress the step d^6, (which has been raised by this movement of the beam *c*,) and by means of the downwardly-projecting arm c^6 and connecting-rod c^2 will reverse the longitudinal movement of the said beam *c* and its connections, causing it to move in the direction of the arrow v^2, thereby closing the gate. When a team advances in the direction of the arrow v^5, it will depress the step *f*, and by means of the downwardly-projecting arm f^5, connecting-rod f^6, and sector-gear *g* will cause the beam *c* to again move in the direction of the arrow *z*, thereby opening the gate, as before mentioned, and as it passes through the gate it will pass over and depress the step e^5 and cause the beam *c* to move again in the direction of the arrow v^2, and thereby close the gate.

Every time the gate is closed it is locked by the bolts h^5, as follows: The releasing-bar *i'* (see Fig. 2) is rigidly fastened to the longitudinally-movable bar *c* and moves back and forth with it, and it will be seen that when the gate closes the beam moves in the direction of the arrow v^2, and consequently the releasing-bar moves in the same direction. Now, as the gate opens the beam *c* carries the releasing-bar *i'* in the direction of the arrow *z*, (see Fig. 2,) and as the under part, j^2, of the releasing-bar inclines or is beveled off, as shown in said figure, it passes over the portion *j'* (shown in Fig. 6) and forces the locking bars and bolts h^5 downward and unlocks the gate.

It will be noticed that the small amount of lost motion between the teeth on the sector-gear *g* and the teeth on the bar *c* allows the bar *c* and releasing-bar to move, and thus unlock the gates before the mechanism for opening it begins to move, and it will be further seen that as the gates close the releasing-bar moves out and allows the spiral spring *i* to act and force the bolts h^5 up and lock them.

I claim as my invention—

1. An automatically opening and closing gate consisting of the gates *a' a²*, pivoted at the top to supporting-posts, and having their lower portions below the platform pivoted to supports and provided with pinions, and two sector-gears or pivoted arms gearing with the pinions, in combination with a longitudinally-movable bar connected by supporting-brackets to the under side of the platform, and by connecting-rods and downwardly-projecting arms to steps adapted to be operated by a vehicle approaching and leaving, whereby both gates are opened and closed simultaneously, substantially as described.

2. The combination, in a gate, of mechanism, substantially as above specified, for opening and closing the gates, the locking and unlocking mechanism consisting of the forked bar *g'*, connected by pivoted sector-gear to the longitudinally-movable bar *c*, and the vertically-movable bolts h^5, a spring, *i*, and a releasing-bar connected to the bar *c*, as and for the purposes described.

AUGUST HALSTENBACH.

Witnesses:

J. M. CALDWELL,

JAMES SANGSTER.