

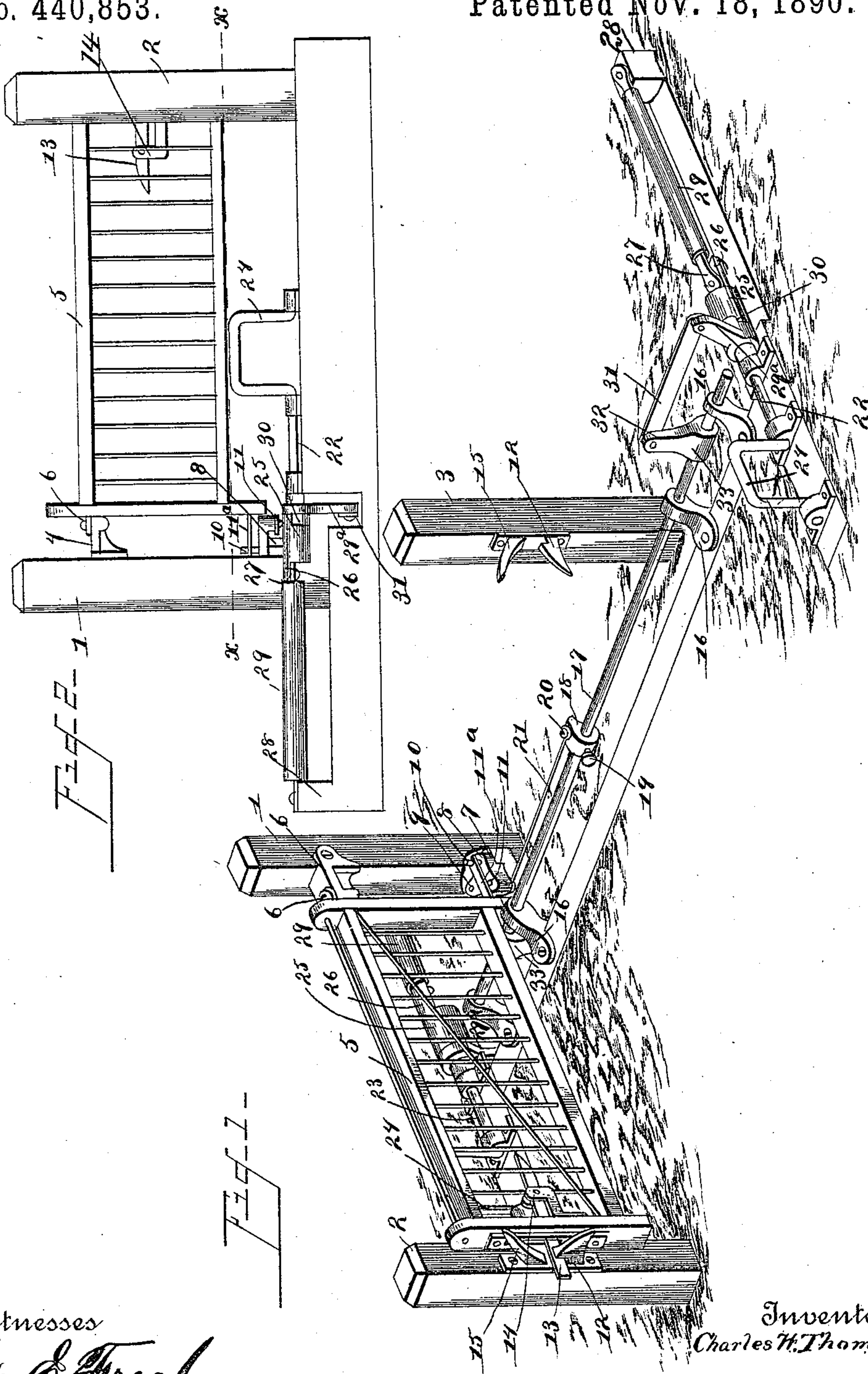
(No Model.)

2 Sheets—Sheet 1.

C. W. THOMPSON.
AUTOMATIC WAGON GATE.

No. 440,853.

Patented Nov. 18, 1890.



Witnesses

Geo. C. French.

Wm. Baggers.

Inventor

Charles W. Thompson

By *his* Attorneys

C. A. Snow & Co.

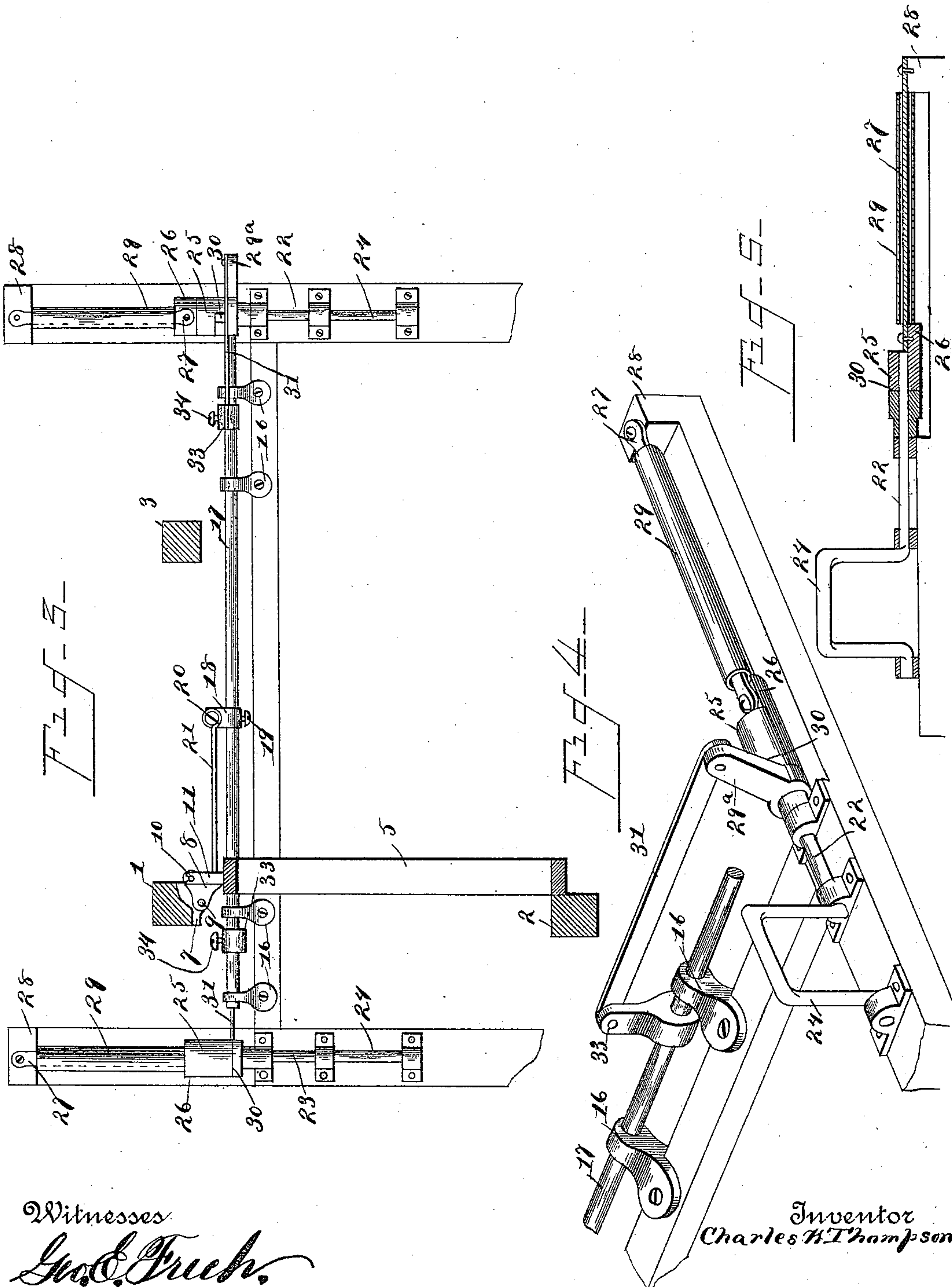
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Witnesses

Geo. E. Fitch.

Wm. Baggett.

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UNITED STATES PATENT OFFICE.

CHARLES WILLIAM THOMPSON, OF TOMALES, CALIFORNIA.

AUTOMATIC WAGON-GATE.

SPECIFICATION forming part of Letters Patent No. 440,853, dated November 18, 1890.

Application filed December 28, 1889. Serial No. 335,246. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WILLIAM THOMPSON, a citizen of the United States, residing at Tomales, in the county of Marin and State of California, have invented a new and useful Automatic Wagon-Gate, of which the following is a specification.

This invention relates to automatic wagon-gates; and it has for its object to construct a gate of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency.

With these ends in view the invention consists in the improved construction, arrangement, and combinations of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a gate embodying my improvements. Fig. 2 is a side view showing the gate in its closed position. Fig. 3 is a horizontal sectional view taken on the line x of Fig. 2. Fig. 4 is a perspective detail view, on a larger scale, of one of the rock-shafts with its vibrating arm and operating-clutch, showing also one end of the longitudinally-sliding operating-rod. Fig. 5 is a sectional view taken vertically and longitudinally through one of the rock-shafts.

Like numerals of reference indicate like parts in all the figures.

1 designates the hinge-post of a gate, and 2 3 are the latch-posts. The hinge-post is provided at its upper end with the angle bar or bracket 4, to which the gate 5 is directly connected by means of a hinge-bolt 6. The hinge-post is provided near its lower end with a bracket 7.

8 designates a triangular cam-plate, one of the corners of which is hinged to the bracket 7 by means of a bolt 9. The second corner of said cam-plate is provided with an upwardly-extending stud 10, serving as a pivot for an arm or bracket 11^a, which extends from the lower end of the gate. The third corner of the cam-plate 8 is provided with a downwardly-extending stud or bolt 11, the use of which will presently be described.

The latch-post 2, which holds the gate in its closed position, is provided with a catch 12, which is beveled at its outer end, so that

it will readily engage the latch 13, which is pivoted to a bracket 14 upon the gate. A guide 15 extends upwardly and outwardly above the catch 12. The latter and the inclined guide 15 are formed integrally in a single casting. A similar casting comprising catch 12 and guide 15 is secured to the post 3, which holds the gate in an open position.

Suitable bearings are provided, as shown at 16 16, for a longitudinally-sliding rod 17, which is arranged to slide about parallel to a line drawn through the posts 1 and 3. The sliding rod 17 is provided with a sleeve or collar 18, secured thereon adjustably by means of a set-screw 19, and provided with an upwardly-extending bolt 20, which is connected by the pivoted rod 21 with the stud 11, which extends downwardly from one corner of the triangular cam-plate 8.

It will be seen from the foregoing description and by reference to the drawings that when, the gate being in a closed position, the sliding rod 17 is moved in the direction of the arrow the connecting-rod 21 serves to operate the cam-plate 8 in such a manner as to throw the corner of said cam-plate with which the bracket 11^a of the gate is connected in an outward direction, thereby tilting the gate, throwing the latch out of engagement with the catch upon the post 2 and causing the gate to swing open until its pivot-latch engages the catch upon the post 3. When, the gate being open, the sliding rod 17 is moved in an opposite direction, the operation is reversed and the gate is caused to swing shut.

Parallel to the gate when the latter is in a closed position, and mounted in suitable bearings—usually upon sills, which may be embedded in the ground at suitable distances from the gate—are the rock-shafts 22 and 23, each of which is provided with an upwardly-extending bail 24, which is so located as to be readily engaged by the wheels of vehicles approaching the gate. The outer end of each of said rock-shafts is provided with a collar 25, having a lug or flange 26, to which is connected one end of a leaf-spring 27, the opposite end of which is securely attached to a fixed point, which may consist of a bracket 28, mounted upon the end of the sill having the bearings for the rock-shaft. The springs

27 are to be incased in metallic pipes—such as ordinary gas-pipes—as shown at 29, to protect them from inclement weather or from meddling by stock or injury from other causes.

5 The action of the springs 27 serves to hold the rock-shafts, with the bails 24 extending normally in an upward direction, to a vertical position, as shown. When the bails are depressed by the wheels of passing vehicles, 10 the springs will be twisted one-quarter turn and will, as soon as the bails are released from pressure, serve to restore the said bails and the rock-shafts to their normal positions.

Each of the rock-shafts is provided with a 15 pivoted or vibratory arm 29^a, connected with the adjacent collar 25 by a clutch 30, which shall admit of the said arm vibrating upon the rock-shaft on which it is mounted to the extent of a one-quarter turn. The said arms, 20 which upon the two rock-shafts 23 and 22 extend, respectively, in a downward and upward direction, are connected by means of pivoted straps or rods 31 with arms 32, extending radially from collars 33, which are mounted adjustably upon the longitudinally-sliding rod 25 17 by means of set-screws 34.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings hereto 30 annexed. When, the gate being closed, a vehicle approaches from either side and the wheels of said vehicle come into contact with the bail 24 of either rock-shaft, said rock-shaft will be vibrated in its bearings and the 35 sliding rod will be moved in the direction of the arrow, thus causing the gate to swing open. When the wagon has passed through the gate and the wheels come in contact with a bail of the rock-shaft on the opposite side, 40 the sliding rod 17 is caused to move in the opposite direction and the gate is caused to swing shut. The clutch-connection between the arms 29 and the rock-shafts upon which they are mounted enables the said rock-shafts 45 to be vibrated in a reverse direction without affecting the position of the gate.

My improved gate is exceedingly simple in construction, certain and absolutely automatic in its operation, and is not liable to get 50 out of order by accidental disarrangement of any of its parts. The springs 27, connected with the rock-bars in the manner described, serve to hold the said rock-shafts at all times in position for operation.

55 I am aware that automatic wagon-gates have been constructed in which weights have been employed to restore the wheel-irons to position after the passage of a wagon, such weights being usually connected with the 60 rock-shafts having the wheel-irons by means of ropes passing over suitable guide-pulleys.

I am also aware that in mechanics a spring is considered the equivalent of a weight when the function of exerting a certain power is 65 alone considered.

I am not aware, however, that a wagon-

gate has heretofore been constructed in which flat springs alone have been used for restoring the wheel-irons to normal position, such springs being attached direct to the ends of 70 the rock-shafts having the wheel-irons. By this construction the utmost simplicity compatible with operativeness is insured. All pulleys and connecting-ropes are dispensed with. Moisture, heat, and cold will not in- 75 terfere with the operation, and cheapness and simplicity are attained.

Having thus described my invention, what I claim is—

1. In an automatic gate of the class herein 80 described, the rock-shafts having upwardly-extending bails, in combination with the leaf-springs connecting the outer ends of said rock-shafts with some fixed point of attachment, whereby the said rock-shafts shall be 85 normally held in operative position and be restored to operative position when the bails of said rock-shafts have been depressed, substantially as and for the purpose set forth.

2. The rock-shafts having the upwardly- 90 extending bails, in combination with the clutch-collars mounted upon the outer ends of said rock-shafts and having outwardly-extending lugs or brackets, and the leaf-springs connecting said brackets with fixed 95 points of attachment, substantially as set forth.

3. The combination of the rock-shafts having upwardly-extending bails, the clutch-collars secured at the outer ends of said rock- 100 shafts, the springs connecting said clutch-collars with fixed points of attachment, and the vibratory arms mounted upon said rock-shafts adjacent to said clutch-collars and having their vibratory movement limited by 105 the latter, substantially as and for the purpose set forth.

4. The combination of the rock-shafts having upwardly-extending bails, the springs connecting the outer ends of said rock-shafts 110 with fixed points of attachment, the vibratory arms mounted upon the said rock-shafts and extending, respectively, in an upward and downward direction from the same, the longitudinally-sliding operating-rod having 115 the upwardly and downwardly extending longitudinally-adjustable arms, and the rods connecting said arms with the vibratory arms upon the rock-shafts, substantially as and for the purpose set forth. 120

5. The combination of the gate hung substantially as described, and provided at its lower corner with an arm or bracket connected pivotally with one corner of a hinged 125 triangular cam-plate, a longitudinally-sliding operating-rod, a pivoted rod connecting the latter with a free corner of a triangular cam-plate, the rock-shafts having upwardly-extending bails, the leaf-springs connecting the outer ends of said rock-shafts with fixed 130 points of attachment, the vibratory arms mounted upon the rock-shafts and extending

in opposite directions from the same, and piv-
oted rods connecting said arms with arms
extending radially from collars upon the lon-
gitudinally-sliding operating-rod and the
5 latch-posts, all constructed and operated sub-
stantially as described.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
presence of two witnesses.

CHARLES WILLIAM THOMPSON.

Witnesses:

DAVID THRASHER,

THOS. J. ABLES.