

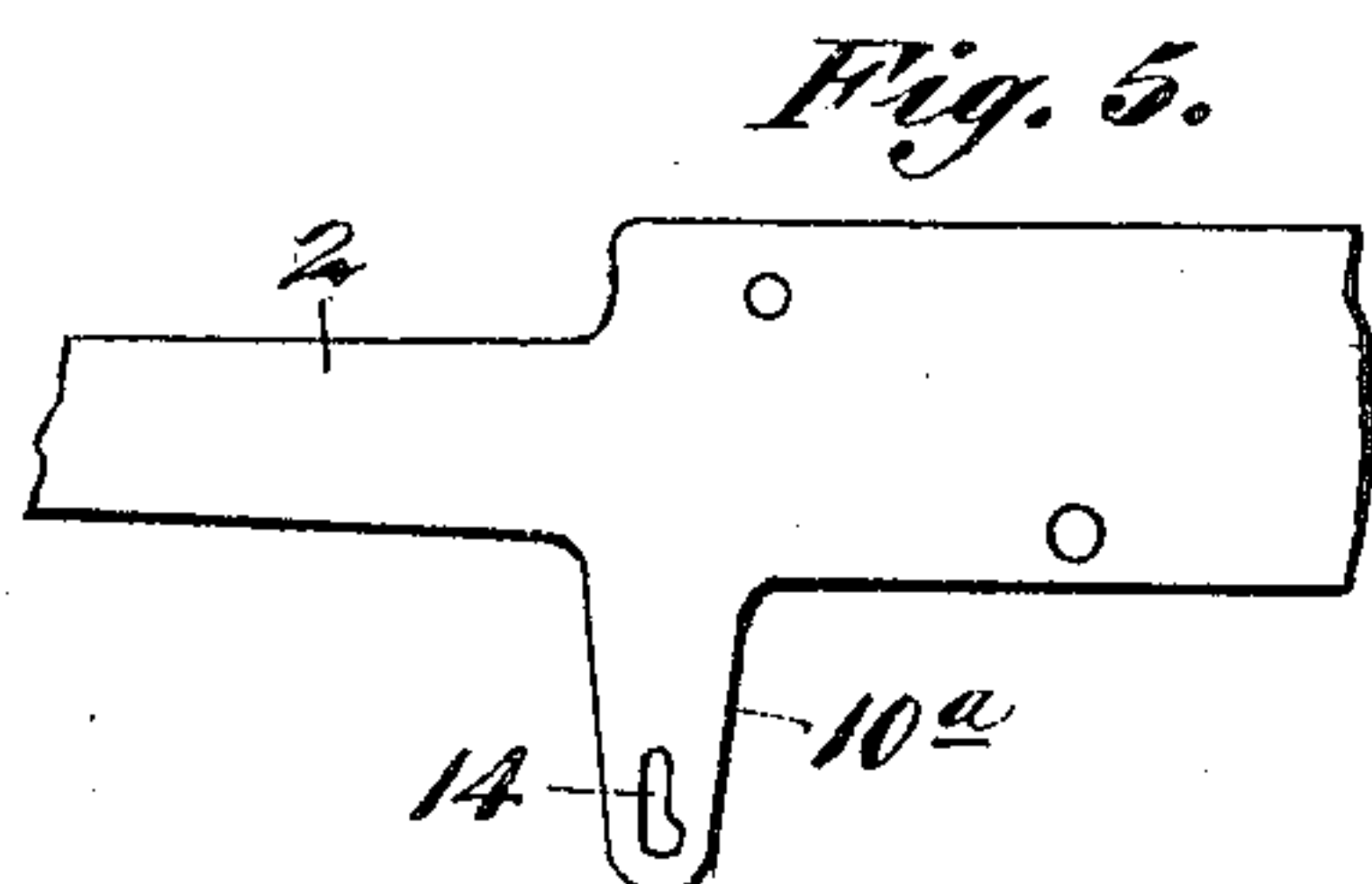
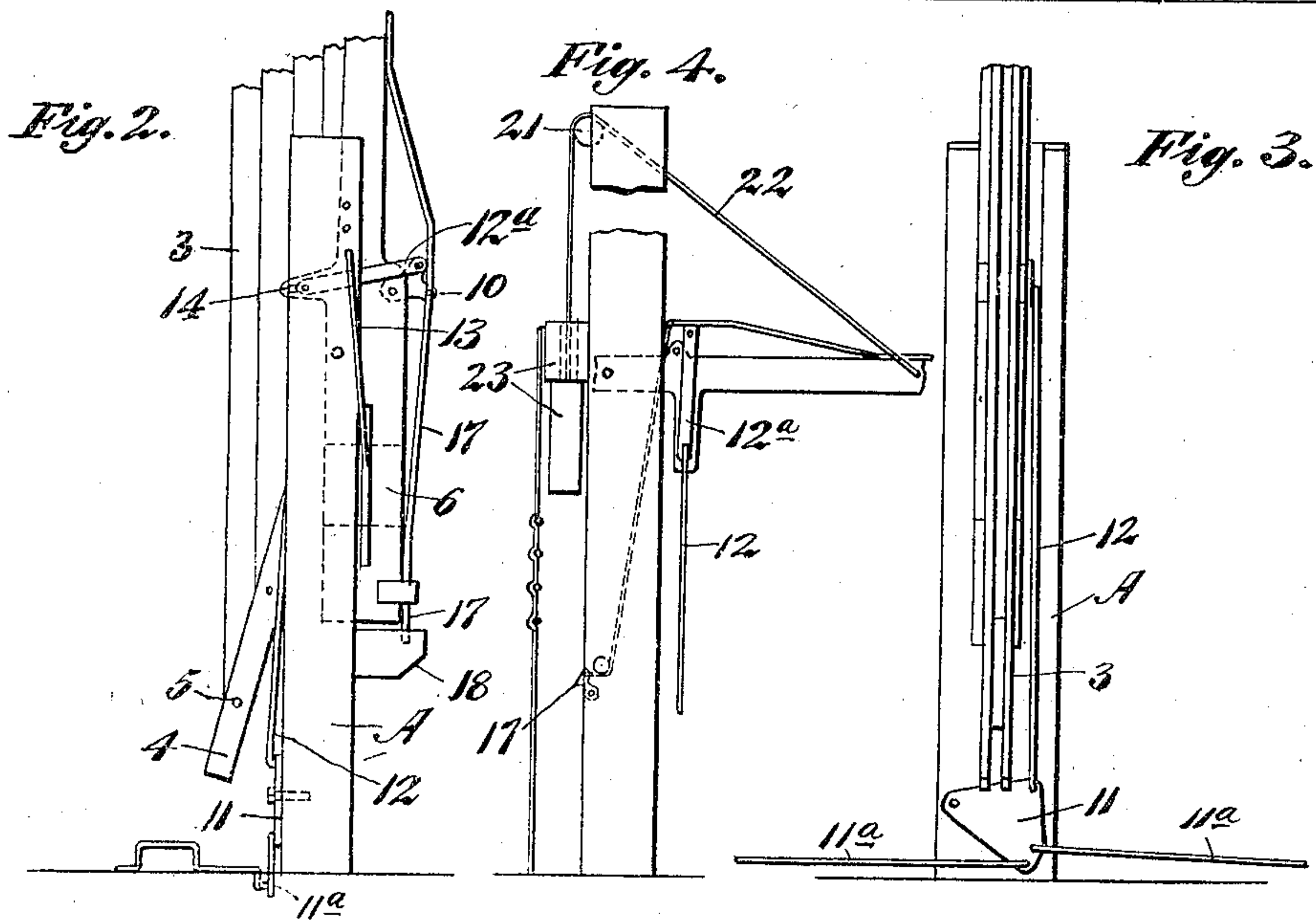
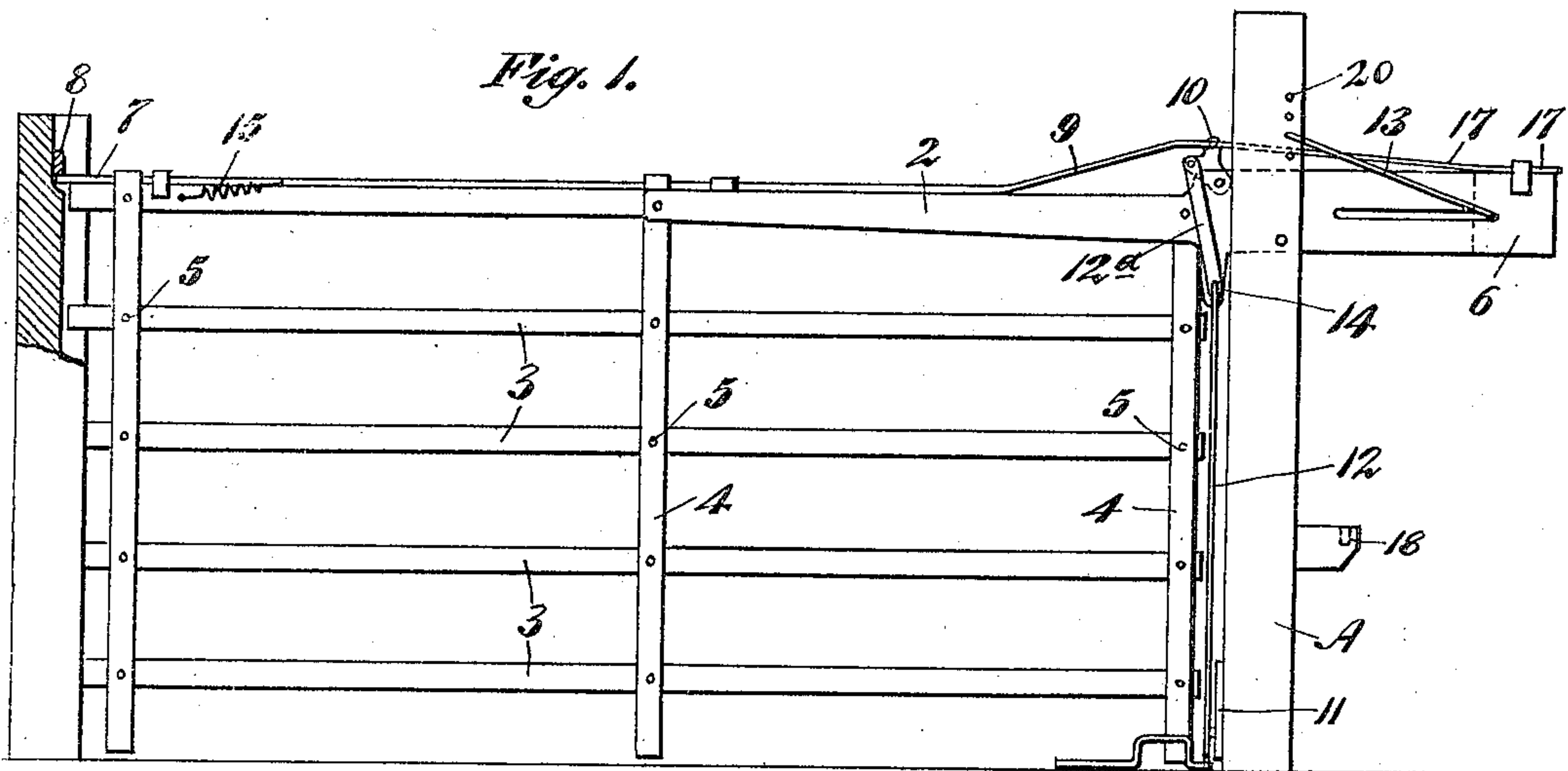
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PATENTED JUNE 5, 1906.

E. M. HOAGLAND.

GATE.

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UNITED STATES PATENT OFFICE.

ELLERY M. HOAGLAND, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF
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GATE.

No. 822,368.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ELLERY M. HOAGLAND, a citizen of the United States, residing at the city and county of San Francisco and State of California, have invented new and useful Improvements in Gates, of which the following is a specification.

My invention relates to improvements in gates; and it consists in a novel combination and arrangement of parts composing the gate whereby the latter is so counterbalanced as to move easily at all points between full opening and closing and in means whereby the gate may be unlatched by the preliminary portion of the opening movement.

My invention comprises details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a side view of my gate closed. Fig. 2 is a side view of same open. Fig. 3 is an end view of same open. Fig. 4 is a modified form. Fig. 5 is a view of upper bar, partly broken away.

My invention is especially applicable to gates hinged at one end to a permanent post and adapted to be raised about the hinge-point, while the bars forming the gate are foldable against each other, so that the gate is reduced to the smallest possible thickness when open and will automatically extend itself to fill the gate-opening when closed.

A is the post, which is preferably slotted or made double, and the top rail 2 of the gate extends through this post at the height at which this rail is to stand when the gate is closed.

The gate may either be composed of parallel rails 3, loosely connected with the upper rail by vertical bars 4, to which the horizontal rails are loosely pivoted, or there may be a bottom rail connected by vertical bars set near enough together to form the desired gate or obstruction. These vertical bars 4 are loosely pivoted in the top and bottom rail, so that when the upper bar is turned about its pivot-pin to raise the upper rail into an approximately vertical position the vertical bars will turn so as to lie close together and parallel with each other, while the bottom rail in the same manner closes in toward the top rail, the whole movement be-

ing similar to the opening and closing of a parallel ruler, and this effect is produced in either construction.

The top rail of the gate is extended beyond the pivot-point in the supporting-post and may carry a counterweight, as at 6. I have here shown mechanism connecting with this weight so that it is automatically slidable upon the rear extension of the top, so that at all points between opening and closing of the gate it will be substantially counterbalanced.

In order to operate the gate, I may use any of the well-known forms—either cranks fulcrumed upon the ground so that the carriage-wheels may pass over them and connections between these cranks and the gate-actuating mechanism or levers fulcrumed either near the ground or overhead and projecting so as to be reached by persons approaching the gate from either side.

The gate may be latched or secured when closed by a longitudinally-slidable latch, as at 7. This latch may be a short spring-pressed bar adapted to engage with a catch or notch 8 upon the outer post, against which the gate closes, and having a light wire extending along the top bar of the gate to the pivot-post, or the latch may comprise a rod in like manner extending along the top of the gate. A short latch and wire or cord by which the pull may be exerted are very suitable for the purpose.

The wire or cord 9 has its end contiguous to the pivot-post connected to a bell-crank or equivalent lever 10, which is fulcrumed at its angle, and the other end of the lever is connected with the lever mechanism 11, by which the gate is actuated.

The pull-rods 11^a from the actuating-levers connect with one arm of the angular lever 11. Another angle of said lever is pivoted to the gate-post, and a third angle is connected by a rod 12 with a lever-arm 10^a, which projects from the top bar of the gate and provides leverage to start the gate in its opening and closing. A link 12^a connects the lever 10^a with the lever 10, and by means of a slot 14 in lever 10^a the bell-crank 10 will be first moved to disengage the latches before power is applied to lever 10^a to open or close the gate.

Rods 13 connect with the gate-post A above

the point at which the top rail is pivoted to the post. The ends of these rods are also connected with the sliding weight 6.

It will be manifest that when the gate is closed and in a horizontal position the angular direction of the rods 13 will be such as to push the weight outward and away from the post, thus increasing its counterbalancing effect upon the other end of the gate, and when the gate is raised, so as to be opened, as the extension of the top rail behind the post moves downward the pull upon the weight through the rods 13 will draw the weight nearer to the post and reduce its counterbalance-weight upon the gate. Thus by these or equivalent connections the gate will always be substantially counterbalanced in any position from fully open to fully closed.

The latch may preferably be subjected to a light spring, as at 15, which will cause it to engage the catch upon the outer post when the gate is closed, and the movement of the operating-lever which serves to close the gate will release the tension or pull upon the latch, so that it will be in readiness to engage the catch on the post when the gate is closed.

In order to insure its remaining open until it is desired to have it closed, a latch 17 is slidably carried upon the rear extension of the gate, so that when the gate has been turned up in its open position this latch will engage a catch or stop 18. This latch is connected by a wire or cord 19 with the bell-crank lever 10, and when by the movement of the lever 11 the closing of the gate is commenced this latch is first withdrawn from its engaging catch, while the same movement places the latch 7 in position to engage with its catch when the gate is again closed.

The counterbalance-weight may be adjusted to move more or less by increasing or decreasing the angle of the rod 13. This is done by notches or perforations 20 upon the vertical post with which the end of the rod may be changed to connect.

By journaling a pulley 21 on the post A above the gate and connecting a cord 22 with the gate and with a weight 23, suspended on the opposite side of the pulley, the gate may be partially counterbalanced, and the weight may be varied to correspond with changes of position of the gate by making the weight in sections. The suspending-cord may pass through each of the upper sections and be fixed to the lower one. The weights above the lower one increase in diameter or are otherwise constructed, so that as they move in guides when the gate first commences to open all the weights act to counterbalance it and as the gate approaches the perpendicular one or more of the weights will be successively arrested and supported. The cord sliding through the arrested weight and connected with the lowermost weight will thus

provide for a constantly-decreasing weight as the gate approaches its open position, and when the gate closes additional weights will be picked up until the gate is fully counterbalanced.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a folding panel-gate having its top rail pivoted, an extension of said top rail, a weight slidable upon said extension and connections between the weight and the pivot-post whereby the weight is moved away from the post when the gate is closed, and is drawn toward the post when the gate is opened.

2. The combination of a folding panel-gate, the top bar of which is pivoted in a post and extended beyond said post, guides upon said extension, a weight slidable in the guides, arms connecting said weight with a point above the pivot of the bar, operating-levers extending to either side of the gate, and connections between said levers and the gate.

3. The combination in a folding panel-gate having a top bar pivoted to a fixed post and an extension rearwardly of said bar, of guides upon said extension, a weight slidable in said guides, a connection between said weight and a fixed point above the pivot-point of the gate, a tiltable lever pivoted upon the gate, a latch adapted to engage with the outer post, connections between said latch and the tiltable lever, operating-levers extending away from the gate and connections between said levers and the latch-actuating lever.

4. In a vertically tiltable and foldable panel-gate, a latch horizontally movable upon the top rail, a catch in the outer post with which the latch is engaged when the gate is closed, a fulcrumed lever with which the latch is connected, levers and connections by which the gate is moved about its fulcrum, a loose connection between said gate levers and the latch-lever whereby the latter is moved to disengage the latch previous to the opening movement of the gate, an extension of the top rail and a shiftable weight upon the extension actuated by the opening and closing of the gate.

5. In a vertically-tiltable panel-gate having a pivoted top rail with an extension beyond its pivotal point, a weight disposed at the rear of the pivotal point of the top rail and means connected to the weight and by which the position of said weight is varied to correspond with the variations of the weight of the gate, a horizontally-movable latch by which the gate is held in a closed position, a second latch on the extension of the top rail and by which the gate is retained in an open position, a bell-crank lever mounted upon the gate, connections between the lever and the two latches, and other connections between

the lever and the gate opening and closing means whereby one of the latches is moved to engage and the other to disengage.

5 6. A vertically-tiltable gate having in combination a gate-post, a top rail pivoted thereto with an extension in rear of the pivotal point, a horizontally-movable latch by which the gate is held in a closed position, a
10 second latch by which the gate is held open, a bell-crank lever between the two latches and connections between the lever and the two latches, a movable connection between the gate opening and closing means and said lever whereby the lever is moved to actuate
15 the latches before movement is communicated to the gate, and a variable counterbalance movably mounted at the rear of the pivotal point of the top rail and means connecting this counterbalance with the post
20 whereby the counterbalance approaches, or recedes from, the post as the gate is vertically moved.

7. The combination in a vertically-tiltable gate, of a post, a gate having the top rail pivoted to the post and extending rear- 25 wardly of the post, means connected with the gate to open and close the same, variable counterbalances for the gate, said counterbalances comprising vertically-movable flexibly-connected weights with a rope connecting said weights with the gate, and a direction- 30 pulley for the rope, and a weight slidable on the rear extension of the top rail, and connected with the post, and acting in unison with the suspended weights when the gate is 35 opened or closed.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELLERY M. HOAGLAND.

Witnesses:

S. H. NOURSE,
EUGENE W. LEVY.