(No Model.) 2 Sheets—Sheet 1.

W. S. HARTLEY.

GATE OPERATING DEVICE.

No. 494,860. Patented Apr. 4, 1893.

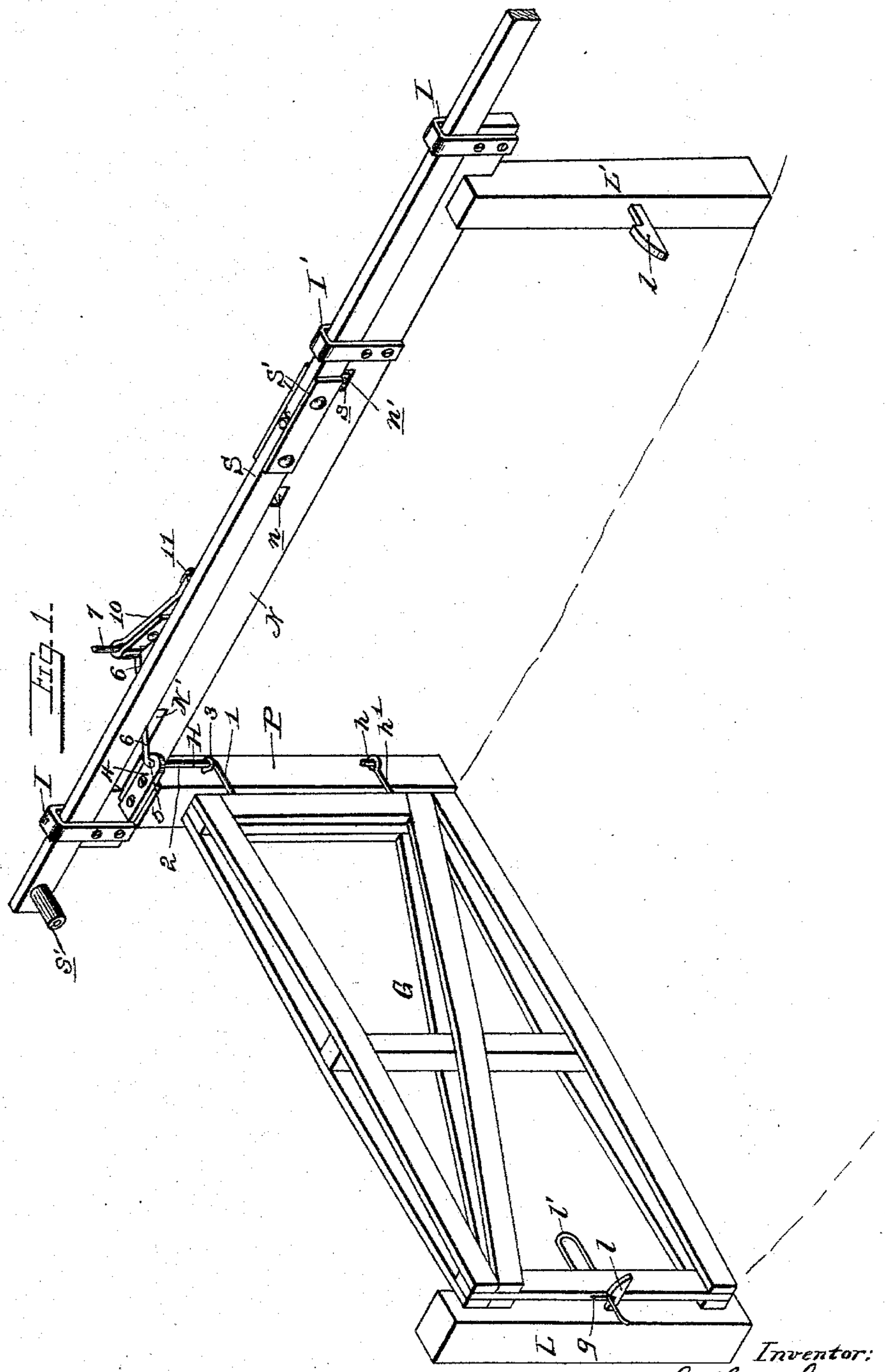

FIG. 1.

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(No Model.) 2 Sheets—Sheet 2.

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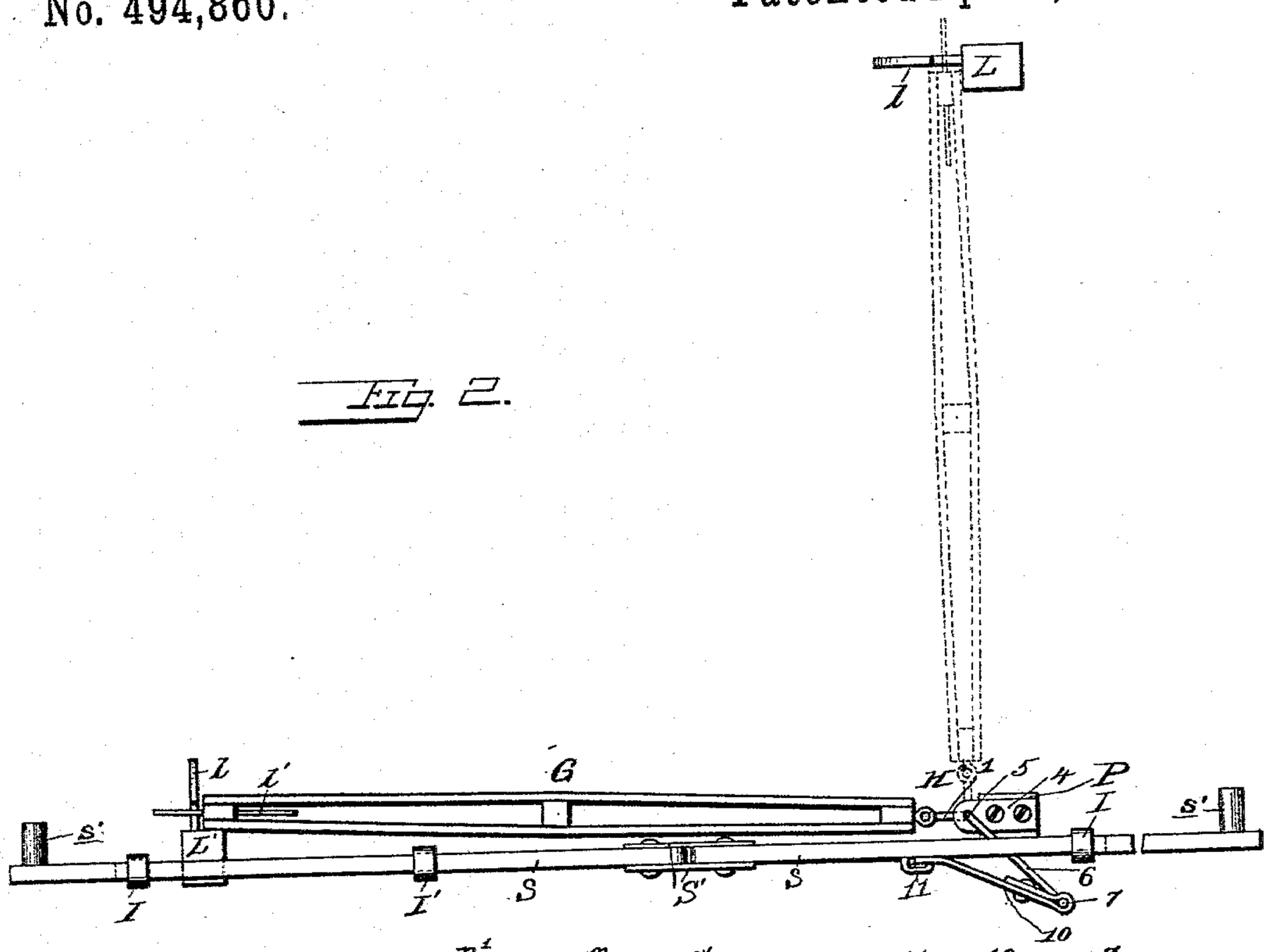
Fig. 2.



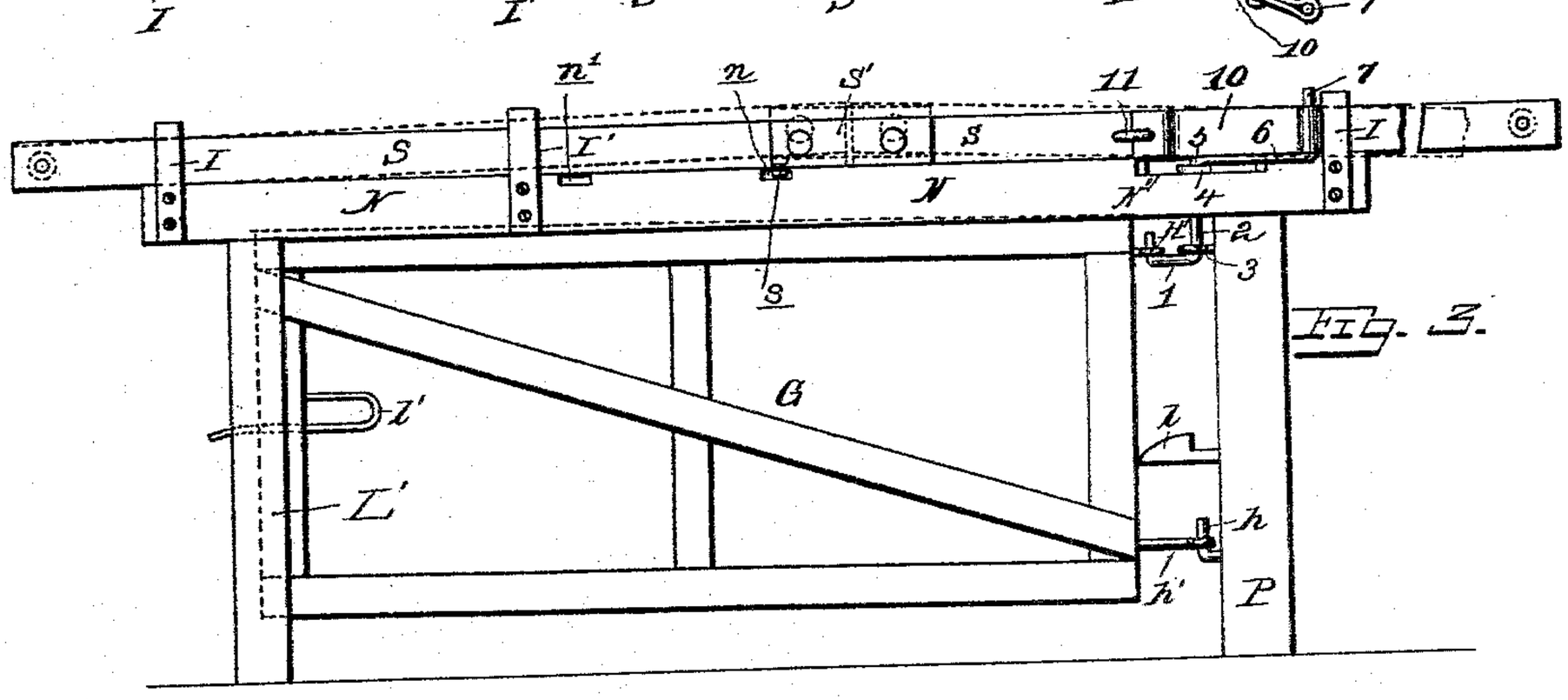
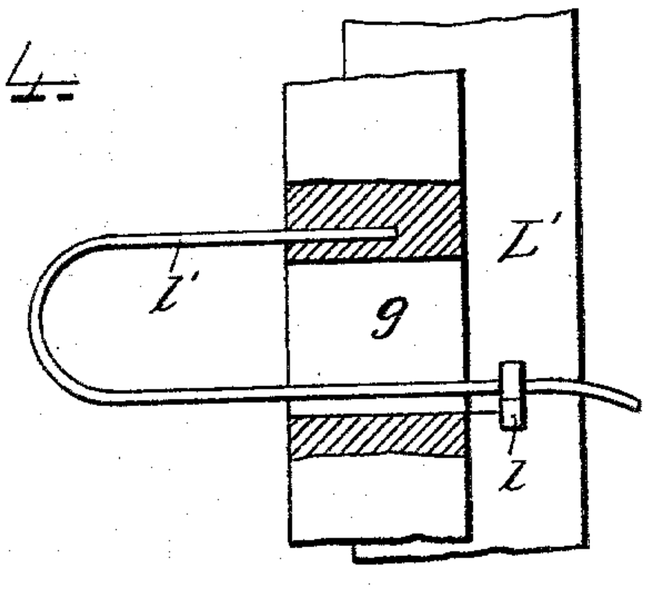


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER S. HARTLEY, OF LITTLE YORK, ILLINOIS.

GATE-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 494,860, dated April 4, 1893.

Application filed January 31, 1893. Serial No. 460,405. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. HARTLEY, a citizen of the United States, and a resident of Little York, Warren county, State of Illinois, have invented certain new and useful Improvements in Gate-Operating Devices; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to gates, and more especially to swinging gates adapted to be opened and closed by hand; and the object of the same is to produce improved means for causing the movements of the gate from a distance by devices which tilt the gate in the direction in which it is to move and also raise its free end so as to disengage its latch from the latch-post.

To this end the invention consists in the construction and arrangement of devices for effecting this object; all as hereinafter more fully described, and as illustrated in the drawings, wherein—

Figure 1 is a perspective view of this gate and a portion of a roadway, showing the gate as closed across the road. Fig. 2 is a plan view of the gate in its open position. Fig. 3 is an elevation from the rear of Fig. 2 showing the notched bar, the sliding rod locked in one position and in dotted lines as about to be moved from said position, the link, and the swinging hinge. Fig. 4 is an enlarged sectional detail showing a latch which may be employed with this gate.

In the said drawings the letter P designates a post at one side of the road to which the gate G is hinged, and L, L′ are the latch posts standing respectively one across the road from the hinge post, the other on the same side of the road with the hinge post and remote therefrom—the position of these posts being such that the latch on the free end of the gate will automatically engage the catches *l* on the latch posts as will be understood. The latch on the gate which I preferably use is best shown in Fig. 4 and consists of a spring *l′* secured at one end to the outer bar of the gate, extending thence inwardly, curving in a simple bend as shown or in a coil or circle if desired, and then passing outwardly through a vertical slot *g* in the outer bar of the gate so that the free end of the spring rod will protrude to a sufficient extent to pass over the beveled faces of the catches *l* and be engaged automatically behind their shoulders, as will be clear. However, any other suitable form of latch may be used if desired, without departing from the essential principles of my invention; though I consider this latch preferable because it operates automatically when the gate is swung by the devices described below, or it can be operated by hand as by a person who desires to open the gate only partially for the purpose of passing through. In this latter case it will be obvious that, when he has opened the gate and released it, it will automatically swing back to its closed position and latch itself there because when it was opened it had to be inclined in a manner which will be clear farther on.

The letter N designates a horizontal bar secured near its ends to the posts P and L′ and standing alongside the roadway slightly above the level of the top of the gate, and the upper edge of this bar is provided with a long notch N′ and two small notches *n* and *n′* at about the points shown. S is a sliding rod made in two parts flexibly connected at their meeting ends as by a link S′, their bodies sliding on the upper edge of the bar N through guides I mounted thereon near its ends and also through one guide I′ adjacent the notch *n′*, and at the outer ends of these parts are handles *s′* of any suitable construction. One part (preferably that which slides through the intermediate guide I′) is provided near the link S′ with a depending pin or stud *s* adapted to fall into the notches *n* and *n′* at the ends of the movement of the sliding rod, and at this time to permit said rod to lie flat on the upper edge of the bar N while at other times the stud slides along such upper edge between said notches.

The hinge of this improved gate is constructed as follows: *h* is a hook seated preferably in the side of the post P, and *h′* is an eye with a long shank which is seated in the inner bar of the post—the eye passing loosely over the hook so as to support the lower end of the gate and permit it to swing.

H is a rod forming the upper hinge and en-

gaging at its upturned end with the eye H′ seated in the inner bar of the gate nearly flush therewith as shown. This rod extends from said upturned end toward the post P for a short distance as at 1, is then bent up as at 2, passes through and is journaled in two eyes 3 and 4 in the edge of the post P above the hook *h*, then bends as at 5 and extends in a horizontal direction in an arm 6 which stands (when viewed from above) one hundred and thirty-five degrees from the line of the first mentioned arm 1 and which arm 6 passes through the long notch N′ in the bar N, and is finally turned up as at 7 at its other extremity; and 10 is a link connecting this upturned extremity with an eye or staple 11 in the back of the adjacent member of the rod S. Obviously, however, an eye could be substituted for the upturned end 7 and the link 10 could have hooks at its ends if preferred.

With the above construction of parts, the operation of my improved gate is as follows: The gate being closed and latched as seen in Fig. 1, when a person in a vehicle approaches from either side of the gate and desires to open it so as to permit his team to pass through, he grasps one of the handles and bears it down, thereby raising the stud out of the notch *n′*. He then moves the handle so as to slide said stud and the rod L longitudinally until the stud falls into the other notch *n*. This movement pushes on the link 10 and turns the swinging hinge in its pivot-eyes 3 and 4 so that its arm 1 turns slowly from the position shown in Fig. 1 to that shown in Fig. 2. Such motion of this arm causes its upturned end to move the eye H at the upper inner corner of the gate in a circle around above the hook *h*, so that the gate is caused to rise slowly at its free end and then tilt in the direction in which it is to swing, and then swing in that direction which will permit its free end to descend again and finally cause its latch to engage automatically with the catch on the post L′. Having passed through the gate-way, the operation is reversed and the gate is closed again. A pedestrian approaching the gate shown in Fig. 1 can raise the free end of the latch by hand and swing the gate open sufficiently to permit him to pass through. At this time—since the two eyes are not in vertical alignment—such opening of the gate will cause it to tilt toward the post L, and hence when he releases it its weight will cause it to close and latch automatically. Such partial opening of the gate does not interfere with the sliding rod which is then locked by its stud engaging the notch *n′*.

I do not confine myself to the specific construction of parts except in so far as claimed below, but I prefer the arrangement described and shown as I consider it best adapted to produce an operative device. The hook *h* and the upturned end of the swinging hinge could of course be eyes, but if they are hooks as shown the gate can be detached when desired by simply lifting its eyes off the hooks. The parts are of the desired sizes, proportions, and materials.

What I claim as new is—

1. In a gate operating device, the combination with the hinge-post, the gate, a lower hinge working at a point near the post, and an upper swinging hinge comprising a body journaled in vertical position above the turning point of the lower hinge, a lower arm extending radially from said body and loosely connected with the gate, and an upper arm also extending radially from said body; of a sliding rod substantially as described connected with said upper arm, a latch for the gate, and means for locking the rod in either of two positions, as and for the purpose set forth.

2. In a gate operating device, the combination with the hinge-post, the gate, a lower hinge working at a point near the post, and an upper swinging hinge comprising a body journaled in vertical position above the turning point of the lower hinge, a lower arm extending radially from said body and loosely connected with the gate, and an upper arm also extending radially from said body one hundred and thirty-five degrees from the line of the lower arm; of a bar having a long notch through which said upper arm projects, a rod sliding along said bar and above said arm, a link attached to the rod and connected with said upper arm, and means for locking the rod in either of the two positions, as and for the purpose set forth.

3. In a gate operating device, the combination with the hinge-post, the gate, a lower hinge working near the post, and an upper swinging hinge having a lower arm loosely connected to the gate near the latter and an upper rearwardly-extending arm with an upturned extremity; of a bar standing alongside the roadway and having two notches, a rod guided along said bar, a handle at its outer end, a stud on said rod adapted to engage either notch, and a link loosely connecting the rod with said upturned end, of the rear hinge arm as and for the purpose set forth.

4. In a gate operating device, the combination with the hinge-post, the gate, a lower hinge working near the post, and an upper swinging hinge having a lower arm loosely connected to the gate near the latter and an upper rearwardly-extending arm with an upturned extremity; of a bar standing alongside the roadway and having two notches; guides on said bar, a rod composed of two members moving loosely through said guides and connected at their inner ends, a stud on one member adapted to engage either notch, and a link loosely connecting one member with said upturned end, of the rear hinge arm as and for the purpose set forth.

5. In a gate operating device, the combination with the hinge-post, the gate, one rigid hinge, and one swinging hinge adapted to cause the tilting of the gate in the direction

which it is to swing; of a bar standing alongside the roadway and having two notches in its upper edge, guides near the ends of said bar and near one of said notches, a rod composed of two members sliding upon the bar and through the end guides and adapted to slide through and to move vertically in the intermediate guide, a link connecting the inner ends of said members, handles at their outer ends, a depending stud on one member near said link adapted to engage either of said notches, and another link loosely connected to one of said members and to said swinging hinge, all as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my signature on this the 26th day of January, A. D. 1893.

WALTER S. HARTLEY.

Witnesses:

ARCH. M. ROCKWELL,

ADDISON FILLER.