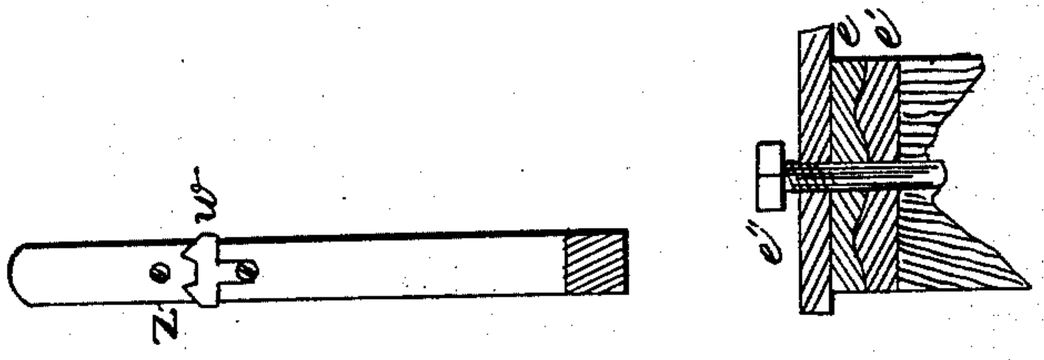
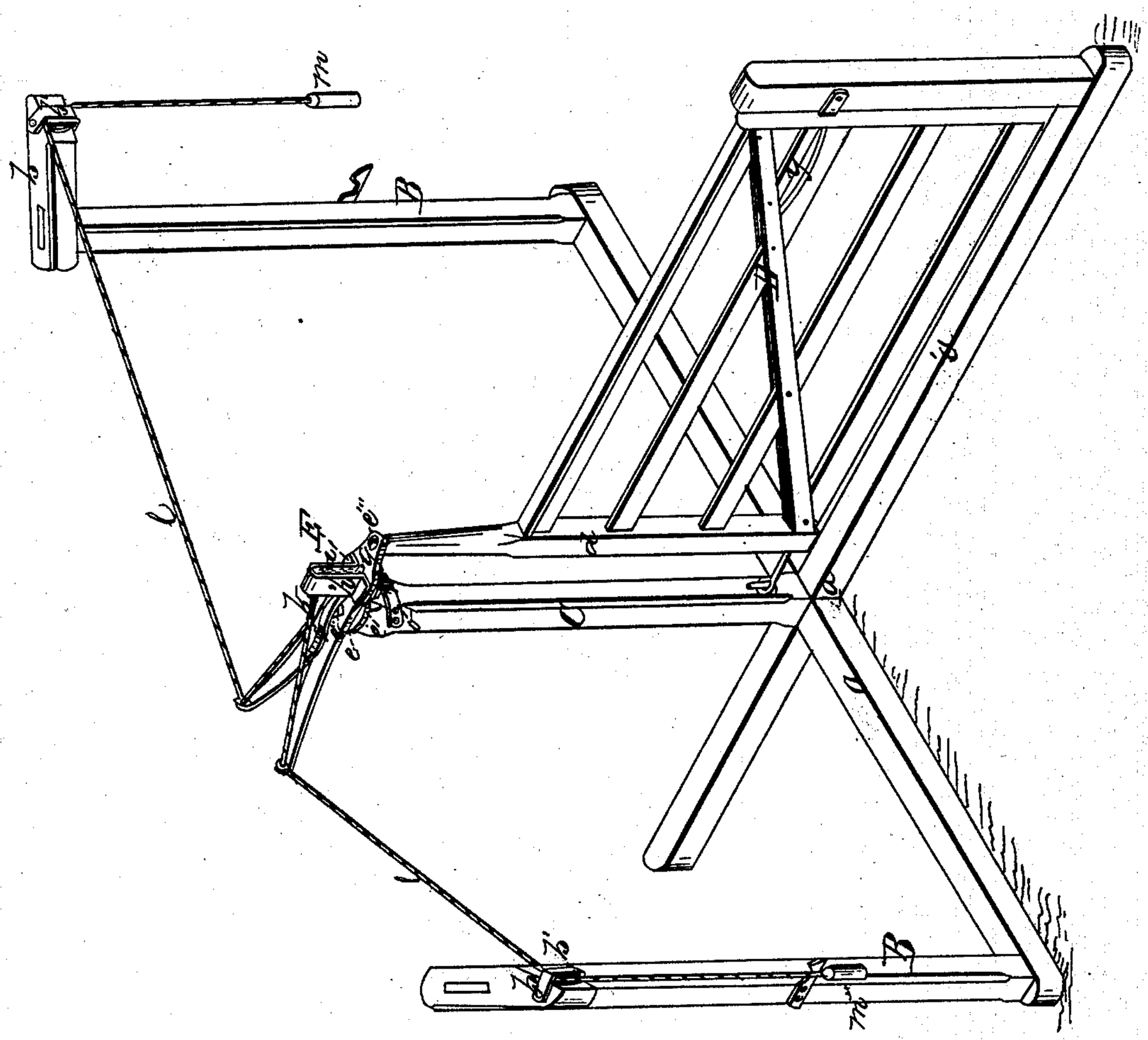
Smith & Persels,

Automatic Gate,

No. 68,801. Patented Sep. 10, 1867.





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United States Patent Office.

SYLVESTER SMITH, OF ROCKFORD, ILLINOIS, AND A. PERSELS, OF BELOIT, WISCONSIN.

Letters Patent No. 68,801, *dated September* 10, 1867.

IMPROVEMENT IN GATES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, SYLVESTER SMITH, of Rockford, Winnebago county, in the State of Illinois, and A. PERSELS, of Beloit, in the county of Rock, and State of Wisconsin, have invented a new and improved device for operating Gates; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention belongs to that class of automatic gates which are operated by means of their own weight, certain devices being used to throw them out of balance. The device in this case consists principally of a forked lever-hinge, in combination with a spring-catch, as will be hereinafter fully described.

To enable others to make and use our invention, we will now proceed to describe its construction and operation.

A A′ represent foundation-beams, placed at right angles to each other, and joined at the point *a*. From each end of the beams A rise posts B, from which extend the arms *b*, to which are attached the pulleys *b′*. At the centre of the beam A, and at the point of junction with A′, rises the post C, to the lower part of which is fastened, by an ordinary eye-hinge, the lower part of the gate D, and to the top of which is attached the device by which the gate is rendered automatic in its operation. E represents a forked lever, made of metal or other suitable material, which is provided on its under side with a bearing, *e*, with convex and concave surfaces, which fit into corresponding surfaces upon the washer *e′* upon the top of the gate-post, and is held by the bolt *e″*. The object of this arrangement of bearing surfaces is to relieve the bolt *e″* from undue strain. To the short arm of the lever, at the point *e‴*, is fastened the upper end of the gate-standard *d*, in such manner that it swings freely in either direction. Upon the top of the lever is placed the spring *s*, which, curving over the bolt *e″*, passes through the opening *g* in the lever, arranged for the purpose, and terminates in a sharp upward curve. When the gate is closed the lower edge of this spring rests in a depression, *x*, in the strip *o*. This strip is a curved piece of metal, and is so placed that the points next the centre are the highest, thus enabling the spring, when once lifted from the depression or notch to either side, to pass over the inclined surface without difficulty. Over the opening *g* in the lever rises the yoke *h*, in which is pivoted the pulley *i*. To the end of the spring *s* is attached the chain *k*, and to it the ropes *l*, which, passing one through each fork of the lever, arranged for the purpose, and over the pulleys *b′*, terminate in the handles *m*. From the beam A′ rises the post B′, upon which is the catch *w*, into which the latch *y* shuts when the gate is closed. In order that the gate may not swing by the post in the act of closing, the stop *z* is used, which arrests the motion of the gate and forces the latch to fall into the catch below. In order that this stop may not interfere with the movement of the latch the catch is made wider than usual, giving ample room upon each side of the stop for the latch to rise, when the gate opens without danger of interference. The sides also of the catch are made slightly sloping in order to facilitate the movement of the latch.

The operation of our arrangement is as follows: The gate being closed, and it being desired to open it, either handle is pulled, and force being thus applied, by means of the rope and chain, to the spring *s*, it is lifted from its notch, and the short arm of the lever being thus freed it necessarily moves in the direction opposite to that pulled from. By this movement the upper part of the gate-standard is thrown around, the lower part being, as it were, stationary, and consequently the outer end of the gate is lifted and the latch freed from the catch. The gate being thus freed at both ends, its balance being disturbed by the change of the position of its upper hinge, it opens rapidly by its own weight. Catches upon the post B hold it firmly open until further action is taken.

Instead of the catches of the side posts B, notches in the strip *o*, similar to the notch *x*, could be used if thought expedient. In this case, however, the strip should be put on straight around, and the notches located at the sides.

The person having passed through, and it being desired to shut the gate, the other handle is pulled, and the lever-hinge swinging about again disturbs the balance of the gate, and it shuts rapidly by its own weight. The movement of the hinge-lever operates as before to lift the gate up from the side-catch.

It will be observed that when the gate is closed it is held securely by the catch at one end, and by the spring *s* at the other, by this means being made safe from opening by animals. This gate can also be used as a simple gate, the arrangement being such that its own weight will always act to keep it closed.

We are aware of the patent of Ezra Nicholson, granted August 11, 1863, and do not therefore desire to make a broad claim for the result obtained, but simply for our combination and arrangement for producing it.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The gate D, lever E, with bearing *e*, spring *s*, strip *o*, yoke *h*, pulley *i*, chain *k*, ropes *l*, pulleys *b'*, and handles *m*, when constructed and arranged as described.

SYLVESTER SMITH,
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Witnesses:
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