S. L. Marsden.

Gate.

No. 88,575. Patented Apr. 6, 1869.

Fig. 3.

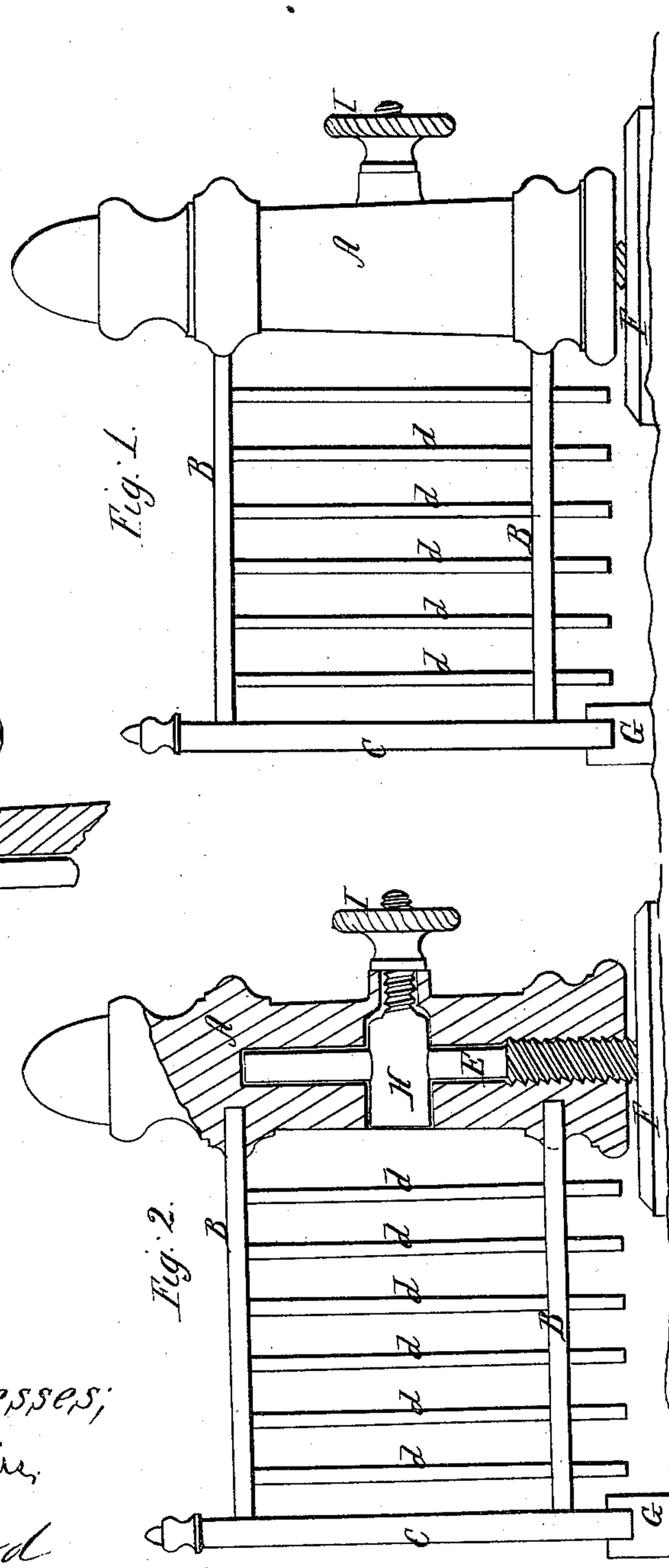

Fig. 2.

Fig. 1.

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United States Patent Office.

SAMUEL L. MARSDEN, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 88,575, *dated April* 6, 1869.

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 I, SAMUEL L. MARSDEN, of New Haven, in the county of New Haven, and State of Connecticut, have invented a new and improved Method of Operating Self-Closing Doors, Gates, &c.; and I do hereby declare that the following is a clear and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a view in elevation, representing a gate constructed with my improvement.

Figure 2 is a similar view, with the post A shown in vertical section.

Figure 3 is a detached view, showing a portion of the spindle E and sleeve H, for fastening the gate at any desired point.

Similar letters designate corresponding parts in all of the figures.

As represented in the drawings—

A is an upright shaft, or column, analogous in its form and position to one of the posts of a gate, as ordinarily constructed, but forming part of the movable portion of the gate itself, the rails B B being framed thereto, as is the upright C, which, with the pickets *d d*, compose the gate.

The shaft may be either of wood, stone, or cast-iron, as is best adapted to its situation and uses, and is either constructed hollow in its interior, or, if formed of solid material, is bored longitudinally, for the purpose of receiving an upright spindle, E.

This spindle is firmly embedded in a stone, F, or other suitable foundation, and extends to nearly the height of the shaft.

The lower part thereof is provided with screw-threads, and an internal screw is cut in the lower portion of the shaft, (if of metal,) to receive the threaded portion of the spindle.

If the shaft is composed of wood or other non-metallic substance, a nut may be inserted, and secured in the lower end.

The shaft, being placed upon the spindle, and their screw-portions connected, the weight thereof, and also of the gate and its appurtenances, is sustained upon the screw-threads alone, the angle, or inclination of which is such as to overcome the friction, and the shaft turns, or follows down the screw, until its motion is arrested, thus causing the gate to swing, or revolve, the spindle being the axis of motion.

The inclination of the screw-threads may be more or less, according to the weight of the gate, and its resistance, but should always be so steep that the weight will considerably preponderate over the friction, and cause it to turn quickly.

A stop, G, is provided, to arrest the motion at the right point, against which the gate closes.

The screw may be constructed with a single thread or with a series of threads. I prefer the latter, generally not less than three or four threads, as best calculated for durability.

To enable different gates to be opened in different directions, either to the right or left, it is necessary that the direction of the screw-threads be reversed, on a portion of the spindles, forming what is termed "right-and-left-hand screws."

The same arrangement may be applied to doors (and also gates) of all kinds, by constructing the hinges in the same manner, the spindle forming that portion of the hinge which is attached to the jamb, or wall, and the shaft A the part which is attached to the door.

A still simpler application consists in setting the spindle E in the floor, and inserting the internal screw, in the form of a nut, within the stile of the door, at the axis, or point on which it turns, with a pivot corresponding to the spindle at the top.

This requires only the rounding of the edge of the door, to allow it to turn in the casing, to form a concealed hinge, and constitute a self-closing door.

It also dispenses with all springs, joints, and other outward appliances, rendering the door more comely, and obviating the creaking of ordinary hinges, as its operation is entirely noiseless.

As applied to gates, and occasionally to doors, an accessory is required, to enable them to be fixed to a certain point, when required to remain open, and also to secure them from being easily opened when closed.

This I accomplish by means of a sleeve, H, working in an opening, transverse to the spindle, which passes through it, as shown in fig. 4.

A thumb-screw, I, is provided on the projecting-end of the sleeve, by turning which, it is drawn so tightly against the spindle as to bind it against the interior of the shaft, and hold it so firmly as to prevent the gate from moving by its own weight.

The spindle should have a bearing in the shaft, at or near its upper extremity, to prevent any tendency of the shaft to swerve from the perpendicular.

I am aware that spirally-inclined planes and surfaces have been employed to render the hinges of gates and doors self-shutting; but I am not aware that a screw has ever been employed as the axis on which the gate or door swings, by which it is rendered self-closing, and other valuable results are obtained, as specified. Therefore,

What I claim as my invention, and desire to secure by Letters Patent, is—

The employment of the screw-threaded spindle E, in combination with the shaft A, or its equivalent, provided with a corresponding internal screw, when so arranged and applied that the spindle forms the axis on which the gate or door revolves, and the threads support the weight thereof, substantially in the manner and for the purposes set forth.

Also, the adjustable sleeve H and thumb-screw I, in combination with the spindle E and shaft A, arranged and operating substantially as and for the purposes described.

SAM'L L. MARSDEN.

Witnesses:

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