M. Frank Taber.

Imp^ts in Door & Gate Springs.

116644 PATENTED JUL 4 1871

Fig. 1.

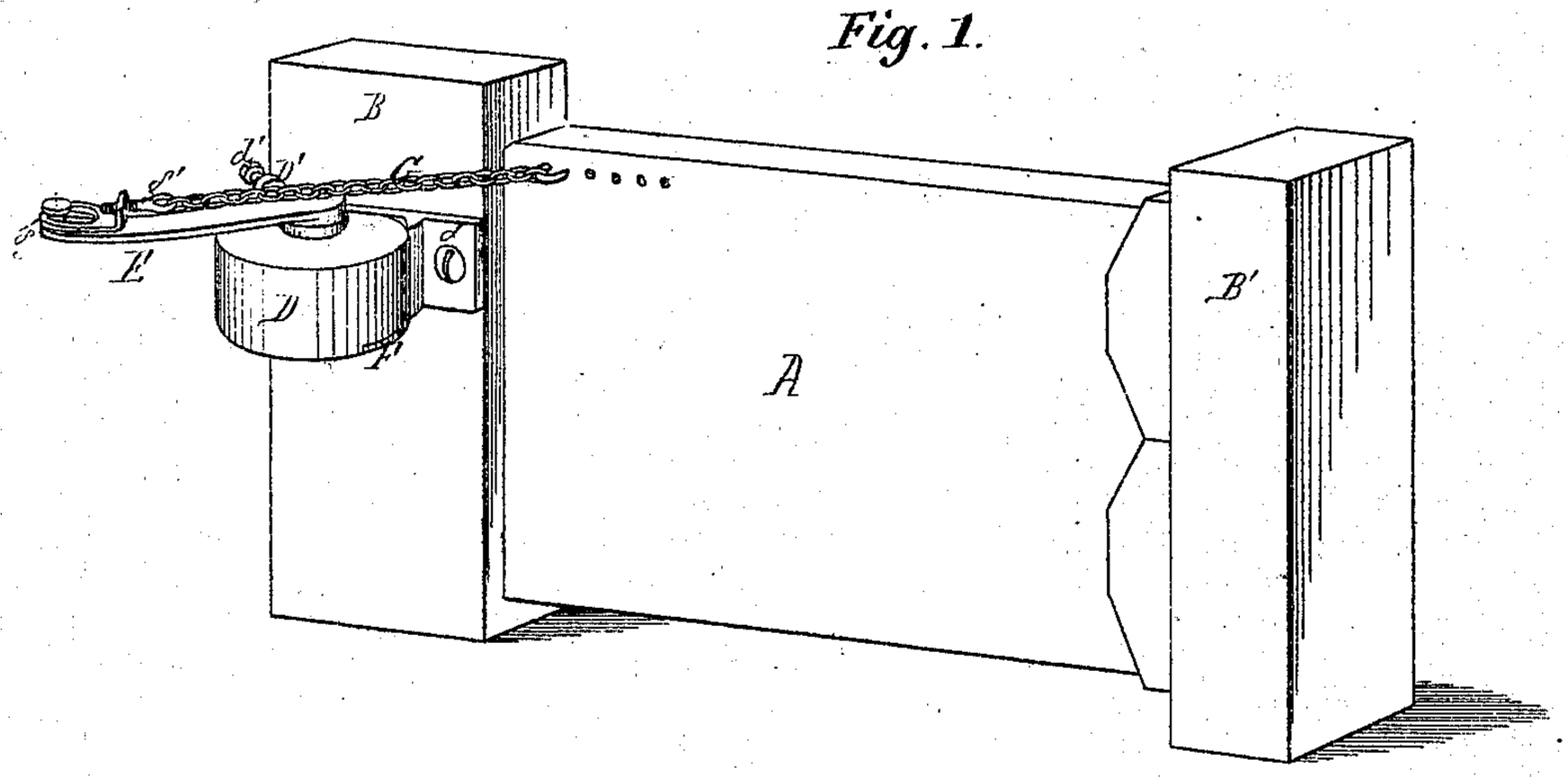


Fig. 2.

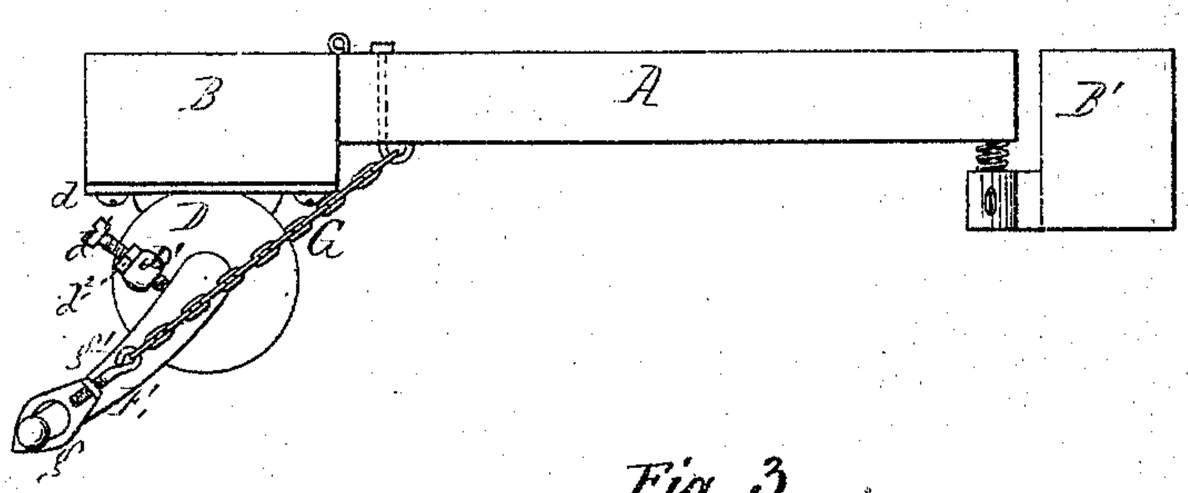
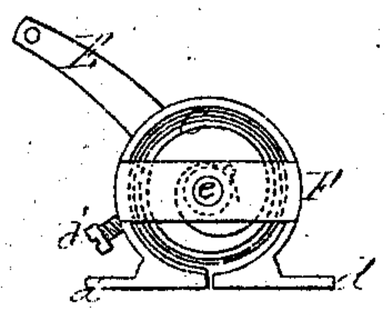


Fig. 3



Witnesses.

Alex^r Mahon

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UNITED STATES PATENT OFFICE.

M. FRANK TABER, OF SALEM, OHIO.

IMPROVEMENT IN DOOR AND GATE-SPRINGS.

Specification forming part of Letters Patent No. 116,644, dated July 4, 1871.

To all whom it may concern:

Be it known that I, M. FRANK TABER, of Salem, county of Columbiana, State of Ohio, have invented certain new and useful Improvements in Door and Gate-Springs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view of my improved spring as applied, the parts being in such position as to prevent the door or gate from being opened. Fig. 2 is a plan view of the same in such position as to permit the door or gate to be opened, and Fig. 3 is a bottom view.

Similar letters of reference denote corresponding parts in all the figures.

The devices to which my invention is more particularly applicable consist of a vibrating arm actuated by a coiled spring, a sheet inclosing the spring and supporting both spring and arm, the arm being connected with the gate or door by a link or chain. The first part of the invention consists in a stop so arranged as to limit the backward throw of the arm, in a manner and for a purpose which will be fully explained. The second part of the invention consists in the combination, with the vibrating arm and connecting-link, of an adjustable screw, by means of which the length of the link may be varied at will to correspond with the variation in the throw of the arm.

In the drawing, A represents a door or gate hinged to post B. B′ is the opposite post, against which the door shuts. Post B′ may, when preferred, be provided with suitable buffers *b*, Fig. 2, to relieve the jar when the door is closed. C is a common coiled spring, incased within shell D, the shell being provided with suitable flanges *d d*, by means of which it is secured to post B. D′ is a stop projecting from the head of shell D. In practice I usually cast this stop upon the shell, but I sometimes provide it with a screw-thread and screw it into the head of the shell. d^1 is a set-screw engaging with a corresponding thread in the upper end of stop D′. d^2 is a jam-nut. E is a vibrating arm provided at one end with a stud-shaft, mounted centrally in shell D, and actuated by coiled spring C in substantially the manner customary in this class of springs. F is a bar supported in sockets *f* cut for its reception in opposite sides of the lower or open side of shell D, and provided centrally with a bearing, in which the lower end of the stud-shaft *e* is secured by riveting or by a nut. G is a chain connecting the free end of arm E with the gate. The point at which the chain is attached to the gate may be varied according to the amount of power which it is desired to apply. *g* is a loop connected with the chain by means of screw-eye *g′*. The loop is made of such size that it can be easily passed over the head of the pin *e′* on arm E, in order that the chain may be readily attached to and detached from the arm, for a purpose which will be fully explained.

In constructing my device I secure the spring to the shell and stud-shaft, by means of a spur on the shaft and the slot d^2 in the wall of the shell, as is customary in similar springs. When the spring is applied the set-screw d^1 is adjusted, according to circumstances, as follows: If it is desired to hold the door or gate so as to require a good deal of force to open it the adjustment is made so that the parts shall occupy the position shown in Fig. 2, where it will be seen that the line of draft nearly intersects the center of motion of the arm E; in other words, the arm is almost on a dead-center relative to the stud-shaft; but whatever lead there is is from stop D′, so that the arm is free to move whenever sufficient power is applied to the gate; and, under this arrangement of parts, the amount of power required to start the gate is so great as to be practically the equivalent of latching it, under ordinary circumstances.

It will be apparent that a fixed stop may be made to answer the purpose just described with a certain degree of accuracy by the exercise of a little skill on the part of the person putting up the spring; but, for the purpose of further increasing its efficiency, and of making the device perform another duty, I have made the stop adjustable, so that, when thought best, the arm E may be allowed to move over the dead-center referred to above, thus making the draft lead toward the stop; but, as the arm cannot pass said stop, any pressure upon the gate serves to lock the arm more firmly in position, thus preventing the gate from being opened, as will be readily understood without further explanation.

When the parts are applied to a door or gate in the position just described it can be opened from the inside by moving the arm by hand

in front of the dead-center, and the door will, when released, be closed and locked automatically, which will be found to be a very convenient arrangement many times. By removing loop *g* from pin *e'* the door or gate can be left open when desired.

There has been much difficulty experienced in putting up this class of springs as they have been usually built, particularly by inexperienced persons, because they did not take sufficient care in adjusting the link, for which reason the arm would sometimes swing past the dead-center and occasion much annoyance to those who used them; and sometimes, even when they were properly put up, a slight yielding of parts would give rise to the same difficulty in a short time. But this objection is obviated by the stop, even when used without the adjusting-screw, as the backward throw of the arm is limited by the stop instead of the chain; but, in practice, I much prefer to add the set-screw, in order to provide for locking the gate when closed, as described.

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

1. In combination with the vibrating arm E, spring C, shell D, and link G, the stop D', substantially as and for the purpose described.

2. The combination of the vibrating arm E, spring C, shell D, link G, stop D', and set-screw *d'*, substantially as and for the purpose set forth.

3. In combination with the link G, the loop *g* and screw-eye *g'*, substantially as described.

M. FRANK TABER.

Witnesses:

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