L. P. SHERMAN.

DOOR-SPRING.

No. 192,602. Patented July 3, 1877.

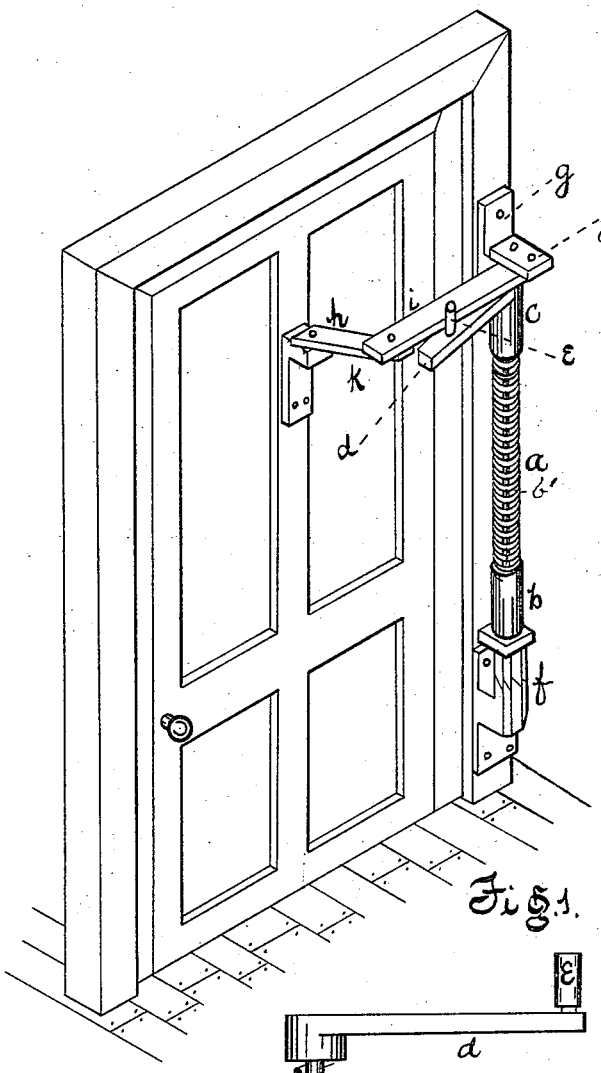


Fig. 1.

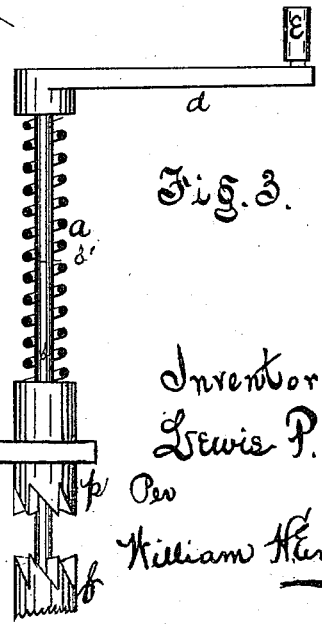
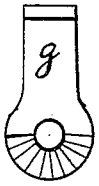


Fig. 3.

Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

LEWIS P. SHERMAN, OF BIDDEFORD, MAINE, ASSIGNOR OF ONE-HALF HIS RIGHT TO PERLEY M. BERRY, OF SAME PLACE.

IMPROVEMENT IN DOOR-SPRINGS.

Specification forming part of Letters Patent No. **192,602**, dated July 3, 1877; application filed January 22, 1877.

To all whom it may concern:

Be it known that I, LEWIS P. SHERMAN, of Biddeford, in the county of York and State of Maine, have invented certain new and useful Improvements in Door-Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of the invention attached to a door. Fig. 2 is a detail of bracket *c* and arm *j*. Fig. 3 is a detail of spring and rings.

Similar letters of reference relate to corresponding parts.

This invention relates to a new and improved apparatus for closing and holding doors or gates either open or shut; and consists in the novel construction and combination of a spiral or coil wire spring, lever-arms, and devices for regulating the tension of the spiral spring, all as hereinafter more fully described and claimed.

The method of applying my invention to a door or gate, and its operations, are as follows: *a* is a spiral or coil wire spring, having any convenient number of coils. On either end of the coil-spring are firmly fixed sockets or rings. The ring *b*, at the lower end, is provided with notches or teeth. The ring *c*, at the upper end, has the arm *d*, and at the end of the arm is the roll *e*. Through the coil-spring passes a metallic rod, *b'*, the lower end of which rests on the bracket *f*, and the upper part is held in place by the bracket *g*, which has its upper side corrugated. The bracket *f* is provided with notches or teeth to match into those of the ring *b*.

The brackets are attached to the door-frame or gate-post by screws or any convenient method.

h and *i* are two lever-arms, pivoted at *k*. *h* is attached to the door by means of a plate. *i* is attached to the arm *j*, which is secured to the bracket *g* by a screw, and its position is regulated by a stud on the under side, which fits into the corrugations of the bracket *g*.

When in use the different parts of the device will have positions similar to those shown in Fig. 1.

When it is desired to use the invention with a common wrench, the ring *b* can be turned so that the coil-spring shall be wound up tightly. The teeth of the ring *b*, fitting into the teeth of the bracket *f*, hold it firmly in place. This, of course, will cause the ring *c* to revolve, so that the roll *e* on the arm *d* will press against lever-arm *i*. When the door or gate is thrown open this pressure will be very great, and the recoil of the spring will cause it to close quickly.

The arm *j* and the arm *d* may be so arranged with reference to each other that when the door or gate is thrown open the roller *e* will pass backwardly on the lever-arm *i*, so near to the pivot which unites *i* with *j* that it will hold the door or gate open.

When the roller-arm first begins to operate to close the door it presses with considerable force on the arm *i*; but the leverage is very small. As it passes along on the arm the spring is uncoiled, and the force is very much diminished, and the door or gate is closed without slamming or violence.

It will thus be seen that my invention can be very conveniently applied to any door or gate, and can be very quickly and easily adjusted.

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

1. The combination of rings *b* and *c*, spiral coil-spring *a*, metallic rod *b'*, brackets *f* and *g*, arm *d*, roller *e*, arm *j*, and pivoted arms *h* and *i*, arranged and operating as described.

2. The combination of the brackets *f* and *g*, the latter having corrugations on its upper surface, ring *b*, ring *c*, spiral coil-spring *a*, rod *b'*, arm *j*, roller-arm *d*, and pivoted arms *h* and *i*, arranged, operated, and attached as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

LEWIS P. SHERMAN.

Witnesses:

WILLIAM HENRY CLIFFORD,

HERBERT G. BRIGGS.