

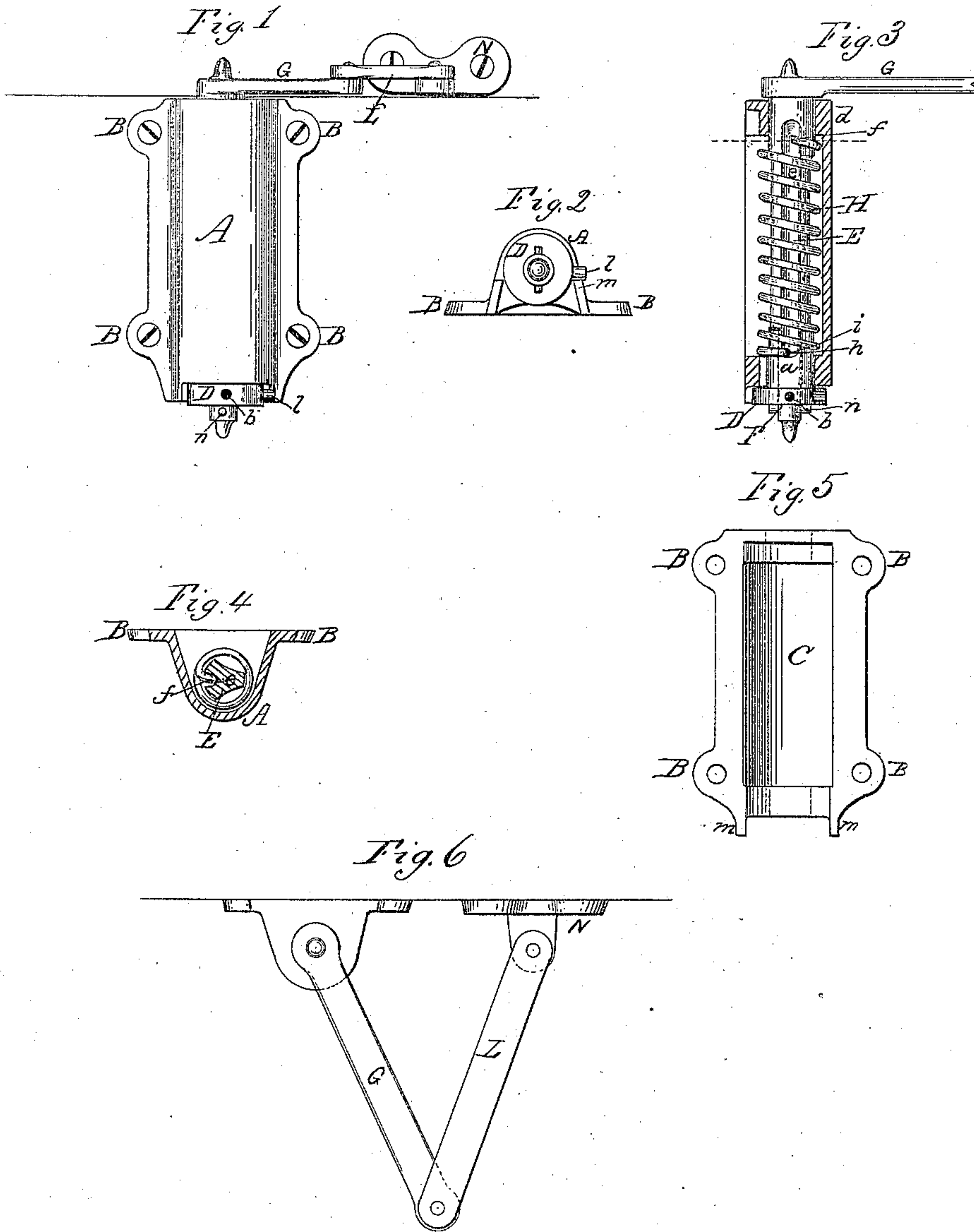
(No Model.)

W. GILFILLAN.

DOOR SPRING.

No. 311,307.

Patented Jan. 27, 1885.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM GILFILLAN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO SARGENT & CO., OF SAME PLACE.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 311,307, dated January 27, 1885.

Application filed August 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, WM. GILFILLAN, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Door-Springs; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of the apparatus complete; Fig. 2, a lower end view; Fig. 3, a vertical central section showing a side view of the spindle and lever G; Fig. 4, a transverse section on line *xx*; Fig. 5, a rear view of the barrel, showing the open spring-chamber; Fig. 6, a top view of the spring as applied.

This invention relates to an improvement in that class of door-springs in which a spiral spring is wound by a system of levers in the opening of the door, and so that the reaction of the spring will force the door to its closed position, the object being a simple construction whereby the spring will be increased and made easily adjustable; and it consists in the construction as hereinafter described, and more particularly recited in the claims.

A represents the barrel or shell, constructed with ears B, by which it may be secured. On its back or rear side it is open to the interior to form a spring-chamber, C, as seen in Fig. 5. At one (the lower) end it is fitted to receive a tubular sleeve, *a*. This sleeve extends up into the spring-chamber, and is of less diameter than the chamber, so as to leave a space between its outer surface and the inner surface of the chamber, as seen in Fig. 3. The lower end of the sleeve is constructed in the form of a disk or collar, D, which has upon its outer surface several radial holes, *b*.

E is the spindle, which is introduced through the upper end of the barrel, and so as to take a bearing at that end, as at *d*, and in which bearing the spindle may freely turn. The spindle extends down through the spring-chamber and through the sleeve *a* below, the lower end, F, of the spindle, taking a bearing in the sleeve *a* in line with the bearing *d* above, and so that the spindle is firmly seated at its

upper and lower end. That part of the spindle E above the lower bearing, F, and below the upper bearing, *d*, is constructed with a vertical or longitudinal groove, *e*. The upper end of the spindle is provided with a lever, G, cast as an integral part of the spindle. Into the spring-chamber a helical spring, H, is introduced, the upper end turned into the groove *e*, as at *f*, the lower end, *h*, turned into a notch, *i*, in the sleeve, and so that one end of the spring is firmly engaged with the sleeve and the other end with the spindle. A stud, *l*, is provided, which may be set into either of the holes in the collar D, and on the lower end of the barrel, adjacent to the periphery of the collar, is a shoulder, *m*, upon which the stud *l* rests to form a stop, as seen in Fig. 2.

To the outer end of the lever G a second lever, L, is hung by one end, the other end hinged to a bracket, N.

The spindle is prevented from longitudinal movement by the introduction of a pin, *n*, through its lower end, below the collar D.

In applying the spring the barrel may be secured to the jamb and the bracket to the door, or vice versa, in the usual manner of securing this class of springs, and as seen in Fig. 6. When so applied, a lever is introduced into one of the holes in the collar D, the collar, together with the sleeve *a*, rotated until the desired tension of spring is produced. Then the stud *l* is introduced into the proper hole and so as to come to a bearing on the shoulder *m* and there hold the collar, so as to prevent its rotation. One end of the spring being fixed to the spindle and the other to the collar, it follows that such turning of the collar and sleeve will wind the spring to the extent of the rotation imparted to the collar D, and this may be greater or less, according to the tension required. By this construction of barrel it will be observed that the spring is entirely inclosed, and yet the barrel made in a single piece, the spring-chamber formed in the process of casting. The lever G, being cast as an integral part of the spindle E, not only makes a cheap construction, but prevents derangement of the spring by disengagement of the lever from the spindle—a difficulty which is liable to occur in springs where the spindle

and lever are made in separate pieces and united. The adjustment of the spring or its entire release is easily made and without liability of derangement.

5 I claim--

1. The combination of the barrel A, constructed with a spring-chamber, the sleeve *a*, constructed with a collar, D, arranged for rotation at one end of the barrel, said sleeve extending into the spring-chamber, the spindle E, longitudinally through the barrel and spring-chamber, the helical spring H, arranged in the spring-chamber, one end engaged with the said sleeve, the other with said spindle, an adjustable stop, *l*, on the collar, the lever G, attached to the spindle E, and a lever, L, one end hung to the said lever G and the other to a bracket, substantially as described.

2. The combination of the barrel A, con-

structed with a recess open upon the rear side 20 of the barrel, said recess forming a spring-chamber, and with a bearing at its upper and lower ends, the sleeve *a*, arranged in the lower bearing, but extending into the spring-chamber, and provided with the collar D, an adjustable stop, *l*, on said collar, the spindle E, longitudinally through the spring-chamber, supported in a bearing at the upper end and in the sleeve at the lower end, the helical spring H, arranged in said chamber, one end 30 engaged with the spindle and the other with said sleeve, the lever G, attached to said spindle, and the lever L, hinged to said lever G and to the bracket, substantially as described.

WILLIAM GILFILLAN.

Witnesses:

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