

(Model.)

2 Sheets—Sheet 1.

W. GILFILLAN.
SPRING HINGE.

No. 244,584.

Patented July 19, 1881.

Fig. 1.

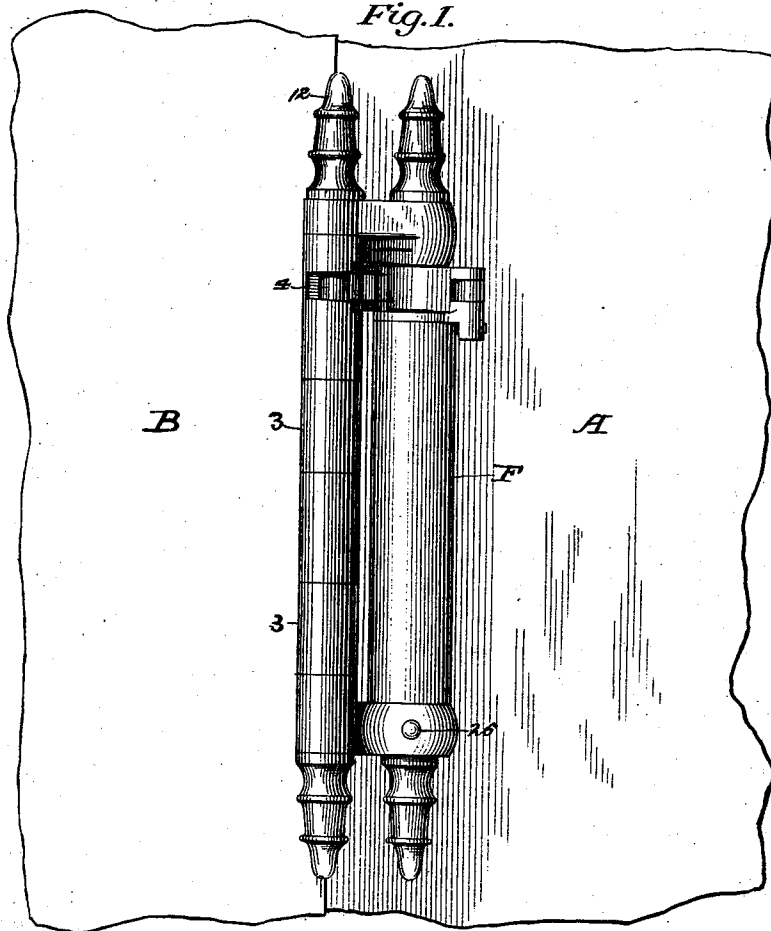
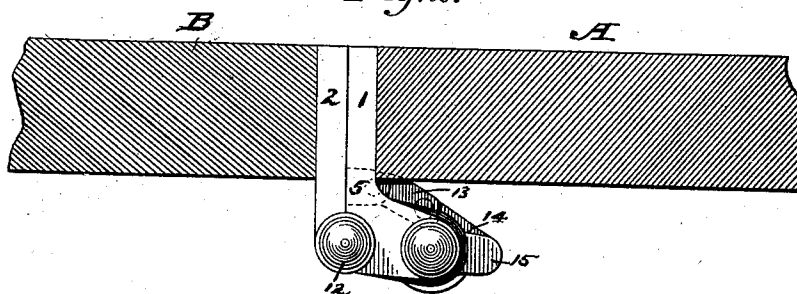


Fig. 2.



Attest:

R. J. Barner.
L. W. Sney

Inventor:

William Gilfillan

(Model.)

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Fig. 3.

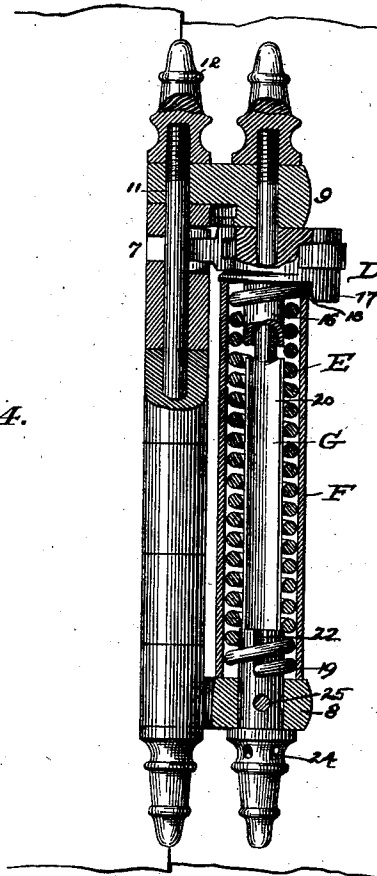


Fig. 4.

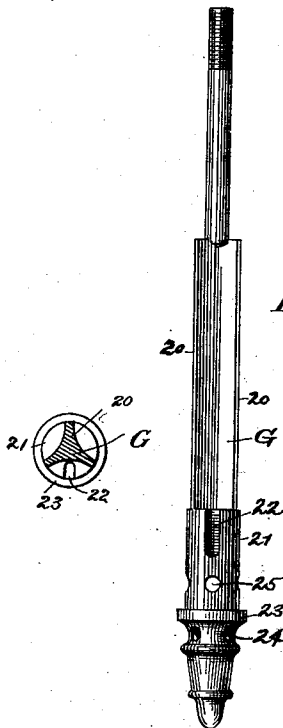
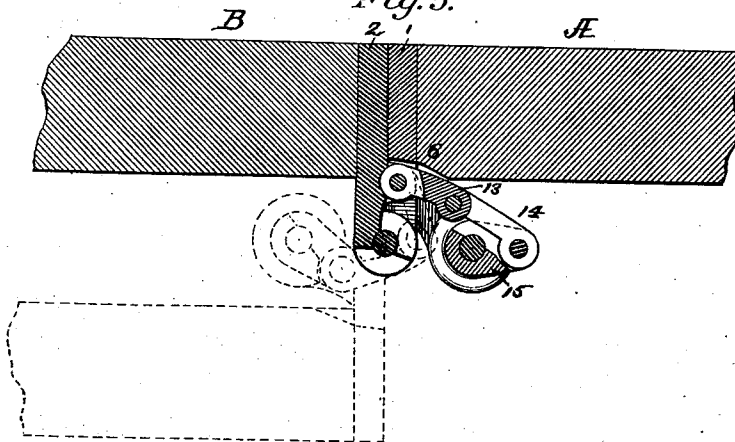


Fig. 5.



Attest
R. H. Barnes.
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Inventor:
William Gilfillan

UNITED STATES PATENT OFFICE.

WILLIAM GILFILLAN, OF BROOKLYN, NEW YORK.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 244,584, dated July 19, 1881.

Application filed May 14, 1881. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM GILFILLAN, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Spring-Hinges; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to hinges of the class used in connection with self-closing doors, and commonly termed "spring-hinges;" and its object is to produce a simple, efficient, and compact device consisting of few parts, rendering it cheap to manufacture, easily operated, and little liable to get out of order or to need repair.

My invention consists in the peculiarities of construction and in the various operative combinations of the parts which compose it, as will be fully hereinafter described and claimed.

In the drawings, Figure 1 represents an elevation of the hinge; Fig. 2, a plan view; Fig. 3, a sectional view; Fig. 4, the pintle; Fig. 5, a transverse section.

A represents the post, frame, or sill to which the door B is connected by the spring-hinge. On the edges of the door and post, and situated respectively thereon opposite one another, are screwed the metal plates 1 2, of substantially similar construction, and such plates are provided with the ordinary cylindrical lugs, 3 3, bored out centrally to receive a rod, 4, which forms the pivot on which the connected parts move. Upon the plate 1 are two projections, 5, forming a bearing, as hereinafter described, and opposite this bearing the plate 2 and the door-post are cut away, as at 6, in order to allow the edges of the door and post to meet squarely when the door is closed, the projections 5 entering such opening. The upper pintle-eye, 3, of the series carried by the plate 1 is provided with a slot, 7, as shown.

The metallic plate 2, attached to the edge of the post B, has cast with it two brackets, 8 9, the lower of which, 8, is bored out cylindrically, while an opening of smaller bore, 10, is formed in the bracket 9. The end of the pintle 4 also passes through a hole, 11, in the bracket 9, and, being screw-threaded, is provided with a thimble, 12, which keeps it in place. The brackets 8 and 9 form the bearings for the rod which holds the spring and its inclosing-cylinder.

The connection between the spring carried

on the door-post and the swinging door is made by a jointed connection, represented as a whole by D. Between the bearings 5 5 is hinged an arm, 13, to which is jointed an arm, 14, and to the arm 14 is pivoted a bracket, 15. The parts 13 14 15 move freely upon one another and form a jointed connection. Cast with the bracket 15 is a tubular extension, 16, bored out cylindrically, as shown, and a stop, 17, for a purpose hereinafter to be described.

The spring E is inclosed within a cylinder, F, and is an ordinary steel spiral of any desired strength. One end of the spring projects outside the case, as at 18, while the other is bent inwardly, as shown at 19. The cylinder which contains the spring is held in position between the bracket 8 on the door-post and the tubular extension 16 of the jointed arm D, and the fastening device is the peculiar pintle (shown separate in Fig. 4) which passes through the bracket 8, the tubular extension 16, and the upper bracket, 9, and thus holds the spring in position, the part 16 entering the hollow casing or cylinder F.

The pintle G consists of a metallic rod, screw-threaded at the upper end to receive a cap, below which it is cylindrical for a short distance. Below this cylindrical portion are three radial ribs or feathers, 20, extending longitudinally, forming triangular grooves. At the end of these grooves the rod becomes cylindrical and of larger diameter, as at 21, and is provided with a deep slot or recess, 22, situated at the end, and forming a continuation of one of the longitudinal triangular grooves. The cylindrical portion 21 terminates in a shoulder, 23, which rests on the lower side of the bracket 8 when the parts are in position. The spring is held in position in such a manner that the projecting end 18 bears on the stop 17, while the bent end 19 slides through the groove on the pintle, when the latter is inserted, and enters the slot 22. A row of holes, 24, is made in the lower end of the pintle, and a similar row, 25, in the cylindrical portion 21, while a single perforation, 26, is drilled in the side of the bracket 8.

It is evident that as the upper end of the spring bears on the rigid stop 17 while the lower end is held in the recess 22 the turning of the pintle in one direction will coil the spring closer, increasing its power, and that it may

be held at any desired tension by a pin inserted through the perforation 26 when made to register with any desired hole, 25, in the pintle.

5 The pintle is conveniently turned by a lever inserted in any one of the holes 24. This mode of adjusting, regulating, and preserving the tension of the operating-spring is one of the most important features of my invention.

10 The operation of my device will be readily understood. The spring being adjusted to proper tension, the act of pushing open the door will turn the pintle and coil the spring closer. The parts composing the jointed arm

15 D move on their several bearings, the adjoining parts being cut away, as before described, to give them play. The release of the door allows the spring D to exert its force and close it.

By changing the position of the spring 20 slightly the device might be made so that the jointed arm might be brought to the dead-point, so that the spring could have no leverage through which to transmit its force, and the door would then remain open at its widest extent,

25 and the modification necessary to accomplish this is within the spirit of my invention.

As thus constructed, my device is exceedingly neat, compact, and convenient, and possesses advantage which will be evident to 30 those skilled in the art.

What I claim is—

1. The combination of the plates 1 2, situated respectively on the door and post, the pintle-eyes 3 3, the recess 6, the slot 7, and the jointed arm D, substantially as described. 35

2. In a spring-hinge, the combination of the plate having supporting-brackets 8 9, the spring E, and the arm D, composed of the joints 13 14 15, pivoted to each other, and connected at one end to the door and at the other 40 to the spring, substantially as described.

3. The combination of the plate 1, attached to the swinging door, and having lugs or bearings 5 5, with the plate 2 on the door-post, having the recess 6, and with the jointed connecting-arms 13 14 15, substantially as described. 45

4. In combination, the coil-spring E, the brackets 8 9 on the door-post, the jointed connection D, having the tubular portion 16 extending into such spring and connected to the 50 door, and the pintle G, passing through such brackets, spring, and tubular portion, substantially as described.

In testimony whereof I have hereunto set my hand this 10th day of May, 1881.

WILLIAM GILFILLAN.

In presence of—

G. B. RIDE,

W. O. NEEDHAM.