No. 624,850. Patented May 9, 1899.

S. S. NILES.

SPRING HINGE.

(Application filed Dec. 17, 1898.)

(No Model.)

Fig. 1.

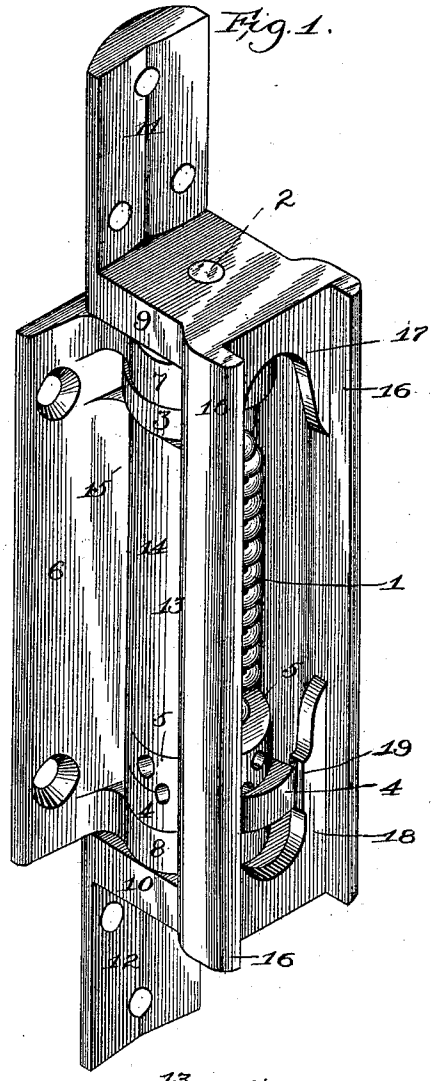


Fig. 2.

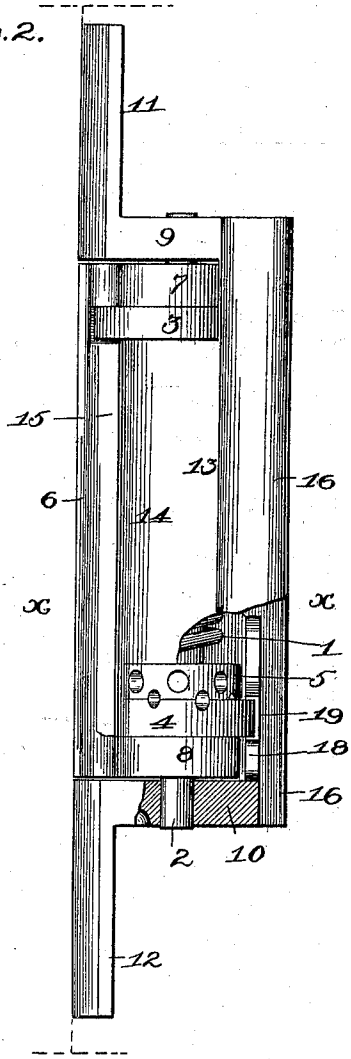


Fig. 4.

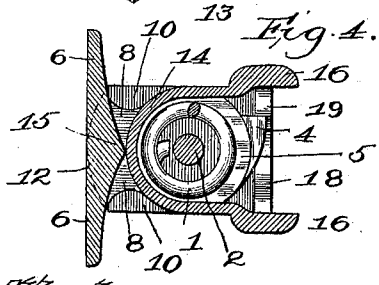
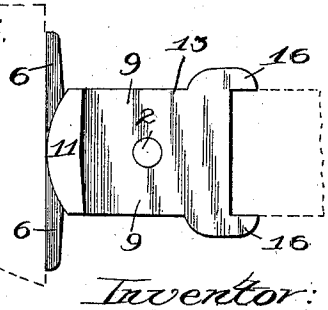


Fig. 3.



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Sidney S. Niles.
by Robert Burns Atty.

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UNITED STATES PATENT OFFICE.

SIDNEY S. NILES, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NILES MANUFACTURING COMPANY, OF SAME PLACE.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 624,850, dated May 9, 1899.

Application filed December 17, 1898. Serial No. 699,614. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY S. NILES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Double-Acting Spring-Hinges; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to that type of double-acting spring-hinges that form the subject-matter of my prior patents, No. 317,410, issued May 5, 1885, and No. 325,761, issued September 8, 1885.

The objects of the present improvement are, in the main, to provide a simple and effective formation and arrangement of fixed and movable hinge members by which the cutting away of the door and the fitting thereto of the swinging hinge member are materially simplified and made easy of accomplishment without liability of marring or disfiguring the door at the point of application of such swinging hinge member. With the present improved construction the stationary hinge member is adapted to be fastened by means of its attaching base-plate to the surface of the door-jamb without the usual mortising and fitting in place, and the swinging hinge member is adapted to close the space which will otherwise occur between the vertical attaching-flanges of said swinging hinge member and the adjacent surface of the door-jamb.

A minor object of the present improvement is to provide a simple and efficient construction and arrangement of the abutment or stop for the lower spring-carrying disk of the hinge, all as will hereinafter more fully appear, and be more particularly pointed out in the claims.

I attain such objects by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a double-acting spring-hinge constructed in accordance with the present invention; Fig. 2, a side elevation of the same with parts in section; Fig. 3, a plan view of the hinge; Fig. 4, a horizontal section of the same at line $x x$, Fig. 2.

Similar numerals of reference indicate like parts in the several views.

In the present hinge construction, as illustrated in the drawings, the arrangement of the operating coiled spring 1, axially-arranged pintle 2, upper and lower spring-carrying collars or disks 3 and 4, and the supplementary capstan collar or disk 5, by which an adjustment of the tension of the coiled spring 1 is effected, are substantially the same as in my former patented constructions heretofore referred to.

In the present invention the stationary hinge member will comprise a wide attaching base-plate 6, provided at its extreme upper and lower ends with the respective upper and lower pintle-eyes 7 and 8, projecting outward from said base-plate, with the respective top surface of the one and the bottom surface of the other on a plane with the respective top and bottom surfaces of the base-plate, as shown in Fig. 2.

The swinging hinge member is in the present improvement formed with upper and lower horizontal webs 9 and 10, perforated to receive the hinge-pintle 2, a pair of vertical attaching-plates 11 and 12, that extend in opposite directions away from the horizontal webs 9 and 10, and a main body portion 13, that connects the aforesaid web portions and attaching-plates into one integral piece. Such main body portion of the swinging hinge member is formed with a middle shell portion 14, that is of a semicylindrical form at the side or face next adjacent to the stationary hinge member, such shell portion being adapted to inclose and conceal the spiral operating-spring 1 of the hinge.

In the present improvement the cylindrical surface of the shell portion 14 is intended to coact with a central vertical spine or ridge 15 on the stationary hinge member to prevent a space between the parts as the door is swung in either direction.

The middle shell portion 14 is separated at top and bottom from the respective top and

bottom horizontal webs 9 and 10 by upper and lower spaces, which in turn receive the upper and lower pintle-eyes 7 and 8 of the stationary hinge member and the spring carrying and adjusting collars or disks 3, 4, and 5 when the hinge parts are assembled together.

The main body portion 13, the horizontal pintle-webs 9 and 10, the vertical attaching-plates 11 and 12, and the shell or casing 14 of the swinging hinge member are in the present improvement made of an equal width, and which width corresponds with the thickness of the door for which the hinge is intended, so that the aforesaid parts will fit flush with the opposite surfaces of the door when the swinging hinge member is fitted into a mortise formed therefor in the door.

It is a material part of the present invention to make the curved faces of the vertical attaching-plates 11 and 12 of the swinging hinge member concentric with the axis of the hinge-pintle and of a radius equal to the distance between such pintle-axis and the attaching-face of the base-plate 6 of the stationary hinge member, so that as the door is swung in either direction no space will be left between the adjacent surfaces of the said attaching-plates and the door-jamb. With the above-described construction it is intended that the edge of the door next adjacent to the door-jamb shall have a corresponding curved formation and for a like purpose.

The side or face of the swinging hinge member next adjacent to the door is of a plane formation, as shown, so as to fit a transverse mortise formed therefor in the door, and in order to conceal the vertical seam or joint so formed I provide such swinging hinge member with vertical overhanging lips or beads 16 on its respective sides that, with such member in place, will overlap and conceal said vertical seam or joint between the door and the hinge member. The vertical lips or beads 16 are external of the main body portion of the swinging hinge member, so as to require no cutting away of the door to receive them, and while it is preferable to form said lips or beads integral with the said main body portion they may be formed separately and secured in place by screws or other usual fastening means when so desired.

17 18 are upper and lower transverse reinforce-webs connecting the shell portion 14 together at its open side or end, so as to impart strength and rigidity to the same, and in the present improvement the lower web 19 is additionally utilized to constitute a stop or abutment 18 for the lower carrying disk or collar 4 of the operating-spring 1 of the hinge.

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

1. A double-acting spring-hinge, comprising a stationary hinge member formed by an attaching-base and pintle-eyes at the extreme ends thereof, a pintle, and a swinging hinge member formed with vertically-extending attaching-plates, the faces of which adjacent to the door-jamb are arranged on a plane with the attaching-surface of the stationary hinge member, substantially as set forth.

2. A double-acting spring-hinge, comprising a stationary hinge member formed by an attaching-base and pintle-eyes at the extreme ends thereof, a pintle, and a swinging hinge member provided with vertically-extending attaching-plates formed with curved faces adjacent to the door-jamb concentric with the pintle-axis and of a radius equal to the distance between the pintle-axis and the attaching-face of the stationary hinge member, substantially as set forth.

3. A double-acting spring-hinge, comprising, a stationary hinge member formed by an attaching-base and pintle-eyes projecting outwardly from the base, a pintle, and a swinging hinge member provided with vertically-extending attaching-plates, vertical overhanging lips or beads on opposite sides and horizontal upper and lower pintle-webs, the pintle-eyes of the stationary member being arranged between the pintle-webs of the swinging member, substantially as set forth.

In testimony whereof witness my hand this 13th day of December, 1898.

SIDNEY S. NILES.

In presence of—

ROBERT BURNS,

JAMES LAVALLIN.