No. 621,192. Patented Mar. 14, 1899.

R. P. WHIPPLE.

SPRING HINGE.

(Application filed Sept. 26, 1898.)

(No Model.)

Fig. 1.

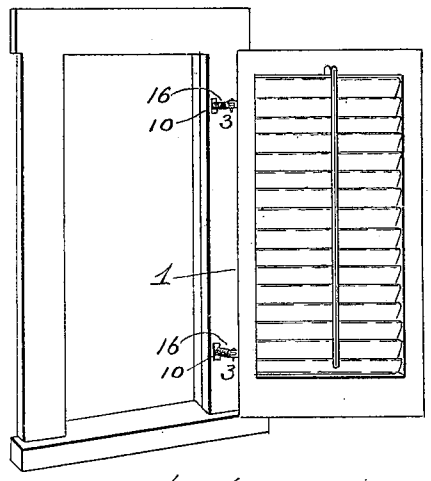


Fig. 2.

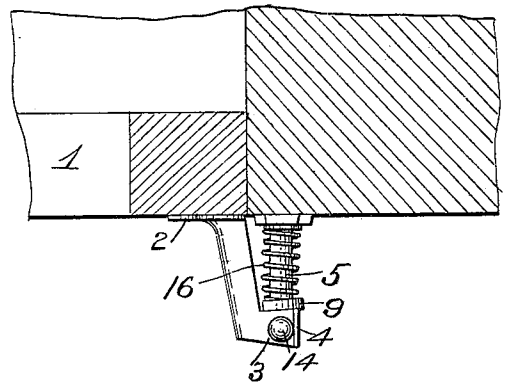


Fig. 4.

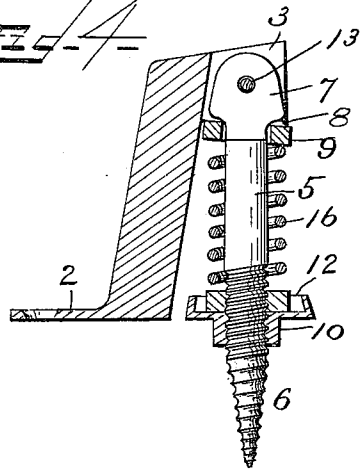


Fig. 3.

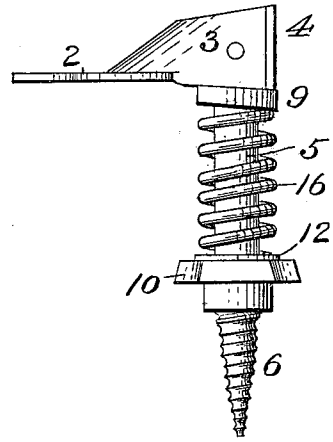
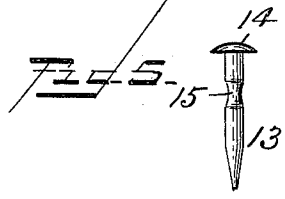


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROLLIN P. WHIPPLE, OF GREENFIELD, MASSACHUSETTS.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 621,192, dated March 14, 1899.

Application filed September 26, 1898. Serial No. 691,851. (No model.)

To all whom it may concern:

Be it known that I, ROLLIN P. WHIPPLE, a citizen of the United States, residing at Greenfield, in the county of Franklin and State of Massachusetts, have invented new and useful Improvements in Spring-Hinges, of which the following is a specification.

My invention relates to spring-hinges for window-blinds; and its object is to provide an improved construction thereof whereby the blind may be held in a closed, opened, or intermediate position without liability of being accidentally thrown out of its adjusted position.

It is also an object to provide a spring-hinge which shall possess superior advantages with respect to efficiency in use.

The invention consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a window-frame and blind with my improvement applied thereto. Fig. 2 is a horizontal sectional view of the same. Fig. 3 is a plan view of the hinge detached, also showing a modified construction of the leaf which is secured to the blind. Fig. 4 is a longitudinal sectional view of the hinge. Fig. 5 is an elevation of the pin which forms the pivot of the hinge.

In the said drawings, the reference-numeral 1 designates a window-frame of any ordinary or suitable construction, to which is secured the leaf 2 of the hinge. This leaf has formed integral with it two parallel lugs 3, the sides of which are beveled, while the ends are made straight and strengthened by ribs 4. These lugs serve as cams, as hereinafter described.

The numeral 5 designates a shank, the inner end, which is connected with the window-frame, being formed with a tapering thread 6, the edge of which is sharpened, so as to take or bite into the wood of said frame, and is formed with a gimlet-point. The inner end of said shank is formed with a flattened head 7, having shoulders 8, against which abuts a loose collar 9, of hard metal, the shank itself being made of soft metal, preferably malleable iron. The shank in rear of said head is made cylindrical, and intermediate thereof and the tapering screw-threaded portion is formed with what is known as a "metal" thread—that is, a thread the edge of which is square or blunt. The numeral 10 designates a bracket which is secured to the window-frame, and in front of this bracket is a nut 12, which fits upon and is adjustable on the said intermediate threaded portion of the shank.

The numeral 13 designates the pin or pintle which connects the leaf 2 with the head of the shank. This pin is provided with a head 14 and the opposite end is made tapering, for a purpose hereinafter described. Between said tapering portion and the head the pin is formed with a peripheral groove 15, with which the edge of the opening in the head 7 engages. The numeral 16 designates a coiled spring embracing said shank and confined between the collar 9 and the nut 12 and the tension of which causes the blind to be held in its adjusted position.

In practice the bracket 10 is secured to the window-frame and the pointed end of the shank is passed through the hole therein and screwed into the frame. The leaf 2 is then secured to the blind or shutter and the lugs 3 engaged with the head 7 of the shank and the pin or pintle passed through the holes in said lugs and head, and the edge of the hole in said head engaging with the groove in the pin will prevent accidental displacement of the latter, yet at the same time allow it to be forced out by a blow from a hammer or other instrument, as the head is held in place in said groove by the tension of the coiled spring 16. To disconnect the leaf from the head, the said pin is forced outward by a blow from a suitable instrument, so that the tapering end thereof will come into line with the opening in the head 7, and being of smaller diameter than said opening or hole will be relieved from the tension of the spring, enabling it to be readily withdrawn by the fingers.

As will be seen in Fig. 1, the blind or shutter may be held in either a closed or open position or in a position at a right angle to the building without the aid of catches of any kind and without liability of blowing to when opened.

By means of the nut 12 the tension of the spring 16 may be regulated without removing the shank from the window-frame by simply

turning the nut to the right or left, as the case may be.

As before stated, the collar 9 is made of hard metal, while the shoulders 8 of the head 7 are of softer metal, thereby reducing the friction and preventing wear.

In Fig. 1 I have shown the lugs 3 as being formed with an arm integral with the leaf 2, which is the construction used when the blind or shutter fits into the window-frame when closed, while in Fig. 2 the lugs are formed directly with the leaf. This latter form is employed when the blind abuts against the window-frame when closed.

It will be noticed that the cylindrical portion of the shank, the collars thereon, and the coiled spring on the shank are all outside of the window-frame, so that in case the spring should become wet from rain or snow it will readily dry, and thus prevent rusting of the same.

The advantages gained by forming the shank with a tapered end having wood screw-threads and the cylindrical portion formed with square threads are as follows: In applying the hinge to a window-frame the bracket is secured thereto and the shank inserted in the hole therein and turned, the pointed end acting as a gimlet and entering the window-frame without the necessity of boring a hole therein. The square or metal threads will then engage with the bracket, and the shank will be securely held and locked in place without any liability of working loose. The adjusting-nut also engages with the square threads, and by turning the same the tension of the coiled spring can be regulated.

Having thus fully described my invention, what I claim is—

1. In a spring-hinge, the combination with the leaf formed with integral lugs, the sides of which are beveled, of the bracket adapted to be secured to the window-frame, formed with a screw-threaded hole, the shank having a flattened head at one end and the other end tapered and formed with wood screw-threads and the cylindrical portion of said shank formed with square wood threads joining said wood screw-threads, the adjusting-nut engaging said square threads, the coiled spring and the pintle, substantially as described.

2. In a spring-hinge, the combination with the leaf formed with integral lugs, the sides of which are beveled of the shank having a flattened head and formed with a tapering end formed with wood screw-threads and with square threads joining the same, the movable collar, the adjusting-nut, the bracket having a screw-threaded hole therein, the coiled spring, and the tapering pintle having a head at one end and a curved or rounded peripheral groove intermediate the said tapered end and head, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROLLIN P. WHIPPLE.

Witnesses:
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