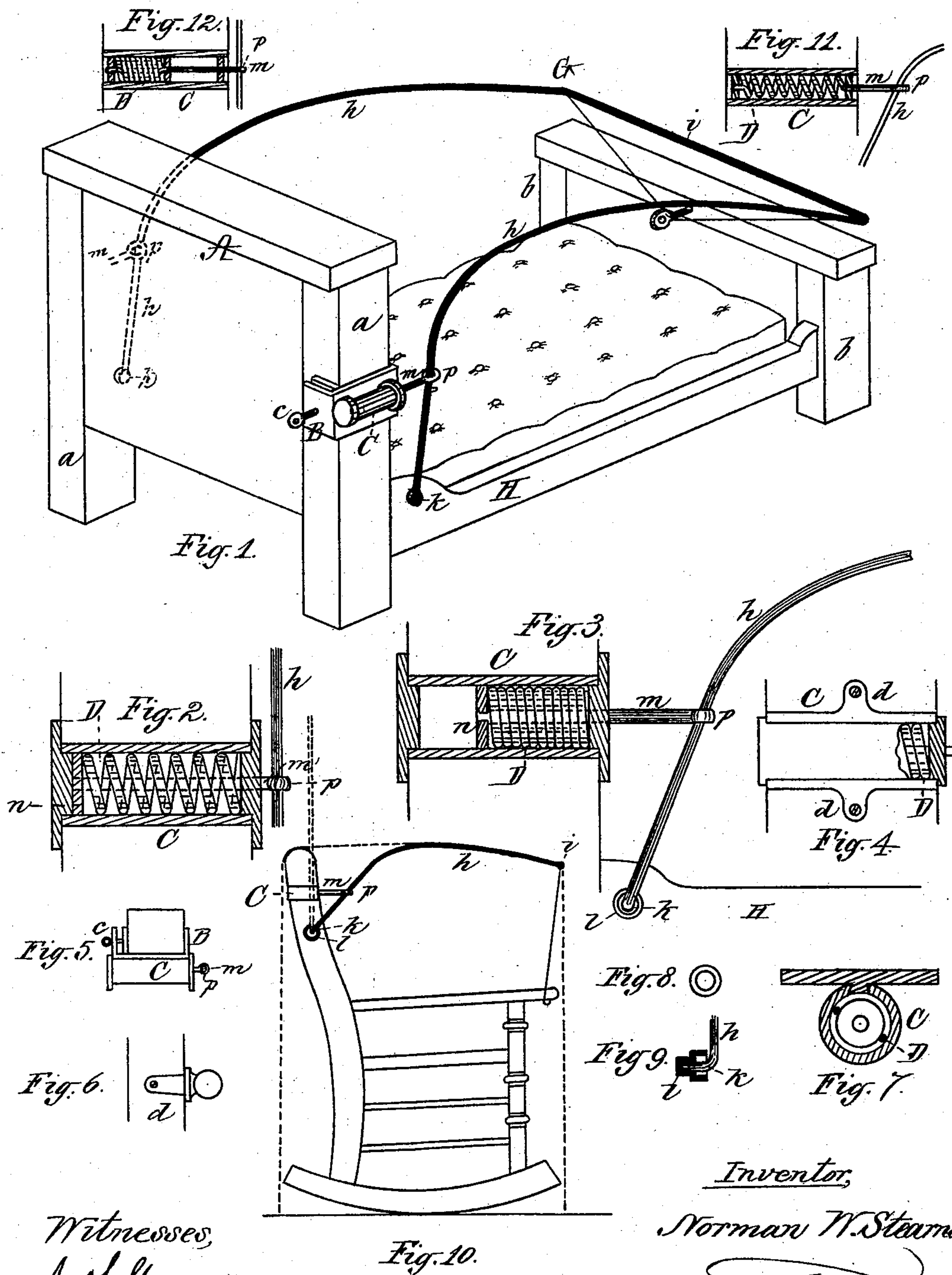


(No Model.)

N. W. STEARNS.
INSECT CANOPY.

No. 599,874.

Patented Mar. 1, 1898.



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INSECT-CANOPY.

SPECIFICATION forming part of Letters Patent No. 599,874, dated March 1, 1898.

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To all whom it may concern:

Be it known that I, NORMAN W. STEARNS, of Boston, Suffolk county, Massachusetts, have invented certain Improvements in Insect-Canopies, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a bedstead having applied thereto a mosquito-canopy frame with my improved device for returning and holding the same in a position when not required for use. Fig. 2 represents a spiral spring within a casing and with its tension relaxed for returning the frame to an upright position; Fig. 3, the spiral spring contracted by the frame when drawn down for use. Figs. 4, 5, and 6 show various means for attaching the spiral spring and its casing to a support. Fig. 7 is a section showing a dovetail connection between a tubular casing inclosing a spiral spring and the plate for securing it to a support; Figs. 8 and 9, the manner of pivoting the lower end of the canopy-frame; Fig. 10, my invention applied to a rocking-chair. Figs. 11 and 12 represent the rear end of the spiral spring secured immovably to the stationary rear end of its inclosing tube in contradistinction to connecting the rear end of the spring to a disk free to slide within the tube, as in Figs. 2 and 3, whereby the action of the spring is reversed.

The aim of my present invention is to provide a simple, reliable, and inexpensive insect-canopy the frame of which may be applied and instantly manipulated without the exercise of skill and, with its netting, be drawn at a single operation over the object to be protected and when released be automatically swung out of the way for future use; and this invention consists in the following-specified combination and arrangement of elements, viz: a canopy-frame, a support to which it is pivoted, a spiral spring applied to the support and having its longitudinal axis located in or parallel to the plane of the vertical path traversed by the contiguous side of the frame, a connection leading directly therefrom to said spring, and a means of retaining the frame (when swung against the resistance of the spring) into the position it occupies when in use, the canopy on its re-

lease being automatically swung out of the way by the prompt assertion of the spring as it returns to its normal position.

In Fig. 1 of said drawings, A represents a bedstead; *a a*, its head-posts; *b b*, its foot-posts.

B is one of a pair of brackets, each of which may be secured to one of the head-posts by a clamping-screw *c* (see Figs. 1 and 5) or by an ordinary screw *d*, turned into the front side of the post, as shown in Fig. 4, or by such screw entering the rear of the post, as seen in Fig. 6; but to prevent marring the posts the clamping-screw with an interposed block or plate of wood or metal is preferred, this latter means of attachment also possessing the advantage of its ready adaptation to supports of different widths.

C is a casing, preferably tubular, formed either integral with or separate from the bracket, said casing being intended for the reception of a spirally-wound spring D, Figs. 2, 3, 11, and 12.

G is a canopy-frame formed of two substantially-parallel portions *h h*, preferably of resilient rod or wire metal, united by an interposed outer portion *i*, substantially at right angles thereto. Each of the portions *h h* is pivoted at its lower or inner end to the side rail H (or head-post) at a point below the location of the bracket, spring, and its casing, a simple means of connection being had by upsetting (bending) the lower extremity *k* of each portion *h* and locating it snugly within a simple thimble or socket *l*, set into the side rail, Figs. 8 and 9.

The connection *m*, projecting from the front of the casing C and to which the frame is attached, may either be a central rod or wire made independently of the spring, Figs. 2 and 3, and be secured at its rear to a circular plate or disk *n*, which is free to slide forward and back within the casing from the position it occupies in Fig. 2 to that shown in Fig. 3, and vice versa, the spring being expanded in its normal position and the disk *n* being pressed thereby against the interior rear end of the casing, as shown in Fig. 2, when the frame is swung up or back against the head-board, the coils of the spring being drawn compactly together into the forward end of the casing, as seen in Fig. 3, when the frame

is swung forward and held down to the footboard in the covering position, Figs. 1 and 3. The connection *m* between each frame portion *h* and its spring *D* should be provided at its outer end with an eye or hook *p* for the reception and free movement therein of the portion *h* of the frame as it is swung forward and back, thereby preventing undue friction and the liability of the frame becoming "set" or bent out of shape.

It will be observed that the spring shown in Figs. 2, 3, 11, and 12 is a spirally-wound one, yet owing to the different manner of attaching its rear terminal and the difference in the connection *m* at its forward end in its natural or retracting (normal) position it is compactly located in Fig. 12 and expanded or relaxed in Fig. 2 when the frame is returned to its upright position against the headboard *a* when not required for use, and is expanded or relaxed in Fig. 11 and compactly coiled in Fig. 3 when the frame is swung forward and held in its covering position.

The spring may be held in place by any well-known form of bracket and the casing *C* be dispensed with, but I prefer to use the latter. The longitudinal axis of the spiral spring *D* when in place is intended to be located in an extension of the vertical plane coincident with the path traversed by the contiguous portion *h* of the frame *G*, by which arrangement the tension or stretching instead of the torsion or twisting of the spring

is the effective factor relied on for returning the canopy-frame to its unused position when the spring is released or retracted.

My invention is applicable to supports of various kinds—for instance, to chairs, Fig. 10, lounges, tables, boats, &c.—and may be attached directly to a wall or block secured thereto and be distinct from the object or thing to be covered and protected.

I claim—

1. In combination a resilient canopy-frame, a support to which the frame is pivoted, a spiral spring applied to the support and operatively connected with the frame between its extremities, said spring having its axis in the plane of movement of said frame and adapted to exert its force longitudinally, and a means of retaining the frame in position for use.

2. In combination a resilient canopy-frame, a support to which the frame is pivoted, a spirally-coiled spring applied to the support and operatively connected with the frame between its extremities, said spring having its axis in the plane of movement of the frame and arranged to exert its force longitudinally, a holder for the spring, and means for retaining the frame in position against the force of spring when the same is adjusted for use.

Witness my hand this 22d day of April, 1897.

NORMAN W. STEARNS.

In presence of—

A. F. STEARNS,

A. B. DEGGS.