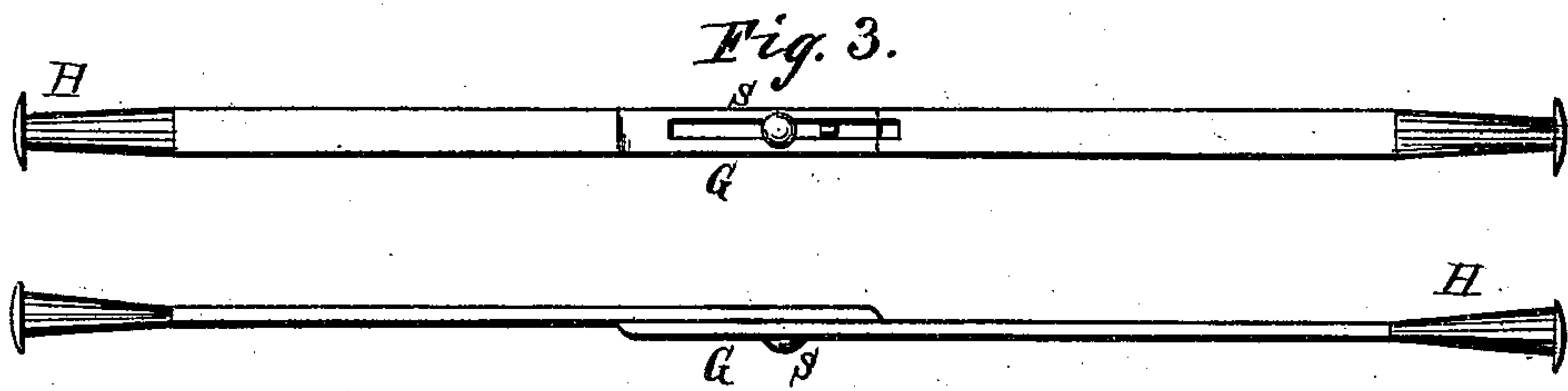
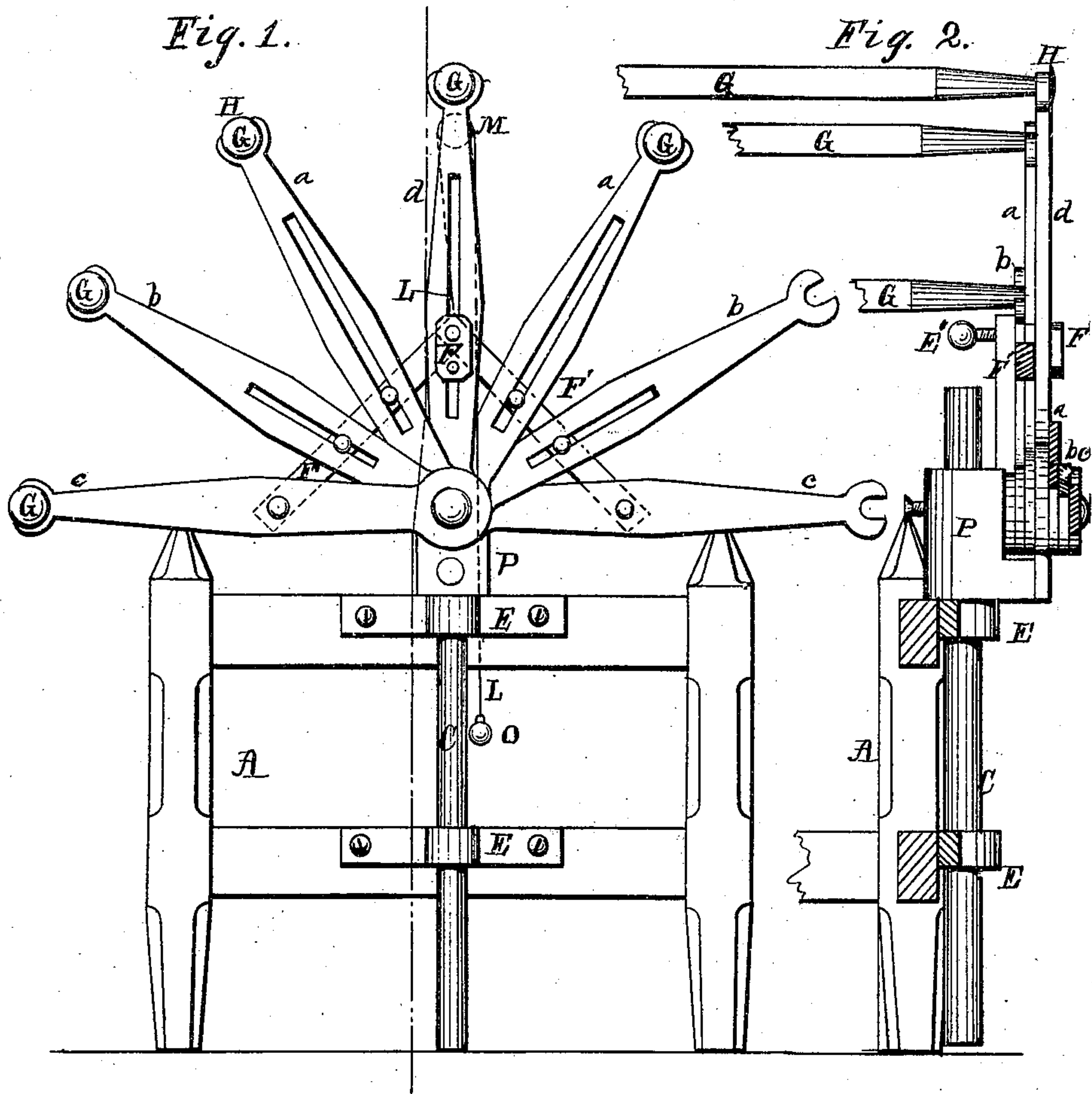


LYDIA K. BALLOU & G. G. LEE.

MOSQUITO NETS AND CANOPIES.

No. 179,503.

Patented July 4, 1876.



Witnesses:  
J. C. Kemmon  
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# UNITED STATES PATENT OFFICE.

LYDIA K. BALLOU, OF WATERVLIET, AND GEORGE G. LEE, OF PAW PAW,  
MICHIGAN.

## IMPROVEMENT IN MOSQUITO NETS AND CANOPIES.

Specification forming part of Letters Patent No. **179,503**, dated July 4, 1876; application filed  
May 27, 1875.

*To all whom it may concern:*

Be it known that we, Mrs. LYDIA K. BALLOU, of Watervliet, in the county of Berrien and State of Michigan, and G. G. LEE, of Paw Paw, in the county of Van Buren and State of Michigan, have invented a new and useful Improvement in Mosquito Nets and Canopies; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention is an improvement in that class of nets or canopies which are applied to beds and other articles of household furniture, to exclude mosquitoes, flies, and other insects; and consists of a series of folding frames, having their respective arms or end bars pivoted to common centers, to adapt the frames to open and close like the leaves of a fan, and in a clamping device for adjusting and holding the pivoted frames in the desired position; also, in the construction of the individual longitudinal main bars of the frames; also, in other features hereinafter described and claimed.

In the accompanying drawing, forming part of this specification, Figure 1 is an end elevation of our improved canopy-frame or curtain-holder, applied to a bedstead. Fig. 2 is a sectional elevation of a fragment of the same; and Fig. 3 represents side and edge views of the main bars of the folding frames.

A is a bedstead, and E keepers, applied to the end bars of the same to receive a vertical rod, C, which may be adjusted vertically to raise or lower the canopy as a whole. Blocks P slide on said rods, and may be secured at any adjustment by set-screws. To these blocks P the arms of the several folding frames *a b c*, which compose the canopy-frame proper, are pivoted, as shown. The vertical middle arms *d* are, however, not pivoted, but rigidly attached to the blocks B.

The device for adjusting the arms *a b c* is composed of two bars, *F' F'*, a screw, *E'*, and clamp-nut *F*. The screw *E'* passes through the upper ends of bars *F'*, and through the elongated slot in the rigid arm *d*, while the lower ends of said arms are pivoted to the outer arms or bars *c c*. The intermediate arms *a a* and *b b* are connected to the bars *F'* by means of studs or pins, which work in longitudinal slots of the arms, as shown.

The drawing shows the above-described parts applied at one end of a bedstead; but,

as is obvious, similar ones are to be provided at the other end.

The main supports of the net or curtain are the bars *G*, which rest in round or semicircular notches formed in the outer ends of arms *a b c d*. The bars are detachably connected to the arms by means of their peculiar form, being flat or narrow near the heads *H*, which are cylindrical, and provided with a cap or flange. Each bar is formed of two parts, one overlapping the other, and respectively provided with a slot and screw, to adapt them to be clamped together after the heads *H* have been drawn into the notches in arms *a b*.

In respect to operation of the apparatus, it is obvious that the adjustment of the clamp-nut *F* higher or lower tends to close or open the arms *a a b b c c* like the leaves of a fan, and that by this movement the net or curtain will be correspondingly raised or lowered.

To facilitate raising the arms, we employ a weighted cord, *L O*, passing over a pulley, *M*, at the upper end of arm *d*, and attached to the nut *F*. When the latter has been properly adjusted it is clamped and secured by turning the thumb-screw *E'*.

The canopy-frame proper may be readily detached from the rods *C*, and thereby from the bedstead, as occasion may require.

What we claim is—

1. The combination, with the pivoted folding frames, of adjusting-bars *F'*, substantially as shown and described.

2. The combination of clamp-nut *F* and screw *E'* with vertical rigid arm *d*, movable arms *a b c*, and bars *F'*, provided with studs working in slots of arms *a b*, as shown and described.

3. The combination, with the arms *a b c d*, having notches in their outer ends, of bars *G*, having heads with contiguous flat and cylindrical portions, as shown and described.

4. The combination, with notched arms, of the bars *G* made in two parts, respectively provided with slot and clamp-screw, as shown and described.

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Witnesses:

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