

No. 680,301.

Patented Aug. 13, 1901.

J. C. WHIPPLE.
LACE CURTAIN STRETCHER.

(Application filed Feb. 1, 1899.)

(No Model.)

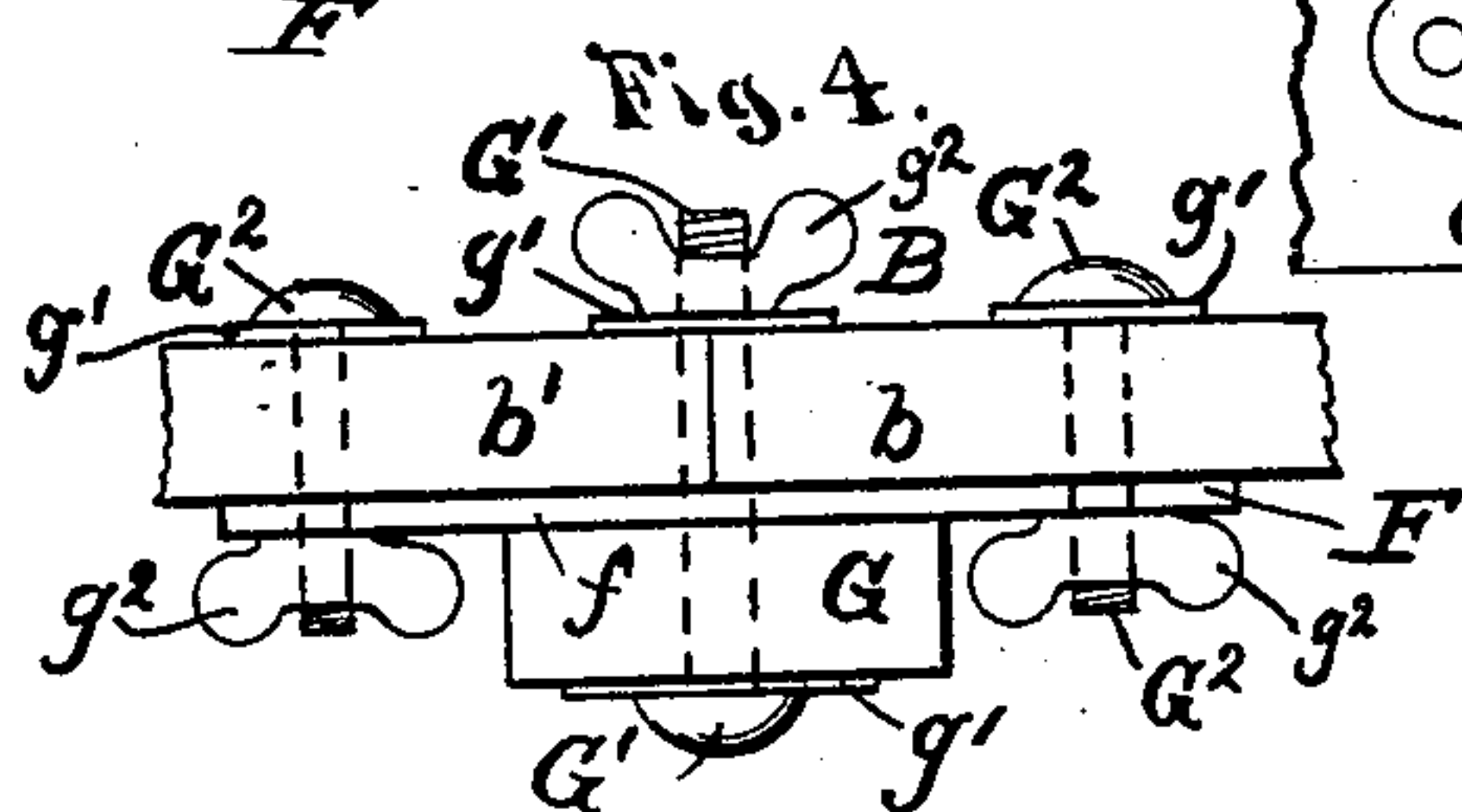
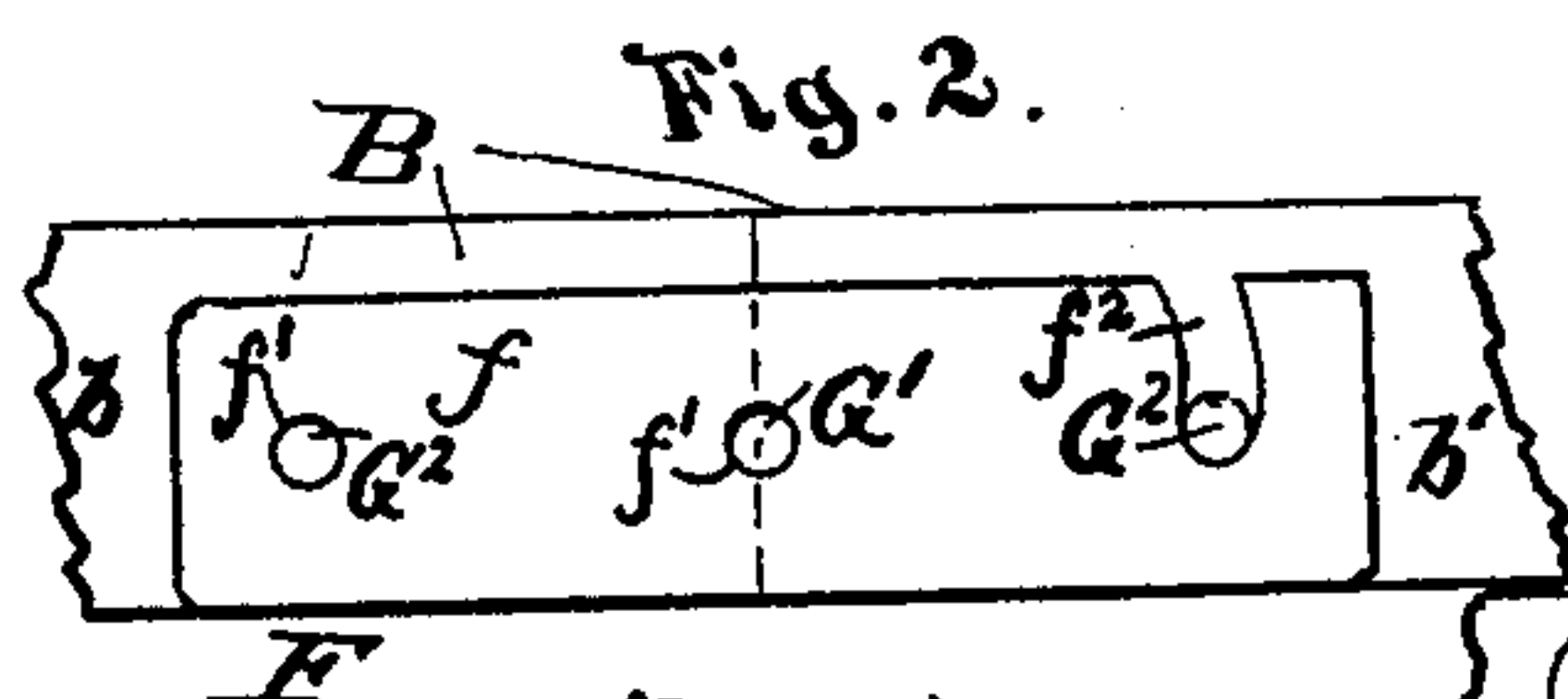
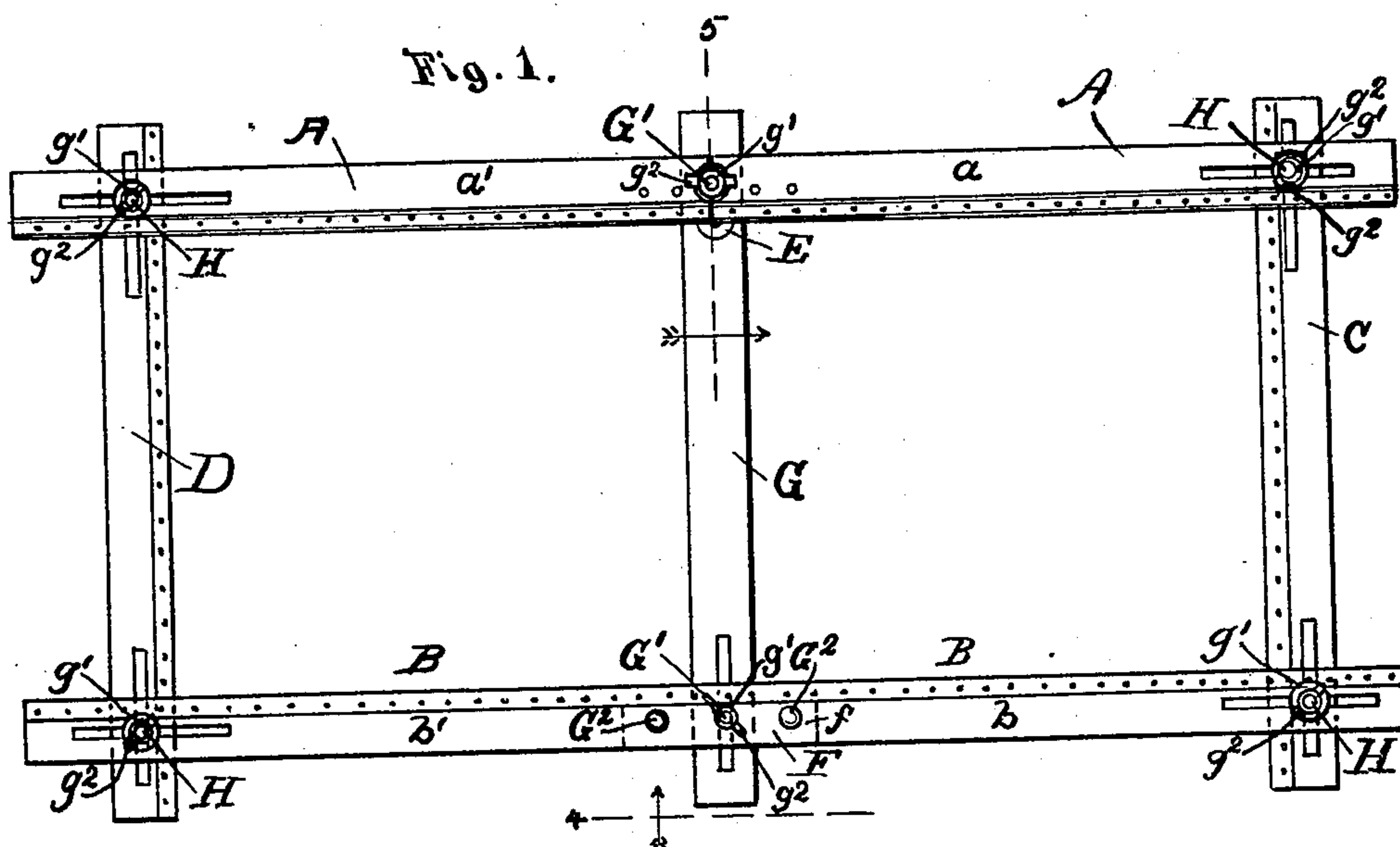


Fig. 3.

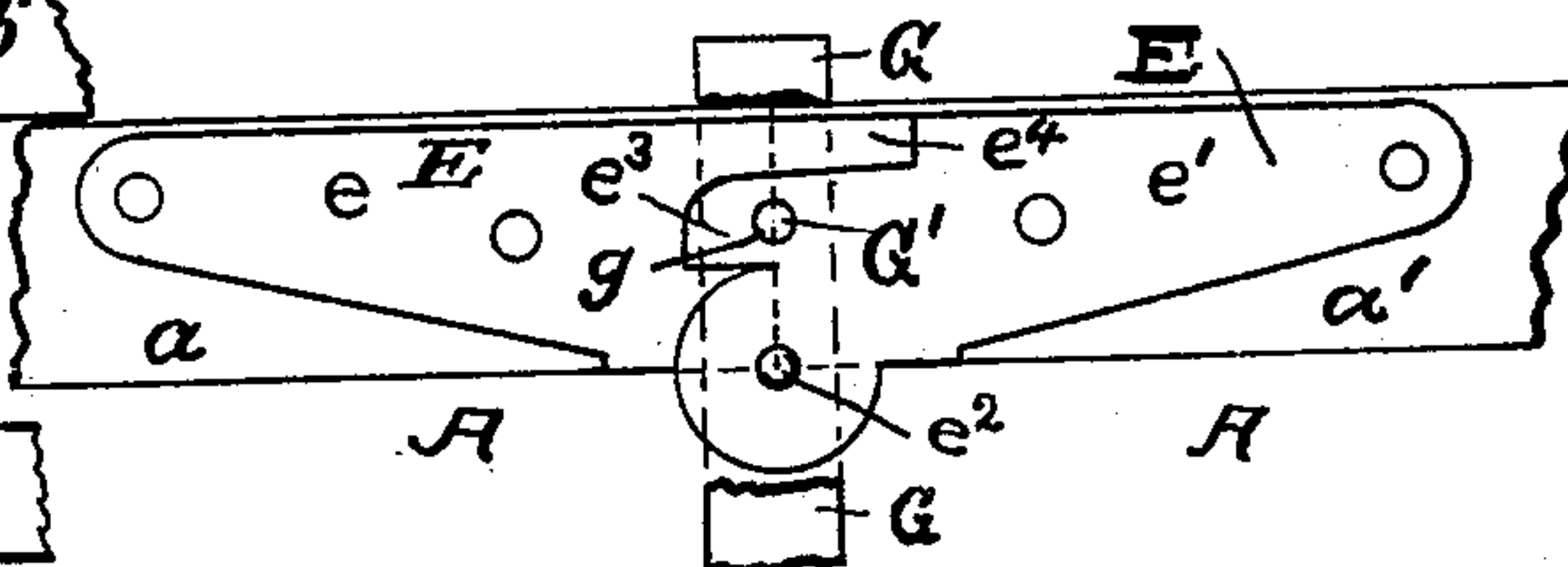


Fig. 5.

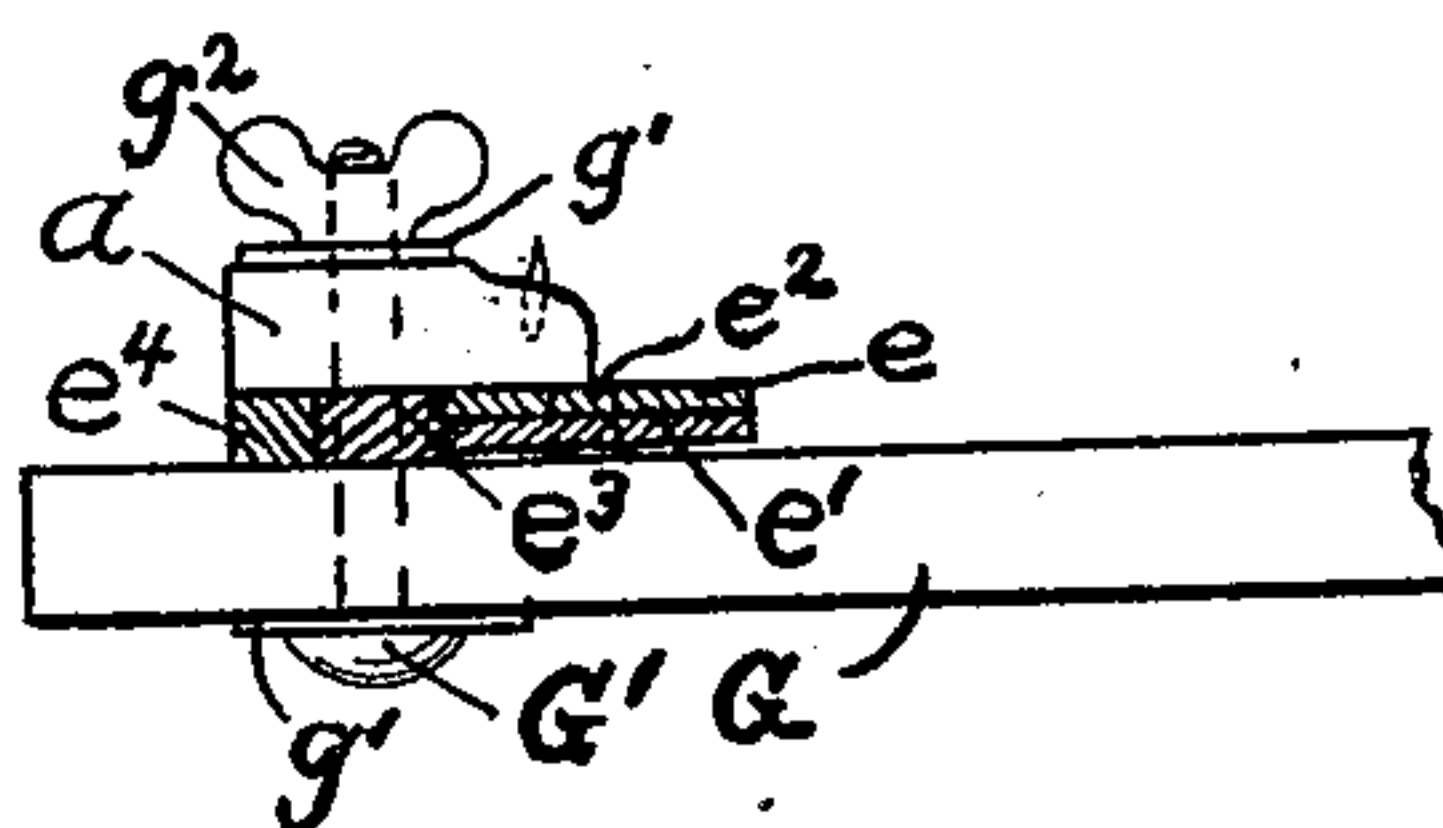
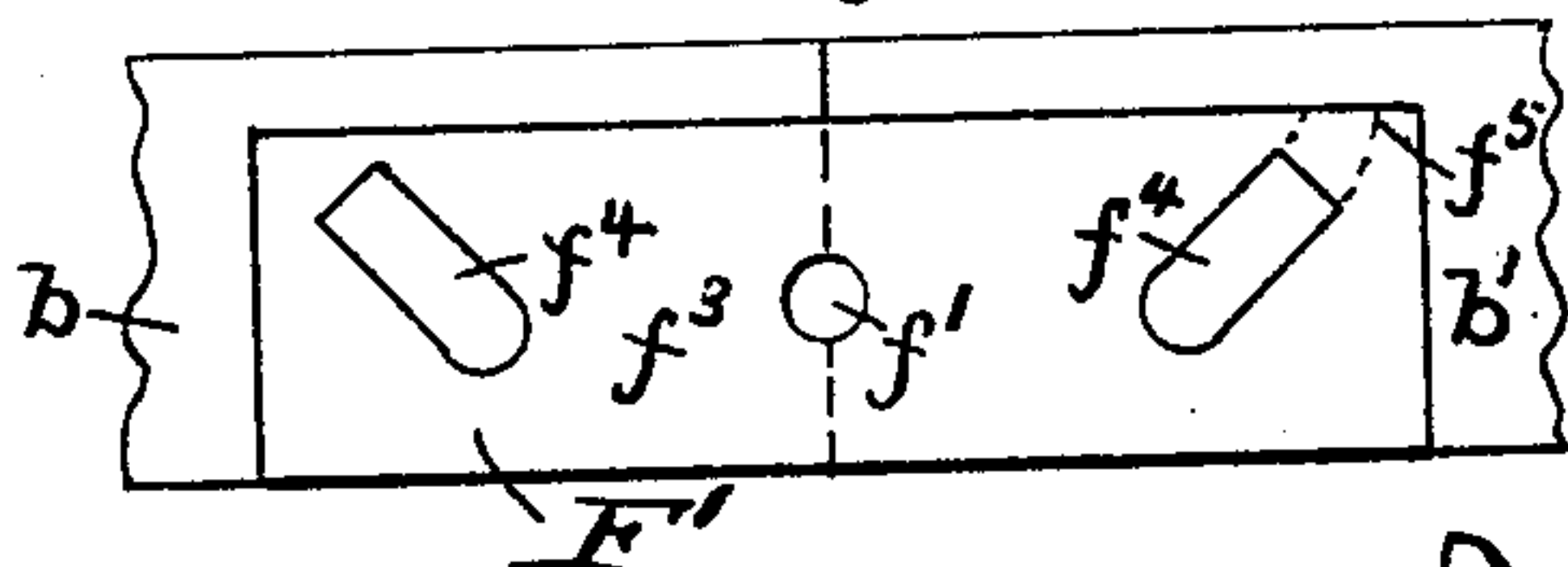


Fig. 6.



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UNITED STATES PATENT OFFICE.

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LACE-CURTAIN STRETCHER.

SPECIFICATION forming part of Letters Patent No. 680,301, dated August 13, 1901.

Application filed February 1, 1899. Serial No. 704,085. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. WHIPPLE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lace-Curtain Stretchers, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

The invention relates to that class or kind of lace-curtain stretchers which are designed to be set up for use and folded or taken down when not in use.

The object of this invention is to obtain a lace-curtain stretcher which shall be neat in appearance, not liable to get out of order, and of moderate cost to make.

In lace-curtain stretchers of the kind named, side rails composed, respectively, of two bars joined together at their inner and adjacent ends are secured at their outer ends to end rails, thereby obtaining a rectangular frame, such frame being made adjustable by the pivotal connections at the meeting ends of the side and end rails being made through slots. In order to construct the side rails of light material, it is necessary to provide specially-constructed hinges for joining the bars together at the adjacent ends thereof in the side rail wherein such bars are hinged together. It is also necessary to provide special mechanism for joining together the adjacent ends of the bars forming the side rail where such bars are not hinged together, and it is further necessary to provide a cross-bar and means for securing it near its ends to the side rails at or adjacent to the joined ends of the bars constituting such side rails; and this invention comprises, first, a specially-constructed hinge for joining together adjacent ends of the bars forming a hinged side rail, preferably used for one side rail of the stretcher, and for securing one end of the cross-bar to the hinge and to such side rail in a manner to prevent sagging of the side rail as well as any bowing inward thereof; secondly, a mechanism for securing together adjacent ends of the bars forming a side rail whereof the bars are not hinged together, such

side rail preferably forming the remaining side rail of a stretcher embodying this invention, and mechanism for securing the end of the cross-bar to such connecting mechanism and to the adjacent ends of the bars forming such side rail, and, thirdly, the combining of the foregoing-named hinge and mechanism, respectively, with the respective side bars named.

In the drawings referred to as forming a part of this specification, Figure 1 is a plan view, on a smaller figure than are the remaining figures of the drawings, but not to scale, of a lace-curtain stretcher embodying this invention; Fig. 2, a bottom plan view of the adjacent ends of the bars forming one of the side rails of the curtain-stretcher; Fig. 3, a bottom plan view of the adjacent ends of the side bars forming the other (and the hinged one) side rail of the curtain-stretcher; Fig. 4, an elevation on line 4 of Fig. 1 viewed in the direction indicated by the arrow; Fig. 5, a vertical sectional view on line 5 of Fig. 1 viewed in the direction indicated by the arrow, and Fig. 6 is a bottom plan view of a modification of the connecting mechanism illustrated in bottom plan view in Fig. 2.

A reference-letter applied to designate a given part in one figure of the drawings is used to indicate such part throughout the several figures wherever the same appears.

A and B are the side rails, and CD the end rails, of a curtain-stretcher embodying this invention. Side rail A comprises bar *a*, bar *a'*, and hinge E. Side rail B comprises bars *b b'* and connection F. (See Fig. 2.)

G is the connecting-bar extending from side rail A to side rail B.

H H are bolts securing the ends of the side and end rails together.

g' g' are washers on bolts *G' G'* and H H, respectively, and *g² g²* are butterfly-nuts on such bolts *G' G' H H*, respectively. *G' G'* are bolts extending through holes in the hinge E and connection F, as hereinafter more fully shown.

Hinge E comprises plates *e e'*, pivotally joined by pin *e²*. Plate *e'* is provided with projection or lug *e³*, and plate *e* is provided with projection or lug *e⁴*. These projections or lugs *e³* and *e⁴* interlock, as is well illustrated in Fig. 3 of the drawings.

g is a hole in projection or lug e^3 , through which the bolt G' extends when connecting-bar G is to be secured in place to the under side of rail A , with the hinge E interposed.

5 When such connecting-bar is so secured in place, the projections e^3 and e^4 are pressed firmly by such connecting-bar G against the under side of bars $a a'$ by the setting of the nut g^2 on bolt G' , and great rigidity is thus

10 secured in the hinged connection of such bars.

Connection F comprises plate f , bolts $G' G^2$, and washers $g' g^2$, with the butterfly-nuts $g^2 g^2$ on such bolts, respectively. The plate

15 f is provided with the holes $f' f'$ for bolt G' and one of the bolts G^2 to pass through and with the slot f^2 for the remaining bolt G^2 to pass through.

The connecting-bar G is secured in place

20 to side rail B by bringing such connecting-bar up against the under side of the plate f of connection F , as is well shown in Fig. 4 of the drawings, passing the bolt G' upward through the connecting-bar and plate f and

25 through the bars $b b'$, (between the ends of such bars,) and then placing the washer g' on such bolt, with the butterfly-nut g^2 firmly set in place.

The connection F is secured in place and

30 to the bars $b b'$ by the bolts $G^2 G^2$, (see Fig. 4,) passing through holes provided therefor in the respective bars and through the plate f , (one of such bolts passing through hole f' and the other through slot f^2 , as shown in

35 Fig. 2,) and then setting the butterfly-nuts $g^2 g^2$ firmly in place on such bolts.

In the modification of connection F , which is lettered F' in Fig. 6 of the drawings, plate f^3 is provided with hole f' for the bolt G' to

40 pass through, as in plate f of connection F , and with the slots f^4 and f^4 for the bolts $G^2 G^2$ to pass through. This plate f^3 is secured to the bars $b b'$ of side rail B by the bolts $G^2 G^2$, passing through the slots $f^4 f^4$, respec-

45 tively, and through the bars $b b'$, such bolts having thereon the washers $g' g'$ and butterfly-nuts $g^2 g^2$ in the same relative position and in the same manner as is shown in Fig. 4 relative to connection F . In the use of this modi-

50 fication, as well as in the use of the construction illustrated in Figs. 2 and 4, bars $b b'$ can be folded parallel to each other upon taking out the bolts $H H$ at the ends thereof, respectively, without taking bolts $G^2 G^2$ out of such

55 bars $b b'$, it being simply necessary to loosen the butterfly-nuts $g^2 g^2$ on such bolts.

The connecting-bar G may be disconnected from the connection F (or F') by taking out the bolt G' , or it can be disconnected at the other end thereof from the hinge E by taking

60 out the bolt G' therein and allowed to remain connected to the connection F (or F') in the folding of the bars $b b'$, as hereinbefore described.

Having thus described my invention, what

65 I claim as new, and desire to secure by Letters Patent, is—

1. In a lace-curtain stretcher, side rails joined to end rails, such side rails comprising, on one side of the frame, bars hinged together

70 by a hinge the plates whereof are pivotally secured together, with interlocking projections on the plates, and a cross-bar secured to one of the projections, and on the other side of the frame, bars joined together by a

75 connecting-plate provided with openings therethrough, bolts passing through such opening and through the bars, nuts on the bolts, and a bolt passing through the central opening in the plate, through the cross-bar

80 which is secured to the hinge on the other side rail, and between the ends of the side bars, with a nut on such bolt; substantially as described.

2. In a curtain-stretcher, side rails, one

85 whereof comprises bars joined together by a hinge and the other, bars joined together by a connecting-plate; such hinge consisting of plates pivoted together, projections on such plates respectively, such projections inter-

90 locking when the hinge is open, and means for pivotally attaching a cross-bar to one of the projections of the hinge, and such connecting-plate consisting of a plate having openings therethrough, bolts having nuts

95 thereon extending through the openings in the plate adjacent to the ends thereof and through the bars to which the plate is attached, and a bolt extending through the opening in the center of the plate, and through

100 between the ends of the bars forming the side rail, with a washer and a nut on such bolt, and a connecting cross-bar secured to the hinge by a pivot passing through the projec-

105 tion on one of the plates thereof and to the connecting-plate by the bolt which passes through the central opening therein; substantially as described.

JAMES C. WHIPPLE.

In presence of—

CHARLES TURNER BROWN,
FLORA L. BROWN.