

No. 824,310.

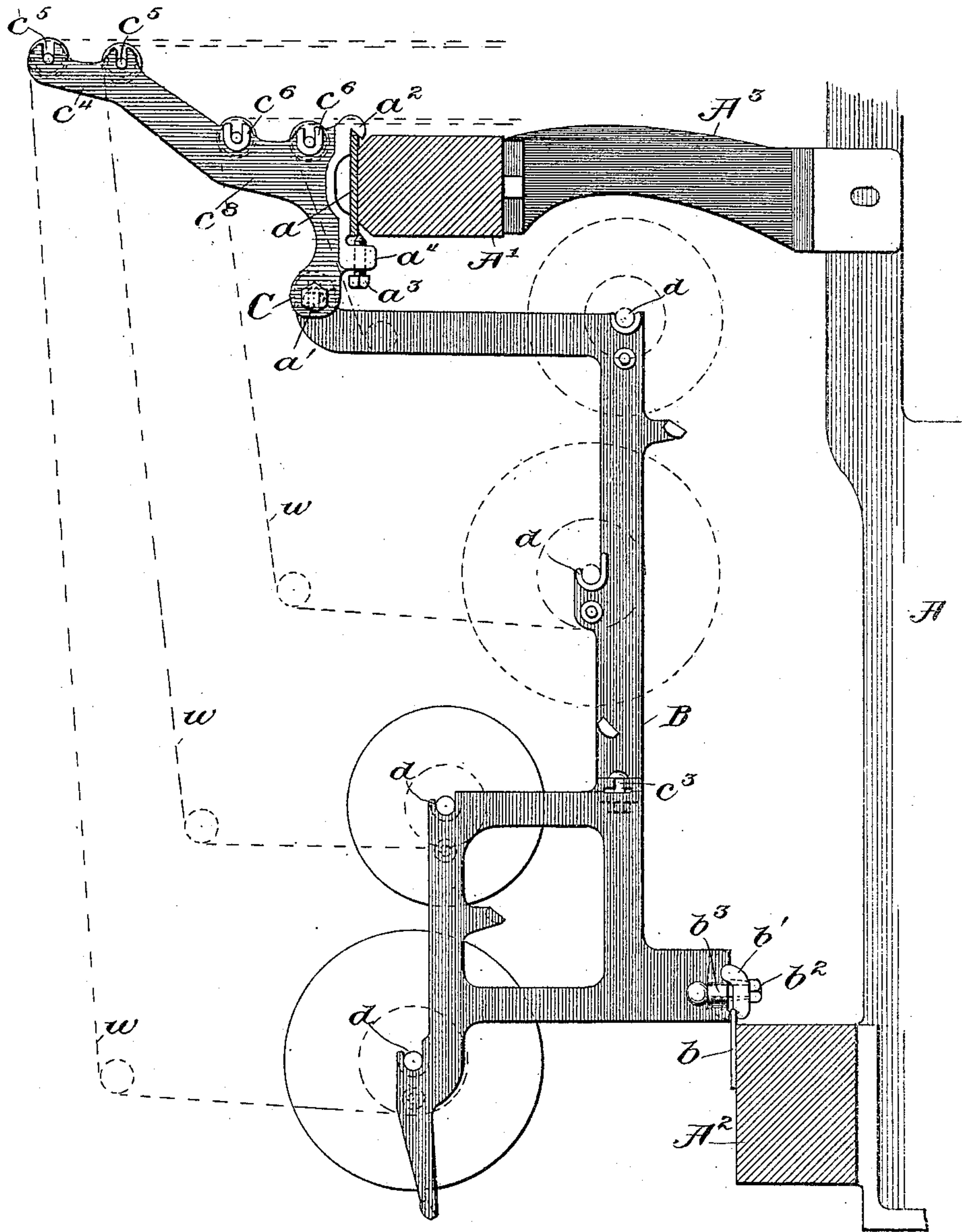
PATENTED JUNE 26, 1906.

O. W. SCHAUM.  
WARP SUPPORTING AND GUIDING MEANS.

APPLICATION FILED SEPT. 20, 1906.

2 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses:  
W. S. Babcock  
A. R. Hunter

Inventor:  
Otto W. Schaum,  
by Robt. P. Hauss,  
Attorney.

No. 824,310.

PATENTED JUNE 26, 1906.

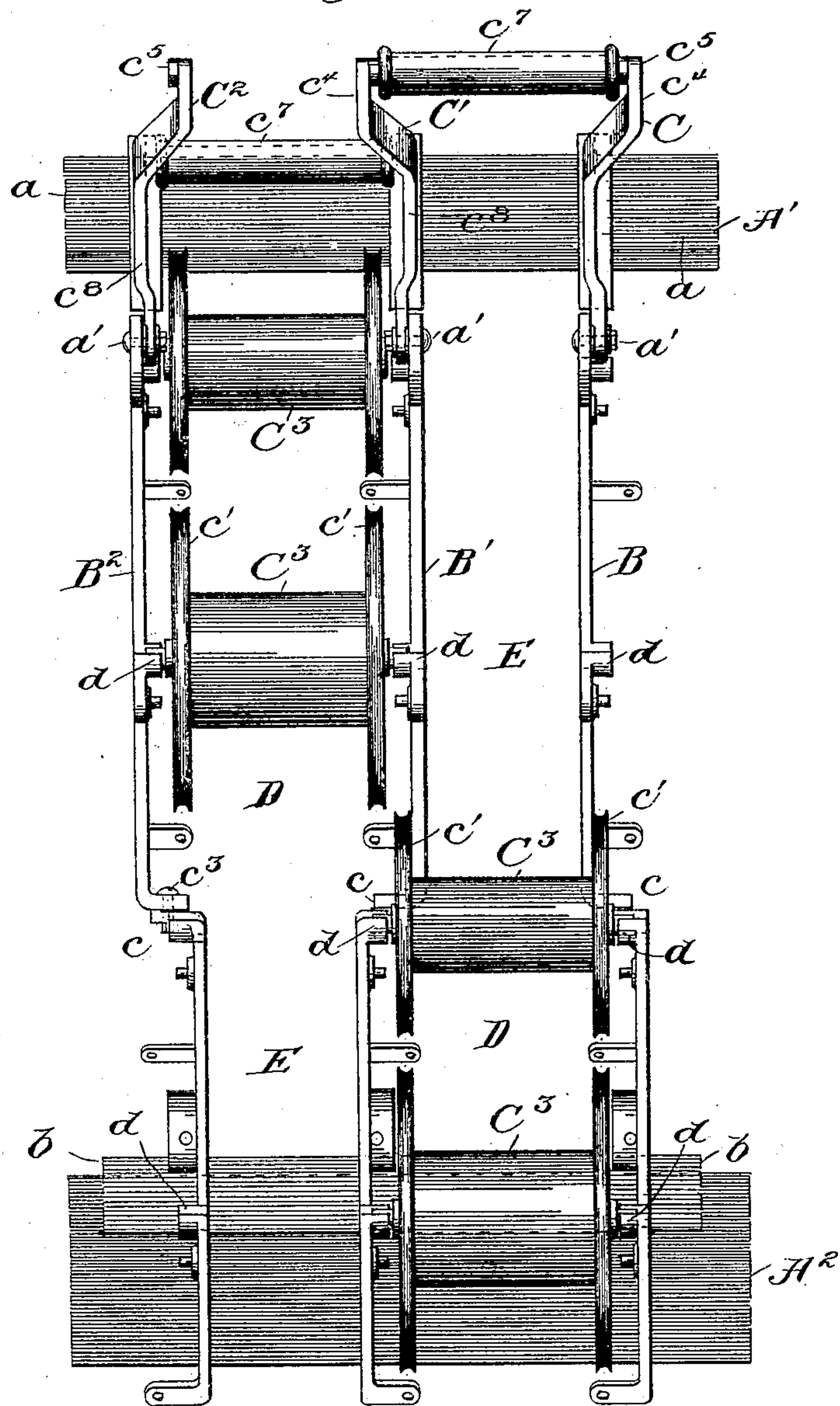
O. W. SCHAUUM.

WARP SUPPORTING AND GUIDING MEANS.

APPLICATION FILED SEPT. 20, 1905.

2 SHEETS—SHEET 2.

*Fig. 2.*



Witnesses:  
W. S. Babcock  
A. R. Hunter

*Inventor:*  
*Otto W. Schaum,*  
*by Robt. P. Hains,*  
*Attorney.*



# UNITED STATES PATENT OFFICE.

OTTO W. SCHAUM, OF PHILADELPHIA, PENNSYLVANIA.

## WARP SUPPORTING AND GUIDING MEANS.

No. 824,310.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed September 20, 1905. Serial No. 279,372.

*To all whom it may concern:*

Be it known that I, OTTO W. SCHAUM, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Warp Supporting and Guiding Means, of which the following is a specification.

The invention to be hereinafter described relates to warp supporting and guiding means in loom structures, and more particularly to such devices in looms for weaving narrow fabrics, such as ribbons and the like.

As will be readily understood by those skilled in the art, the warp-threads in the general character of looms referred to are supplied to the weaving instrumentalities from short beams or spools supported at the rear of the loom, and from such beams or spools the warps pass over suitable guiding and whip rollers, which spread the warp-threads into a sheet form for further manipulation. In such character of loom, whether single or double deck, it is desirable that the beam or spool-supporting devices and the guiding means for the warp-threads be readily adjustable in a manner to provide for sheets of warp of varying width according to the character or width of fabric to be produced. It is likewise desirable that these adjustments for the purposes noted be simple and convenient and that the relative position of the beams or spools and warp-guiding means be such as to maintain the entire set of warp-threads evenly spaced apart.

With these general considerations in view the object of the present invention is to provide a back rack for the beams or spools and a support for the warp-guiding means of a character that relative movement of the sections of the back rack toward or from each other will effect a like movement of the supports for the warp-guiding means and wherein also the warp-threads shall be delivered from the warp-guiding means in a uniformly-spaced condition.

The invention consists of the parts and combinations to be hereinafter described and then definitely pointed out in the claims.

In illustration of the present embodiment of my invention all parts of the loom structure not directly associated with or connected to the subject-matter of the invention have been omitted for simplification, such

parts being well understood by those skilled in this art.

In the drawings, Figure 1 is a sectional side elevation of the rear part of a loom, showing one embodiment of the present invention; and Fig. 2 is a rear elevation of the parts shown in Fig. 1.

In the drawings, A represents any usual form of loom-framing, to which is secured the upper beam A' by means of suitable arms or supports A<sup>3</sup> and the lower beam A<sup>2</sup>, said parts being connected together in desired relation by appropriate means, as will be understood. Secured to the beams A' and A<sup>2</sup> are the face-plates a and b, extending transversely of the loom, and adjustably connected to such face-plates, so as to be transversely movable with respect to each other, are the back-rack sections B B' B<sup>2</sup> and the guide-roll supports C C' C<sup>2</sup>, as will presently appear. Secured to the upper portions of the back-rack sections B B' B<sup>2</sup> by means of suitable bolts a' are the guide-roll supports C C' C<sup>2</sup>, each of which is provided with a lip a<sup>2</sup> for engaging the upper edge of the face-plate a and a bolt a<sup>3</sup>, tapped into a lug a<sup>4</sup> and adapted to engage the lower edge of the face-plate a. Likewise each of the back-rack sections B B' B<sup>2</sup> at its lower part is provided with a clamping-finger b' and a bolt b<sup>2</sup>, tapped into a lug b<sup>3</sup>, said finger being adapted to clamp between it and the end of the rack-section the upper edge of the face-plate b. From this construction it will be apparent, aside from the special form and details of structure of the back-rack sections and guide-roll support, that by proper manipulation of the screw-bolts a<sup>3</sup> and b<sup>2</sup> any one of the back-rack sections, and with it the connected guide-roll support, may be adjusted transversely of the loom and then clamped in its new position or any such back-rack section and its connected guide-roll support may be readily removed from the loom.

In the present embodiment of the invention the back-rack sections, as well as the guide-roll supports, are of peculiar construction, so that each section and support may afford bearings for spools and guide-rolls on either side thereof in connection with its next adjacent section or support and at the same time maintain a proper even spacing of the warp-threads, as will be explained. Referring to Fig. 2, it will be noted that the



back-rack sections are each provided with an offset  $c$  and that adjacent sections have such offset reversed in direction, so that between each two sections there will be a widened portion D for the support of the spools or beams and a narrow portion C either above or below such spools or beams, whereby a staggered relation of the spools or beams is secured between the successive sections. The purpose of this will be readily apparent, since the flanges  $c'$   $c'$  of the spools or beams  $C^3$   $C^3$  occupy considerable transverse space, and by providing such widened portions in which the spools or beams may be supported in staggered relation on appropriate bearings  $d$   $d$ , provided on opposite sides of the rack-sections, the spools or beams between successive sections may be arranged more compactly in transverse relation and the warp passing therefrom be presented to the guiding-rolls to be described more nearly in a uniformly-spaced relation.

In the particular form of the back-rack sections shown in the drawings the offsets  $c$  are formed by making each section in two parts and connecting these by a usual bolt and nut  $c^3$ ; but it will be understood that such detail structure may be varied within the scope of the present invention.

In order that the warp-threads delivered from the spools or beams  $C^3$   $C^3$  may be maintained in uniform spaced relation throughout the transverse extent of the loom, and thus presented to the weaving instrumentalities, the guide-roll supports  $C$   $C'$   $C^2$ , like the back-rack sections described, have offset or bent ends  $c^4$   $c^4$ , the offset or bend in one support, as  $C$ , being in an opposite direction to the offset or bend in the next adjacent support  $C'$ , and so on throughout the transverse extent of the loom. It will thus be seen that adjacent guide-roll supports present a wide and a narrow space between and that such wide space occurs between the end portions  $c^4$   $c^4$  of two adjacent supports and between the base portions  $c^8$   $c^8$  of the next adjacent supports, the wide space between successive supports being thus staggered. The end portions  $c^4$   $c^4$  and the base portions  $c^8$   $c^8$  are provided with bearings  $c^5$  and  $c^6$ , respectively, for the guide-rolls  $c^7$   $c^7$ , so that by reason of the offsets or bends of the guide-roll supports the guide-rolls between successive supports may be disposed in the wide space provided and the end flanges be thus caused to overlap, as seen in Fig. 2, the offset being to enable the warp-threads  $w$  (shown by dotted lines in Fig. 1) to be passed over the several guide-rolls  $c^7$   $c^7$  and delivered in sheet form with substantially uniform space between the several threads.

From the construction illustrated and described as presenting one form of the invention it will be noted that the back rack for the support of the spools or beams is com-

posed of several separate and independent sections, each provided with a series of bearings for the spools or beams, and that each section of the back rack is provided with or has secured to it a guide-roll support in the general form of a bracket, means being provided for adjustment of the several back-rack sections transversely of the loom, so adjustment of a back-rack section also secures simultaneous adjustment of the guide-roll support associated with it. It will also be noted that the guide-roll supports are offset to present between successive supports in staggered relation wide receiving-spaces for the spools or beams, so that the flanged ends of the beams or spools by being overlapped do not interfere with the uniform spacing of the warp-threads as they are delivered to the weaving instrumentalities. In other words, the arrangement referred to gives to the series of transversely-disposed guide-rolls the functional characteristics of a continuous rod, while permitting a more or less number of such rolls to be employed, as circumstances in the width of fabric may dictate. The staggered condition or overlapping of the spools or beams as resulting from the reverse offsets in adjacent rack-sections also contributes to a maintenance of uniform spaces between the warp-threads as they are delivered over the guide-rolls, as will be obvious.

It will be understood that the beams or spools are, as usual and well known to those skilled in the art, provided with tension-regulating devices; but, as hereinbefore stated, these form no essential part of the present invention and are not deemed necessary for special description or illustration. It will also be understood that changes in details may be made in the described structure without departing from the spirit of the present invention, which contemplates joint movability or adjustment of the back-rack sections and guide-roll supports and the provision of offsets or like means in the supports for maintaining a spread and evenly-spaced condition of the warp-threads. Only three back-rack sections and guide-roll supports are shown in the drawings; but this number is illustrative merely, and obviously any number may be used.

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

1. In a loom, the combination of a back rack comprising a series of back-rack sections, a guide-roll support connected to each of said back-rack sections and movable therewith and means for adjusting the back-rack sections and their connected roll-supports transversely of the loom.

2. In a loom, the combination of a back rack comprising a series of back-rack sections, a guide-roll support connected to each of said



back-rack sections and movable therewith, said guide-roll supports being offset, and means for adjusting the back-rack sections and their connected roll-supports transversely of the loom.

3. In a loom, the combination of a back rack comprising a series of back-rack sections; a guide-roll support connected to each of said back-rack sections and movable therewith; said back-rack sections and guide-roll supports being offset as described; and means for adjusting the back-rack sections, and their connected roll-supports transversely of the loom.

4. In a loom, the combination of a back rack comprising a series of back-rack sections having bearings for spools or beams, at each side thereof, adjacent back-rack sections being reversely offset, a guide-roll support connected to each of said back-rack sections and movable therewith, and means for independently adjusting the back-rack sections and their connected roll-supports transversely of the loom.

5. In a loom, the combination of a back rack comprising a series of back-rack sections having bearings for spools or beams, at each side thereof, adjacent back-rack sections being reversely offset, a guide-roll support connected to each of said back-rack sections and

movable therewith, said guide-roll supports being reversely offset and provided with guide-roll bearings and means for independently adjusting the back-rack sections and their connected roll-supports transversely of the loom.

6. In a loom, a back rack comprising a series of back-rack sections having bearings on their opposite sides for spools or beams, said sections being offset to provide for overlapping of the spool or beam ends between successive back-rack sections, a guide-roll support connected to each of said back-rack sections, adjacent supports being reversely offset to provide for overlapping the ends of the guide-rolls between successive sections and means for supporting the back-rack sections and connected roll-supports.

7. In a loom, a back-rack section and a guide-roll support connected together to be movable in unison, and means for adjustably supporting the back-rack section and guide-roll support from the loom-frame.

In testimony whereof I affix my signature in presence of two witnesses.

OTTO W. SCHAUM.

Witnesses:

B. G. ELLIOTT,  
L. M. LENTZ.