

June 2, 1953

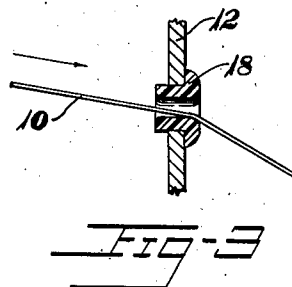
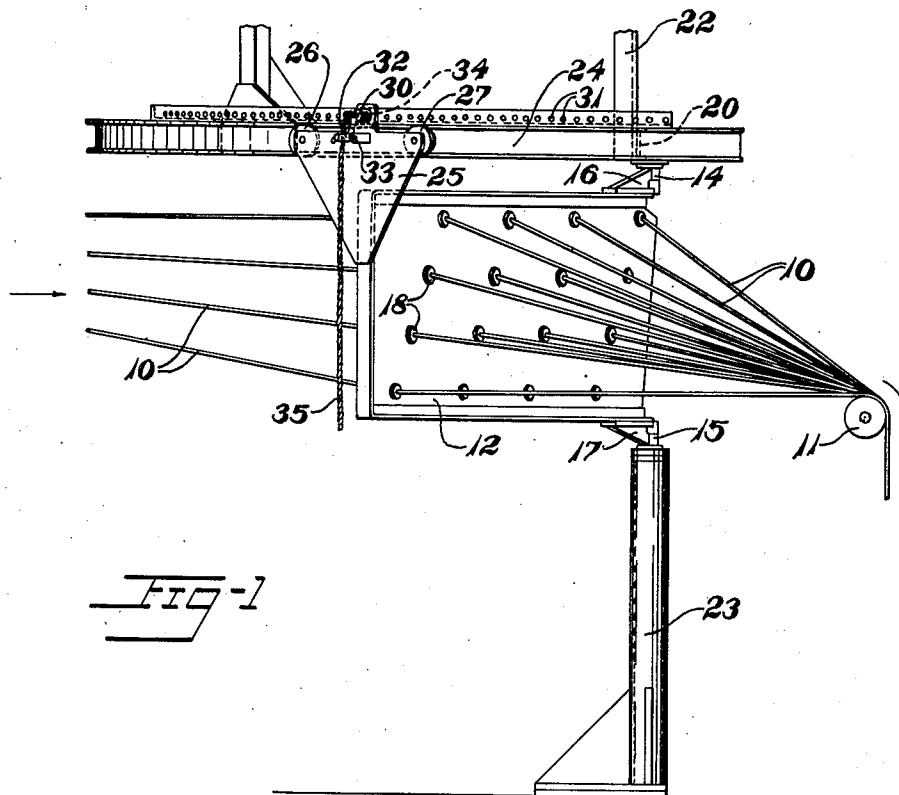
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2,640,664

APPARATUS FOR SPACING ELONGATE ELEMENTS

Filed Dec. 19, 1950

2 Sheets-Sheet 1



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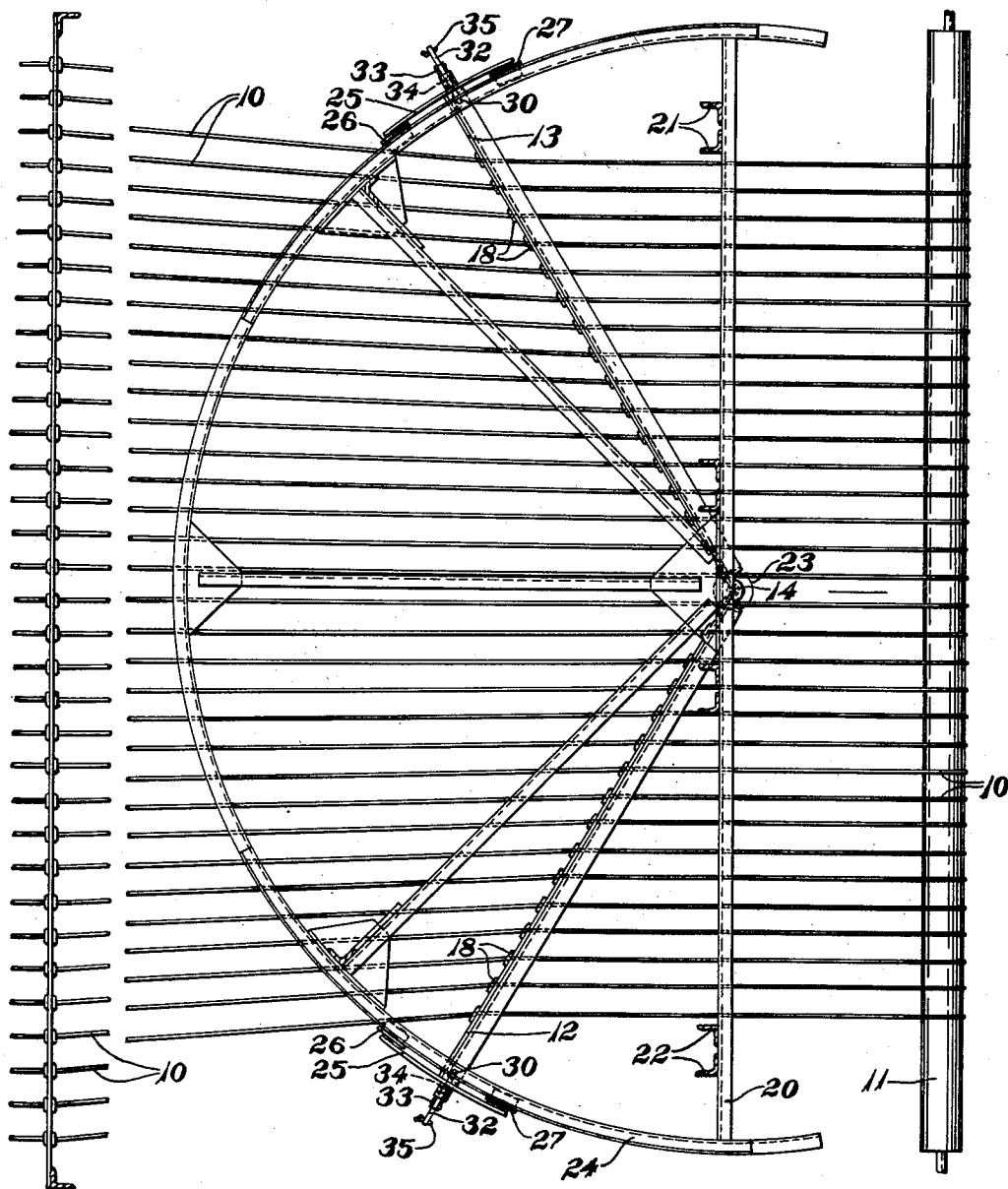


FIG-2

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UNITED STATES PATENT OFFICE

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APPARATUS FOR SPACING ELONGATE
ELEMENTS

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1 Claim. (Cl. 242—157)

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This invention relates to the spacing of filamentary elements for grouping them in a desired arrangement and in parallel relation and is especially useful in the spacing of cords in the manufacture of weftless cord fabric although the invention is also useful in spacing yarns, cords, wires or filaments for delivery to calendering, beaming and other machines.

Objects of the invention are to provide for spacing of elements in a desired relation, to provide for evenly arranging the elements at any desired spacing, to quickly effect change in the spacing without disturbing pattern or equality of spacing, and to provide such change in spacing without rethreading of elements.

Other objects will appear from the following description and the accompanying drawings.

Of the drawings Fig. 1 is a perspective view of apparatus constructed in accordance with and embodying the invention.

Fig. 2 is a plan view thereof, parts being broken away.

Fig. 3 is a cross-sectional detail view of one of the thread guides.

Referring to the drawings, the filamentary elements 10, which may be threads, cords, wires, or filaments are drawn from supply spools (not shown) and are delivered in uniformly spaced-apart relation and into a single plane about a guide roll 11. For spacing the elements 10, a pair of eyelet boards, 12, 13 are hingedly mounted edge to edge as by pivot bearings 14, 15 carried by upper and lower supports 16, 17 about a vertical axis. These boards are formed with a multiplicity of openings therethrough for receiving non-abrasive guide bushings 18 through which the elements 10 are threaded. The guide openings are preferably arranged in horizontal and inclined rows to distribute them over the boards as shown in Fig. 1.

For supporting the boards, the pivot bearing 14 may be supported by a horizontal frame member 20 supported by columns 21, 22 and the lower pivot bearing 15 may be supported in vertical alignment therewith by a column 23. For locking the swinging ends of the boards 12, 13 in the desired positions of adjustment, an arcuate track 24 is supported by the columns 21, 22 with its center of curvature in alignment with the pivot bearings. Each eyelet-board has a hanger 25 secured thereto and having wheels 26, 27 for engaging the track. A locking pin 30 is slidably mounted in the hanger and is adapted to engage in any one of a series of holes 31 formed in a vertical flange of the track. A bell-crank lever 32 is pivotally mounted on the hanger as at 33. One end of the lever engages a notch in the locking pin for retracting the pin against pressure

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of a spring 34. The other end of the lever is secured to a pull cord 35. The arrangement is such that by swinging the eyelet boards about their pivots from a position where they are perpendicular to the elements 10 to a more inclined position such as that shown in Fig. 2, the spacing of the cords fed therefrom is reduced by an amount which varies with the cosine of the angle of adjustment. This is accomplished without disturbing the spaced arrangement of the elements as a group whether the elements are to be spaced equally or in some other desired arrangement.

The invention is of especial use in the manufacture of weftless cord fabric where parallel equally spaced cords are fed to a rubber calender and applied to a layer of rubber material. The spacing of the cords may be adjusted without exchanging eyelet boards or rethreading as a quick adjustment of the eyelet boards about their pivots will provide any desired spacing within the range of adjustment.

Variations may be made without departing from the scope of the invention as it is defined by the following claim.

I claim:

Apparatus for spacing extensive filamentary elements for longitudinal travel of the elements in determinate spaced relation, said apparatus comprising a support, eyelet boards pivotally mounted on said support in side-by-side relation across the path of travel of the elements, each eyelet board having a plurality of apertures therethrough at fixed intervals for guiding individual elements, and arcuate track mounted on said support with its center coincident with the pivotal axis of said eyelet boards, wheel hangers cooperating with said track for supporting the movable ends of said boards, and means for locking said boards to said track in a plurality of positions inclined relative to the path of travel of the elements to adjust the spacing of the elements for delivery in parallel relation at a determinate spacing.

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