

Aug. 24, 1937.

C. E. PINK

2,091,213

WIRE FABRIC CONVEYER

Filed May 27, 1935

2 Sheets-Sheet 1

Fig. 1.

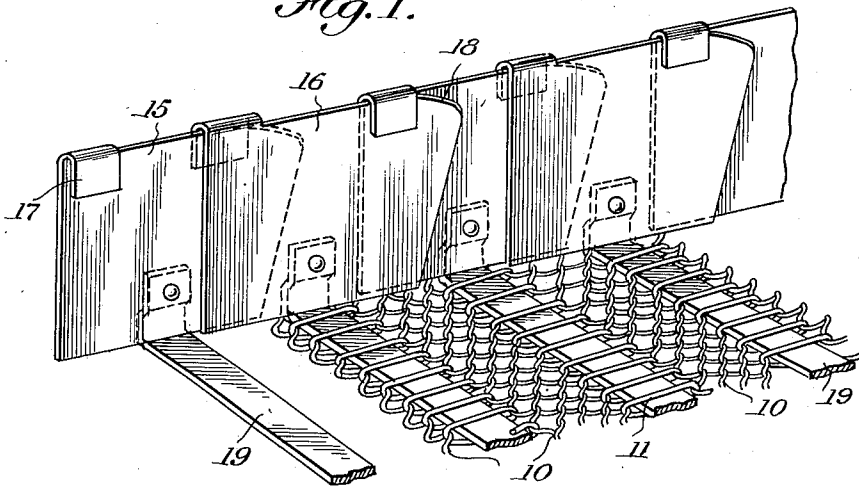


Fig. 2.

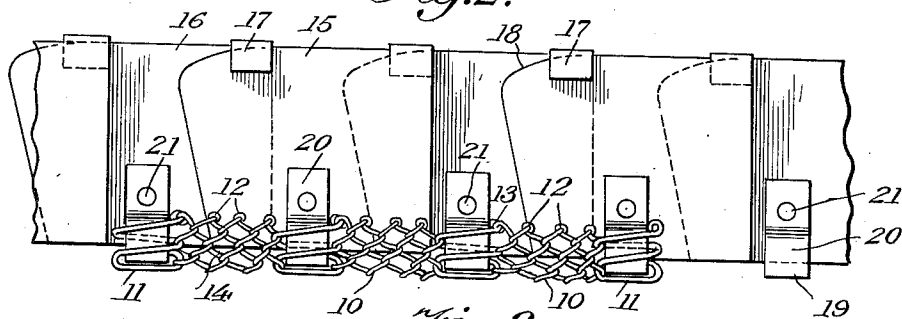
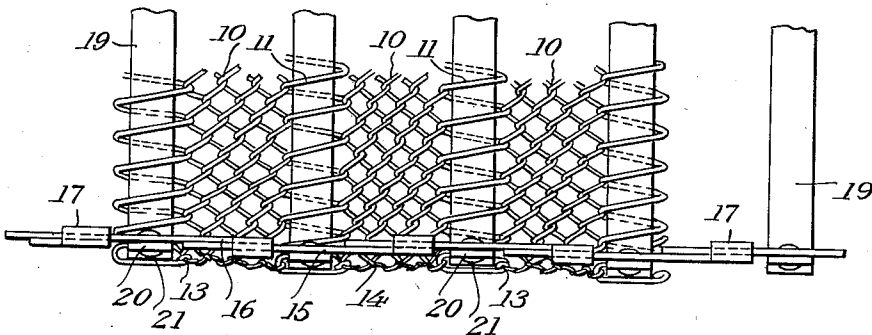


Fig. 3.



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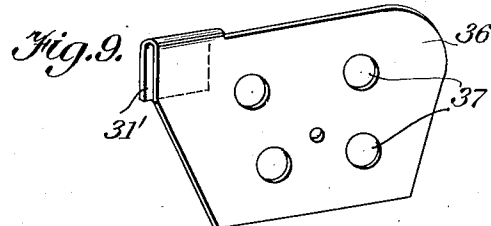
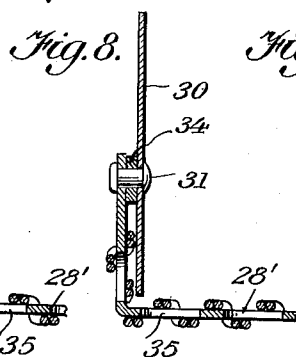
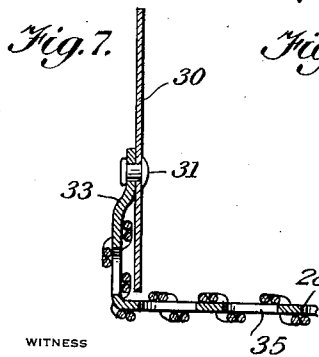
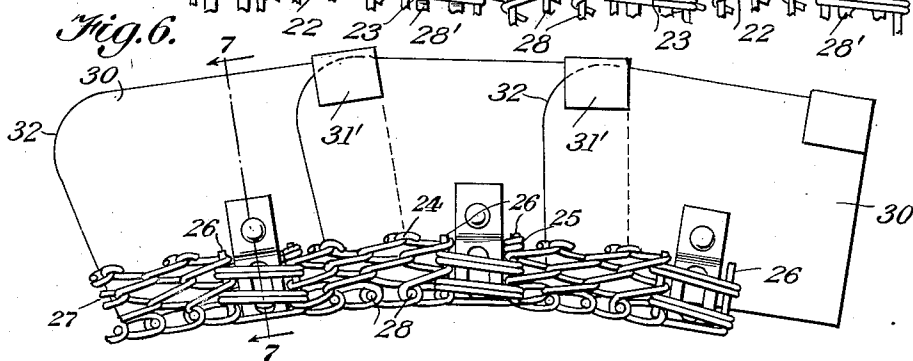
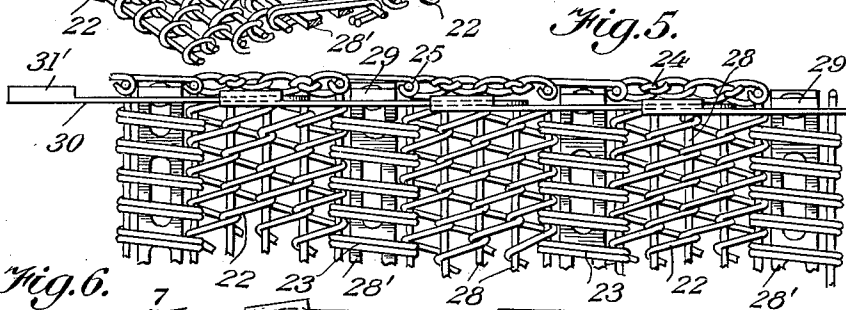
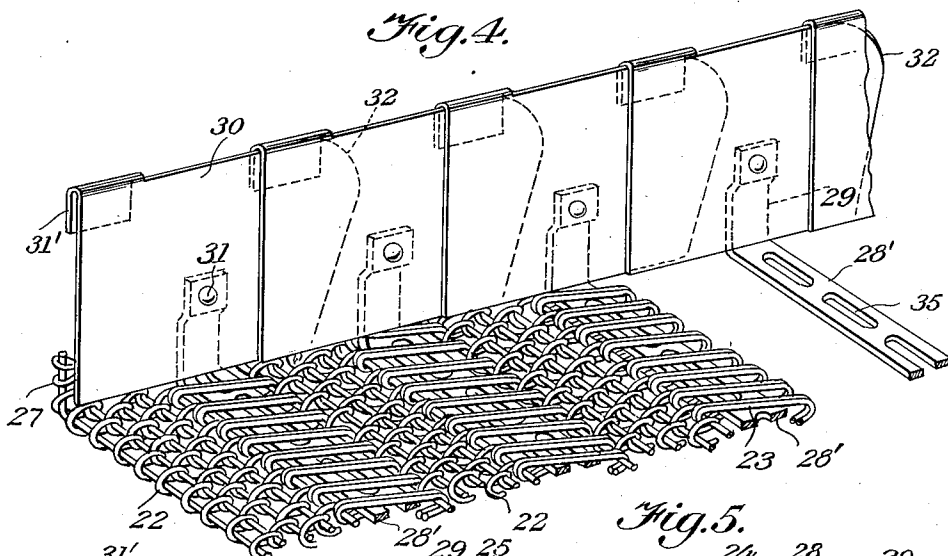
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WIRE FABRIC CONVEYER

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WIRE FABRIC CONVEYER

Clarence E. Pink, Cambridge, Md.

Application May 27, 1935, Serial No. 23,790

9 Claims. (Cl. 198—201)

The object of the invention is to provide a conveyer of the troughed wire fabric type adapted particularly for use as a means on which small articles may be carried without danger of loss by passage through small openings; to provide a troughed wire fabric conveyer, in which the upturned margins are supplemented with flanges which are carried adjacent to but are unconnected with the margins and are adapted to readily pass around a roll or drum on which the fabric may be carried; to provide a conveyer of the kind indicated in which the flange supporting means function in part, if not wholly, in maintaining the upturned positions of the margins; to provide a wire fabric conveyer in which the flange supporting means are incorporated in the fabric; to provide a wire fabric conveyer composed of connected sections, of which the elements are reversely wound to prevent lateral creeping of the fabric on the conveyer supporting drums; and generally to provide a wire fabric conveyer which is of simple form, susceptible of cheap manufacture, and of a character that will insure the maximum resistance to wear and disarrangement of its parts when under the most exacting conditions of use.

With this object in view, the invention consists in a construction and combination of parts, of which a preferred embodiment is illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of a section of a troughed fabric constructed in accordance with the invention.

Figure 2 is a side elevational view.

Figure 3 is a top plan view.

Figure 4 is a view similar to Figure 1 but showing a variation in construction or modification of the invention.

Figure 5 is a top plan view of the structure of Figure 4.

Figure 6 is a side elevational view of the structure of Figure 4, but showing the fabric flexed, as in passing around a supporting drum or roller.

Figure 7 is a sectional view on the plane indicated by the line 7—7 of Figure 6.

Figure 8 is a view similar to Figure 7 but showing a modification in the manner of mounting a flange plate on its supporting means.

Figure 9 is a perspective view of a modified form of flange plate.

The fabric is composed of a series of alternate closely woven sections 10 and intervening connecting sections 11, of which the former consist of connected spirals edged by terminally joining them in pairs, as by means of eyes 12. The sec-

tions 11 consist of single spirals whose convolutions are of generally oval form with their major axes materially greater than their minor axes, the convolutions being pitched, however, according to the pitch of the spirals composing the sections 10. The spirals 11 are wound into the edge spirals of the sections 10 in the same manner in which the latter are joined together and they are terminally interlocked as by means of eyes 13.

The marginal edges of the fabric thus formed are upturned, as indicated generally at 14, and the flanges which constitute the side guards to convert the fabric into a trough conveyer are disposed adjacent these upturned margins and consist of series of plates 15 and 16 formed with ears 17 on their upper edges, which are overturned into parallelism with the plates, the ears on the plates 16 being turned in the opposite direction from the ears on the plates 15. The plates 15 are thus arranged with their inner faces in contact with the outer faces of the plates 16, and the ear on each plate overhangs the upper edge and abuts the opposite face of the adjacent plate. The plates are arranged in overlapping relation and at the end remote from the ear are cut off, as indicated at 18, on an arc having its center at approximately the center of the lower edge of the plate, so that when the conveyer is passing around the belt or pulley, the curved upper edge will clear the crotch between the connecting plate and its overhanging ear. The flanges, while being carried by the fabric adjacent the upturned margins, are supported independently thereof and the means for accomplishing this consist of flat bars 19, which lie within the convolutions of the spirals 11, the thickness of the bars being slightly less than the minor axes of the convolutions of the spirals 11, and the width of the bars slightly less than the major axes of such convolutions. The bars 19 have their extremities upturned as indicated at 20 and are continued beyond the ends of the spirals 11, so that they may be riveted or otherwise attached one to each of the flange plates, as indicated at 21. The corresponding plates of opposite flanges are thus connected to the same bar and these bars, by reason of the upturned ends 20, not only support the flanges independently of the margins but maintain the upturned positions of the margins, so that small articles carried on the conveyer may not be lost through any opening between the lower edges of the flanges and the fabric, as would likely be the case were it not for the upturned margins of the fabric.

In that form of the invention illustrated in

Figures 4 to 6, the same general arrangement of alternate closely woven and intervening relatively open sections obtains. The open sections 23 are formed preferably of dual strands wound to give convolutions of generally oval form with comparatively long major and relatively short minor axes. The strands comprising the sections 23 are laid in close lateral contact, but the convolutions are pitched according to the pitch of the spirals composing the sections 22 and are coupled with the edge spirals of those sections to make a continuous fabric. The spirals 23 are wound reversely to the spirals composing the sections 22. The fabric is edged by means of interlocking eyes 24 on the spirals of the sections 22 and by turning the extremities of the strands composing the spirals 23 into eyes 25 which embrace the extremities of the cross rods 26 which constitute the coupling means between the sections 22 and 23.

The margins of the fabric are upturned, as indicated at 27, and the coupling rods 26 are continued into these margins, although the cross rods 28 which extend through the spirals of the sections 22 are terminated short of the margins. While the upturned extremities of the cross rods 26 assist to some extent in maintaining the upturned positions of the margins, such positions of the margins are actually maintained by means of the cross bars 28', which, like the cross bars 19, extend through the spirals constituting the sections 23, being enclosed by the latter. The upturned extremities 29 of the cross bars 28' project far enough beyond the marginal portions of the sections 23 to have the flange plates 30 secured to them, which may be done by riveting, as indicated at 31, or by any other acceptable means of attachment. The plates 30 are formed with downturned ears 31' at their upper edges adjacent one end and each ear overhangs the upper edge of the adjacent plate, the several plates being arranged in overlapping relation with the heel edge 32 curved to an arc having its center at the lower edge of the plate directly below its point of attachment to the upturned end of the bar 28'. The bar 28 may have its upturned ends offset, as indicated at 33, to lie in direct contact with the connected plate 30, as shown in Figure 7, or it may be left straight and a spacing washer 34 interposed between it and the plate, as indicated in Figure 8.

The flanges composed of the plates 30 are set against the inner faces of the upturned marginal portions of the fabric but are unconnected therewith, although being held in their indicated relation by the bars 28'.

To reduce weight in the bars and thereby reduce dead weight in the conveyer, as well as to reduce to a minimum the heat absorbing qualities of the conveyer when used in installations where it would be subjected to great heat, said bars 28' are punched, as indicated at 35, so that those portions which are embraced by the spirals of the sections 23 are reduced to the form of webs.

If desired, the plates composing the flanges may be made of inverted trapezoidal form, as shown by the plate 36 illustrated in Figure 9, which arrangement reduces the amount of material necessary to be employed in the construction of the flanges, so as to give a minimum weight to the conveyer. Weight may be further reduced by perforating the plates, as indicated at 37, whether they be of the form shown in Figure 9 or of any of the other forms.

Having described the invention, what is claimed as new and useful is:

1. A wire fabric conveyer having upturned margins, lateral flanges composed of loosely interconnected sections disposed adjacent said margins, bars spanning the fabric and terminally upturned to correspond with the margins, the bars throughout their lengths being secured to the fabric to maintain the upturned positions of the margins, the upturned portions of said bars being connected to corresponding flange sections at opposite sides of the fabric to support the sections independently of the margins while maintaining the indicated relation of the flanges and margins.

2. A wire fabric conveyer having upturned margins, lateral flanges composed of loosely interconnected sections disposed adjacent said margins, bars spanning the fabric and terminally upturned to correspond with the margins, the bars throughout their lengths being secured to the fabric to maintain the upturned positions of the margins, the upturned portions of said bars being connected to corresponding flange sections at opposite sides of the fabric to support the sections independently of the margins while maintaining the indicated relation of the flanges and margins, said bars being incorporated in the fabric by being enclosed by certain of the spirals thereof.

3. A wire fabric conveyer composed of relatively closely woven sections and intervening connecting spirals of which the convolutions are of generally oval form with their major axes materially greater than their minor axes, the margins of the fabric being upturned, lateral flanges composed of loosely interconnected sections, and transverse members enclosed in the connecting spirals and terminally connected with corresponding flange sections at opposite sides of the fabric to maintain the flanges adjacent the margins.

4. A wire fabric conveyer composed of relatively closely woven sections and intervening connecting spirals of which the convolutions are of generally oval form with their major axes materially greater than their minor axes, the margins of the fabric being upturned, lateral flanges composed of loosely interconnected sections, and transverse members enclosed in the connecting spirals and terminally connected with corresponding flange sections at opposite sides of the fabric to maintain the flanges adjacent the margins but unconnected therewith.

5. A wire fabric conveyer composed of relatively closely woven sections and intervening connecting spirals of which the convolutions are of generally oval form with their major axes materially greater than their minor axes, the margins of the fabric being upturned and the spirals of the closely woven sections being reversely wound with respect to the connecting spirals, lateral flanges composed of loosely interconnected sections, and transverse members enclosed in the connecting spirals and terminally connected with corresponding flange sections at opposite sides of the fabric to maintain the flanges adjacent the margins.

6. A wire fabric conveyer composed of relatively closely woven sections and intervening connecting spirals of which the convolutions are of generally oval form with their major axes materially greater than their minor axes, the margins of the fabric being upturned and the spirals of the closely woven sections being reversely

- wound with respect to the connecting spirals, lateral flanges composed of loosely interconnected sections, and transverse members enclosed in the connecting spirals and formed with up-
5 turned extremities connected with corresponding flange sections at opposite sides of the fabric to maintain the flanges adjacent the margins and simultaneously maintain the upturned position of the margins.
- 10 7. A wire fabric conveyer having upturned margins, lateral flanges composed of overlapping plates having interlocking connections to prevent relative lateral movement but to permit relative longitudinal movement, the flanges being adjacent said margins, and transverse bars incorporated in the fabric and continued into the margins, the terminals of said bars extending above the margins and being connected to corresponding flange plates on opposite sides of the fabric.
- 15 8. A wire fabric conveyer composed of relatively closely woven sections and intervening connecting spirals of which the convolutions are

of generally oval form with their major axes materially greater than their minor axes, lateral flanges composed of loosely interconnected sections, and transverse members enclosed in the connecting spirals and terminally connected with
5 corresponding flange sections at opposite sides of the fabric to maintain the flanges as upward lateral extensions of the fabric.

9. A wire fabric conveyer composed of relatively closely woven sections and intervening connecting spirals of which the convolutions are of
10 generally oval form with their major axes materially greater than their minor axes and arranged in the direction of the length of the fabric, lateral flanges composed of loosely interconnected sections, and flat bars enclosed in the
15 connecting spirals and terminally connected with corresponding flange sections at opposite sides of the fabric to maintain the flanges as lateral upward extensions of the fabric. 20

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