May 10, 1932. H. H. RAPLEY 1,857,605

NEWSPAPER CONVEYER

Filed Sept. 16, 1929

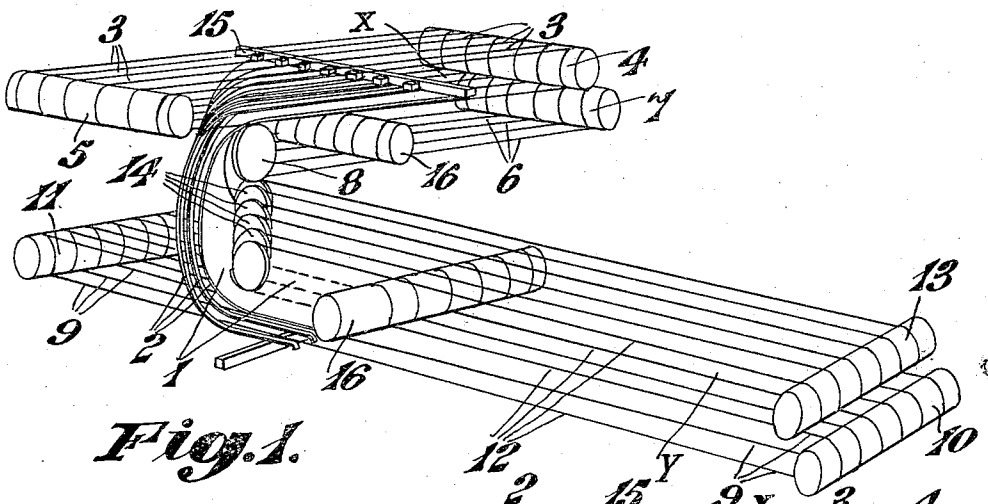

Fig. 1.

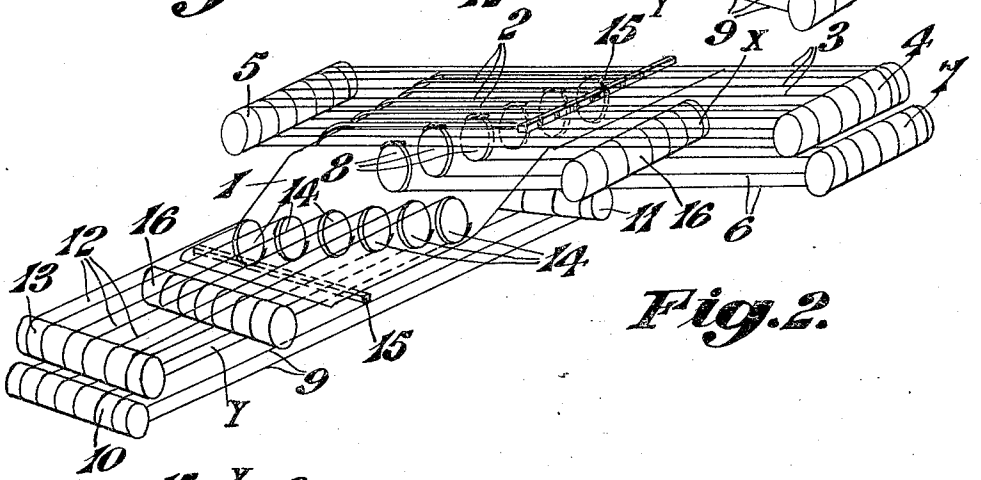

Fig. 2.

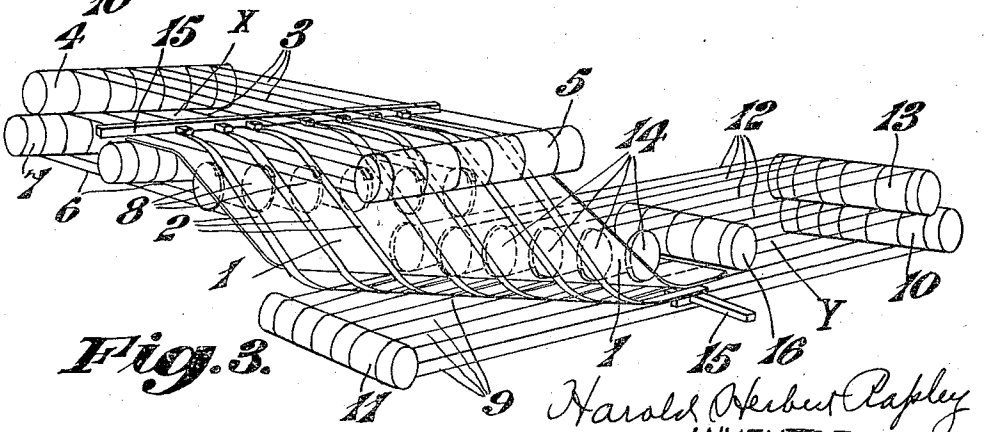

Fig. 3.

Harold Herbert Rapley
INVENTOR
BY Francis T. Wentworth
his ATTORNEY.

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UNITED STATES PATENT OFFICE

HAROLD HERBERT RAPLEY, OF BEDFORD, ENGLAND

NEWSPAPER CONVEYER

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This invention relates to and has for its object the provision of improvements in newspaper conveyers. The invention consists broadly in the arrangement according to which the course of the stream of newspapers is adapted to be turned through an angle in the plane of the newspapers. Thus it is possible to suit the exigencies of the conveyer room by avoiding obstacles and carrying the path of the conveyer around any desired portion of the perimeter of said conveyer room.

In order that the invention may be the more clearly understood a conveyer in accordance therewith will now be described, reference being made to the accompanying drawings, Figures 1, 2 and 3 of which are diagrammatic perspective views of the turning portion of the conveyer seen from three different angles.

Referring to these drawings the stream of newspapers is diverted from one horizontal path X to another horizontal path Y at right angles to and at a level a little lower than said former path. Said stream is conveyed along each of said paths between an upper and a lower set of endless wire belts. Said stream is diverted from the path X to the path Y by means of a diverter device comprising one guide element constituted by a bent diverter plate 1 around the outer surface of which said stream moves, and a second guide element constituted by a number of diverter strips 2 which bend around, parallel to and clear of, said diverter plate 1 and maintain said stream against said diverter plate. Said diverter plate 1 is a rectangular plate turned back upon itself through 180° and at the same time twisted through 90° as shown in such a way that at one end it lies parallel to and just below said path X and at the other end it lies parallel to and just above said path Y. The diverter strips 2 which are parallel and coplanar are similarly bent and twisted so that at one end they are parallel to and just above said path X and at the other end they are parallel to and just below said path Y. It will thus be seen that the stream moving along said path X will pass between said plate 1 on the one hand and said strips 2 on the other and will be guided by said plate and strips until it emanates the reverse way up in said path Y.

The upper set 3 of endless wires appertaining to said path X extend between horizontally spaced rollers (viz: a driving roller 4 and an idler roller 5 in the usual way and said wires 3 pass through the openings between the strips 2 so as to engage the newspapers after they are between the strips 2 and the plate 1. The lower set 6 of the wires appertaining to said path X extend between a driving roller 7 at the end remote from said diverter device and individual idler pulley wheels 8 at the end adjacent said diverter device, the said pulley wheels 8 being mounted underneath the upper portion of said diverter plate 1 and having their upper edges just projecting through slots in said diverter plate. Thus said pulley wheels 8 also engage the newspapers after they are between the strips and the plate.

In like manner the lower set 9 of endless wires appertaining to said path Y extend between a driving roller 10 and an idler roller 11 and pass through the openings between the strips, and the upper set 12 of the wires appertaining to said path Y extend between a driving roller 13 and individual pulley wheels 14 mounted above the lower portion of, and projecting through slots in, said diverter plate 1.

Owing to the twisted form of the plate 1 the said individual pulley wheels 8 and 14 are not arranged coaxially. As shown the pulley wheels 8 are set further forward along the stream the nearer they are located to the side of the plate 1 facing the path Y. In like manner the pulley wheels 14 are set further back along the stream the nearer they are located to the side of the plate 1 facing the path X.

The ends of the diverter strips 2 and the ends of the diverter plate 1 are bent away from one another so as to facilitate the stream in passing between them. The said ends of the diverter strips are supported by means of suitable transverse bars 15.

Idler rollers 16 are provided for assisting

to guide the stream between the plate 1 and strips 2.

In construction the rollers 4 and 7 and the rollers 13 and 10 are directly geared together so as to rotate in opposite directions as required, and the two pairs of said geared rollers are connected by means of a suitable gear train.

In order to maintain regular working it may in some cases be preferred to provide a further set of endless wires to help maintain the stream in motion as it passes round the diverter plate.

What I claim and desire to secure by Letters Patent is:—

1. A newspaper conveyer comprising two conveyer sections extending in different directions along which, one after the other, a continuous stream of newspapers is adapted to pass, two parallel guide elements, one upon one side of the plane of one of said conveyer sections and the other upon the other side of said plane, wherein the guiding of the stream out of directional and planar alignment with the first section into that of the second is adapted to be effected by both causing its path to curve and the stream itself simultaneously to turn about said path as axis.

2. A newspaper conveyer comprising two conveyer sections in approximately parallel planes and extending in different directions along which, one after the other, a continuous stream of newspapers is adapted to pass, two parallel guide elements, one positioned upon one side of the plane of one of said conveyer sections and the other positioned upon the other side of said plane, wherein the guiding of the stream out of directional and planar alignment with the first section into that of the second is adapted to be effected by both causing its path to curve and the stream itself simultaneously to turn about said path as axis through an angle of approximately two right angles.

3. A newspaper conveyer comprising two conveyer sections extending in different directions and two parallel guide elements one positioned upon one side of the plane of said conveyer sections and the other upon the other side of said plane between which a stream of the newspapers is adapted to pass from one section to the other, said guide elements being bent to a curve and simultaneously twisted about said curve as axis.

4. A newspaper conveyer comprising two conveyer sections extending in different directions each comprising an outer and an inner set of endless belts, and two parallel guide elements between which a stream of the newspapers is adapted to pass from one section to the other, said guide elements being bent to a curve and simultaneously twisted about the line of said curve as axis, and the belts of the outer set of each conveyer passing through respective openings in the outer guide elements so as to engage the portion of the stream between said guide elements.

5. A newspaper conveyer comprising two conveyer sections extending in different directions each comprising an outer and an inner set of endless belts, and two parallel guide elements between which a stream of the newspapers is adapted to pass from one section to the other, said guide elements being bent to a curve and twisted about the line of said curve as axis, and the belts of the outer set of each conveyer passing through openings in the outer guide elements so as to engage the portion of the stream between said guide elements, and end pulleys for each inner set of belts projecting through openings in the inner guide element so as also to engage said portion of the stream between said guide elements.

6. A newspaper conveyer according to claim 5 wherein said pulleys are arranged in stepped relation to one another so as to accord to the form of said inner guide element.

7. A newspaper conveyer embodying therein two sections extending in different directions, each conveyer comprising endless tapes in parallel relation to each other, parallel rollers about which one set of tapes pass, a roller parallel with the aforesaid rollers, and pulleys, the axis of which extends obliquely to the axis of said other rollers about which the other set of tapes pass, a diverter plate having openings adjacent the forward and rear edges thereof through which said pulleys respectively project, said diverter plate extending in a curve from lines coincident with the axes of one set of pulleys to a line coincident with the axes of the other set of pulleys, the ends of said plate extending upon a plane parallel with the tapes of said conveyer sections respectively, and diverter strips extending parallel with, and spaced from, said plate.

HAROLD HERBERT RAPLEY.