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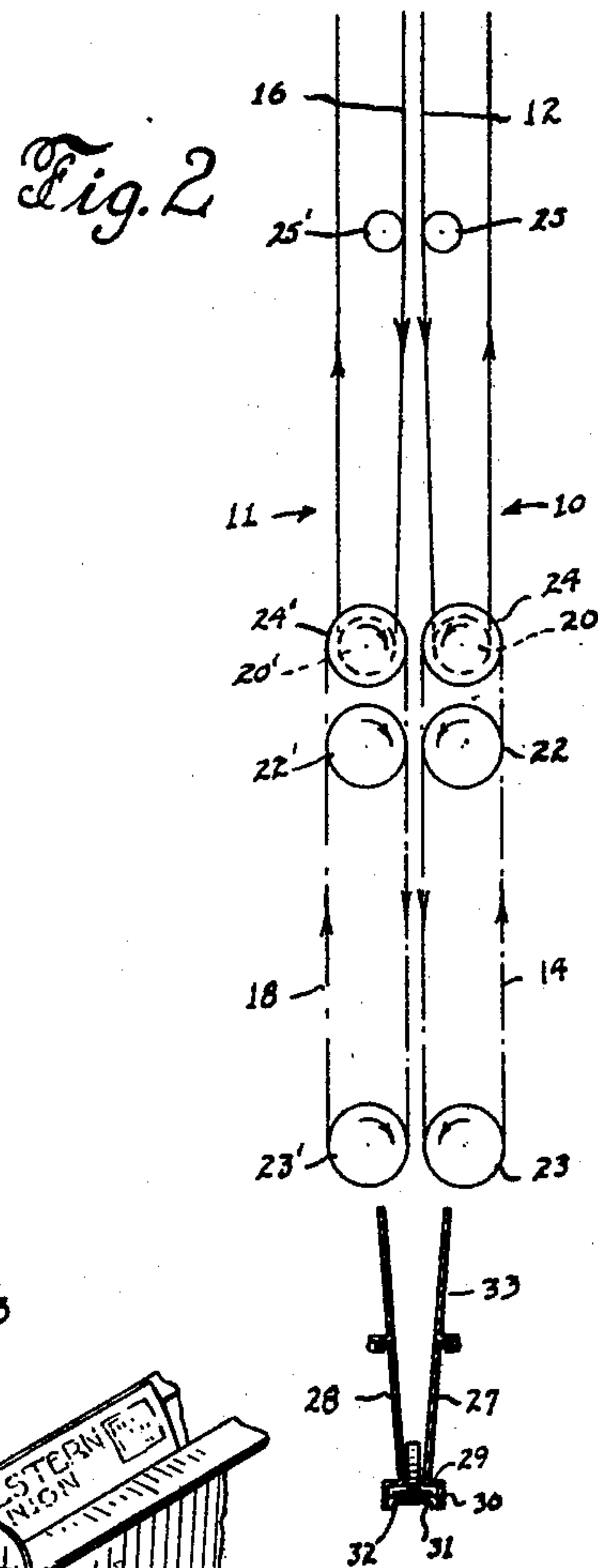
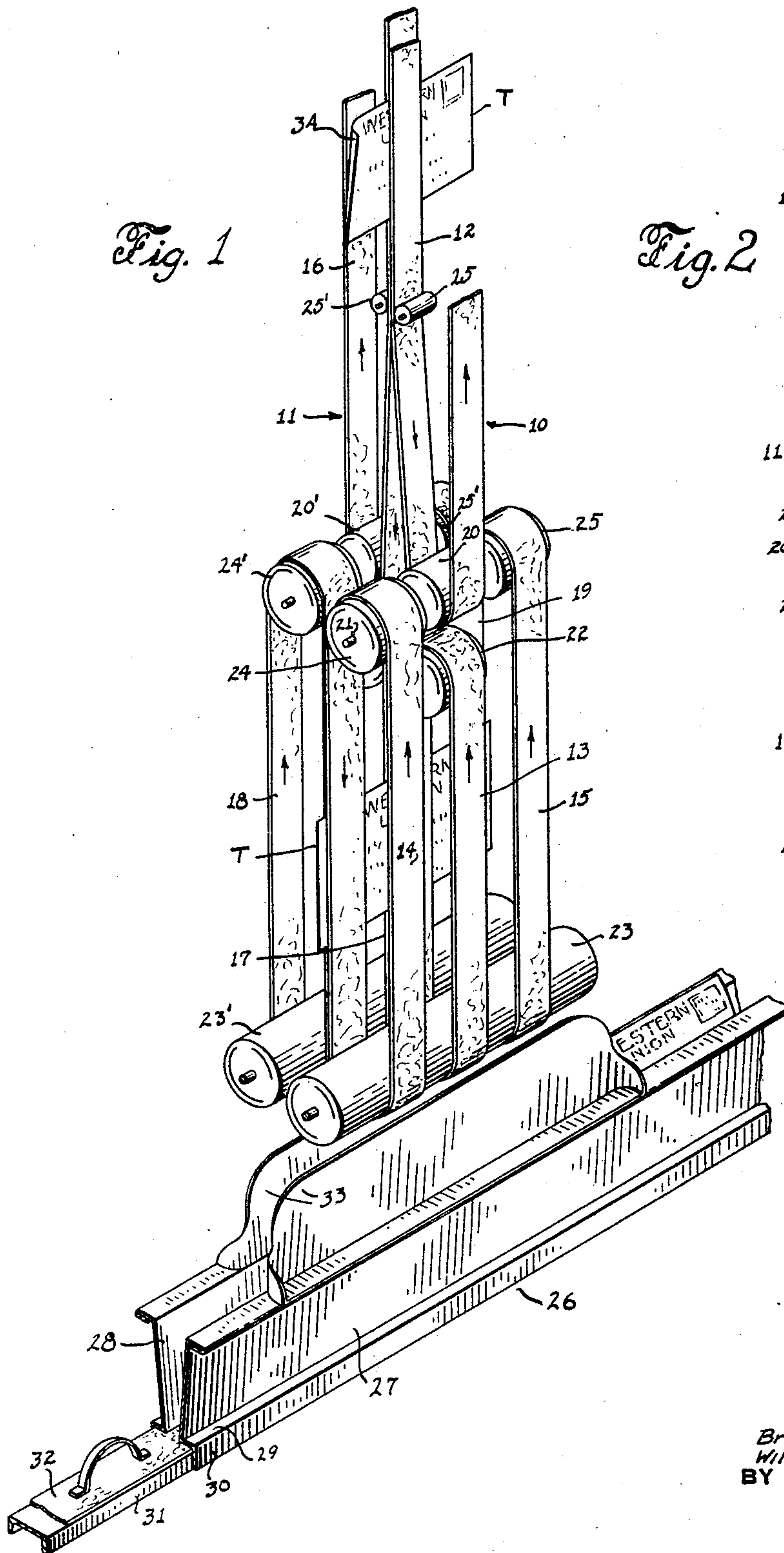
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TRANSFER MECHANISM FOR STRAP CONVEYERS

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TRANSFER MECHANISM FOR STRAP CONVEYERS

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This invention relates to a conveyer system and more particularly to a system employing endless straps for the transportation of flat parcels such as telegrams, letters and the like, in which said articles are carried between two straps travelling in the same direction in contact with each other, whereby the articles are gripped therebetween.

10 In the handling of telegrams at a central office it is often desirable to transport the telegram blanks from one part of the building or from one operator or attendant to another by means of conveyers. These conveyers may take a variety of forms depending upon the service to be performed, the length of the run, etc., and the conveyer system of a large office may consist of a number of conveyers of different forms feeding into one another. For instance, for vertical runs and runs of considerable length it is desirable to employ an endless double strap which may receive the telegram blanks from or deliver them to a different form of conveyer such as a V-belt conveyer, in which the blanks are carried in a vertical position within a substantially V-shaped trough by means of a flat horizontal belt.

20 The present invention is especially concerned with a conveyer of the double strap type but in one of its aspects it relates to the transfer of telegrams, letters and similar articles from such a double strap conveyer into a V-trough or other type of conveyer.

35 In the construction of a double strap conveyer for transporting such articles as telegram blanks it is desirable to make the straps comprising the system as light as is commensurate with the service to be performed and to operate them at a relatively high speed. In a long conveyer system it is not feasible to employ a single belt or strap extending from one end of a system to the other since the power required to drive a strap of such length may exceed the strength of

the strap. It is difficult moreover, to maintain such lengths of strap at the proper tension and for these reasons it is necessary to employ a number of shorter lengths thus causing breaks or gaps in the system. Difficulty has been experienced however, with such double strap conveyers at the breaks between the adjacent lengths due to the papers following around one of the straps at the break and thus feeding out of the conveyer.

It is one of the objects of the present invention to provide in a conveyer having a number of lengths of strap in tandem means for overcoming these difficulties and to guide the articles being transported so that they will be properly transferred from one of such lengths of conveyer to the succeeding length.

Another object is to provide means, in a double strap conveyer, to facilitate the deposit of the transported articles from the strap conveyer into a horizontal conveyer, such as a V-trough conveyer.

A further object is to produce a strap conveyer system which may be operated at a high speed and in which the articles are delivered therefrom at a lower speed.

A still further object is to produce a strap conveyer in which articles may be transferred from one section thereof to another, operating at different speeds.

Other objects and advantages will hereinafter appear.

In accordance with our invention we provide a conveyer comprising two separate conveyer systems disposed side by side in frictional contact whereby articles, such as telegram blanks, may be carried therebetween. Each system is composed of a plurality of endless straps arranged end to end whereby a number of breaks are produced in the system. At each of said breaks we provide auxiliary endless straps on each side of the main conveyer strap and extending across the break

so as to guide the articles from one portion of the system to another.

Where it is desired to transfer the article from a section of the conveyer operating at one speed to one operating to a different speed we provide a break in each system at substantially the same point and cause the straps to diverge slightly at the advancing side of the break to release the articles and permit them to be engaged by the auxiliary straps, by which they are transported at a different speed to the succeeding section of the conveyer or to another conveyer.

In order that the invention may be more fully understood, reference will be had to the accompanying drawings in which:

Figure 1 is a perspective view of a strap conveyer embodying our invention and being arranged to deliver the articles being transported into a second conveyer;

Figure 2 is a vertical elevation of the construction shown in Figure 1;

Figure 3 is a perspective view of a vertical or horizontal reach of the conveyer having a break in one system;

Figure 4 is a perspective view showing a double break; and

Figure 5 is a side elevation, somewhat diagrammatic in character, of the construction shown in Figure 4.

Referring now to the embodiment of the invention illustrated in Figures 1 and 2, in which we have shown the delivery end of a double strap conveyer, it will be seen that the conveyer consists of two separate conveyer systems 10 and 11, the former comprising the endless straps 12 and 13 disposed in an end to end relation and having two auxiliary endless straps 14 and 15 arranged at each side of the strap 13. The conveyer system 11 likewise comprises the endless straps 16 and 17 and the auxiliary straps 18 and 19. The straps of each system have their working runs in contact throughout the greater portion of their length, whereby the telegrams T are gripped therebetween so as to be carried along with the straps, which travel in the same direction.

The strap 12 at its lower end passes around a roller 20 loosely mounted upon a shaft 21, strap 13 passes around the pulleys 22 and 23 and the two auxiliary straps 14 and 15 pass between the roller 23 and two pulleys 24 and 25 also mounted upon the shaft 21. The straps of the conveyer system 11 are arranged on similar pulleys indicated by corresponding reference numerals, primed (').

The straps 12 and 16 are provided with idler rollers 25 and 25' respectively spaced in advance of the rollers 20 and 20' and against which the straps bear. The rollers 20 and 20' are made of a smaller diameter than pulleys 24 and 24' so that their peripheries are spaced apart, thereby causing the

straps to diverge or spread out at their lower ends.

Immediately beneath the pulleys 23 and 29 there is provided a horizontal conveyer 26 of the V-trough type into which the strap conveyer discharges. The conveyer 26 comprises two flaring side plates 27 and 28 forming a substantially V-shaped trough the plates at their lower end being bent outwardly and horizontally at 29, and vertically downward at 30 where they are secured to the sides of an inverted channel member 31, thus forming a substantially rectangular conduit through which the conveyer belt 32 travels. A flaring extension 33 is provided at the top of the trough, adjacent the rollers 23 and 23' to facilitate the guidance of the telegrams into the trough.

In operation, the straps 12 and 16 may form part of a long conveyer system and may be operated at a higher speed than that at which the telegram blanks may be conveniently delivered into the trough conveyer 26. The main strap 13 and the auxiliary straps 15 and 17 and the associated straps of the opposite system may be operated at a somewhat lower speed. A telegram T gripped between the straps 12 and 16 is carried along thereby until it passes the idler rollers 25 after which it is released by the divergency of the straps and is picked up by the auxiliary conveyer system and delivered at a lower speed into the trough conveyer 26.

The auxiliary straps serve the additional function of holding the telegrams in a substantially straight position so that they will be properly delivered into the trough. It will be obvious, in the absence of the auxiliary straps, that should the outwardly extending or free ends of the telegrams become bent around out of the plane of the belt, as shown at 34, such intumed edges would engage the top of the trough and possibly be deflected outside of the trough or lodged in the top thereof in the path of the succeeding telegrams. The auxiliary guide belts however, maintain the blank substantially straight and in the vertical plane of the center line of the trough and cause them to be deposited in the trough correctly.

In Figure 3 we have shown a break occurring in one run of a horizontal or vertical reach of the conveyer. The lower run or strap 35 is continuous and the upper run 36 on the advancing side of the break passes around a pulley 37. The upper run is continued by a second length of strap 38 passing around a pulley 39. In order to prevent the telegram T from passing out between the pulleys 37 and 39, should it adhere to the strap 36, we provide a pair of auxiliary guide straps 40 and 41 disposed on each side of the main straps. The straps 40 and 41 pass around the pulley 39 so as to be driven thereby and at their opposite end pass around

the pulleys 42 and 43, mounted upon the same shaft 44 as the pulley 37.

With this construction, when a telegram T approaches the break it is engaged at the upper side by the belts 40 and 41 and guided past the break.

In Figures 4 and 5 we have illustrated an arrangement in which a break occurs in each of the conveyer systems at the same point, both of the straps 45 and 46 passing around pulleys 47 and 48 respectively. The conveyer system is continued beyond the break by the straps 49 and 50 which pass around the pulleys 51 and 52 respectively. The gap between the straps 45, 46 and 49, 50 is bridged by four auxiliary endless straps 53, 54, 55 and 56. Straps 53 and 54 are driven by the pulley 51 and pass around the idler pulleys 57 and 58 mounted upon the same shaft with the pulley 47. The straps 55 and 56 of the lower conveyer system are similarly driven by pulley 52 and pass around idler pulleys 59 and 60.

The pulleys 47 and 48 are of a somewhat smaller diameter than the remaining pulleys so as to cause the belts 45 and 46 to diverge slightly, starting from a pair of idler rollers 61. The telegrams are thus released by the main straps 45 and 46 prior to being engaged by the auxiliary straps, thereby permitting the straps 45 and 46 to be operated at a different speed from the auxiliary straps and from the straps 49 and 50.

While we have shown several modifications of our invention it is evident that various other changes and modifications thereof will occur to persons skilled in the art and therefore, we do not desire to be limited to the particular details shown and described, except in accordance with the appended claims.

What we claim is:—

1. A conveyer for transporting sheet material comprising two strap conveyer systems disposed side by side with their operating runs in contact and adapted to grip such sheet material there-between, each system being composed of one or more endless straps positioned end to end and forming a break in the conveyer system at their adjacent ends, said contacting straps at the advance side of said break diverging slightly to loosen the grip on said material and an auxiliary strap system extending across said break and adapted to grip said material after the grip of said diverging straps has been loosened and while the material is still under the propelling action thereof, for delivering it to the contacting straps at the opposite side of the break.

2. A conveyer for transporting sheet material comprising two strap conveyer systems disposed side by side with their operating runs in contact and adapted to grip such sheet material there-between, each system being composed of one or more endless straps posi-

tioned end to end and forming a break in the conveyer system at their adjacent ends, the straps at the opposite sides of said breaks being arranged to operate at different speeds, said contacting straps at the advancing side of the break diverging slightly to release said material and an auxiliary endless strap system extending across said break and being arranged to operate at a different speed from said diverging straps for receiving said material therefrom and delivering it to the contacting straps at the opposite side of the break.

3. A strap conveyer for the transportation of flat articles, comprising two opposed endless straps in contact with each other, adapted to grip said articles there-between, said straps diverging at the delivering end to release said articles and an auxiliary endless strap conveyer having contacting portions extending from said diverging straps to receive the articles therefrom, and a second conveyer disposed adjacent the delivery end of said auxiliary strap conveyer for receiving said articles therefrom and conveying them in a substantially vertical position and horizontal direction.

4. A strap conveyer for transporting flat articles comprising two opposed endless straps in contact with each other adapted to grip said articles there-between, each strap being of less width than said articles whereby said articles extend outwardly therefrom at each side, said straps diverging at the delivery end to release said articles, a second conveyer, adapted to carry said articles in a substantially vertical position, disposed beneath the delivery end of said strap conveyer and articles straightening straps extending from the delivery end of said strap conveyer to said second conveyer for engaging the outwardly extending portions of said articles to straighten the same and direct the articles into said second conveyer in a vertical position.

5. A conveyer for the transportation of flat articles comprising two opposed contacting conveyer elements arranged for the conveyance of sheet material therebetween, the contacting surfaces of said conveyer elements being of a width substantially less than said articles whereby the articles extend outwardly at each side and a second conveyer arranged adjacent the terminal of the first conveyer and having spaced pairs of contacting conveyer elements arranged to engage the outwardly extending sides of the articles for conveying them beyond the end of said first conveyer.

6. A conveyer for the transportation of flat articles comprising two opposed contacting conveyer elements arranged for the conveyance of sheet material therebetween, the contacting surfaces of said conveyer elements being of a width substantially less than said articles whereby the articles extend outwardly at each side, a second conveyer arranged adja-

cent the terminal of the first conveyer and
having spaced pairs of contacting conveyer
elements arranged to engage the outwardly
extending sides of the articles for conveying
5 them beyond the end of said first conveyer,
and a third conveyer having an inlet disposed
adjacent the outlet of said second conveyer
and adapted to convey said articles in a sub-
stantially vertical position and in a horizon-
10 tal direction.

In testimony whereof we affix our signa-
tures.

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