

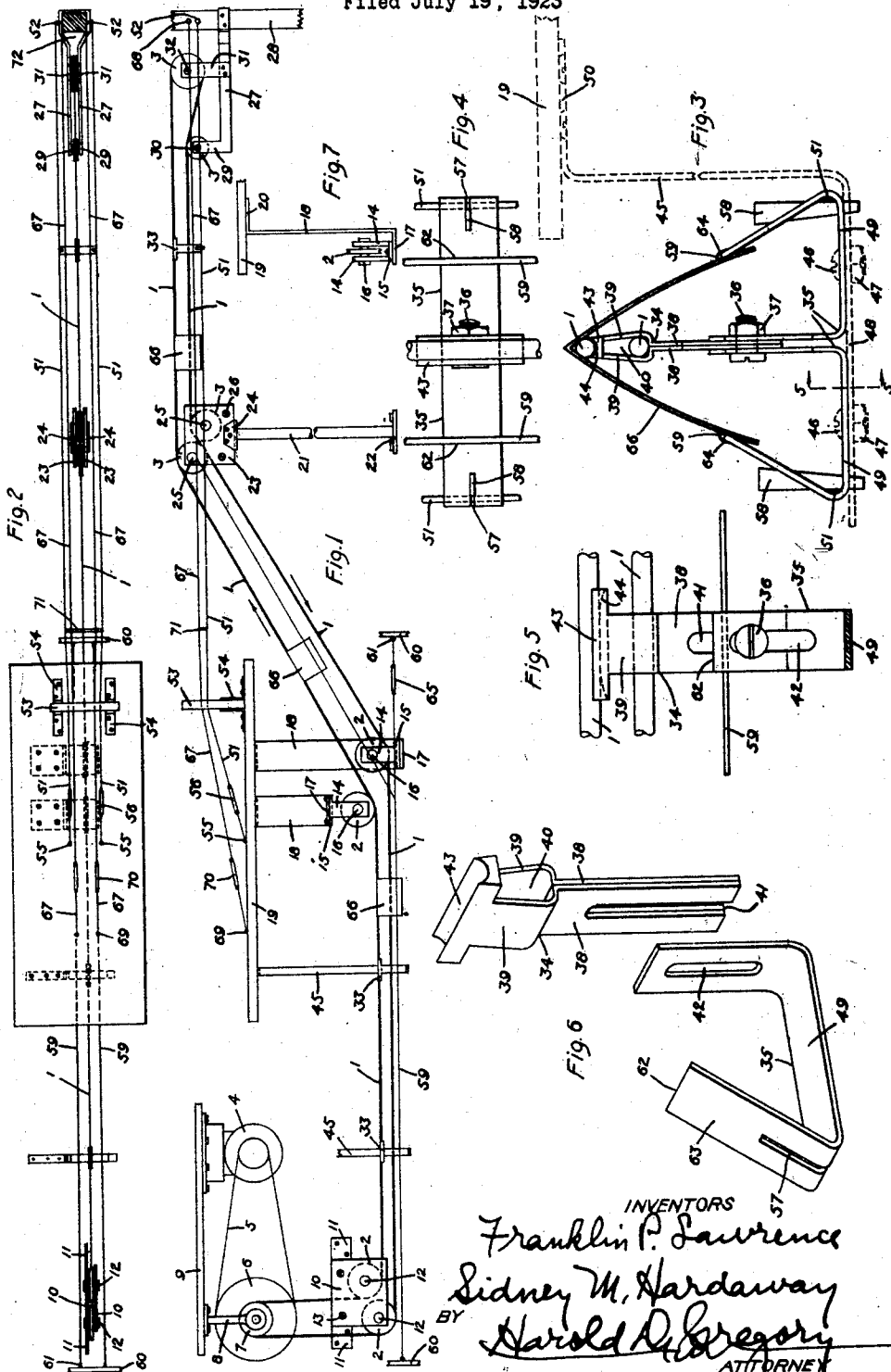
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TICKET CARRIER

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TICKET CARRIER.

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Our invention relates to improvements in conveyors, and is particularly adapted for use in a telephone exchange to deliver toll tickets from the toll switchboard to a distributing desk, but is not necessarily restricted to this use. Previous to this time it has been the custom to employ messengers for this purpose, but experience has shown this to be not only expensive but unsatisfactory.

An important object of the invention is to provide means to maintain the toll tickets in operative position on the conveyor after they have once been placed thereon.

A further object of the invention is to provide a conveyor on which the toll tickets can be easily and quickly placed for carriage from one place to another.

A further object of the invention is to provide supports for the different parts of the conveyor.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same.

Figure 1 is a side view, in elevation, of the conveyor,

Fig. 2 is a plan view of Fig. 1,

Fig. 3 is a side elevation of one of the supports,

Fig. 4 is a plan view of Fig. 3,

Fig. 5 is a vertical section on the line 5—5 of Fig. 3,

Fig. 6 is a perspective of the principal parts of a support, and

Fig. 7 is an end view of one of the elements, showing the method of supporting it in operative position.

In the drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention, and as shown in Figs. 1 and 2, the numeral, 1, designates a non-metallic, endless, conveying element and is made of flexible material such as rope or sash cord. The conveying element, 1, passes partly around the pulleys, 2 and 3, as shown, and is caused to travel in the direction of the arrows by means of a motor, 4, belt, 5, and pulleys, 6 and 7. The pulleys, 6 and 7, are preferably made integral, and

are supported by the bracket, 8, which is bolted to the shelf, 9, as shown. Metal plates, 10, one of which is provided with flanges, 11, embrace the pulleys, 2, and provide a support for the journals, 12, of the said pulleys. The journals, 12, maintain the plates, 10, in proper position with respect to each other, but additional bolts, 13, may be used for this purpose. By means of the flanges, 11, the plates, 10, are bolted or otherwise secured to the side of a cabinet, a wall, or other suitable structure.

As shown in Figs. 1 and 7, brackets, 14, provided with integral bases, 15, provide supports for the journals, 16, of the pulleys, 2. The brackets, 14, by means of their bases, 15, are bolted or otherwise secured to the lower arms, 17, of the Z-shaped supports, 18, which are, in turn, secured to the under side of the shelf, 19, by means of the arms, 20.

The standard, 21, which may be secured by its base, 22, to a floor, supports the two metal plates, 23, by means of a U-shaped bracket, 24, at the top of the said standard. The metal plates, 23, embrace the pulleys, 3, and provide a support for the journals, 25, of the said pulleys. The journals, 25, maintain the plates, 23, in proper position with respect to each other, but additional bolts, 26, may be used for this purpose.

As shown in Figs. 1 and 2, a metal strap, 27, embraces and is bolted to a post, 28. At its ends, the metal strap, 27, is provided with two upstanding arms, 29, the said arms providing a support for the journal, 30, of the pulley, 3. Brackets, 31, bolted to the metal strap, 27, provide a support for the journal, 32, of the pulley, 3.

The conveying element, 1, is supported at intervals by means of supports, 33. As more clearly shown in Figs. 3, 4, 5 and 6, a part, 34, is adjustably held between two members, 35, by means of a bolt, 36, and nut, 37. The part, 34, comprises two legs, 38, each having their upper ends, 39, off-set to form a guide channel, 40, for the lower strand of the conveying element, 1. By means of slots, 41 and 42, cut in the parts, 34 and 35, respectively, which slots, 41 and 42, receive the bolt, 36, the part, 34, is made adjustable, in a vertical plane, with respect to the part, 35. A supporting shoe, 43, for

the upper strand of the conveying element, 1, is made integral with and is supported by the off-set ends, 39, of the legs, 38. As shown in Figs. 3 and 5, the edges, 44, of the wearing surface of the shoe, 43, may curve downwardly so as to present a smooth surface to the conveying element, 1, as it slides on the said shoe, 43. As shown in dotted lines in Fig. 3, the supports, 33, between the pulleys, 2, are secured to the arms, 48, of Z-shaped brackets, 45, by means of bolts, 46, and nuts, 47, which pass through the said arms, 48, and the horizontal parts, 49, of the members, 35. The Z-shaped brackets, 45, are, in turn, secured to the under side of a shelf, such as 19, by means of the arms, 50.

The supports, 33, between the pulleys, 3, are supported in a different manner than those between the pulleys, 2. As shown in Fig. 1, the supports, 33, between the pulleys, 3, and those between the pulleys, 2, are in different horizontal planes, the former being placed above the latter. Only one support, 33, is shown between the pulleys, 3, but in actual practice it is often necessary to employ many of these supports, 33, depending upon the distance between the standard, 21, and the post, 28. The distance between the plates, 10, and the brackets, 18, will likewise determine the requisite number of brackets, 33, in the lower horizontal plane, the only requirement being that the conveying element, 1, be given proper support so that it will not sag or leave the vertical plane in which the pulleys, 2 and 3, are fixed. Wires, 51, extend on either side of the conveying element, 1, and run parallel to the same. At one end, the wires, 51, are secured to the post, 28, by means of pegs, 52. From the post, 28, the wires, 51, run parallel to the conveying element, 1, pass through a rectangular board, 53, secured by brackets, 54, to the upper side of the shelf, 19, and are anchored to the said shelf, 19, by means of screws or bolts, 55. Turnbuckles, 56, may be used to keep the wires, 51, taut. As shown in Figs. 3, 4, and 6, one end of the horizontal parts, 49, of the members, 35, is bent upward so as to form an acute angle therewith. Slots, 57, adapted to receive wedges, 58, are cut at the acute angles of the members, 35. The wires, 51, are placed in the said acute angles and are firmly held therein by means of the wedges, 58, as shown in Figs. 3 and 4.

An important feature of our invention is the means provided to prevent the toll tickets from being knocked or blown off the conveying element, 1, after having once been placed thereon by the switchboard operators, and also to maintain the said toll tickets in proper operative position on the said conveying element. To accomplish this in that section of the conveyer in the lower hori-

zontal plane, guide wires, 59, are stretched parallel to and on either side of the conveying element, 1, as shown in Figs. 1 and 2. The ends of the guide wires, 59, are attached to any suitable, fixed members, 60, which may be a wall or parts of a cabinet, by means of screws or bolts, 61. The guide wires, 59, are stretched in line with and secured to the upper edges, 62, of the legs, 63, of the members, 35, by any suitable means such as solder, 64, as more clearly shown in Figs. 3 and 4. A turnbuckle, 65, may be used with each guide wire, 59, to keep it taut. In the use of the conveyer, the toll tickets, 66, which are rectangular in shape, are folded in the middle and placed upon the upper strand of the conveying element, 1, as shown in Figs. 1 and 3. Due to their own resiliency, the toll tickets, 66, will tend to spring outwardly against the guide wires, 59, thereby holding themselves in proper operative position on the upper strand of the conveying element, 1. As the conveying element, 1, travels in its prescribed path, as determined by the respective positions of the pulleys, 2 and 3, the toll tickets, 66, are carried thereby, and the depending ends of the said toll tickets press outwardly against and slide along the guide wires, 59. The parts are so proportioned with respect to each other that the toll tickets, 66, do not press against the guide wires, 59, with sufficient force to cause such resistance between the depending ends of the toll tickets, 66, and the guide wires, 59, that the said toll tickets lose their traction on the conveying element, 1.

Guide wires, 67, are employed for that section of the conveyer in the upper horizontal plane, in the same manner and for the same purpose as the guide wires, 59. From pegs, 68, in the post, 28, the guide wires, 67, run parallel to and on either side of the conveying element, 1, pass through the rectangular board, 53, and are anchored to the shelf, 19, by means of screws or bolts, 69. A turnbuckle, 70, may be used with each guide wire, 67, to keep them taut. As shown in Figs. 1 and 2, a rectangular board, 71, is placed in proximity to the board, 53. The two pair of wires, 51 and 67, are nailed or otherwise secured to the board, 71, to keep the said wires in fixed and proper position with respect to each other. As shown, the wires, 51 and 67, converge from the board, 71, toward the board, 53, in both vertical and horizontal planes, the purpose being to cause them to press toward each other and against their seats on the board, 71, when the said wires are drawn taut by means of the turnbuckles, 56 and 70.

The operation of the device is as follows: A toll ticket, 66, is folded and placed upon the upper strand of the conveying element, 1, of that section of the conveyer erected in the lower horizontal plane. This lower sec-

tion of the conveyer runs parallel to the toll switchboard and within convenient reaching distance of the operators. The motor, 4, drives the conveying element, 1, in the direction indicated by the arrows in Fig. 1. The toll ticket, 66, is carried along on the conveying element, 1, under the pulley, 2, and thence up the inclined section of the conveyer to the upper section, from the end of which it drops through a space, 72, between the arms of the strap, 27, to a distributing desk below.

The shelf, 19, the plates, 10, and the fixed members, 60, are shown as separate parts, but in actual practice it has been found to be more convenient to secure these parts to the switchboard cabinet, or make them a part thereof.

The device is peculiarly adapted for use in a telephone exchange to convey the toll tickets, as explained in detail above, but it may well be employed for conveying other articles having the same general shape and characteristics of toll tickets, such as telegrams or pages for books. By constructing one section of the conveyer in a horizontal plane substantially higher than that section associated with the toll switchboard, it does not take up an unnecessary amount of floor space and is out of the way.

The form of our invention herewith shown and described is a preferred example of the same, and various changes in the shape, size, and arrangement of the parts may be resorted to without departing from the spirit of the invention, or the scope of the subjoined claims.

We claim as our invention and desire to secure by Letters Patent:

1. In conveying apparatus of the character described, a plurality of sheaves, an endless conveying cable trained thereabout, a supporting member arranged intermediate said sheaves and engaging the under side of one run of said cable in such wise as to permit of placement thereon and movement therewith of a folded ticket with the parts of the latter on opposite sides of the crease depending on each side of said cable, means supported for engagement with the upper side of said ticket to urge the latter toward said cable into frictional tractive engagement therewith, while permitting of free movement of said ticket with said cable, and means for imparting operative movement to said cable.

2. In conveying apparatus of the character described, a plurality of sheaves, an endless conveying cable trained thereabout, cable supporting means arranged intermediate said sheaves and including a shoe engaging the under side of one run of said cable in such wise as to permit of placement thereon and movement therewith of a folded ticket with the parts of the latter on oppo-

site sides of the crease depending on each side of said cable, means for holding said supporting means in operative position, said supporting means being provided intermediate said shoe and said holding means with an opening for receiving the other run of said cable, and means for imparting operative movement to said cable.

3. In conveying apparatus of the character described, a plurality of sheaves, an endless conveying cable trained thereabout, a supporting member arranged intermediate said sheaves and engaging the under side of one run of said cable in such wise as to permit of placement thereon and movement therewith of a folded ticket with the parts of the latter on opposite sides of the crease depending on each side of said cable, means engageable with the upper side of said ticket for holding the same in operative relation with respect to said cable, supporting means for said last-named means including an arm associated with said cable-supporting member and extending laterally therefrom, and means for imparting operative movement to said cable.

4. In conveying apparatus of the character described, a plurality of sheaves, an endless conveying cable trained thereabout, a supporting member arranged intermediate said sheaves and engaging the under side of one run of said cable in such wise as to permit of placement thereon and movement therewith of a folded ticket with the parts of the latter on opposite sides of the crease depending on each side of said cable, means engageable with the upper side of each of said parts for urging said ticket toward said cable into frictional tractive engagement therewith while permitting of free movement of said ticket with said cable, means carried by said supporting member and operating to hold said last-named means in operative position, and means for imparting operative movement to said cable.

5. In apparatus of the character described, a plurality of sheaves, an endless conveying cable trained thereabout, a supporting member engaging the under side of one run of said cable in such wise as to permit of placement thereon and movement therewith of a folded ticket with the parts of the latter on opposite sides of the crease depending on each side of said cable, means disposed on either side of said cable for engagement with the respective upper sides of said parts to hold said ticket in folded position and in frictional driving relation at the crease with said cable while permitting of movement of said ticket with said cable by virtue of such relation, and means for imparting operative movement to said cable.

6. In conveying apparatus of the character described including a cable for carrying a folded ticket placed thereon with the parts

of said ticket on opposite sides of the crease depending on each side of said cable, means engageable with one of said parts for effecting frictional tractive engagement between
 5 said ticket and said cable while permitting of movement of said ticket with the latter, supporting means for said last-named means, and means for imparting operative movement to said cable.

10 7. In conveying apparatus of the character described including a cable for carrying a folded ticket placed thereon with the parts of said ticket on opposite sides of the crease depending on each side of said cable, complementary members arranged on opposite
 15 sides of said cable and converging upwardly with their respective upper ends terminating short of said cable, supporting means for said members, means secured to said ends for engagement with said parts in such wise
 20 as to hold said ticket in operative relation with respect to said cable while permitting of movement of said ticket with the latter, and means for imparting operative movement to said cable.

25 8. In conveying apparatus of the character described including a cable for carrying a folded ticket placed thereon with the parts of said ticket on opposite sides of the crease depending on each side of said cable, a bracket comprising a shoe engaging the under
 30 side of said cable to guide the same and upstanding complementary members disposed on opposite sides of said cable with their respective ends terminating short of the latter, supporting means for said bracket,
 35 means secured to said ends for engagement with the upper sides of said parts to hold said ticket in operative relation with respect to said cable while permitting of movement of said ticket with the latter, and means
 40 for imparting operative movement to said cable.

45 9. In conveying apparatus of the character described including an endless cable for carrying a folded ticket placed on one run of the latter with the parts of said ticket on opposite sides of the crease depending on each side of said cable, an upstanding member
 50 disposed below said cable and provided at its upper end with a shoe engaging the under side of said run of the cable and an opening receiving the other run of said cable whereby the last-named run is guided
 55 for movement between the depending parts of said ticket, supporting means for said member, and means for imparting operative movement to said cable.

60 10. In conveying apparatus of the character described including an endless cable for carrying a folded ticket placed on one run of the latter with the parts of said ticket on opposite sides of the crease depending on each side of said cable, an upstanding member
 65 disposed below said cable and provided

at its upper end with a shoe engaging the under side of said run of the cable and an opening receiving the other run of said cable whereby the last-named run is guided for
 70 movement between the depending parts of said ticket, supporting means for said member, upwardly converging arms associated with said member and arranged on opposite sides thereof with their respective upper
 75 ends terminating short of said shoe, means secured to said ends and engageable with the upper sides of said parts for holding said ticket in operative relation with respect to the first-named run of said cable while
 80 permitting of movement of said ticket with the latter, and means for imparting operative movement to said cable.

11. The combination with a conveyer of the character described, comprising a plurality of pulleys and an endless flexible
 85 conveying element arranged thereupon, of means arranged intermediate said pulleys and in engagement with said element to support and guide the same, said means being adapted to permit movement past itself of
 90 a ticket placed upon said conveying element and carried forward thereby, and wires arranged on either side of said conveying element and in parallel relation therewith for engagement with said ticket to hold the same
 95 in operative relation with respect to said conveying element, said wires being supported by said means.

12. The combination with a conveyer of the character described, comprising a plurality of pulleys and an endless flexible
 100 conveying element arranged thereupon, of means arranged intermediate said pulleys and in engagement with said element to support and guide the upper and lower strands thereof, said means being adapted to permit movement past itself of a ticket placed
 105 upon said upper strand of said conveying element and carried forward thereby, and wires arranged on either side of said conveying element and in parallel relation therewith for engagement with said ticket to hold the same in operative relation with respect to said upper strand, said wires being
 110 supported by said means.

13. A conveyer of the character described comprising a plurality of pulleys, and endless flexible conveying element arranged thereupon, guide means associated with said
 120 conveying element and adapted and arranged to engage an article to be conveyed and to urge the same toward said conveying element into frictional tractive engagement therewith, means comprising a vertical member adapted to support and guide the lower
 125 strand of said conveying element and provided with a shoe adapted and arranged to support and guide the upper strand of said conveying element and to permit movement past said means of an article placed upon
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said upper strand and carried forward thereby, and arms extending from said member and adapted and arranged to support said guide means in operative position.

- 5 14. The combination with a conveyer having a conveying element supported to carry a folded article placed thereon with the parts of the article on opposite sides of the crease depending on each side of said element, of

means for effecting frictional tractive en- 10
gagement of said article with said element while permitting of free movement of said article with said element.

In testimony whereof, we affix our signatures.

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