

July 21, 1931.

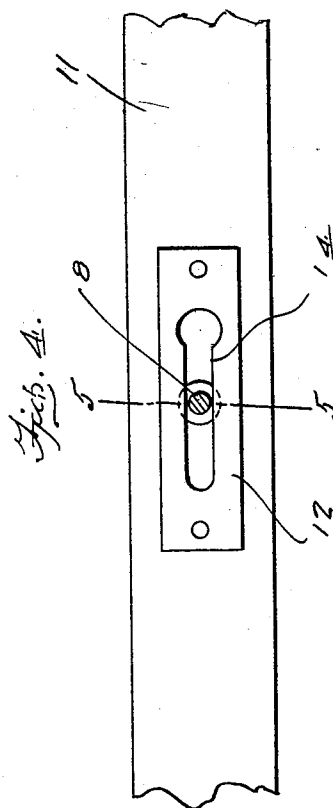
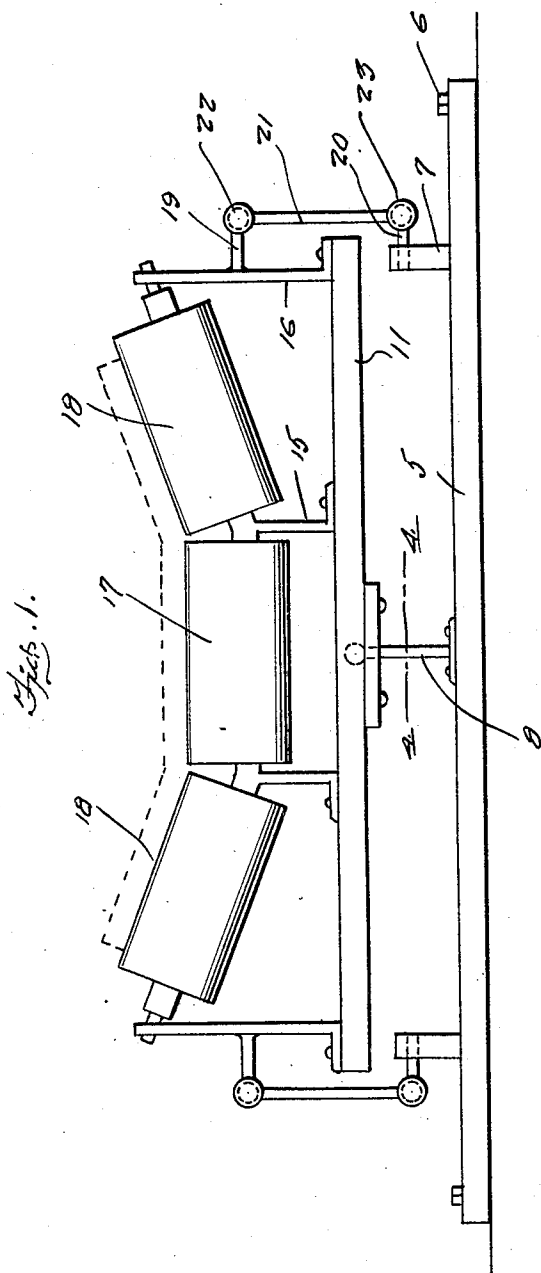
G. A. FOOTE

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AUTOMATIC BELT GUIDE

Filed Jan. 2, 1930

2 Sheets-Sheet 1



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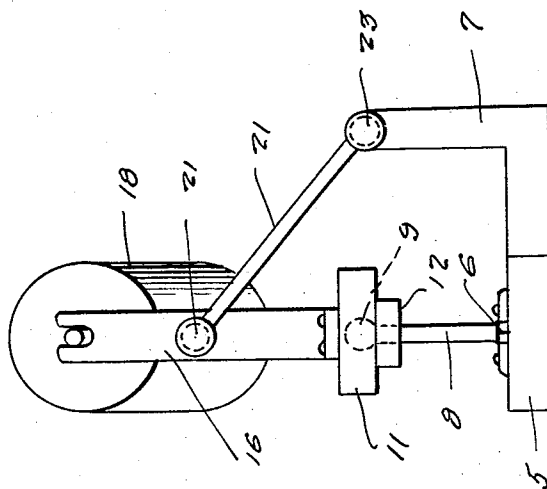
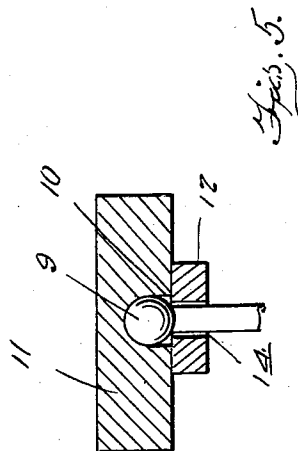
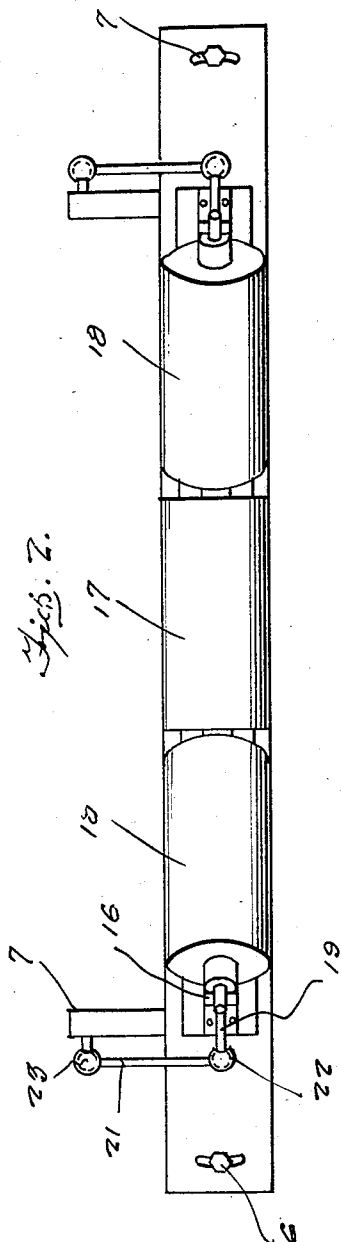
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UNITED STATES PATENT OFFICE

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AUTOMATIC BELT GUIDE

Application filed January 2, 1930. Serial No. 418,024.

The present invention relates to improvements in automatic belt guides and an object of the invention is to provide a device which has novel means for keeping the belt centered with respect to the central line of the conveyor, this means being adapted when the belt moves sidewise from a central line of the conveyor to return the belt to the central line.

10 A further object of the invention is to provide a device of this type in which the belt supporting pulleys are mounted in a structure which is swung by the belt when moving laterally in respect to its central line of travel so that the belt is caused to be immediately returned to its central line of travel.

15 A still further very important object of the invention resides in the provision of an automatic belt guide of this nature which is exceedingly simple in construction, inexpensive to manufacture, strong and durable, thoroughly efficient and reliable in use and operation, and otherwise well adapted for the purpose for which it is designed.

20 With the above and numerous other objects in view as will appear as the description proceeds, the invention resides in certain novel features of construction, and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawings:

Figure 1 is an elevation of the device embodying the features of my invention,

Figure 2 is a top plan view thereof,

35 Figure 3 is an elevation of the device taken at right angles to that shown in Figure 1,

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 1,

40 Figure 5 is a sectional view taken substantially on the line 5—5 of Figure 4.

Referring to the drawings in detail it will be seen that the numeral 5 denotes an elongated base plate transversely disposed in respect to the line of travel of the belt and is anchored in place by bolts 6 extending through arcuate slots 7 in the ends of the base plate. From one side of the base plate there extends a pair of L-shaped brackets 7 terminating above the upper surface of the plate 5.

A standard 8 rises from the center of the base plate and terminates in a ball 9 receivable in a pocket 10 formed in the under surface of the central part of an elongated supporting plate 11 normally disposed coextensive with the plate 5.

A plate 12 is fixed to the under surface of the plate 11 and has an elongated slot 14 therein one end of which is enlarged as is shown in Figure 4 so that the ball may be inserted through the enlarged end.

This plate 14 allows the plate 11 to tilt longitudinally but prevent transverse tilting thereof. A plurality of brackets 15—15 and 16—16 rise from the plate 11 and rotatably support rollers 17 and 18—18. The roller 17 is the central roller and has its axis disposed parallel with the plate 11 while the axes of the rollers 18 are at an acute angle thereto and diverge upwardly away from each other. Lugs 19 extend outwardly from the bracket 16.

Lugs 20 extend outwardly from the upper end of the bracket 7. Connecting rods 21 have ball and socket connections 22 with lugs 19 and ball and socket connections 23 with lugs 20.

To understand the operation of the device let it be supposed that the belt is slipping to the right as the apparatus is illustrated in Figure 1 and therefore the weight which is additionally placed to the right will cause the tilting of the plate 11 to the right and as it tilts downwardly to swing because of the action of the link 21, and therefore will swing, referring to Figure 2, in a clockwise direction, thereby tending to throw the belt over toward the left.

It will be noted that this action takes place immediately and thereby the belt will be automatically maintained in central line of travel at all times.

It is thought that the operation, utility and advantages of this invention will now be quite apparent to those skilled in this art without a more detailed description thereof.

The present embodiment of the invention has been described in considerable detail for the purposes of exemplification since in actual practice it attains the features of ad-

vantage enumerated as desirable in the statement of the invention and the above description.

It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. In an apparatus of the class described, a plate, means for supporting the plate to allow the same to tilt in a vertical plane coincident with its longitudinal extension and prevent tilting thereof out of said plane, said means allowing the plate to swing, a plurality of rollers, means for mounting the rollers to swing with the plate, and means for causing the plate to swing when tilted, said rollers comprising a central roller having its axis parallel with the plate and a pair of side rollers having their axes diverging upwardly from each other, said supporting means comprising a standard terminating in a ball located in a pocket in the center of the plate and an auxiliary plate having an elongated slot through which the standard extends, said auxiliary plate being attached to the first mentioned plate so that the slot extends longitudinally of said first mentioned plate.

2. In an apparatus of the class described, a plate, means for supporting the plate to allow the same to tilt in a vertical plane coincident with its longitudinal extension and prevent tilting thereof out of said plane, said means allowing the plate to swing, a plurality of rollers, means for mounting the rollers for rotation with the plate and means for causing the plate to swing when tilted, said rollers comprising a central roller having its axis parallel with the plate, and a pair of side rollers having their axes diverging upwardly from each other, said supporting means comprising a standard terminating in a ball located in a pocket in the center of the plate, and an auxiliary plate having an elongated slot through which the standard extends, said auxiliary plate being attached to the first mentioned plate so that the slot extends longitudinally of said first mentioned plate, said means for swinging the plate comprising links, ball and socket means for anchoring the links, said ball and socket means connecting the links with the plate and the supporting means.

In testimony whereof I affix my signature.
GEORGE A. FOOTE.