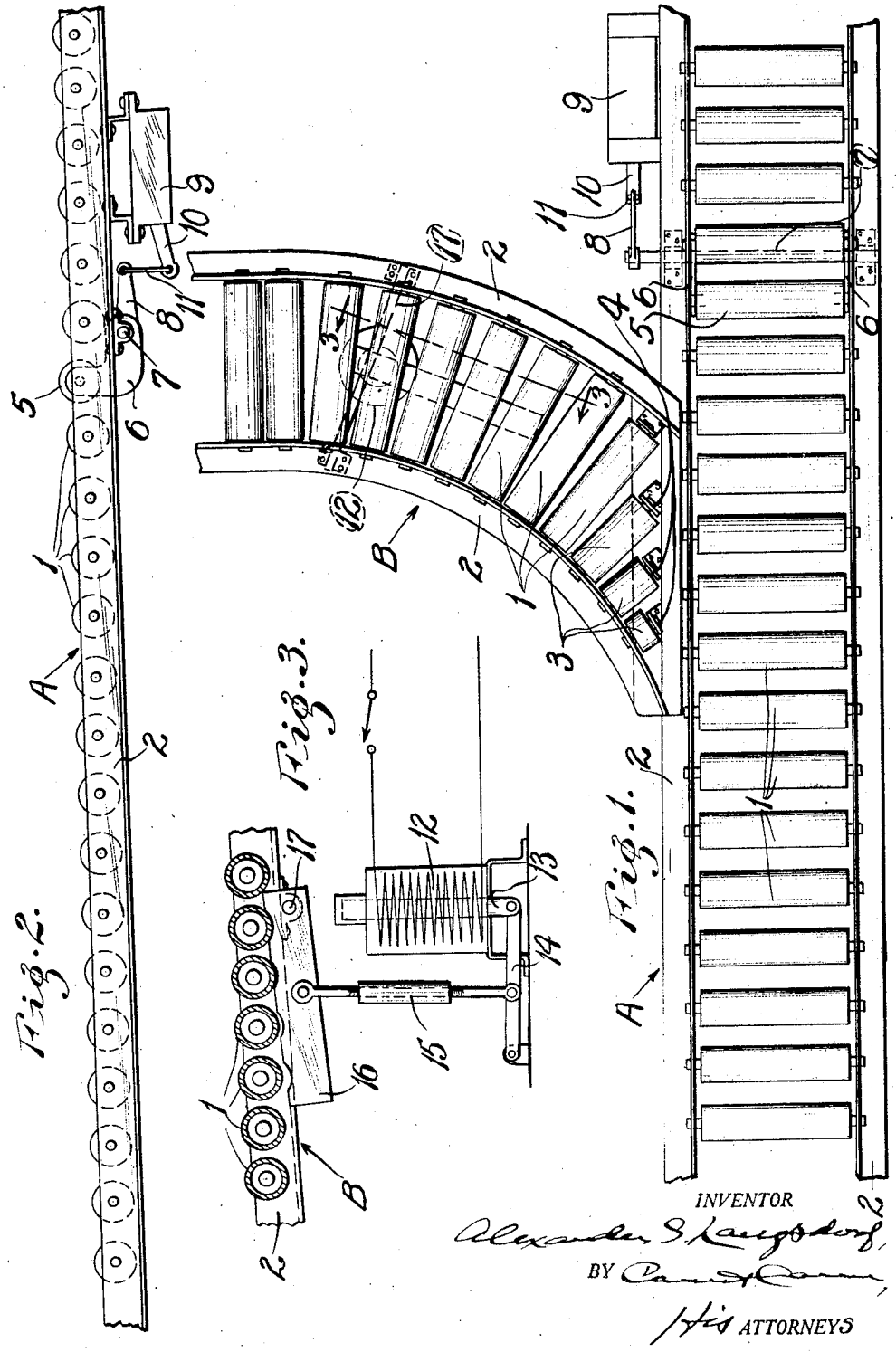
Nov. 10, 1925. 1,560,830

A. S. LANGSDORF

AUTOMATIC CONTROL FOR ROLLER CONVEYER SYSTEMS

Filed Jan. 17, 1925



Patented Nov. 10, 1925. 1,560,830

UNITED STATES PATENT OFFICE.

ALEXANDER S. LANGSDORF, OF ST. LOUIS, MISSOURI, ASSIGNOR TO ALVEY MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

AUTOMATIC CONTROL FOR ROLLER CONVEYER SYSTEMS.

Application filed January 17, 1925. Serial No. 3,013.

To all whom it may concern:

Be it known that I, ALEXANDER S. LANGSDORF, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Automatic Controls for Roller Conveyer Systems, of which the following is a specification.

My invention relates to roller conveyer systems of the type in which one or more branch rollerways deliver articles to a main rollerway. With systems of this type, there are likely to be frequent collisions at the points where the branch lines meet the main line; and the principal object of the present invention is to avoid such collisions by preventing a branch line from delivering an article to the main line when there is an article on the main line in position to be struck by the article delivered from the branch line. The invention consists principally in providing a braking device for preventing rotation of rollers of the branch line adjacent to the point of delivery to the main line, such braking device being actuated by an article on the main line. The invention also consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawing, which forms part of this specification, and wherein like reference numerals refer to like parts wherever they occur.

Fig. 1 is a plan view of a portion of a conveyer system embodying my invention adjacent to the meeting point of a main line and a branch line;

Fig. 2 is a side elevation of the main line; and

Fig. 3 is a vertical sectional view of the branch line on the line 3—3 of Fig. 1, the braking device being shown in elevation and the wiring system being indicated diagrammatically.

The main line A is a rollerway of any suitable type, being illustrated as comprising rollers 1 journaled in suitable side frames 2. The branch line B likewise comprises similar rollers 1 rotatably mounted in similar side frames 2, the branch line B being curved so as to feed articles onto the main line A and the endmost rollers 3 being considerably shorter than the other rollers of the branch line and being provided at one end with special mounting brackets 4.

With the construction so far described, there would be great likelihood of collisions between articles on the main line and articles being delivered thereto from the branch line. As hereinafter described, braking means are provided for preventing rotation of rollers of one of the lines, such braking means being actuated by an article on the other line. In practice, articles on the main line will be given the right of way; and an actuating means is provided on the main line for actuating a braking device for preventing movement of articles at the delivery point of the branch line.

In the embodiment of the invention shown in the drawings, a roller 5 in the main line A slightly in advance of (above) the juncture with a branch line B normally projects above the level of the other rollers 1 of the main line and is pivotally mounted in lever arms 6 that are mounted on a rock shaft 7 that is provided with a projecting rock arm 8. A suitable switch member (not shown in detail in the drawing) is mounted in a housing 9 that may be secured to a frame member 2 of the rollerway. The operating lever 10 of said switch is operatively connected with the rock shaft 7, as by a link 11 connecting said operating lever with the projecting rock arm 8 of the rock shaft 7, so that when the roller 5 is depressed by the weight of an article passing over it, an electric circuit is closed through said switch.

The switch is in an electric circuit that includes the winding of a solenoid member 12 that is mounted in any suitable way, as by being disposed on the floor below the branch line. The lower end of the core 13 of the solenoid is secured to a lever 14 to which is pivotally secured a link whose upper end is pivotally secured to a brake shoe 16. One end of said brake shoe 16 is pivotally secured to a suitable rod 17 or other support which may be secured to the frame members 2 of the branch line. The brake shoe 16 is adapted to be pressed against a plurality of rollers 1 of the branch line to prevent rotation thereof, thus preventing movement of articles along the branch line.

It will be clear from the above that an article moving along the main line under the

influence of gravity, will strike the projecting roller 5 and depress it, thus causing the switch to be closed and the electric circuit of the solenoid member 12 to be closed. Thereupon, the core 13 of the solenoid will be moved upwardly, moving the lever 14 and link 15 and causing the brake shoe 16 to be swung against the rollers 1 of the branch line. Thus any article moving along the branch line while the movable roller 5 is still engaged by an article on the main line will be prevented from passing onto the main line by reason of its coming in contact with the non-rotatable rollers of the branch line. As soon as the movable roller 5 of the main line is released, the circuit through the solenoid member will be opened and the brake shoe and solenoid core will drop, thus permitting the rollers of the branch line to rotate and permitting the article to move along the branch line under the influence of gravity and be delivered to the main line.

Obviously, changes might be made in the braking mechanism and in the brake actuating mechanism, and numerous other changes might be made without departing from the invention; and I do not wish to be limited to the precise construction shown.

What I claim is:

1. A conveyer system comprising a main rollerway, a branch rollerway adapted to deliver articles to said main rollerway, a brake member adapted and arranged to be pressed against rollers of said branch rollerway adjacent to the main rollerway to prevent rotation thereof, electrical means for operating said brake and means controlled by an article on said main rollerway for actuating said brake operating means.

2. A conveyer system comprising a main rollerway, a branch rollerway adapted to deliver articles to said main rollerway, a brake member adapted and arranged to be pressed against rollers of said branch rollerway adjacent to the main rollerway to prevent rotation thereof, a solenoid for operating said brake member, a switch for controlling the solenoid circuit and means controlled by an article on the rollerway for closing and opening said switch.

3. A conveyer system comprising a main rollerway, a branch rollerway adapted to deliver articles to the main rollerway, a yieldably mounted roller located in the main line in advance of the point of delivery of articles from the branch line, said movable roller normally projecting above the other rollers, a switch member operatively connected with said roller to be closed when the roller is moved from normal position, a solenoid in the electric circuit controlled by said switch, a solenoid core, a lever pivotally secured to the lower end of said core, an upstanding link secured to said lever, and a brake member secured to the upper end of said link, said brake member being adapted to be pressed against rollers of the branch rollerway when the electric circuit is closed through said switch member.

Signed at St. Louis, Missouri, this 13th day of January, 1925.

ALEXANDER S. LANGSDORF.