

No. 840,579.

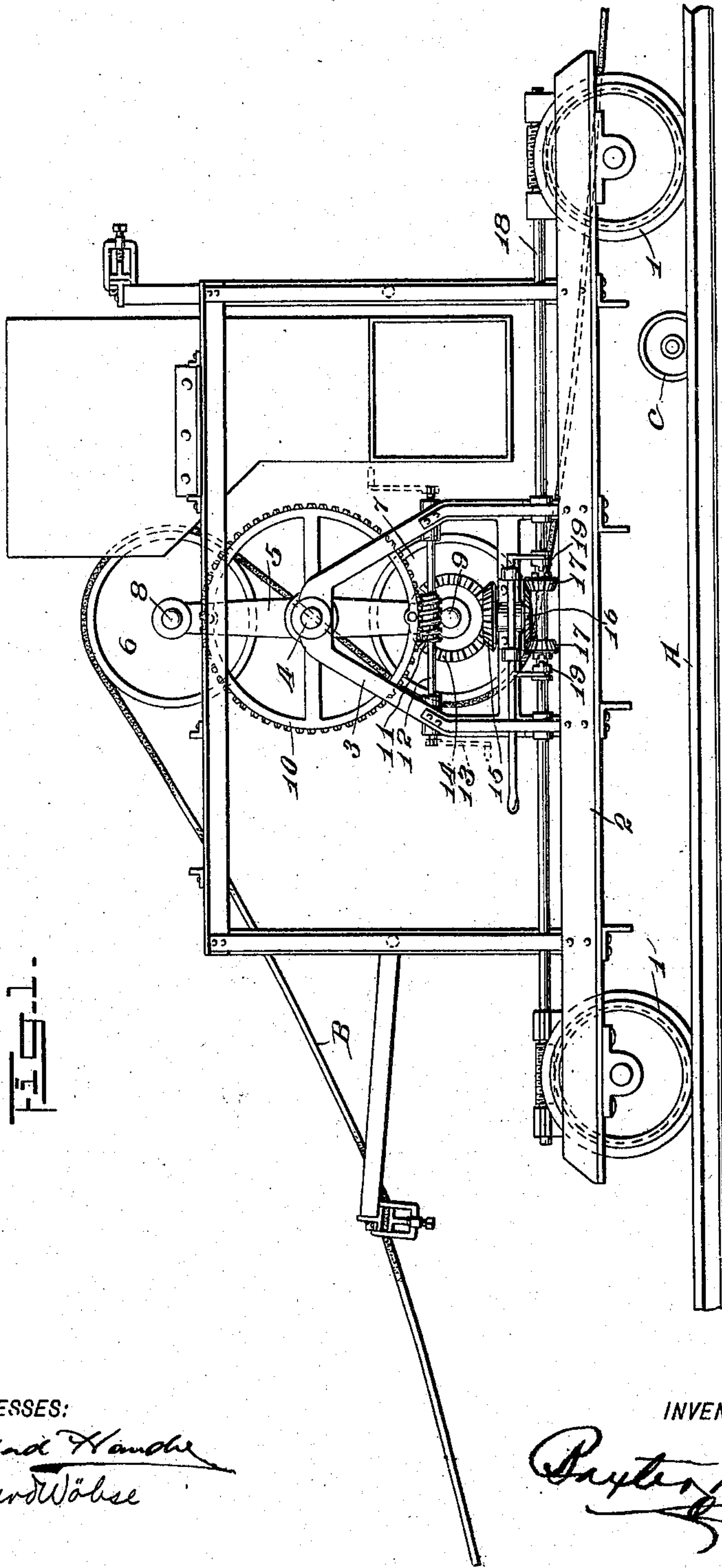
PATENTED JAN. 8, 1907.

B. MORTON.

TRIPPER OR DELIVERER FOR BELT CONVEYERS.

APPLICATION FILED MAY 5, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

*L. Einfeld Hander*  
*Richard Wöhse*

INVENTOR

*Baxter Morton*

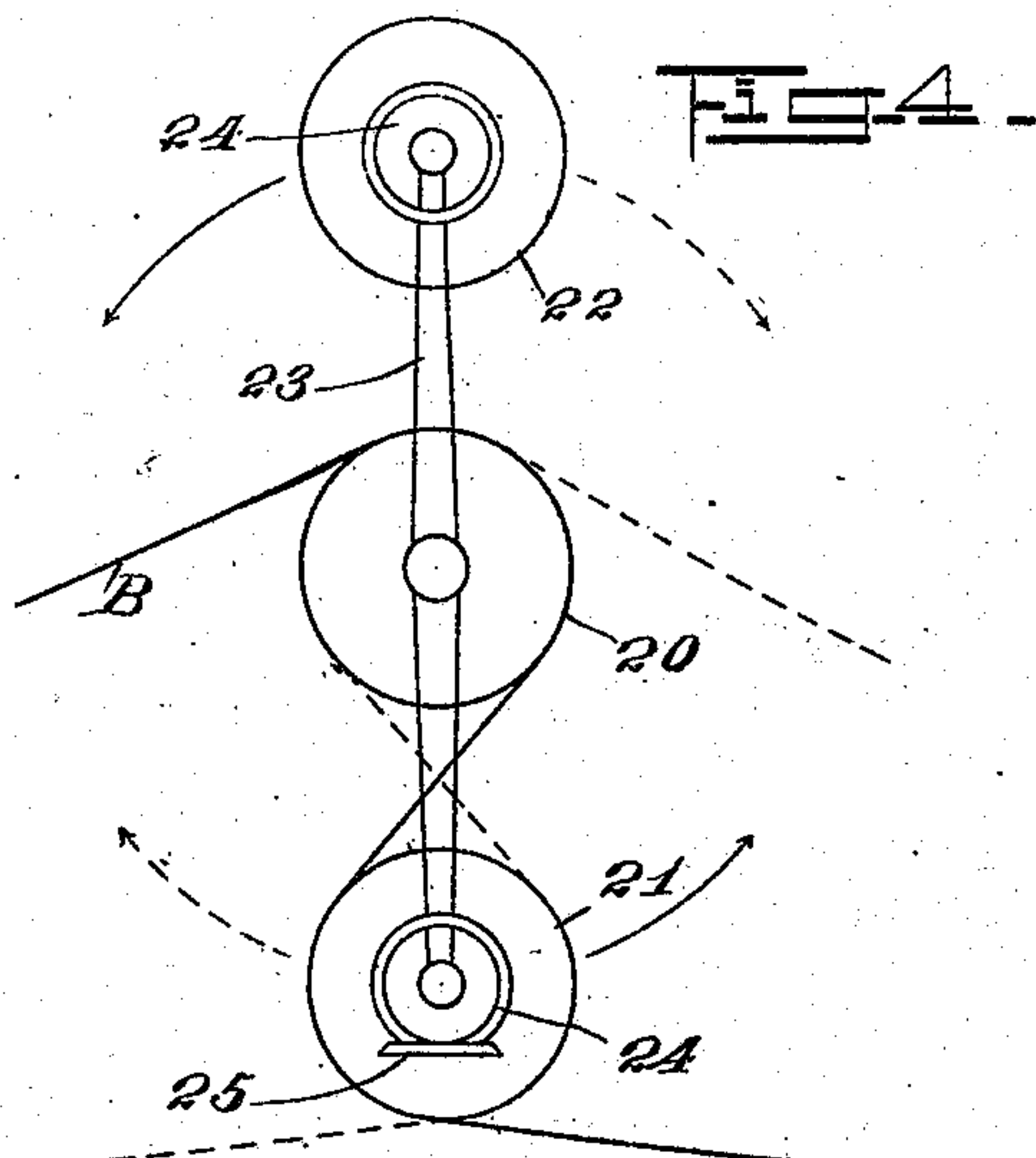
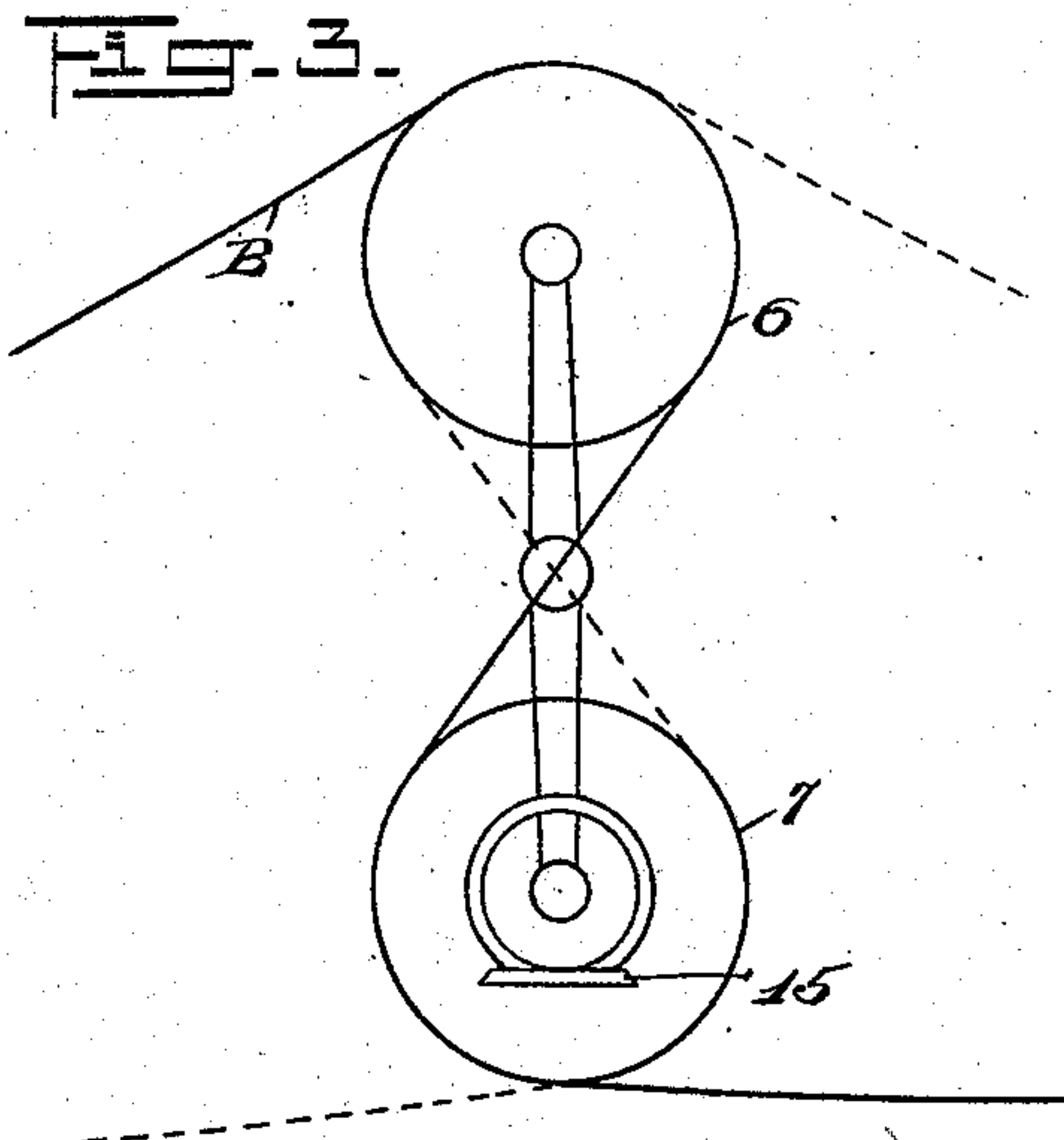
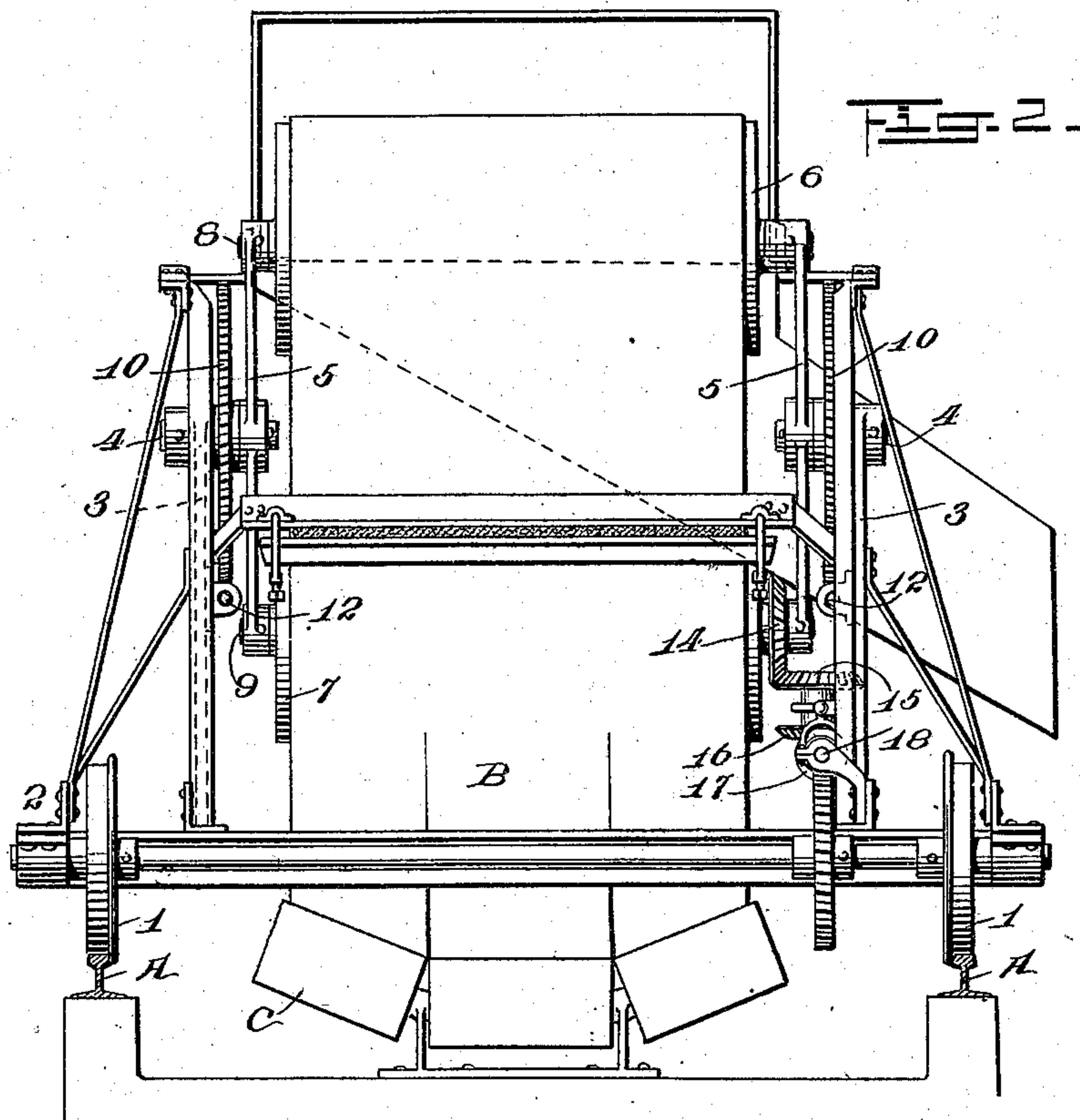
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*L. Sanford Hander*  
*Richard Wöhse*

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# UNITED STATES PATENT OFFICE.

BAXTER MORTON, OF NEW YORK, N. Y.

## TRIPPER OR DELIVERER FOR BELT CONVEYERS.

No. 840,579.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed May 5, 1906. Serial No. 315,325.

*To all whom it may concern:*

Be it known that I, BAXTER MORTON, a citizen of the United States, residing in the city, county, and State of New York, have  
5 invented new and useful Improvements in Trippers or Deliverers for Belt Conveyers, of which the following is a specification.

This invention relates to trippers or deliverers for belt conveyers, and especially to  
10 trippers or deliverers adapted for use in connection with a belt arranged to travel in either of two directions.

The object of the present invention is to improve trippers of the type specified by simplifying the mechanism for transmitting motion from the conveyor-belt to the traction  
15 devices of the tripper.

In the accompanying drawings I have illustrated one embodiment of the invention  
20 which is hereinafter described in detail, and the scope of the invention is clearly pointed out in the claims.

In the drawings, Figure 1 is a view in side elevation of a tripper constructed according  
25 to the present invention. Fig. 2 is a view in end elevation of the tripper shown in Fig. 1 with parts of the conveyer structure indicated in section. Fig. 3 is a diagram showing the movement of the bend-pulleys to  
30 adapt the tripper for operation when the direction of travel of the belt is reversed. Fig. 4 is a diagram showing the application of the invention to a tripper having the upper bend-pulley fixed and the lower bend-pulley only  
35 susceptible of shifting.

Referring to the drawings by the reference characters, A designates the rails of a track of ordinary construction, B the conveyor-belt, and C the troughing-idlers for the belt.  
40 The traction-wheels 1 of the tripper rest upon the rails as usual and afford support for the frame 2, upon which the entire mechanism of the tripper is supported. The frame 2 is provided intermediate of its ends with heavy  
45 supporting-arches 3, in the tops of which are mounted short shafts 4, which carry bars 5, between the ends of which the upper bend-pulley 6 and lower bend-pulley 7 are arranged. The two bend-pulleys turn about  
50 shafts 8 and 9, respectively, which are rigidly connected with the bars 5, so as to form a strong rectangular frame, and at each side of the frame is mounted a large worm-gear or circular worm-rack 10, which meshes with  
55 the worm 11 on a shaft 12, turning in bear-

ings upon the adjacent supporting-arch. The shaft 12 is adapted at the ends to receive a wrench 13. (Shown in dotted lines in Fig. 1.) By means of the worm-gears 10, the worms 11, and the shafts 12, upon which the  
60 worms are mounted, the frame carrying the two bend-pulleys can be turned about the pivot-shafts 4 to reverse the curve of the belt.

In the structure illustrated in Figs. 1 to 3, inclusive, but one lower bend-pulley is provided, and power is always transmitted to the traction-wheels from the lower bend-pulley. The power-transmitting mechanism comprises a bevel-pinion 14, rigidly connect-  
65 ed with the lower bend-pulley, a bevel-pinion 15, with which the pinion 14 meshes when the bend-pulley is in operative position, and mechanism for transmitting motion from the bevel-pinion 15 to the traction-  
70 wheels. The pinion 15 is mounted at the upper end of a short shaft turning in bearings provided in one of the supporting-arches 3 and provided at its lower end with a bevel-pinion 16, which is constantly in mesh with  
75 two loose bevel-pinions 17 on the longitudinal shaft 18, from which motion is transmitted to the axles of the traction-wheels. Clutches 19 are provided to establish operative connection between the bevel-pinions  
80 17 and the shaft 18, as required. In the structure diagrammatically illustrated in Fig. 4 an upper bend-pulley 20 turns round a fixed axis, and two lower bend-pulleys 21 and 22 are mounted in opposite ends of a  
85 frame 23, which turns round the axis of the fixed upper bend-pulley to bring one or the other of the lower bend-pulleys into position. The lower bend-pulleys 21 and 22 are both provided with bevel-pinions 24, and  
90 when either of the two lower bend-pulleys is in operative position below the fixed bend-pulley 20 the bevel-pinion carried by the lower bend-pulley, which is in position, will mesh with a fixed bevel pinion 25, which occupies the position of the fixed bevel-pinion  
95 15 in Fig. 1

From the foregoing description and the drawings it will be noted that the mechanism for transmitting motion from the belt to the traction mechanism is very simple and compact, comprising very few gears, and reducing both the cost and weight of said power-transmitting mechanism to a minimum.  
105

While I have shown and described a shaft extending longitudinally of the tripper-  
110



frame for transmitting power from the pinion driven by the lower bend-pulley to the traction-wheels, it is to be understood that other devices may be used instead of the shaft and the gear-connections associated therewith.

A tripper constructed in accord with the present invention should be provided with a receiving-hopper and belt-clamps, as in other trippers of the class to which the invention pertains; but such devices form no part of the present invention.

The operation of the tripper constructed according to the present invention will be readily understood. When the bend-pulleys are in the position shown in Fig. 1 with the belt traveling from left to right, the bevel-gear 14, carried by the lower bend-pulley, is in mesh with the bevel-gear 15, mounted in the base of one of the supporting-arches 3, and motion is transmitted from the bevel-gear 15 to the traction-wheels. When, however, the direction of travel of the belt is to be reversed, the upper and lower bend-pulleys are both turned through a complete circle from right to left, as indicated in Fig. 3. During this movement the bevel-pinion 14, carried by the lower bend-pulley, remains out of engagement with the pinion 15 from the beginning of the movement until it is substantially completed, coming into engagement with the pinion 15 only just before the lower bend-pulley completes its travel through the entire circle. In this way the effort required to effect the shifting of the bend-pulleys preparatory to the reversal of the belt is reduced to a minimum, and the gears remain

in mesh only when the bend-pulleys are in position for operation.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a tripper or deliverer for belt conveyers of a shiftable bend-pulley, traction members, and power-transmitting mechanism whereby movement is transmitted from said lower bend-pulley to said traction members, said power-transmitting mechanism comprising a pinion movable with said shiftable bend-pulley and a pinion turning about a fixed axis and adapted to engage with the pinion movable with the shiftable bend-pulley when said shiftable bend-pulley is in operative position.

2. The combination in a tripper or deliverer for belt conveyers of a shiftable lower bend-pulley, traction members for said tripper, and power-transmitting mechanism whereby movement is imparted from said shiftable lower bend-pulley to said traction members, said power-transmitting mechanism comprising a pinion rigidly connected with said shiftable lower bend-pulley and a pinion turning about a fixed axis and adapted for engagement with the pinion rigidly connected with the shiftable lower bend-pulley when said lower bend-pulley is in operative position.

In testimony whereof I have signed my name in the presence of two witnesses.

BAXTER MORTON.

Witnesses:

H. RICHARD WÖBSE,  
K. E. O'BRIEN.