

No. 707,614.

Patented Aug. 26, 1902.

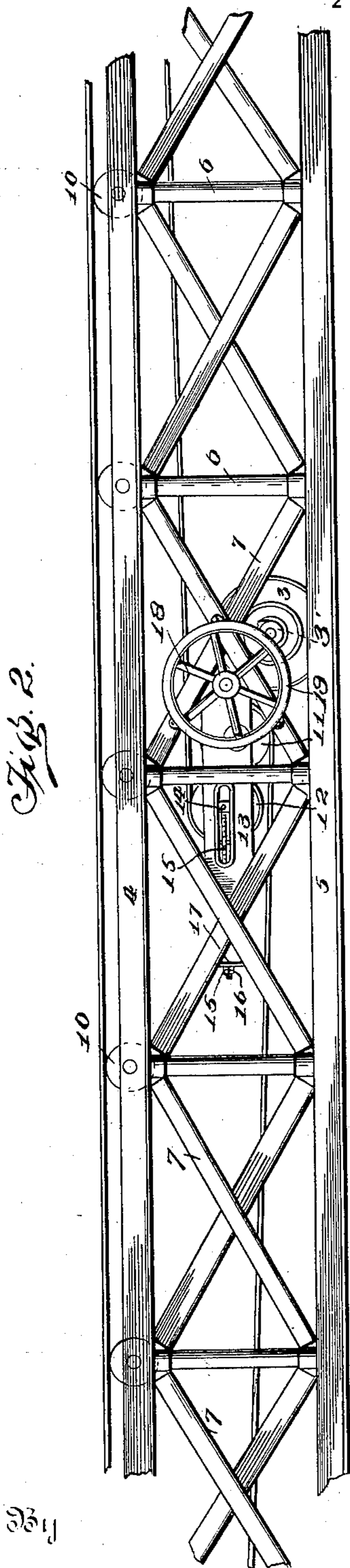
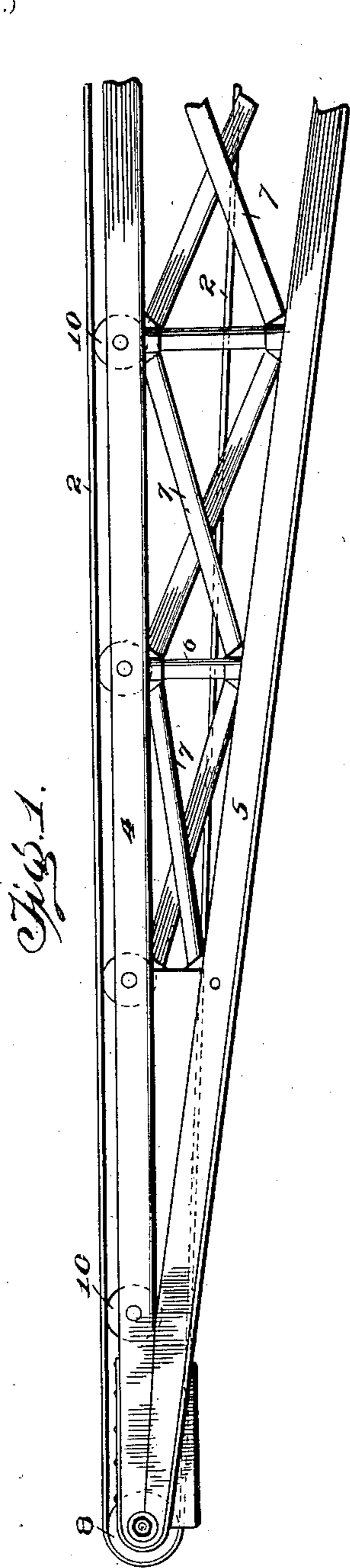
W. L. McCABE

DRIVING MECHANISM FOR PORTABLE ELECTRIC CONVEYERS.

(Application filed Dec. 27, 1901.)

(No Model.)

2 Sheets—Sheet I.



Witnesses

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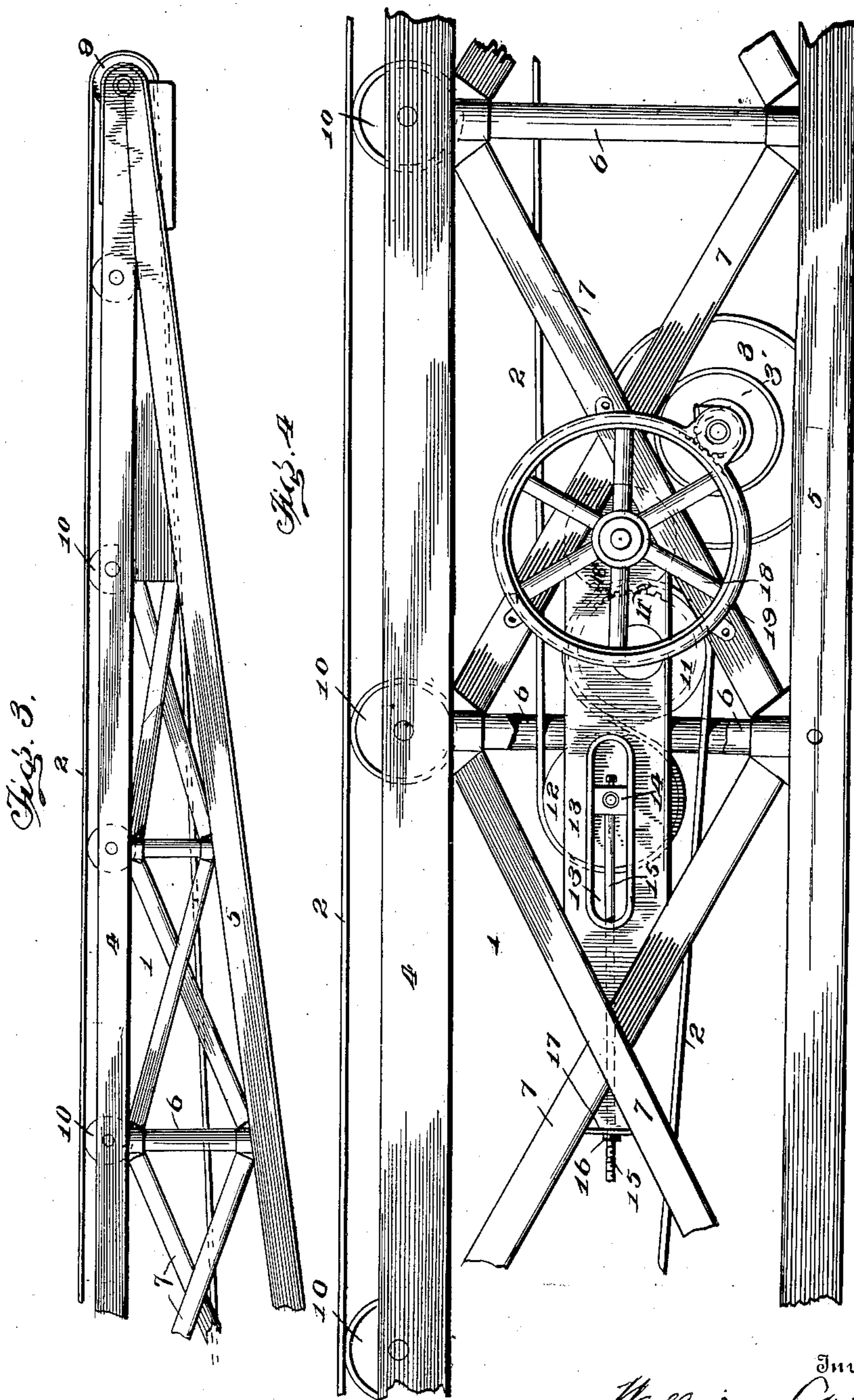
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UNITED STATES PATENT OFFICE.

WILLIAM L. McCABE, OF TACOMA, WASHINGTON.

DRIVING MECHANISM FOR PORTABLE ELECTRIC CONVEYERS.

SPECIFICATION forming part of Letters Patent No. 707,614, dated August 26, 1902.

Application filed December 17, 1901. Serial No. 86,291. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. McCABE, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Driving Mechanism for Portable Electric Conveyers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in portable conveyers, and more particularly to belt tightening and driving mechanism therefor.

It consists in a conveyer comprising a suitable frame having an endless belt mounted thereon upon suitable pulleys and other pulleys engaging said belt, one of the latter pulleys receiving motion from a suitable motor and imparting the same to said belt and the other being adjustable to control the tautness of the belt.

It also consists of a conveyer comprising a suitable frame, an endless belt mounted thereon, pulleys supporting the same, means for driving said belt, a pulley mounted in said frame and engaging a portion of said belt for directing the same in an opposite direction to that of its general movement, and means for adjusting said last-mentioned pulley longitudinally of said frame for increasing or decreasing the distance of said return movement, whereby the tautness of said belt may be governed.

It further consists of certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a view in side elevation of a portion of a portable conveyer, showing one end thereof embodying the features of the present invention. Fig. 2 represents a similar view of the central portion thereof. Fig. 3 represents a similar view of the opposite end to that shown in Fig. 1; and Fig. 4 represents an enlarged view, in side elevation, of the central portion of the conveyer.

Referring to the drawings by numerals, 1 indicates a conveyer-frame, 2 an endless conveyer-belt, and 3 any suitable motor for ac-

tuating the same. In portable conveyers of this character the motor has usually been mounted at the end of the conveyer and the power transmitted from the motor to the mechanism for driving the conveyer-belt by separate belts. I find, however, that the most desirable location for the motor, and particularly an electric motor, which I prefer to use, is in the center of the conveyer-frame, as the weight of the conveyer rests on this point when it is being transported about a dock or warehouse.

The improved conveyer-frame preferably consists of sides suitably trussed and secured together, each of said sides comprising upper and lower bars 4 and 5 and vertical posts, as 6, together with diagonal brace-rods, as 7, all secured together to form a light and yet strong structure. The endless belt 2 is passed over drums, as 8 and 9, at the ends of the conveyer-frame, the said belt being supported at intervals along the upper surface of the frame 1 by means of suitable rollers, as 10, transversely mounted in the said frame. The motor 3 is preferably located at approximately the central point in the frame, as seen in the drawings, the said motor being preferably of the electrical type, which I find to be a very convenient means for operating a conveyer of this character. To one side of the motor is mounted an actuating pulley or drum, as 11, and to one side of said drum, longitudinally of the frame, is mounted a tension-drum, as 12, about both of which drums the belt 2 is passed, the drum 12 being mounted transversely of the frame in a slightly-higher plane than the horizontal plane of drum 11 and on the opposite side thereof to that of the motor, whereby the belt 2 when moving from pulley or drum 8 passes first about drum 11, striking the under portion thereof first and contacting with the periphery of the same for approximately two-thirds of the circumference of the drum and then passing in an opposite direction to that of its general movement beneath drum 12 about the rear portion of the same and over the upper portion thereof to drum 9, or the reverse movement of belt 2 may be had, and the same will then pass from drum or pulley 9 over drum 12 beneath the same, moving back upon itself in an incomplete loop over drum 11 and from

the under portion thereof to drum or pulley 8. This return or lapping action of the belt caused by the relative positions of drums 11 and 12 is considered as a very valuable feature of the present invention, as it greatly facilitates governing the tension of belt 2. The actuating-drum 11 is preferably geared directly to the motor 3 by means of a pinion 3', meshing with a suitable balance gear-wheel 18, carrying the pinion 18', which in turn meshes with a gear 11', carried by the actuating-drum, so that there is only one belt employed in the conveyer—namely, the conveyer-belt itself. It will be seen that I prefer to inclose all of the gears in a suitable housing, as 19. The tension-pulley 12 finds bearings upon each side of the frame in a suitable bar or plate, as 13, which is provided with a longitudinal slot, as 13', in which a movable bearing-box, as 14, is adapted to slide, each of the bearing-boxes carrying its respective end of pulley 12. A bolt, as 15, engages the box 14 at one end and is provided with an adjusting-nut, as 16, at the other, the said bolt being passed longitudinally through a portion of the frame and the nut 16 abutting against a portion of the frame, as at 17, for controlling the position of the bearing-box. It will be readily seen that by adjusting the nuts 16 the bearing-boxes 14 may be moved longitudinally in the slots 13', so as to tighten the conveyer-belt to the required extent. The wires to the electric motor may enter the frame at any desired point and any preferred form of motor may be employed.

It will be noted that the construction of my improved portable conveyer is exceedingly simple and inexpensive and that by mounting the motor centrally of the frame the device is well balanced for moving it from place to place, while the said motor may be geared directly to the actuating-drum for driving the conveyer-belt, and the relative position of the tension-pulley is such as not to interfere with the operation of the parts and yet is capable of the most efficient performance of its functions.

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

1. A portable conveyer comprising a suitable frame, an endless conveyer-belt mounted upon the same, a driving-drum mounted within said frame transversely thereof, a tension-drum also mounted transversely of the frame within the same, and spaced from said

driving-drum longitudinally of the frame, the said belt being passed over one end of the frame, over the driving-drum and then lapped upon itself in an opposite direction to that of its general movement, and passed over the tension-drum, and then passed in the direction of its general movement to the opposite end of the frame, and means for moving said tension-drum bodily longitudinally of said frame, substantially as described.

2. A portable conveyer comprising a suitable frame, an endless belt mounted thereon, means for driving said belt, a pulley mounted in said frame and engaging a portion of said belt for directing the same in opposite direction to that of its general movement, and means for adjusting said last-mentioned pulley longitudinally of said frame for increasing or decreasing the distance of said movement, whereby the tension of said belt may be governed, substantially as described.

3. A portable conveyer comprising a suitable frame, an endless conveying-belt, pulleys for supporting the belt on the frame, an actuating-drum and a tension-drum also engaging the said belt at a point near the center of the conveyer-frame, a motor mounted centrally in the said frame and geared directly to the actuating-drum whereby the device is well balanced, substantially as described.

4. In a portable conveyer, the combination with a frame and an endless conveyer-belt, of an actuating-pulley and a tension-pulley engaging said belt, bearing-boxes engaging the journals of said tension-pulley, the said bearing-boxes being mounted in the frame, slidable longitudinally thereof and bolts secured to said boxes for adjusting the same longitudinally of the frame, whereby the tension of the belt may be controlled, substantially as described.

5. A portable conveyer comprising a suitable frame, an endless conveyer-belt mounted thereon, a driving-drum actuating said belt, means for driving said drum, a tension-drum engaging said belt, journal-boxes slidably mounted in said frame, and carrying the journals of said tension-drum, and means for adjusting said journal-boxes for moving said tension-drum, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM L. McCABE.

Witnesses:

FRANK J. MILLER,
EARL WALKER.