

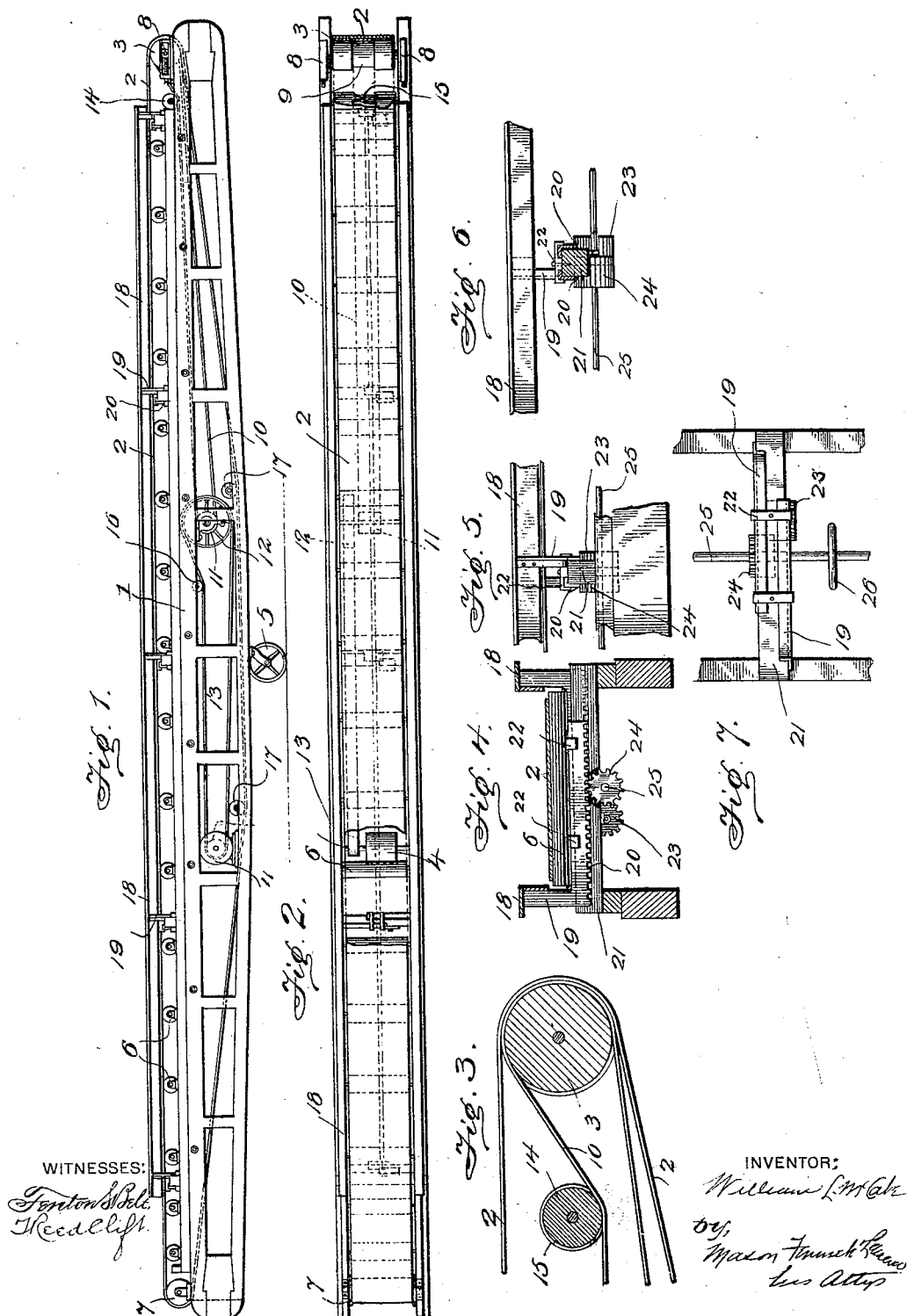
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Patented Oct. 17, 1899.

W. L. McCABE.
PORTABLE CONVEYER.

(Application filed Feb. 2, 1899.)

(No Model.)



UNITED STATES PATENT OFFICE.

WILLIAM L. McCABE, OF TACOMA, WASHINGTON.

PORTABLE CONVEYER.

SPECIFICATION forming part of Letters Patent No. 635,177, dated October 17, 1899.

Application filed February 2, 1899. Serial No. 704,256. (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 Portable 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 is particularly intended for use upon docks or in warehouses where it can be moved about from place to place for unloading ships and railway-cars and for other purposes.

It consists, in a conveyer having a suitable frame, of an endless conveying-belt mounted thereon, the said belt passing about a driving-pulley, a driving-belt also engaging the said driving-pulley and occupying a countersunk peripheral portion upon the same, so that the conveyer-belt may lie smooth over it, though being engaged thereby to help drive it, and means actuating the said driving-belt.

It also consists, in a portable conveyer having an endless conveying-belt, of guide rails or bars mounted thereon for keeping articles upon the conveying-belt, telescoping arms carrying said rails, means for adjusting the said arms to hold the guides at different widths, and means for actuating the conveyer-belt.

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

In the accompanying drawings, Figure 1 represents a side elevation of a portable conveyer constructed in accordance with my invention. Fig. 2 represents a top plan view of the same, parts of the conveying-belt being broken away to show the driving mechanism beneath it. Fig. 3 represents an enlarged detail sectional view of the driving drum or pulley, showing the belts engaging the same. Fig. 4 represents a detail transverse section through the conveyer, showing the means for adjusting the guide bars or rails. Fig. 5 represents a detail side elevation of the same. Fig. 6 represents a detail view showing the

relative positions of the pinions for adjusting the guide-rails; and Fig. 7 is a detail top plan view of a portion of the conveyer, showing one set of adjustable guide-rail arms.

1 in the drawings represents a conveyer-frame; 2, an endless conveyer-belt mounted thereon; 3, an actuating or driving pulley, and 4 a motor. In a conveyer of this kind the frame 1, which is made of suitable length and any desired material, is preferably mounted centrally of its length upon wheels or rollers, as 5, upon which it may be rolled or moved to any desired spot for use. Upon the upper surface of the frame are mounted a series of belt-supporting pulleys, as 6, over which the conveyer-belt passes. At one end of the conveyer a drum, as 7, which is preferably larger than the pulleys or drums 6, guides the belt to its return direction. At the other end of the conveyer the belt passes over the driving-drum 3. The driving-drum 3 forms an important feature of my invention and is preferably mounted upon the frame 1 in adjustable bearings, as at 8, by means of which the conveyer-belt may be kept taut. The driving-drum 3 is provided about centrally of its periphery with an annular depression or groove, as 9, in which a driving or actuating belt, as 10, is adapted to run. This annular depression 9 is made of such a depth that when the driving-belt 10 rests therein the outer surface of the belt will be flush with the remainder of the periphery of the said drum, thus affording a smooth surface from end to end for the conveyer-belt to pass over. By this means the driving-belt not only actuates the drum 3, but because of its frictional engagement with the conveyer-belt 2 prevents the same from slipping upon the driving-drum and aids materially in its actuation. The driving-belt 10 passes into the central portion of the frame 1 and about a pulley or drum 11, mounted upon a cross-shaft in the said frame, the said shaft also having an actuating-pulley, as 12, secured thereto and connected with a motor 4 by means of the belt 13.

In order to prevent the driving-belt 10 from rubbing against the cross-bars in the frame 1, a pulley, as 14, is mounted in the said frame, as clearly seen in Figs. 1 and 3, so as to depress the driving-belt at that point and permit it to pass into the interior of the frame

1. This pulley may be grooved, as at 15, like the drum 3, if desired, for guiding the driving-belt in its movement. Another idler or pulley, as 16, is preferably used to depress the belt 13 in the same manner. One lap of the conveyer-belt 2 therefore passes over the upper surface of the rollers 6, while the return lap or lower one passes beneath the motor and driving-belts in the frame 1, being directed by idler pulleys or drums, as 17, mounted in the lower part of the frame.

In order to especially adapt my conveyer for use in conveying substances which are packed in bags and bundles, I preferably provide my conveyer with side rails, as 18, the said side guide-rails extending almost the entire length of the conveyer. These guide-rails are preferably made adjustable, so that packages of different sizes can be accommodated upon the conveyer-belt. For this purpose the rails 18 are attached to supporting-arms, as 19, at suitable intervals along the top of the conveyer-frame, the said arms being bent inwardly beneath the conveyer-belt and being provided upon their under surfaces with racks, as 20. These arms 19 are preferably formed of angle-irons, as clearly seen in the drawings, which fit upon the opposite edges of cross-bars, as 21, upon the conveyer-frame. These angle bars or arms 19 are preferably held in place and guided upon the said bars 21 by means of cleats 22, which are secured to the upper surface of the bars 21. The construction of these cleats will be clearly seen by reference to Figs. 6 and 7 of the drawings.

The arrangement of the pinions or gear-wheels for adjusting these arms forms a novel and important feature of my invention. Each set of arms 19, with their rack 20, are adapted to engage a pair of pinions, as 23 24, one pinion engaging a rack on each arm. The pinions are made of sufficient width to intermesh with each other, as seen in Fig. 6 of the drawings, so that the movement imparted to one will actuate the other and in an opposite direction, so that one pinion turning in one direction and engaging one rack 20 actuates it one way, while the other pinion engaging the rack on the other arm moves it in an opposite direction. Thus by actuating the pinions 24 the arms 19 and the guide-rails 18 may be adjusted closer together or farther apart, as may be desired. I preferably connect all the pinions 24 by mounting them upon a common shaft, as 25, mounted in suitable bearings upon the under sides of the beams 21. At a suitable point along the length of the said shaft a hand operating-wheel, as 26, is secured, so that by turning the said wheel all of the pinions, and thereby all of the arms 19, may be adjusted simultaneously for regulating the width between the guide-rails. The other pinions 23 find suitable bearings upon the under sides of the beams 21. It will be seen that this construction admits of a quick adjustment of the said

rails to different distances apart and that it can all be done by one person.

The motor 4 may be of any suitable form, but must be of such a construction as to be easily mounted upon the conveyer, so as to go with the same.

It will be observed that my improved portable conveyer is simple in construction and easy of manipulation and that it can be effectively used for transferring goods from ships or railroads to warehouses.

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

1. A portable conveyer comprising a frame, an endless conveyer-belt mounted thereon, a driving pulley or drum engaging said belt, said drum having a peripheral groove to receive the driving-belt, a driving-belt engaging said groove and flush with the periphery of the drum, so as to come into frictional contact with the conveyer-belt and thereby actuate the same, and means for actuating the driving-belt, substantially as described.

2. A portable conveyer comprising a frame, an endless conveyer-belt mounted thereon, a driving-drum engaging said belt, said drum having an annular depression formed in its periphery, a driving-belt adapted to run in the said depression so as to be flush with the surface of the drum, the belt thus serving not only to actuate the drum but to come into frictional contact with the conveyer-belt as it passes around said drum and prevent its slipping thereon, means for actuating the said belt, and means for guiding the belt in the frame, substantially as described.

3. A portable conveyer comprising a frame, a conveyer-belt, pulleys for supporting the same, a driving-drum engaging the conveyer-belt and having an annular peripheral depression formed therein, a driving-belt running in the said peripheral depression for actuating the drum and coming into frictional contact with the conveyer-belt to assist in moving it and an idler for directing the driving-belt, a pulley for actuating the same, and means for connecting said pulley with a suitable motor, substantially as described.

4. A portable conveyer, comprising a suitable frame, an endless conveying-belt mounted thereon, guide-rails for directing packages or bags upon the conveyer-belt, arms carrying the said guide-rails, the said arms being arranged parallel and so as to pass each other, and means for adjusting the said arms with respect to each other for increasing or diminishing the space between the guide-rails, substantially as described.

5. A portable conveyer comprising a suitable frame and a conveying-belt mounted thereon, means for actuating said belt, guide-rails for directing the bags or packages carried by the said belt, said rails being mounted upon suitable arms, racks formed upon the said arms, pinions for engaging the said racks and means for rotating the said pinions,

whereby the rails are caused to approach or recede from each other, substantially as described.

5 6. A portable conveyer comprising a suitable frame, an endless conveying-belt mounted thereon, guide-rails adapted to direct packages or bags upon the said belt, the said rails being supported upon suitable arms, angle-
10 irons forming the said arms and having racks formed on their lower edges, pinions engaging the said racks and meshing with each other, and means for moving one pinion, whereby motion will be communicated to the
15 other and to the racks in opposite directions for adjusting the guide-rails, substantially as described.

7. A portable conveyer comprising a suitable frame and an endless conveying-belt mounted thereon, guide-rails for directing
20 bags or packages on the conveyer-belt, arms supporting the said rails, said arms having racks on their lower edges, pinions engaging said racks and meshing with each other, one

set of pinions being secured upon a common shaft, a handle secured to the said shaft for
25 actuating all of the pinions simultaneously whereby the rails will be caused to approach or recede from each other, substantially as described.

8. In a portable conveyer, the combination
30 with a suitable frame and a conveyer-plate mounted thereon, of guide-rails upon each side of the said belt, supporting-arms arranged in pairs along the frame of the conveyer and engaging cross-bars, cleats for hold-
35 ing the said arms upon the said bars and directing their movement and pinions for moving the said arms back and forth, substantially as described.

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

WILLIAM L. McCABE.

Witnesses:

HERBERT N. DE WOLFE,
FRANK J. MILLER.