No. 705,474. Patented July 22, 1902.

H. L. ST. JAMES.

CONVEYER.

(Application filed Feb. 11, 1902.)

(No Model.) 3 Sheets—Sheet 1.

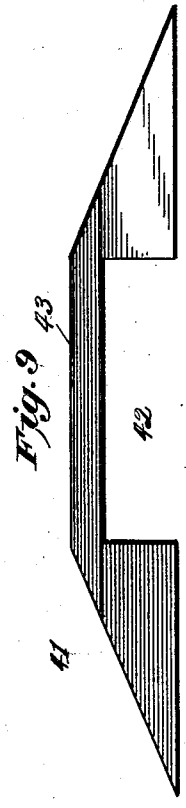


Fig. 9.

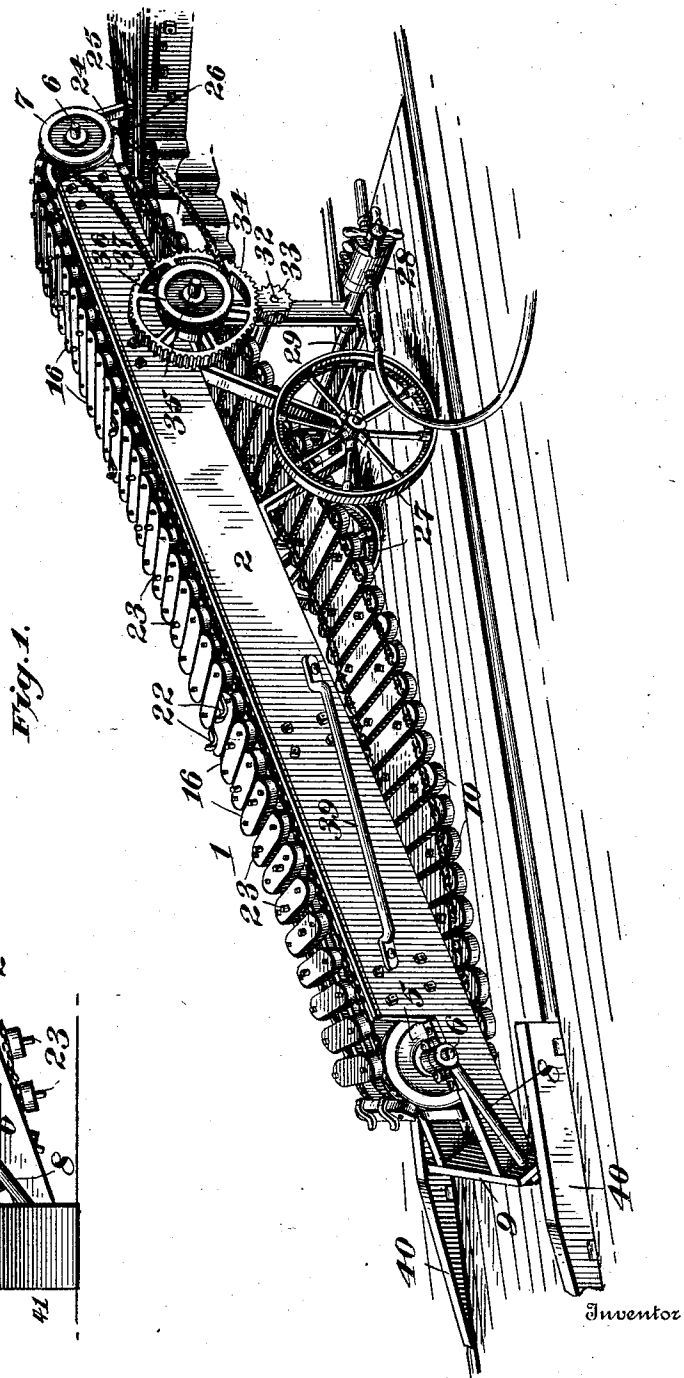


Fig. 1.

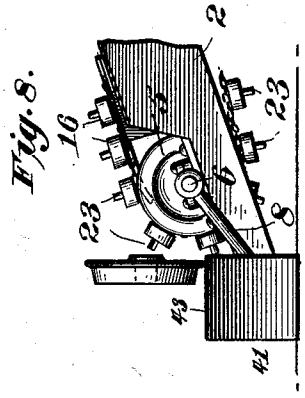


Fig. 8.

Witnesses

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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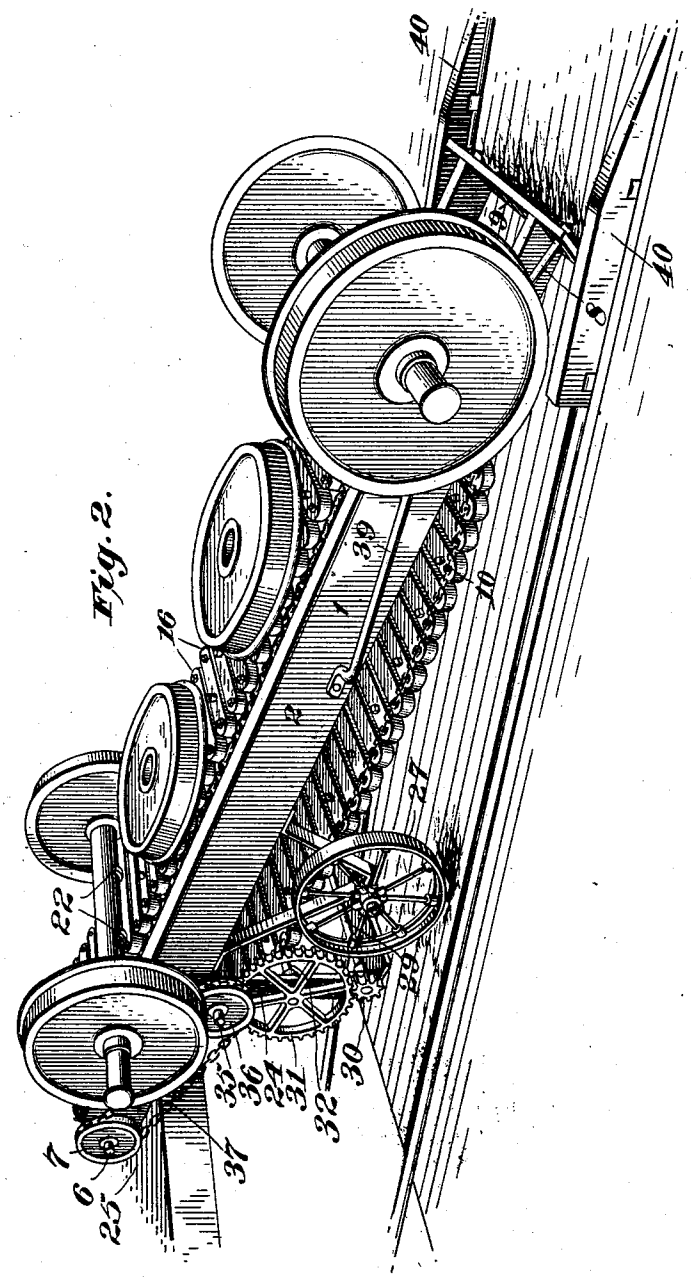
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(No Model.) 3 Sheets—Sheet 2.

Fig. 2.



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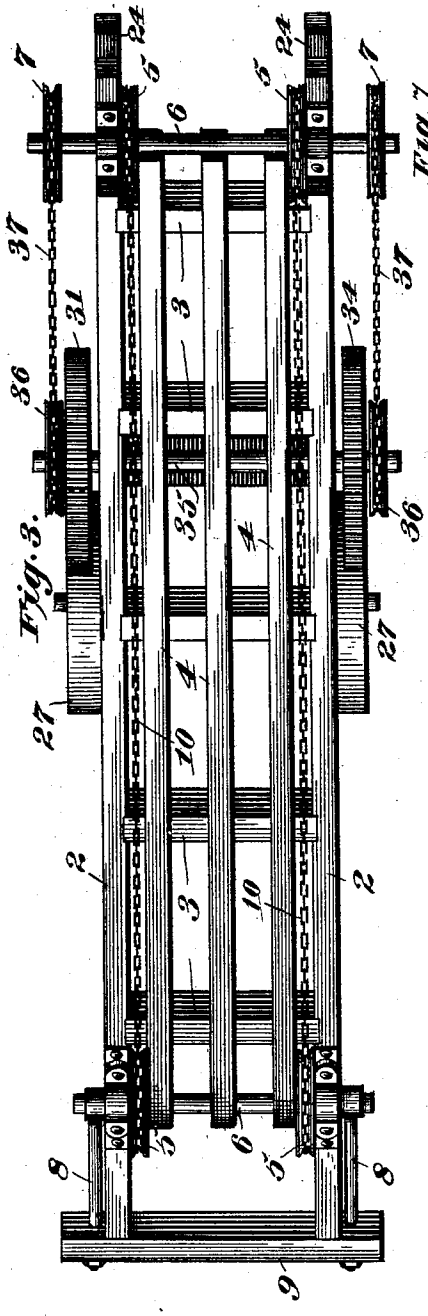


Fig. 3.



Fig. 7.

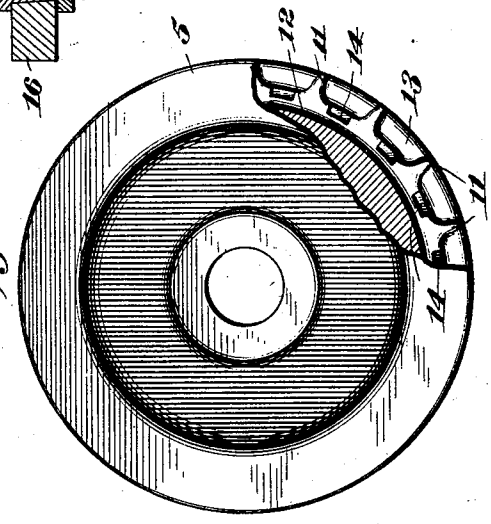


Fig. 6.

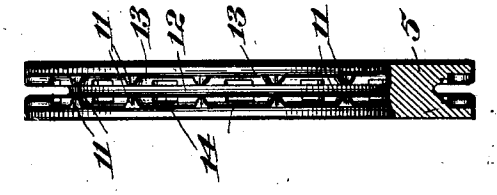


Fig. 5.

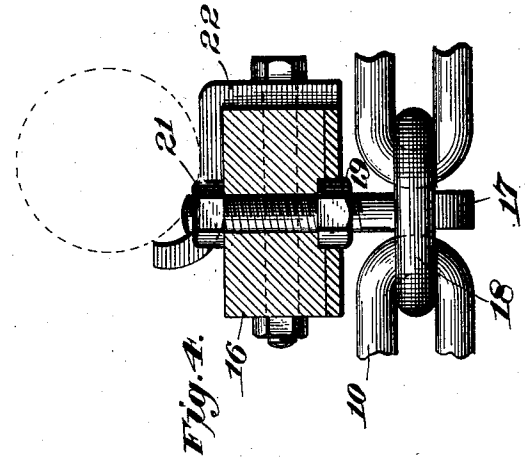


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY LIVINGSTON ST. JAMES, OF MARSHALL, TEXAS.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 705,474, dated July 22, 1902.

Application filed February 11, 1902. Serial No. 93,534. (No model.)

To all whom it may concern:

Be it known that I, HENRY LIVINGSTON ST. JAMES, a citizen of the United States, residing at Marshall, in the county of Harrison and State of Texas, have invented certain new and useful Improvements in 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 conveyers, and has for its object to provide a device of this class which is particularly adapted to load or unload railroad-car wheels or other heavy material on or off cars.

A further object of my invention is to provide a conveyer for the above purpose which is particularly simple in its construction and which is built with a view to strength and durability.

A further object of my invention is to provide a conveyer which is so constructed that it will load or unload scrap car-wheels and axles on or off cars.

With these objects in view my invention consists in the arrangements of the securing devices on the slats of the conveyer.

My invention further consists in the particular method of fastening the slats of the conveyer to the chain.

My invention further consists in the novel construction of the chain sprocket-wheels, and finally in certain other features of construction and combination of parts, which will be hereinafter fully described and afterward specifically pointed out in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of my conveyer in an operative position. Fig. 2 is a perspective view of the opposite side of my conveyer, showing the same in operation. Fig. 3 is a top plan view of the frame or body portion of my conveyer with the slats removed. Fig. 4 is a sectional view of one of the conveyer-slats, showing manner of attaching the same to chain. Fig. 5 is a front elevation of one of the chain sprocket-wheels, partly in section. Fig. 6 is a side elevation of one of the chain sprocket-wheels, a portion being broken away to show the construction. Fig. 7 is a sectional view of one of the conveyer-slats and conveying-pins. Fig. 8 is a fragmentary view showing manner of loading scrap-wheels. Fig. 9 is an elevation of wheel-bridging.

Like numerals of reference indicate the same parts throughout the several figures, in which—

1 is the conveyer, composed of the sides 2 and transverse braces or supports 3, upon which are laid the longitudinal slides 4, Fig. 3. The tops of said sides 2 and longitudinal slides 4 are sheathed with iron. 5 indicates the chain sprocket-wheels, journaled on shaft 6. The upper shaft and sprocket-wheels are keyed together, and said shaft extends some distance on either side of the sides 2 in order to carry two sprocket-wheels 7, also keyed to the shaft. The lower shaft 6 is secured in movable journal-boxes, and attached to said shaft on the outer side of said boxes are two tightening-rods 8, which extend through a transverse brace 9, secured to the ends of the sides 2. The lower portions of said tightening-rods are threaded and after passing through said brace nuts are threaded on, which draws the lower sprockets 5 downwardly, thus tightening the conveyer-chain 10.

By referring to Figs. 5 and 6 it will be seen that the sprocket-wheels are provided with sprocket-teeth 11, in pairs, which do not extend beyond the periphery of the wheels, but are formed on the inner sides of the annular flanges, which flanges are formed by the annular groove 12. A space the width of this groove is left between the teeth, while a considerable portion of the flanges is cut away between each pair of teeth, thereby forming recesses 13, the depth of which is not as great as the depth of the groove 12. In the bottom of each of said recesses and on either side of the groove 12 is a smaller recess 14, the purpose of which will be hereinafter fully described.

10 indicates the conveyer-chain, to which are secured the conveyer-slats 16. A T-headed bolt 17 is passed through a horizontal link 18 of the conveyer-chain, and a nut 19 is threaded on said bolt, after which said bolt is passed through a slat 16, and a nut 21 is then threaded on the end of said bolt. When the conveyer is in operation, the conveyer-chain passes over the sprocket-wheels and every horizontal or alternate link is carried in the recesses 13, the teeth straddling the vertical

links and engaging the rear of the horizontal links. The vertical links lie in the annular groove 12, while the T-heads of the bolts 17 rest in the smaller recesses 14. The bottoms of the slats are sheathed with metal and rest directly on the longitudinal slides 4. Secured to some of said slats by transversely bolting are hooked rests or supports 22, Fig. 4, always employed in pairs, while on the slats intermediate each pair of hooked supports are vertical pins 23, which are shouldered and formed with a small threaded end which passes through the slat, after which a nut is threaded on, Fig. 7.

The hooked supports are so arranged that when a pair of car-wheels or a scrap axle is being carried thereby, as will be hereinafter described, the center of gravity of said wheels or axle is in front of or above the T-headed bolt, Fig. 4, and therefore holds the slat flatly against the slides 4 and prevents the slat from tipping, which would cause the same to bind on the slides.

Secured to the bottom of the upper end of the sides 2 are angle-irons 24, the ends of which rest on the car-floor 25, which may be provided with a cleat 26 in order to more securely hold the conveyer in position.

The conveyer is provided with a pair of wheels 27, so as to make the same portable, and the conveyer-chain is operated, preferably, by an air-motor 28, which revolves a shaft 29, to which is secured on the end thereof a pinion 30, Fig. 2, which meshes with a gear-wheel 31 on the shaft 32, on which is secured a pinion 33, Fig. 1. Said pinion meshes with a gear-wheel 34, keyed to a shaft 35, on which is carried on both ends thereof chain sprocket-wheels 36. Chains 37 pass over said sprockets and around sprocket-wheels 7, keyed to the shaft 6, on which are keyed the upper conveyer-chain sprockets 5.

I provide the conveyer with metal straps or handles 39 for the purpose of moving the conveyer.

40 indicates inclined planes secured to the car-track at the end of the conveyer.

41 indicates my double inclined wheel-bridging, having the hollow space 42 therein and the flat platform 43.

Having thus described the several parts of my invention, its operation is as follows: When it is desired to load a car-wheel onto a car, the conveyer is put in operation and the pair of wheels are run up the inclined planes at the foot of the conveyer, and as one of the slats provided with the hooked supports starts on its upward run said supports engage the axle of the wheels and carry them to the upper end of the conveyer and deposit them on the car-floor. The conveying of scrap axles is carried on in the same manner, but in the case of scrap wheels they are raised and placed on the projecting pins 23, as shown in Figs. 2 and 8. The wheels are run up the inclined plane of the wheel-bridging, Fig. 9, and onto the platform 43, where they are engaged by the pins 23 and carried up. In like manner other heavy and clumsy material may be loaded on cars with my conveyer, although I have constructed the same particularly with the view of conveying and loading car-wheels. I do not, however, wish to be understood as limiting myself in this particular, nor to the exact construction as herein set forth, as various slight changes may be made therein, both in material and construction, and I consider myself clearly entitled to all such changes and modifications.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a conveyer the combination with the body and chain-sprockets, of a conveyer-chain, conveyer-slats adapted to be carried thereon, threaded bolts passing through the horizontal links of said chain and passing through and secured to said slats, substantially as described.

2. In a conveyer the combination with a body of a conveyer-chain and conveyer-slats, T-bolts securing said slats to said chain, chain-sprockets having grooves therein for the vertical links of said chain, recesses for the horizontal links, recesses for the bolt-heads, and means for revolving said sprockets, substantially as described.

3. In a conveyer the combination with a body, of a conveyer-chain, and means for driving the same, conveyer-slats, bolts securing said slats to said chain, chain-sprockets having grooves therein for the reception of the vertical links of said chain, and recesses for the horizontal links, substantially as described.

4. In a conveyer the combination with the body, of a conveyer-chain and slats secured thereto, hooked supports transversely bolted to said slats, and arranged so that the center of gravity of the load is forward of the center of the slats, substantially as described.

5. In a conveyer the combination with the body, of a conveyer-chain and slats secured thereto, hooked supports secured to said slats, and arranged so that the center of gravity of the load is forward of the center of the slats, and vertical pins secured in said slats, substantially as described.

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

HENRY LIVINGSTON ST. JAMES.

Witnesses:
W. P. H. ALLEN,
JOHN MUNTZ.