C. J. SCHERRER.

COMBINED HOIST AND CONVEYER.

APPLICATION FILED NOV. 16, 1916.

1,215,874.

Patented Feb. 13, 1917.

2 SHEETS—SHEET 1.

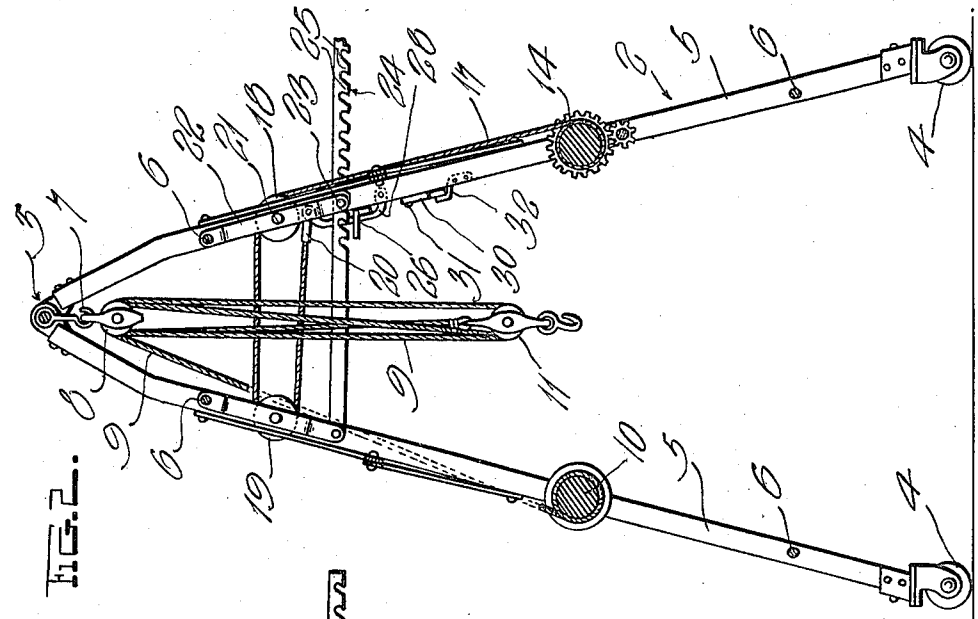


FIG. 2.

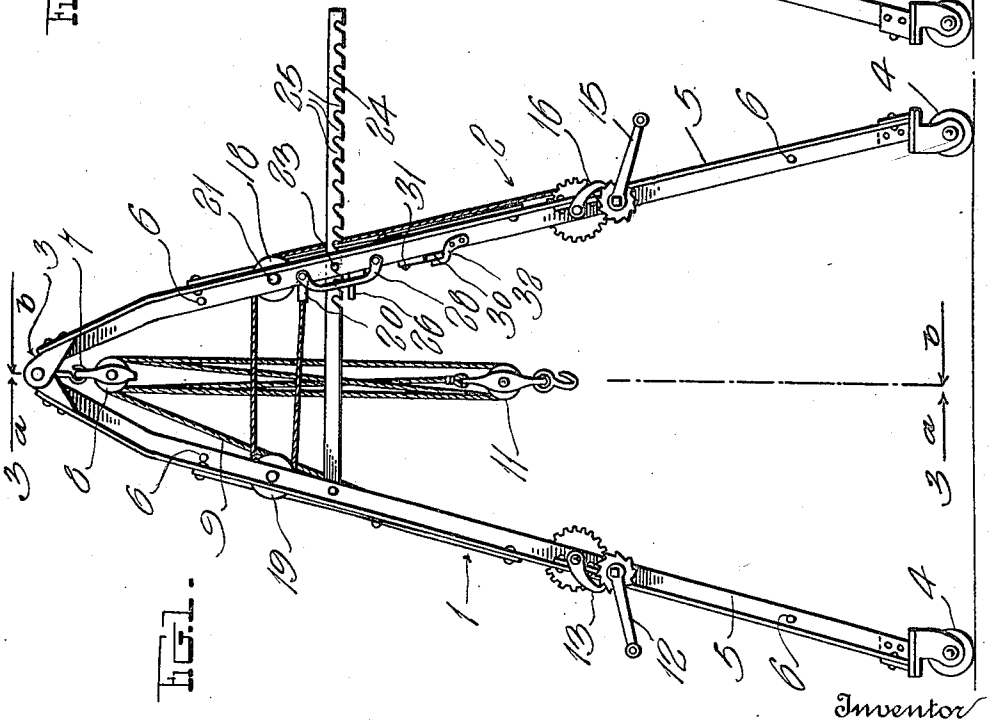


FIG. 1.

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2 SHEETS—SHEET 2.

FIG. 4.

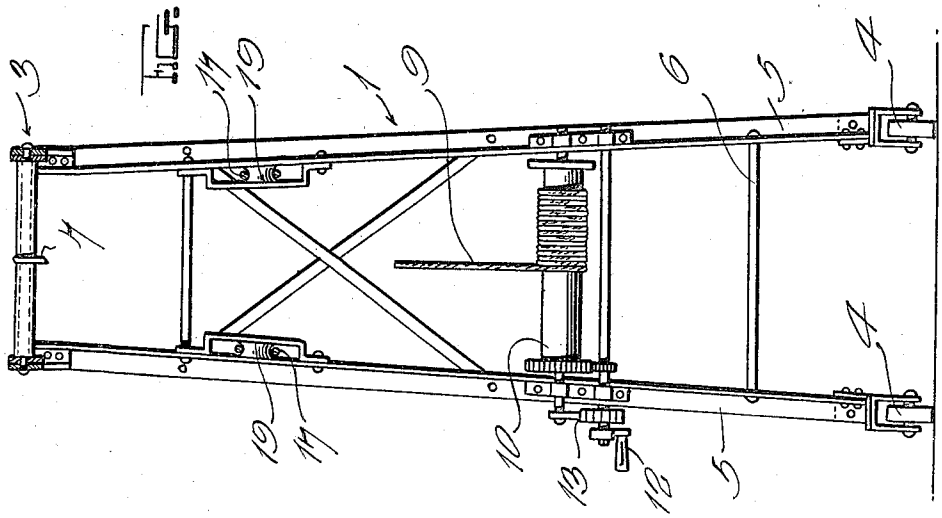
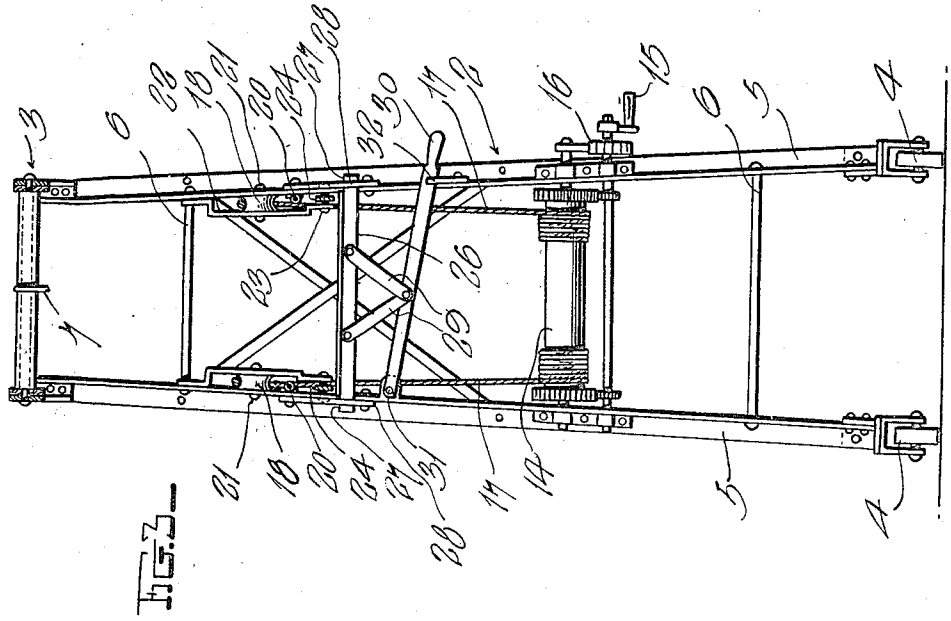


FIG. 3.



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UNITED STATES PATENT OFFICE.

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COMBINED HOIST AND CONVEYER.

1,215,874. Specification of Letters Patent. Patented Feb. 13, 1917.

Application filed November 16, 1916. Serial No. 131,745.

To all whom it may concern:

Be it known that I, CHARLES J. SCHERRER, a citizen of the United States, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented certain new and useful Improvements in Combined Hoists and Conveyers; and I do 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.

This invention relates to improvements in combination hoisting and conveying devices, particularly to that class of machines formed of a pair of sections hinged together at their upper ends and equipped with rollers on their lower ends, the sections being held in various spaced positions.

The object of the invention is to improve upon the structure illustrated in my U. S. Patent No. 1,143,786, granted June 22, 1915. In other words, a novel combination of parts has been added to the structure shown in this patent to hold the two movable sections in various positions.

A secondary object of the invention is to provide means for releasing the improved locking means.

With these and minor objects in view, the invention resides in the novel features of construction, combination and arrangement of parts which will be hereinafter more particularly described and claimed.

In the accompanying drawings:

Figure 1 is a side elvation of my improved combined hoist and conveyer;

Fig. 2 is a central vertical longitudinal section;

Fig. 3 is a central vertical transverse section on the line 3^a—3^a of Fig. 1; and

Fig. 4 is a similar view on the line 3^b—3^b of Fig. 1.

In its preferred embodiment, the device is constructed similar to the machine shown in the above mentioned patent, wherein it will appear that it comprises a pair of sections 1 and 2 hingedly connected together at their upper ends as shown at 3 and provided on their lower ends with casters or rollers 4 swiveled to the ends of the legs 5. It will be noted that each of the sections is formed of a pair of angle metal bars rigidly held in spaced apart relation by means of the brace rods 6.

The pivot bar 3 which connects the upper ends of the sections carries intermediate its ends a hook 7 upon which is disposed a block or sheave 8 of any preferred formation. A cable or rope 9 is disposed around the pulley of this block, one end being fixed to a winding drum 10, while the other end is trained around a pulley of a second block 11, the latter being designed to be attached to the barrel or other article to be lifted and conveyed. The winding drum 10 has stub shafts projecting from its opposite ends which are journaled in the flanges of the section 1, a crank 12 being geared to the drum for rotating the same to wind the cable thereabout. A suitable pawl and ratchet mechanism 13 is also provided in connection with the crank to hold the drum against rotation in one direction.

The other section 2 also carries a winding drum 14 similar in all respects to the first mentioned drum 10 and provided with a crank 15 and pawl and ratchet mechanism 16. This last mentioned drum 14 has a pair of cables 17 disposed thereon and connected by one end thereto, their other ends being trained over pulleys 18 and 19. It will be noted that the pulleys 18 are pivoted one to each of the bars 5 of the section 2, while the pulleys 19 are similarly mounted upon the bars of section 1. The cables 17 are trained over pulleys 18 and then around those on the other section, their ends being brought back to the section 2 and attached to eyes 20 swiveled to the bars 5 thereof.

The pulleys 19 may be pivoted to the bars of the section 1 in any preferred manner, but the pulleys 18 are rotatably mounted on pivot pins 21 which extend inwardly from one of the flanges of the angle metal bars 5, the inner ends of said pivot pins being fixed to the upper ends of guide straps 22. These straps extend below the pulleys 18 and are secured to the bars 5 by the rivets or other fastening elements 23. It will be noted that the lower portion of these guide straps are spaced from the adjacent flanges of bars 5 in order to slidably receive the rack bars 24 which are pivoted at one end to the flanges of the bars of the section 1. Thus these guide straps 22 not only serve to support the inner ends of the pivot pins 21, but also act as guides for the rack bars 24.

The end portions of the bars 24 remote from their attachment to the section 1 are provided on their lower edges with ratchet teeth 25 which are adapted to engage the rivets 23. It will be seen that when the

lower ends of the sections 1 and 2 are relatively close together, the rivets 23 will be engaged by the inner teeth of the rack bars 24, and when the sections are spread far apart, the outermost teeth will engage the rivets. In whatever position the sections 1 and 2 are disposed, the rack bars and the rivets 23 will securely hold the same against further outward movement until they are disengaged by means to be hereinafter more particularly set forth. The teeth 25 of the rack bars are so inclined that when it is desired to move the sections toward each other they will slide over the rivets, but it will be impossible to move the sections outwardly while the rack bars and rivets engage. The means for moving the two sections toward each other consists of the drum 14 and the cables 17, said sections being moved inwardly by winding the cables around said drum.

In order to permit outward movement of the sections 1 and 2, assuming that the pawl of the pawl and ratchet mechanism 16 has been released, a transverse angle metal bar 26 is disposed to slide on the bars 5 of the section 2 directly beneath the rack bars 24, the latter being raised by moving the angle metal bar 26 upwardly. The horizontal flange of this angle metal bar 26 is cut away at each end as shown at 27 to permit the ends of the vertical flange to readily slide in guides 28 which are secured to one of the flanges of the bars 5 of the section 2. Links 29 are fixed in spaced apart relation to the vertical flange of the angle metal bar 26 at its intermediate portions, the free ends of the links being converged and pivoted together to the intermediate portion of an operating lever 30, one end of said lever being pivoted as at 31 to one of the bars 5. The other end of this lever 30 normally rests on a stop 32 carried by the other bar 5 of the section 2. It will be seen that upward movement of the free end of the lever 30 will cause the angle metal bar 26 to rise horizontally and engage the bottoms of the rack bars 24. Continued upward movement of the end of the lever causes the teeth of the rack bars 24 to be disengaged from the rivets 23, and when the lower ends of the sections 1 and 2 are moved apart, said teeth will readily slide over the horizontal flange of the bar 26. When the sections have been spread a sufficient extent, the lever 30 is released to permit the teeth 25 to again engage the rivets 23.

From the foregoing description taken in connection with the accompanying drawings, it will be seen that I have equipped my combined hoist and conveyer with a simple, yet very effective safety device which will always be in operation in case the cables 17 break, or the pawl and ratchet mechanism 16 gets out of order. A device such as this will be found to be extremely useful in a great variety of ways for transporting heavy articles from place to place and also for lifting said articles.

I claim:

1. A device of the class described comprising a pair of sections hingedly connected together at their upper ends, their lower ends being adapted to be moved toward and away from each other, a latch carried by one of said sections, a catch on the other section to be engaged by said latch, a transverse bar slidable on the last mentioned section, and a lever pivoted to the said last mentioned section and to said bar, whereby to raise said bar to disengage the latch from its catch.

2. A device of the class described comprising a pair of sections hingedly connected together at their upper ends, their lower ends being adapted to be moved toward and away from each other, a pair of latches pivoted at one end to one of said sections, a pair of catches carried by the other section to be engaged by said latches, a transverse bar slidable on the last mentioned section, and a lever pivoted to said last mentioned section and to said bar, said bar simultaneously engaging and raising the said latches out of engagement with their catches when said lever is actuated.

3. A device of the class described comprising a pair of sections hingedly connected together at their upper ends, their lower ends being adapted to be moved toward and away from each other, a rack bar pivoted to one of said sections, a catch to be engaged by the teeth of said rack bar and carried by the other section, an angle metal bar slidable on said last mentioned section for raising and guiding said rack bar, and a lever for operating said angle metal bar.

4. A device of the class described comprising a pair of sections hingedly connected together at their upper ends, their lower ends being adapted to be moved toward and away from each other, a pair of rack bars pivoted at one end to one of said sections, studs projecting from the other section for engagement with the teeth of said rack bars, an angle metal bar slidably disposed on said last mentioned section and having its horizontal flange disposed for engagement with the toothed edge of said rack bars, a lever pivoted to said last mentioned section, and a pivotal connection between said lever and angle metal bar, whereby the latter may simultaneously disengage the rack bars from said studs upon actuation of the lever.

5. A device of the class described comprising a pair of sections each formed of a pair of spaced bars, said sections being hingedly connected together at their upper ends, their lower ends being adapted to be moved toward and away from each other, a pair of rack bars pivoted at one end to the

spaced bars of one section, a vertical guide carried by each bar of the other section, studs projecting from said bars of the last mentioned section adjacent said vertical guides, an angle metal bar having one flange disposed horizontally, said flange having its opposite ends cut away, the end portions of the vertical flange of said angle metal bar being slidably disposed in said vertical guides, a lever pivoted to one of the bars of the last mentioned section, a pair of links pivoted together and to the intermediate portion of said lever, the outer ends of said links being spaced apart and secured to the intermediate portions of the vertical flange of the angle metal bar, and means for moving said sections toward each other.

6. A device of the class described comprising a pair of sections each formed of a pair of spaced bars, said sections being hingedly connected together at their upper ends, their lower ends being adapted to be moved toward and away from each other, a guide strap spaced from one bar of one of the sections, a roller disposed between the bar and said strap adjacent one end of the latter, a pivot pin extending through said roller and secured at its opposite ends in said bar, an additional pin spaced from the pivot pin and connecting said strap and said bar, a rack bar pivoted to the other section and extended between said strap and the adjacent bar for engagement with said last named pin, a winding drum carried by one of said sections, a cable disposed around said drum and roller and secured to one of the sections, and means for disengaging said rack bar from the pin.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES JOHN SCHERRER.

Witnesses:
H. W. HAZELTON,
H. C. HATTEN LAUER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."