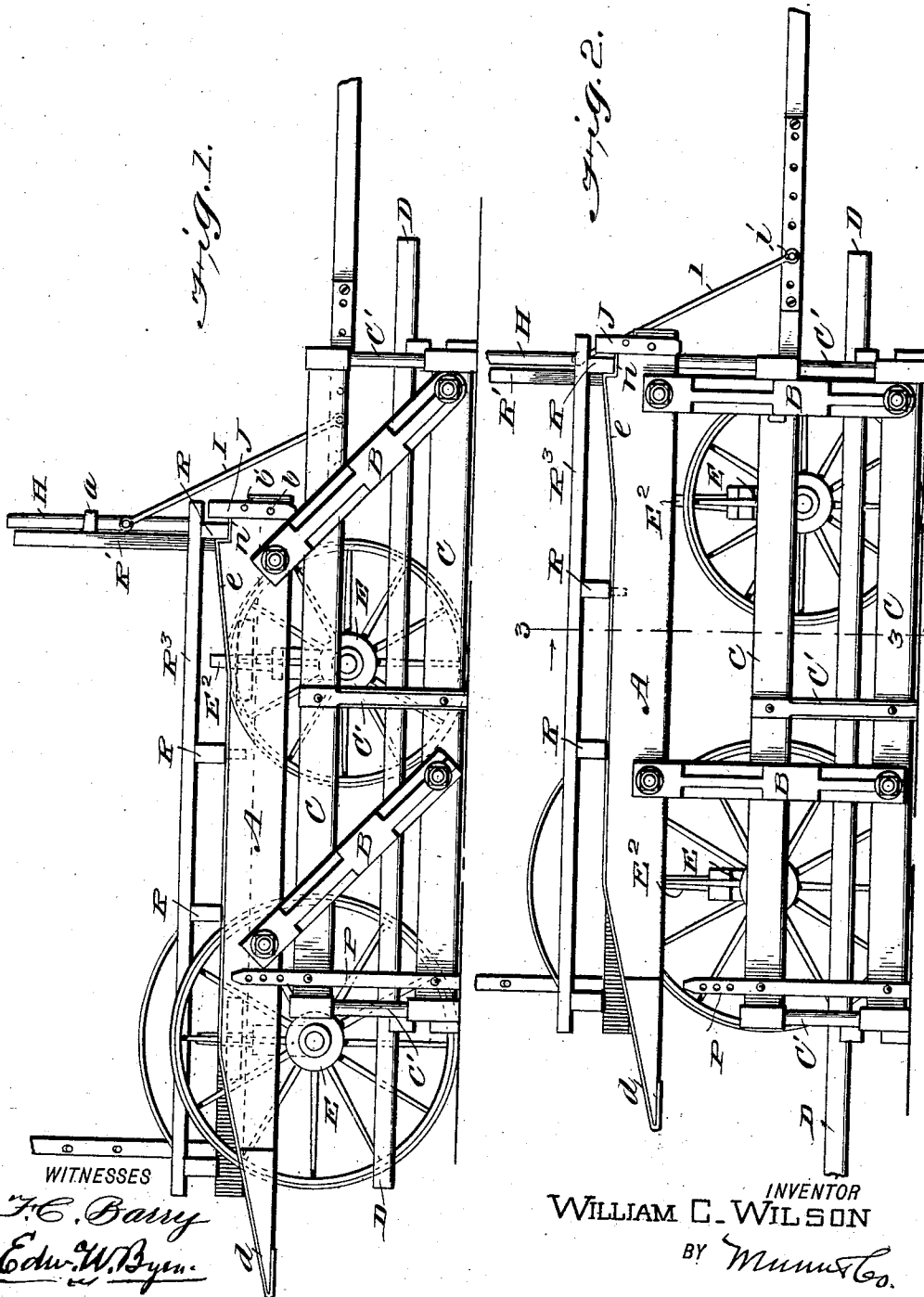


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APPLICATION FILED FEB. 28, 1908.

906,349.

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3 SHEETS—SHEET 1.

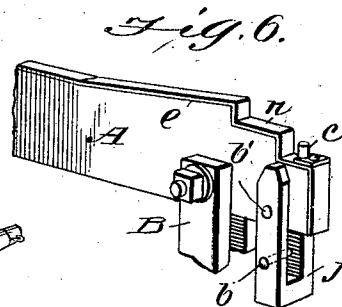
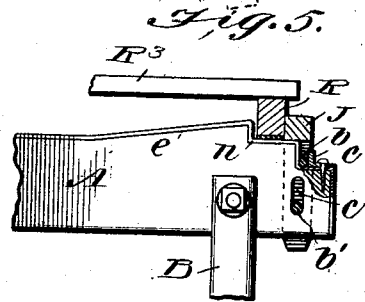
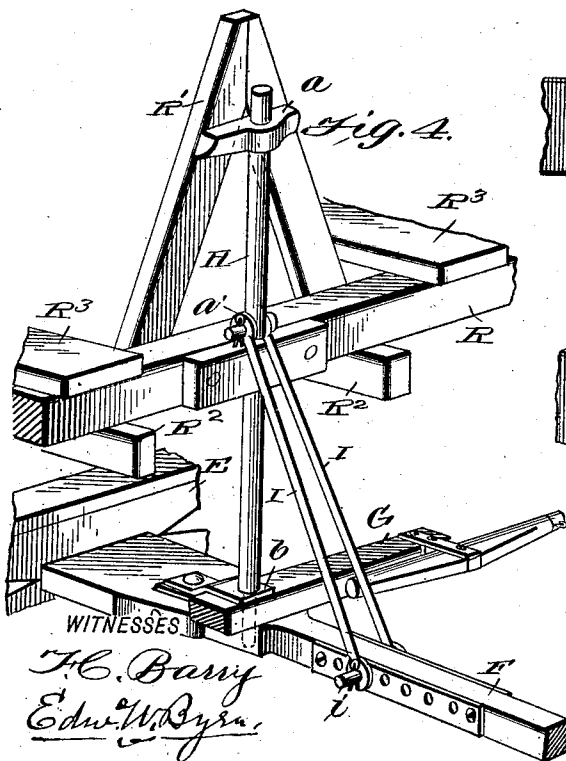
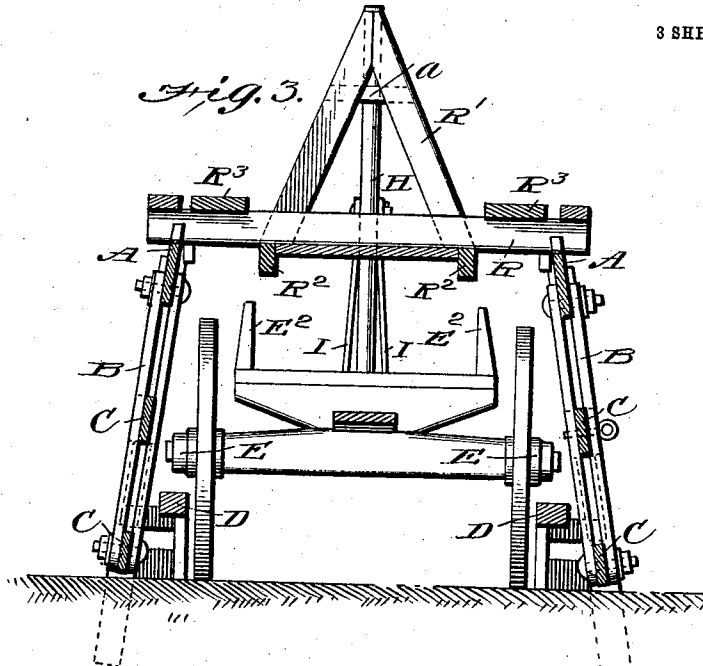


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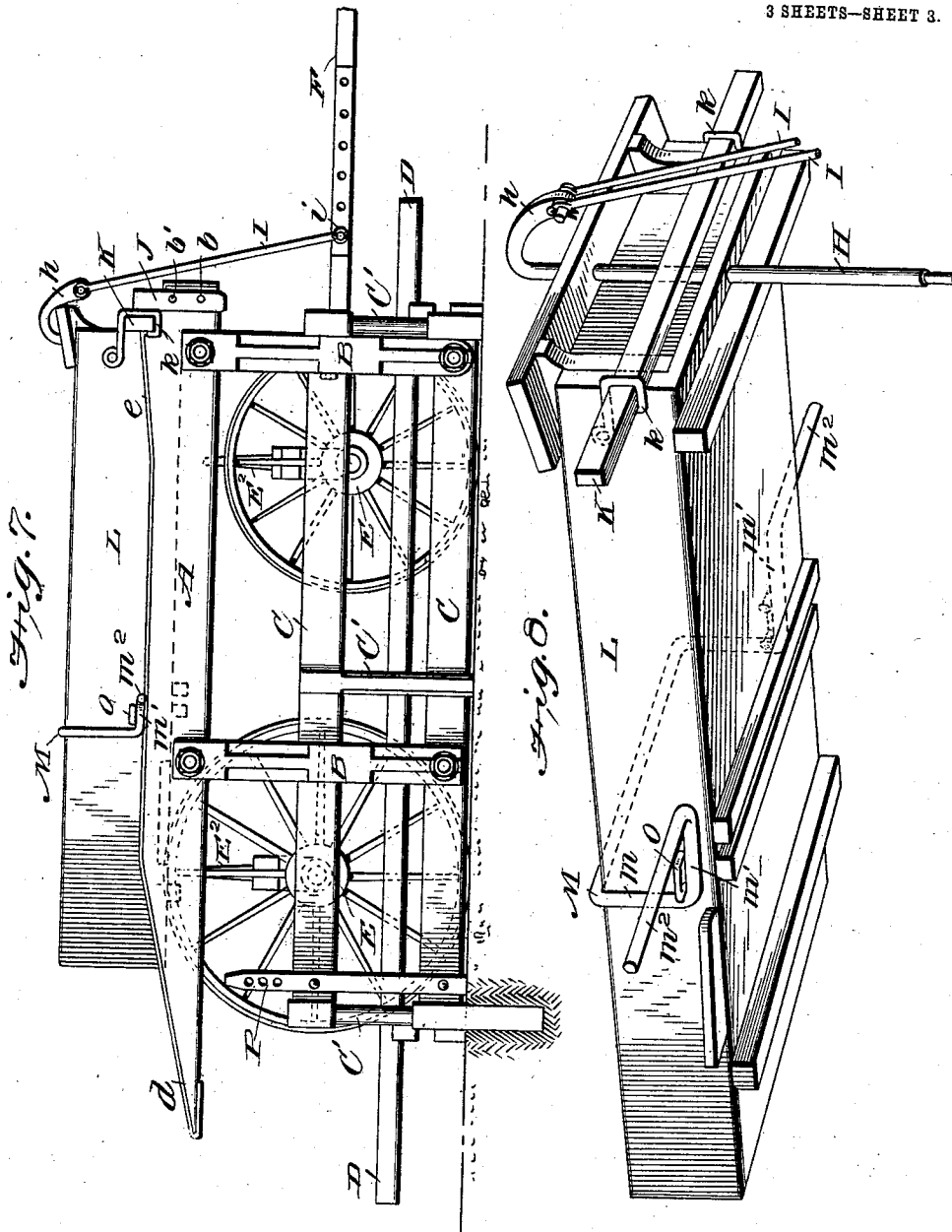
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

WILLIAM C. WILSON, OF LIVERMORE, IOWA.

## WAGON-BODY AND HAY-RACK LIFTER.

No. 906,349.

Specification of Letters Patent.

Patented Dec. 8, 1908.

Application filed February 28, 1908. Serial No. 418,286.

*To all whom it may concern:*

Be it known that I, WILLIAM C. WILSON, a citizen of the United States, and a resident of Livermore, in the county of Humboldt and State of Iowa, have made certain new and useful Improvements in Wagon-Bodies and Hay-Rack Lifters, of which the following is a specification.

Wagon body lifters have heretofore been constructed in which two parallel bars were loosely pivoted to the upper ends of two radially swinging posts having fixed fulcrums at their lower ends and between which two parallel bars, the wagon was driven and the wagon body received upon the parallel bars, which swinging upwardly from the draft strain lifted the wagon body upon the rising parallel bars, thus freeing the wagon body from the subjacent running gear, which latter being thus separated from its body, permitted the running gear with its wheels to be drawn out from underneath the detached and elevated body. In such constructions of wagon body lifters difficulty has been experienced in securing a proper registration of the wagon body and running gear when the latter is to be reconnected to the body.

My invention consists in an improved construction of wagon body lifter, in which special provision is made for bringing down the wagon body in proper relation to the running gear when it is to be reconnected, thus avoiding all heavy lifting and making the reconnection of the wagon body to the running gear automatic as well as its disconnection from the running gear.

My invention consists in the novel construction and arrangement of parts hereinafter shown in the drawings, in which—

Figures 1 and 2 are side elevations of my invention applied to a hay rack, Fig. 1 showing the position of the parts when the wagon is driven into the apparatus, and Fig. 2 representing the hay rack as lifted from the subjacent running gear. Fig. 3 is a vertical transverse section taken on the line 3—3 of Fig. 2 and looking in the direction of the arrow. Fig. 4 is a detail perspective view from the front with parts broken away. Figs. 5 and 6 are detail views showing the means for locking the wagon rack to the parallel lifting bars and for releasing the same at the proper time. Fig. 7 is a side elevation of my invention showing it applied to a box-shaped wagon body, which latter is shown in its elevated or lifted off position, and Fig. 8 repre-

sents an underneath perspective view of a box-shaped wagon body and its attachments for adapting it to use with the wagon body lifter.

Referring to Figs. 1, 2, 3, there are two fence panels arranged parallel to each other and a distance apart sufficient to receive between them an ordinary farm wagon. These fence panels consist each of the horizontal bars C, C, and the vertical posts C', C', C', the end posts of which are anchored into the ground as shown in dotted lines in Fig. 3 and in full lines in Fig. 7. These fence panels are strongly fixed so as to be immovable and have an inward inclination at the top as shown in Fig. 3 for the purpose hereafter described. To the bottom bars of these fence panels are pivoted the lower ends of the radially swinging bars B, B, whose upper ends are pivotally connected on each side to the horizontal lift bars A, and which latter are given a parallel movement and a lifting action by the swing of the bars B about their lower centers. These parallel motioned lifting bars rising from the swing of the radially moving bars have already been employed in wagon body lifting devices and I make no broad claim to the same. The rear ends of the parallel bars A are cut to an incline *d* and their forward ends have inclined elevations *e* and notches *n*. The upper surfaces of these parallel bars are sheathed with metal straps to stand the frictional wear against the portions of the wagon rack or wagon body sliding thereon.

The wagon rack as ordinarily constructed overhangs the running gear of the wagon sufficiently far to overlap and rest upon the two parallel bars A, A, on opposite sides as seen in Fig. 3. This wagon rack consists of the transverse bars R, the longitudinal floor planks R<sup>3</sup> and the longitudinal sills R<sup>2</sup>, which latter fit between the stanchions E<sup>2</sup> of the running gear. At the front end of the rack there is an elevated and rigidly attached A-shaped frame R', on the upper portion of which is fixed a bearing *a* to receive a vertical guide bar H. This vertical guide bar extends through the rack at *a'* and extends down to the tongue of the wagon as seen in Fig. 4. The lower end of this guide bar is reduced in dimensions and when the rack is to be elevated it is made to take the place of the pivot bolt or hammer which is ordinarily employed for connecting the double-tree G to the tongue F.

I, I, are draft rods, which are connected at their upper ends to the guide rod H by means of a bolt passing through the same and also through eyes in the ends of said draft rods.

5 The lower ends of these draft rods are in like manner secured by means of a bolt *i* to one of a series of holes in the wagon tongue F, which holes are reinforced on opposite sides of the tongue by means of metal plates.

10 At the forward ends of the parallel bars A, see Figs. 5 and 6, just beyond the notches *n* there is provided a swinging lock device J made in the form of a U-shaped clevis. This lock device is connected to the front ends of

15 the bars A by means of a bolt *b'* which passes through a vertical slot *c'* in each of the bars A. A transverse bolt *b* is also arranged in this U-shaped locking piece and an upright stud *c* is fixed on the upper surface of the end of each bar A. The object of this locking

20 device is to connect the cross bar R of the wagon rack to the lifting parallel bars A so that the draft strain of the wagon shall cause said bars A to rise with the swing of the bars

25 B, or allow the parts to be disconnected as hereinafter described. Fig. 5 shows the locking of the wagon rack to the lifting bars and Fig. 6 shows the released position of said locking devices on said lifting bars. To connect

30 the bars A to the wagon rack, the locking device J is turned from its pendent position shown in Fig. 6 and lifted until its bolt *b* is dropped behind the stud *c*, the slot *c'* permitting the other bolt *b'* to rise during this

35 lifting of the locking piece. When the locking piece J drops to the position shown in Fig. 5, it will be seen that the notch *n* of the lifting bar is closed on both sides and forms a seat, which retains the transverse bar R of

40 the wagon rack, so that for movement in a horizontal plane, the bars A are compelled to partake of the movement of the wagon rack, which causes the bars A to rise with the radial movement of bars B and so lift the

45 wagon rack from the subjacent running gear. The operation of this portion of my device is as follows: Assuming that the running gear is provided with a wagon rack as seen in Figs.

50 1, 2 and 3, whose cross bars R are wide enough to project over the parallel bars A when the wagon is driven between the two fence panels carrying the lifting bars the cross bars R of the wagon rack ride up upon

55 the inclines *d* of the parallel bars and move forwardly on the upper metal surfaces of the parallel bars, causing, when bar R drops in notch *n*, the bars A to rise and the bars B to swing to an upright position as seen in Fig. 2.

60 The front cross bar R of the rack is locked into the notch *n*, whose outer end is now closed by the locking piece J, so that the rack can pass no further in horizontal direction and is lifted entirely free from the sub-

65 jacent running gear of the wagon. This elevated position of the wagon rack is seen in

Figs. 3 and 4, from which it will appear that as the wagon rack rises its bearings at *a* and *a'* move upwardly over the vertical guide rod H, which is temporarily attached to the running gear and to which the draft strain 70 has been imparted by the entry of its lower end into the bolt hole of the double tree and tongue and the inclined draft rods I. It is now necessary to disconnect the hay rack from the running gear before the latter can 75 be removed from beneath the rack to receive another wagon rack or wagon body. To do this the inclined draft rods I are disconnected at both their upper and lower ends and the vertical rod H is lifted out and in the place 80 of the same a vertical bolt or wagon hammer is placed in the hole in the double tree from which the guide rod H is taken. The running gear of the wagon body may then be withdrawn from beneath its elevated hay 85 rack, which remains supported on the parallel bars until needed again.

It will be seen that as so far described, the vertical rod H serves as a draft attachment to compel the wagon rack to advance horizon- 90 tally with the subjacent running gear during the operation of lifting the wagon rack, but this rod has another and very important function, in that when the wagon rack is to be again fitted to the running gear, it forms a 95 means by which accurate and easy registration and readjustment of the wagon rack to the running gear is automatically secured without any heavy lifting and in an easy and quick manner. Thus, for instance, suppos- 100 ing the wagon body is to be readjusted to the rack, the wagon body is passed between the two fence panels in position beneath the rack and the pivot bolt or wagon hammer which connects the double tree to the tongue is re- 105 moved. The guide rod H is then inserted into the bearings *a* and *a'* in the wagon rack and the running gear of the wagon is adjusted beneath the guide rod H until the hole in the double tree and tongue is exactly be- 110 neath the lower end of the guide rod H. The latter will then slip into this hole and takes the place of the bolt or wagon hammer connecting the double tree to the tongue. The inclined brace rods I are then made to connect 115 the tongue F with the guide rod H above the bar R of the hay rack and the locking device J being now thrown to the open position shown in Fig. 6, when the draft strain is applied to the running gear, this 120 strain transmitted through the draft rods I to the hay rack, causes the hay rack to move off from its seat in the notches *n* of the parallel bars and drops down upon the subjacent running gear. In this fall- 125 ing movement of the hay rack the vertical guide rod H, it will be seen, compels the rack to descend upon the running gear in an exactly correct position, thereby saving 130 all heavy lifting in the effort to secure accu-

rate adjustment and completing the automatic reconnection of the hay rack to the running gear.

As the box-shaped form of wagon bodies is much narrower than the ordinary hay rack, I have provided special means to enable the box body to be lifted off in the same manner as already described in connection with the hay rack. In such case, see Figs. 7 and 8, the vertical guide rod H is formed at its upper end with a goose-neck *h* to which the draft rods I are directly bolted. The guide rod H has a loose bearing in the forward structure of the wagon box, so that the latter may rise and fall over the guide rod. To the front end of the wagon body are attached two loops *k k*, one arranged on each side and adapted to receive a detachable cross bar K, whose length is great enough to allow it to extend over and ride upon the tops of the parallel lifting bars A. To the rear portion of the sides of the wagon there are also attached projections *o* near the bottom of the side bars and a peculiarly bent yoke M is provided, whose middle portion extends across the top of the wagon body and is then bent down on each side at *m*, then extended forwardly at *m'* and is then projected away from the wagon body in a horizontal position at *m*<sup>2</sup>. This yoke M is detachable from the wagon body and after it is adjusted transversely across the top of the wagon body with its part *m'* beneath the projections *o* of the wagon body, the ends *m*<sup>2</sup> project horizontally far enough to ride upon the upper surfaces of the lifting bar A, as seen in Fig. 7. The action of the lifting and readjusting of the wagon body in relation to the running gear is the same as already described in connection with the hay rack. The detachable yoke M and cross bar K being all that is necessary to adapt the relatively narrow wagon body to cooperation with the same lifting devices, which are designed for the hay rack.

To maintain the parallel lifting bars A at any predetermined point to adapt them to the heights of different wagons, a post P is rigidly connected in vertical position to each side panel of the fence and has a series of perforations in its upper end to receive a bolt, which when in place, will hold the inclined ends *d* of the parallel bars in the proper relation to the bearing points of the wagon rack or wagon body, irrespective of the height of the same.

As will be seen in Fig. 3, the fence panels with the lifting devices are arranged in inclined position with their upper ends converging toward each other. This secures two important results. In the first place it renders the structure a more perfectly braced one as against lateral movement, and it also gives room at the lower portion for the hubs of the wheels and for the application of two parallel guide rails D, D, which are fixed

upon stationary supports in the space between the lower ends of the fence panels and the track line of the wheels, so as to form a guide between which the wheels are accurately positioned in order to secure registration between the guide rod H and the tongue connections of the running gear.

I claim—

1. In a wagon body lifter, the combination with the running gear and the body lifting devices; of a vertical guide rod fixed to the running gear, and a wagon body part having a hole through it in which the vertical guide rod plays, to secure accurate registration between the running gear and wagon body in forward and backward direction during the rising and falling movement of said body.

2. In a wagon body lifter, the combination with the lifting devices; of a vertical guide for securing registration between the wagon body and running gear during the rising and falling movement of the body, consisting of an upright rod arranged to have a sliding connection with the wagon body at its upper end, and a connection with the draft appliances of the running gear at the lower end.

3. In a wagon body lifter, the combination with the lifting devices; of a vertical guide for securing registration between the wagon body and running gear during the rising and falling movement of the body, consisting of an upright rod arranged to have a sliding connection with the wagon body at its upper end, and a connection with the draft appliances of the running gear at the lower end, and an inclined draft member connected to the tongue at the lower end and to the upright guide rod at its upper end.

4. In a wagon body lifter, the combination with the lifting devices; of a vertical guide for securing registration between the wagon body and running gear during the rising and falling movement of the body, said guide being made in the form of a detachable rod having its lower end formed to enter the hole through the double tree and tongue ordinarily occupied by the tongue bolt or wagon hammer.

5. In a wagon body lifter, the combination of two stationary side panels arranged at an incline converging toward each other at the top, parallel-motion bars with radial swinging upright bars pivotally connected to the same and arranged also at the same inclination and guided upon the panels.

6. In a wagon body lifter, the combination of two stationary side panels arranged at an incline converging toward each other at the top, parallel-motion bars with radial swinging upright bars pivotally connected to the same and arranged also at the same inclination and guided upon the panels, and horizontal and parallel guide rails arranged

inside the panels at the lower portion of the same below the level of the wagon hubs.

7. In a wagon body lifter, a parallel-motion lifting bar having a notch at its front  
5 end, a rigid upward projection outside the notch and a transverse slot below the projection, in combination with a swinging lock member having a cross bolt playing in the slot of the lifting bar and another cross bolt  
10 adapted to lock behind the upward projection on the lifting bar.

8. The combination with a wagon body lifter; of a wagon body having projections on its side and a yoke piece made with its ends bent, first downwardly, then horizontally 15 along the length of the body and then at right angles to the body.

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Witnesses:

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