Aug. 31, 1926. 1,597,929

A. K. SJOLANDER ET AL

AUTOMATIC TROLLEY HOIST

Filed May 22, 1925 7 Sheets-Sheet 1

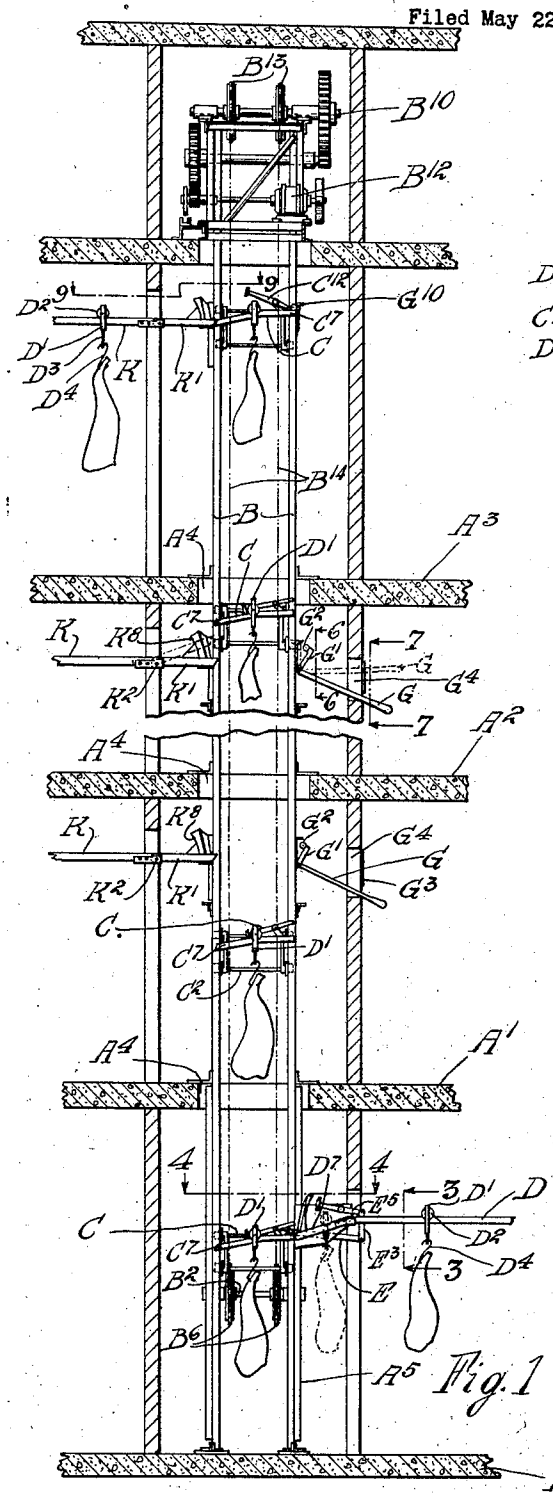


Fig. 1

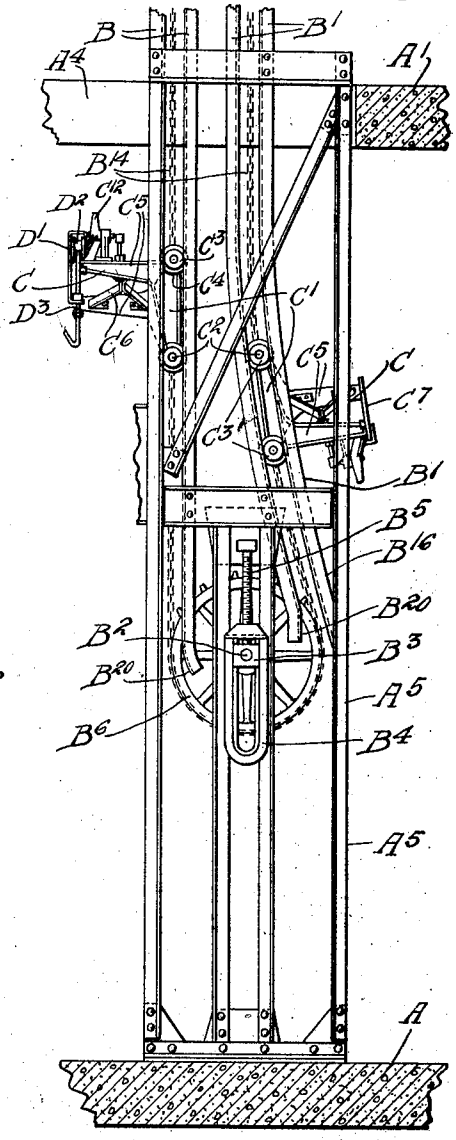


Fig. 2

Inventors
Axel K. Sjolander &
Gosta H. Bergstrom
by Parker + Carter
Attorneys.

Aug. 31, 1926. 1,597,929

A. K. SJOLANDER ET AL

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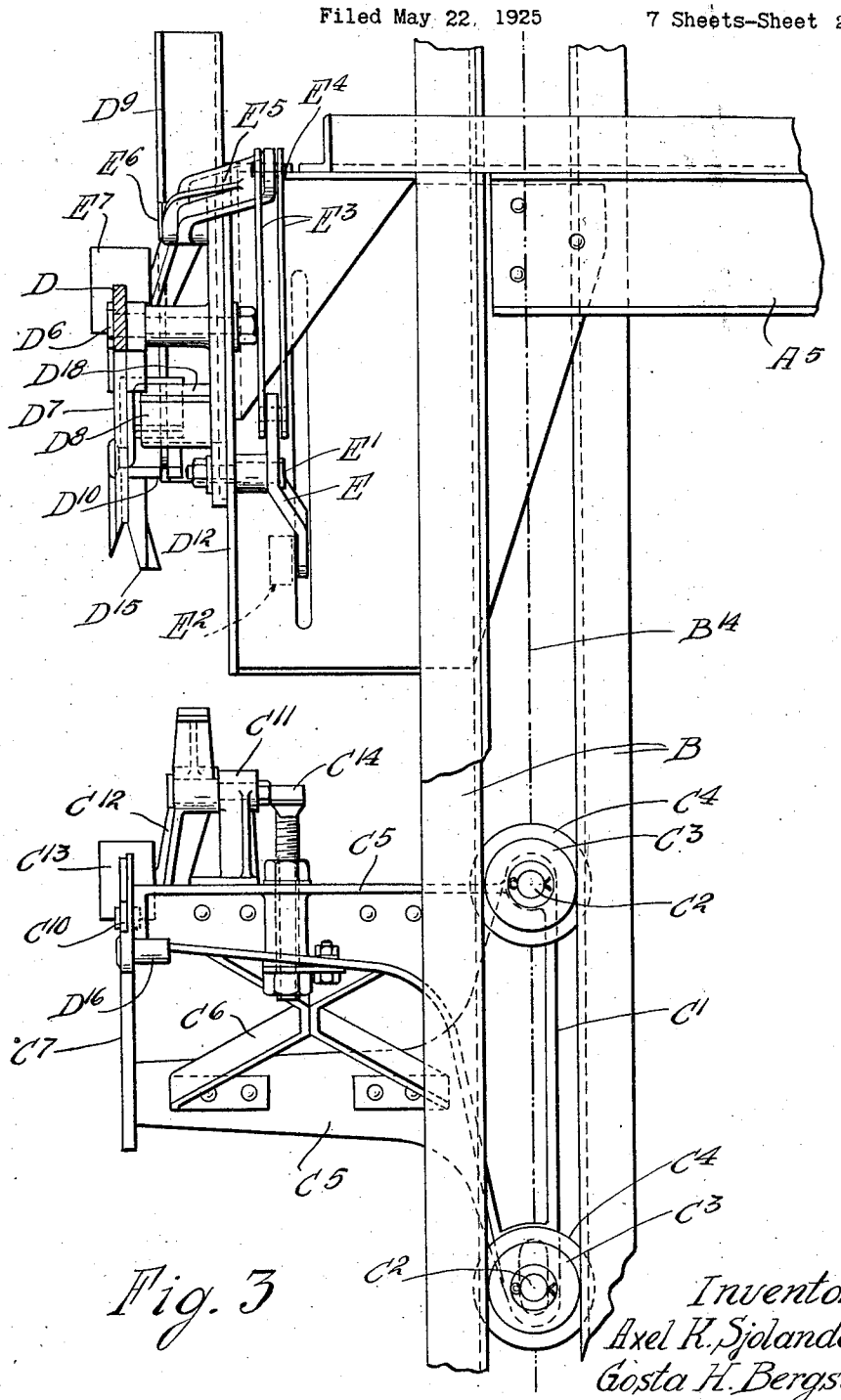


Fig. 3

Inventors.
Axel K. Sjolander &
Gosta H. Bergstrom
by Parker & Carter
Attorneys.

Aug. 31, 1926.

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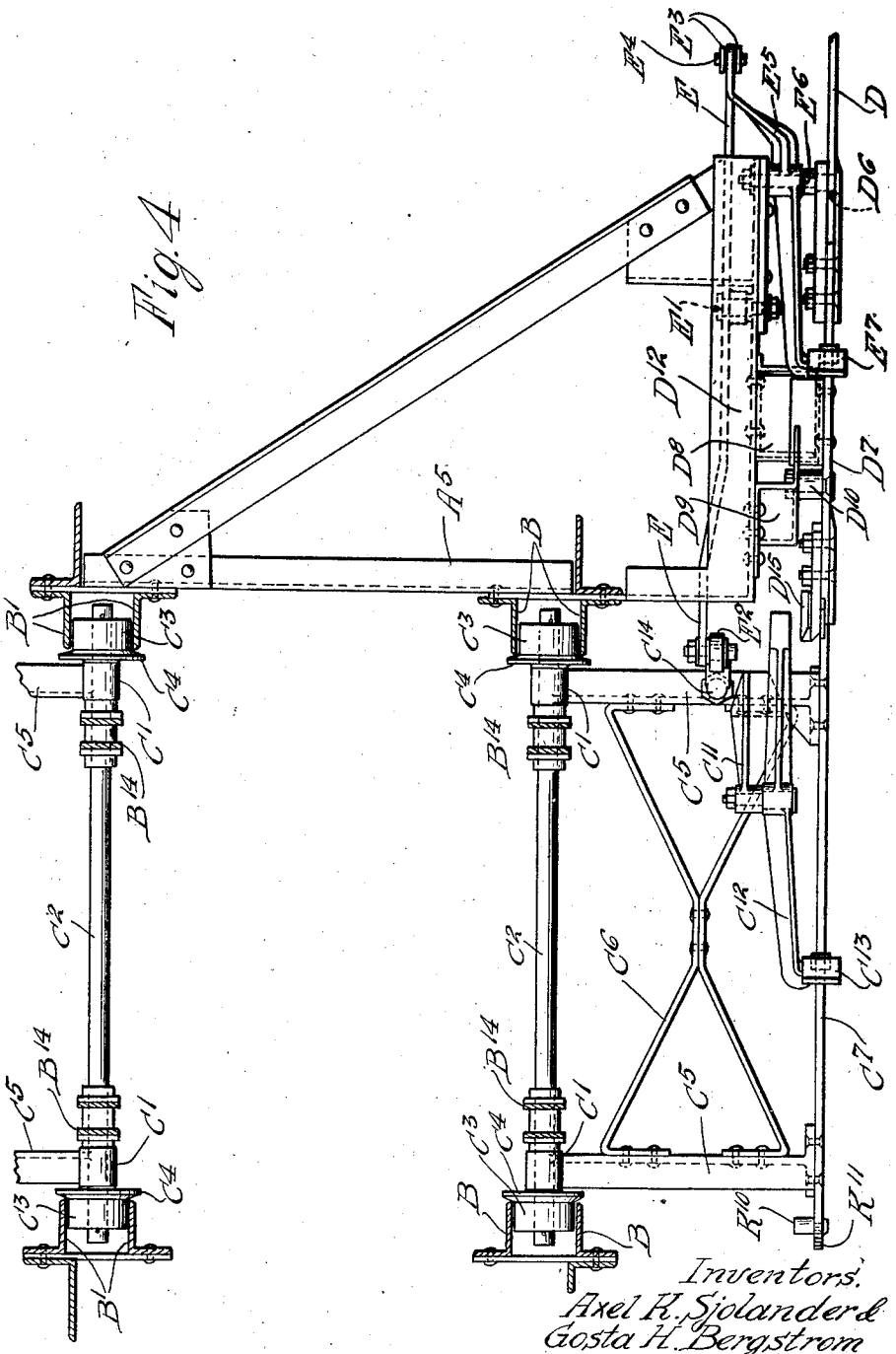
A. K. SJOLANDER ET AL

AUTOMATIC TROLLEY HOIST

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Fig. 4



Inventors:
Axel K. Sjolander &
Gosta H. Bergstrom
by Parker & Carter
Attorneys.

Aug. 31, 1926.

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A. K. SJOLANDER ET AL

AUTOMATIC TROLLEY HOIST

Filed May 22, 1925

7 Sheets-Sheet 4

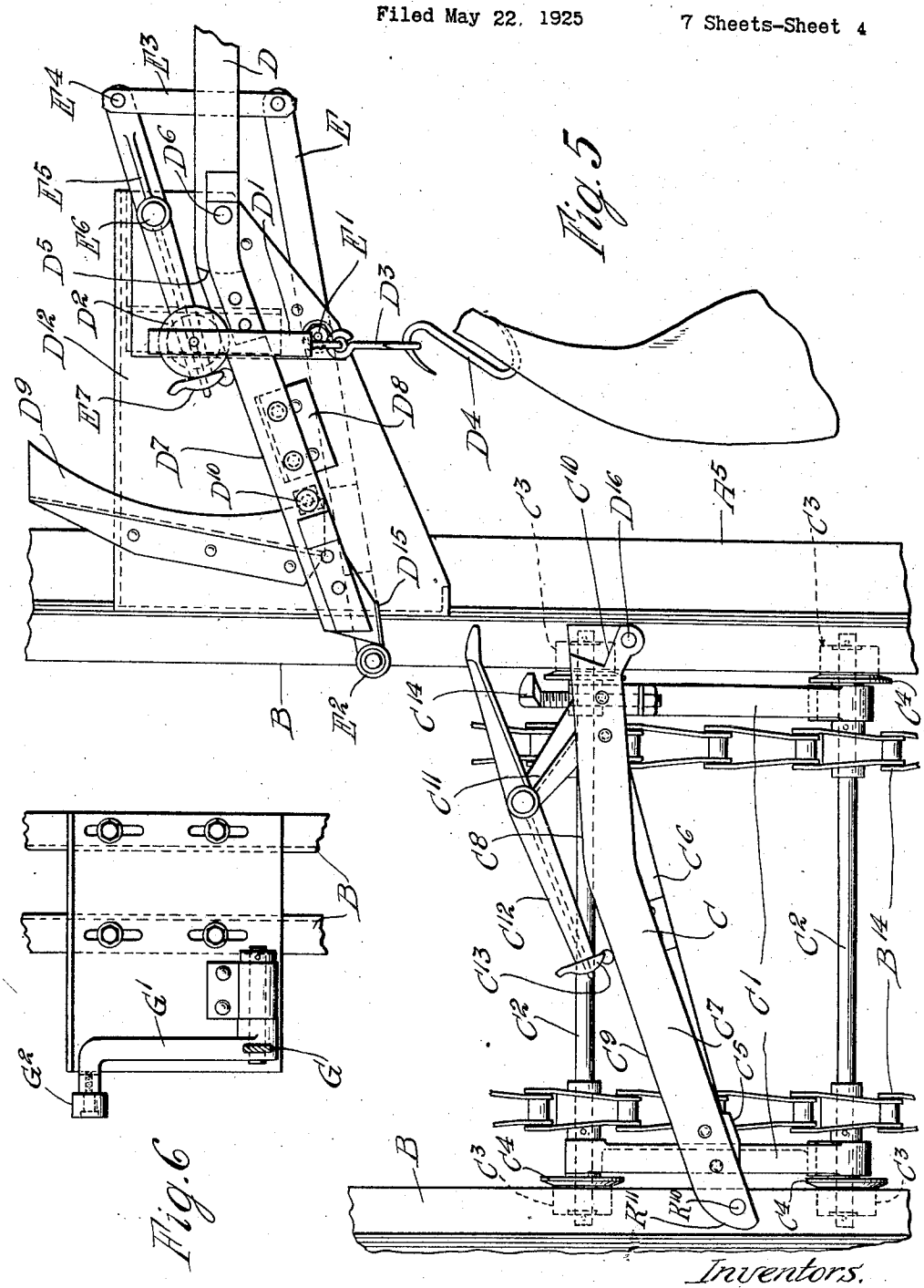


Fig. 5

Fig. 6

Inventors.
Axel K. Sjolander & Gosta H. Berystrom
by Parker & Carter
Attorneys.

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A. K. SJOLANDER ET AL

AUTOMATIC TROLLEY HOIST

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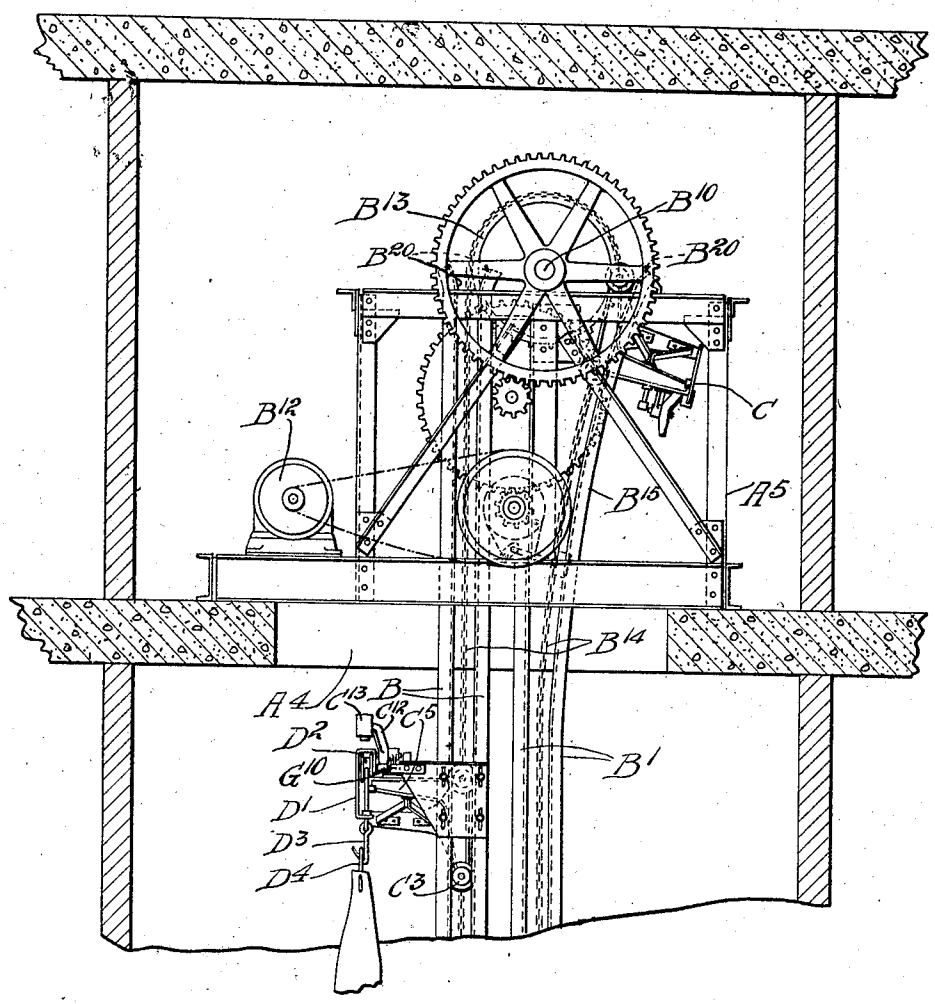


Fig. 8

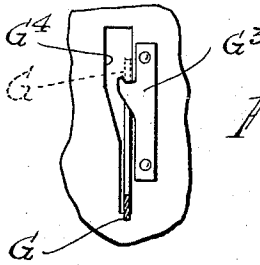


Fig. 7

Inventors
Axel K. Sjolander &
Gosta H. Bergstrom
by Parker & Carter
Attorneys.

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A. K. SJOLANDER ET AL

AUTOMATIC TROLLEY HOIST

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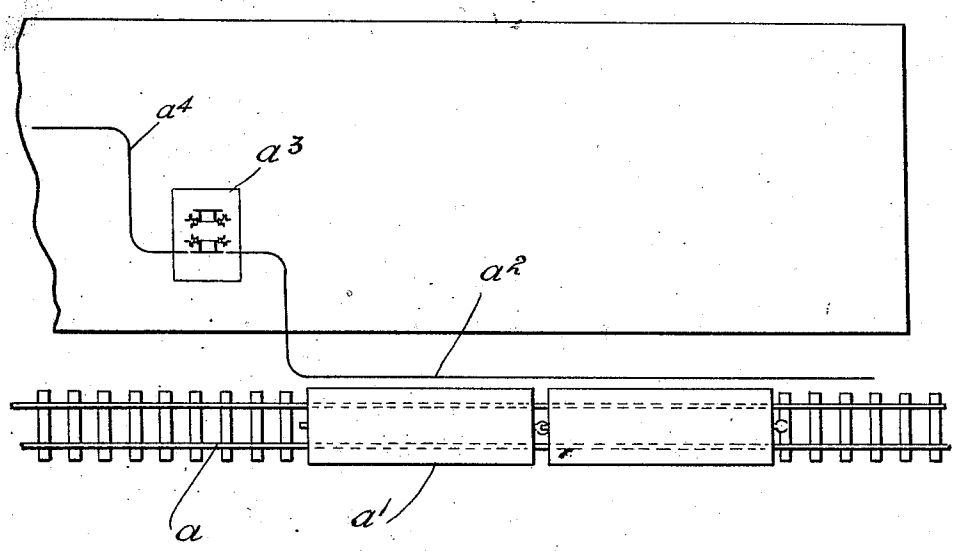


Fig. 11

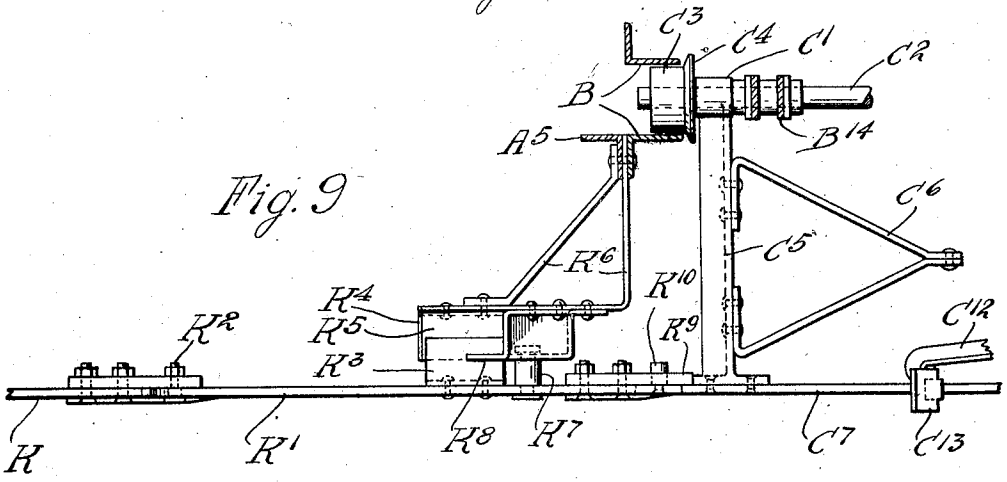


Fig. 9

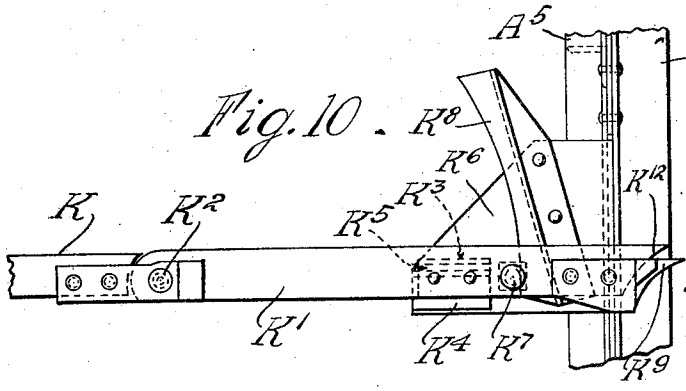


Fig. 10.

Inventors
Axel K. Sjolander &
Gosta H. Bergstrom
by Parker & Carter
Attorneys

Aug. 31, 1926.

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A. K. SJOLANDER ET AL

AUTOMATIC TROLLEY HOIST

Filed May 22, 1925

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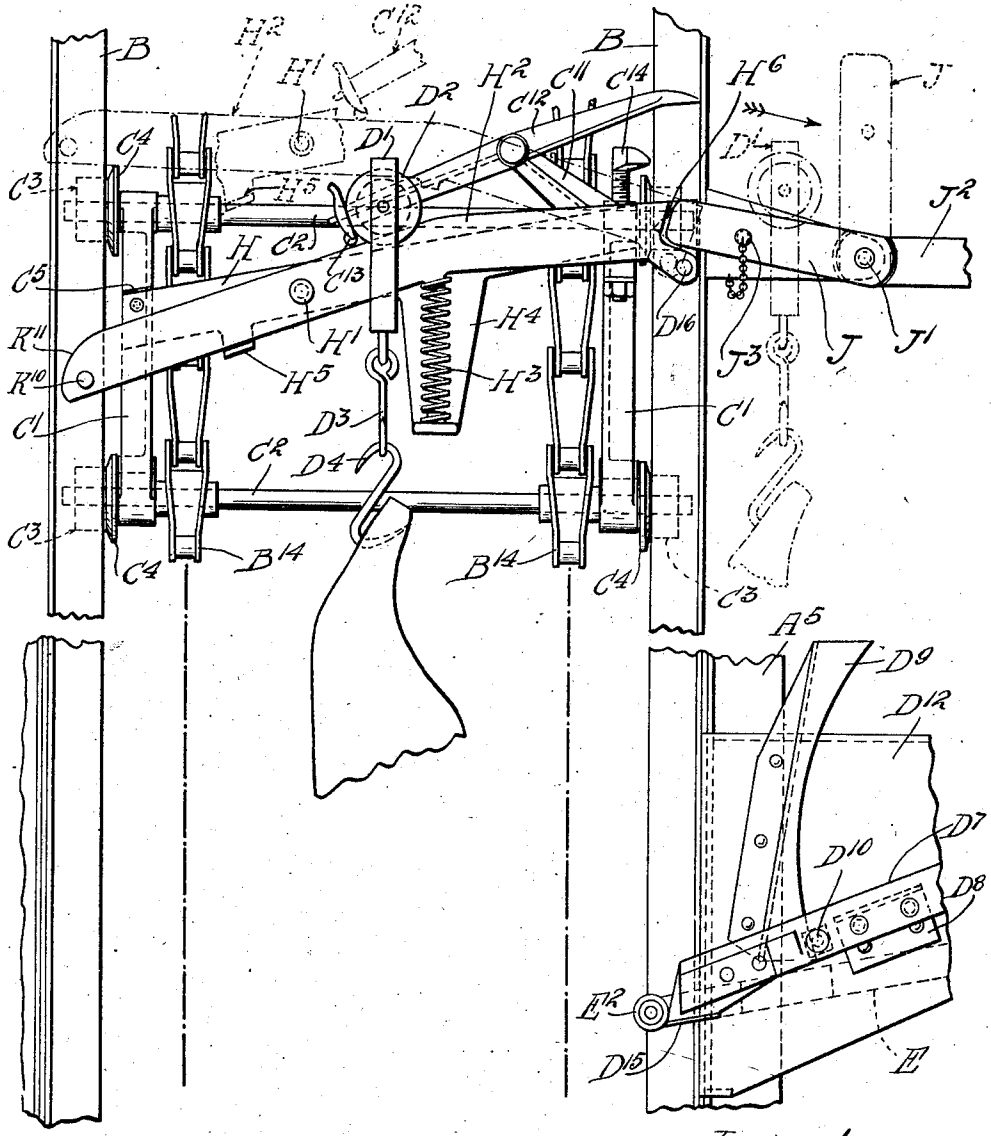


Fig. 12

Inventors:
Axel K. Sjolander &
Gosta H. Bergstrom
by Parker & Carter
Attorneys.

Patented Aug. 31, 1926. 1,597,929

UNITED STATES PATENT OFFICE.

AXEL K. SJOLANDER AND GOSTA BERGSTROM, OF CHICAGO, ILLINOIS, ASSIGNORS TO LINK-BELT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

AUTOMATIC TROLLEY HOIST.

Application filed May 22, 1925. Serial No. 32,005.

Our invention relates to an automatic trolley hoist which is applicable, for example, to slaughtering house conditions. One object is to provide a trolley hoist which shall easily, quickly, and automatically transport from floor to floor or from trolley track to trolley track the articles being conveyed along such tracks. Another object is to provide a hoist of the type described in which the article conveyed may be received upon and discharged from the same side of the hoist. Another object is a provision of sure and efficient means for effecting the automatic transfer of the article conveyed from the trolley track to the hoisting conveyor and from the hoisting conveyor to the trolley track. Other objects will appear from time to time in the course of the specification and claims.

We illustrate our invention more or less diagrammatically in the accompanying drawings wherein—

Figure 1 is a vertical section;

Figure 2 is a side elevation of the bottom part of the structure shown in Figure 1;

Figure 3 is a section on the line 3—3 of Figure 1;

Figure 4 is a section on the line 4—4 of Figure 1;

Figure 5 is a side view on an enlarged scale of the conveying carriage and the terminus of one of the trolleys;

Figure 6 is a section on the line 6—6 of Figure 1;

Figure 7 is a section on the line 7—7 of Figure 1;

Figure 8 is a side elevation of the top portion of the structure shown in Figure 1;

Figure 9 is a section on the line 9—9 of Figure 1;

Figure 10 is a side view of the structure shown in Figure 9;

Figure 11 is a diagram; and

Figure 12 is a view somewhat similar to Figure 5 showing a modified form.

Like parts are illustrated by like symbols throughout the specification and drawings.

Referring to Figure 1; A, A^1, A^2, A^3 are the various floors of any suitable warehouse or factory or building in which our invention is installed. The upper floors are penetrated by the vertically aligned apertures A^4 which serve as an elevator shaft. A^5 is any suitable elevator frame structure upwardly penetrating through the shaft so formed. At each side thereof are the pairs of tracks B and B^1. The pair B for example guide the upwardly moving carriage, and the other pair B^1 for example guide the downwardly moving carriage.

Mounted adjacent the bottom of the elevator frame A^5 is the shaft B^2 rotatable in the blocks B^3 adjustable along the securing yoke or guide B^4 for example by the screw B^5. Mounted on the shaft are a pair of sprockets B^6. Mounted at the top of the elevator structure is the head shaft B^{10} which may be driven by any suitable set of gears from the power source B^{12}. B^{10} carries the sprockets B^{13}. Passing about the sprockets B^6 and B^{13} are the chains B^{14}. One or both of the pairs of tracks B^1 are deflected as at top and bottom as shown at B^{15} B^{16}, the distance between the pairs at the point of maximum deflection being substantially equal to the diameter of the sprockets. The tracks of each pair are flared apart as at B^{20}, the tracks terminating at a point adjacent the location of the axis of rotation of the shafts B^2 and B^{10}. Vertically movable along the pairs of tracks B and B^1 are the conveying carriages C. Each such carriage consists in part of the side frame members C^1, in the ends of which are journalled the transverse shafts C^2, on the outer ends of which are mounted the track engaging rollers C^3 flanged as at C^4. Projecting outwardly from the side frame members C^1 are the frame or bracket members C^5 connected for example by the braces C^6. Mounted on the outer ends of the members C^5 is the transverse inclined track member C^7 which, in the form shown in Figure 5 includes a slightly inclined portion C^8 and a more sharply inclined portion C^9. The member C^7 is cut away at the right end, as shown in Figure 5, at C^{10}. C^{11} is an arm fixed in relation to the track member C^7 and C^{12} is a stop lever pivoted thereto and provided with a terminal catch C^{13}. C^{14} is a vertically adjustable stop the purpose of which will later appear. On the lower floor is supported a trolley track D along which are any suitable track engaging members for

example the carriers D^1 having pivoted thereto the track engaging wheels D^2 and having secured to the lower portion thereof the hooks or loops D^3 adapted to receive the meat hooks D^4. The track D terminates in an arcuate portion D^5. Pivoted as at D^6 to the track D is the track section D^7 the downward excursion of which is limited by any suitable stop plate D^8, which has a cushion D^{18}. D^9 is an arcuate guide plate. The arcuate edge is adapted to be engaged by the slide or channel pin D^{10} on the track section D^7. D^{12} is any suitable supporting plate or structure to which the stop D^8 and the guide plate D^9 are secured. The pivoted track section D^7 has secured to its outer end the plate D^{15} which is adapted to engage the transverse pin D^{16} on the end of the track section C^7 of the carriage.

Pivoted on the plate D^{12} as at E^1 is the lever E having an outward roller E^2 in line with the stop C^{14}. Pivoted to its opposite end is the link E^3 which in turn is pivoted as at E^4 to the lever E^5 pivoted as at E^6 to the plate D^{12}. The opposite arm of the lever E^5 terminates in the stop or catch E^7 adapted normally to engage the wheel D^2, thereby preventing the carrier member D^1 from sliding downwardly along the track D^7.

Referring to Figures 1, 9 and 10, K K are receiving tracks on the upper floors, each having a terminal hinged portion K^1 pivoted as at K^2. K^3 is an angle stop mounted on said portion K^1 and is opposed to a stop K^4 having a cushion or face K^5. The stop K^4 is mounted on the bracket K^6. K^8 is an arcuate guiding plate, mounted on the bracket K^6, and in general similar to the already described arcuate guide D^9. Its edge is engaged by the channeled pin K^7 on the track member K^1, and thereby prevents lateral movement of the hinged track member. K^9 is a block mounted on the end of the hinged track portion K^1, and having a curved outer end adapted to engage a pin K^{10} on the end of the track member C^7, as shown at the left of Figure 5. The curved end K^{11} of the track member C^7 is adapted at the same time to engage the curved end K^{12} of the hinged receiving track K^1.

Mounted on the elevator frame structure A^5 at the opposite side thereof from the ends of the tracks K are manually operated levers G adapted to control the shorter lever arms G^1 with the stop rollers G^2 at the ends thereof. These arms may be set in operative position by being raised to engage any suitable hook or catch G^3 mounted adjacent the elevator shaft. G^4 is a guide slot in the elevator shaft for the lever G. When the lever arm G is raised the stop roller G^2 is aligned with the end of the lever C^{12}.

In the form shown in Figure 12 provision is made for returning the meat to a track J^2 from the same direction in which it was received. In that figure H represents an inclined cross member secured to the ends of the side frame members C^5. Pivoted to it as at H^1 is the track member H^2 normally held in the position shown in full lines in Figure 12, for example by means of the compression spring H^3 mounted on the bracket H^4 depending from the member H. H^5 is a stop adapted to limit the movement of the track member H^2 in response to the thrust of the spring H^3. The track member H^2 is recessed at the right end as shown in Figure 12 as at H^6. J is a stop in the form of a track section pivoted as at J^1 to the track J^2. It may be held by the pin J^3 in the position shown in full line in Figure 12 or, on withdrawal of the pin, it may be rotated out of operative position.

Figure 11 is a diagrammatic showing illustrating the general location of the trolley hoist herein shown in relation to a plant. The track a supports the car a' which may be used either to bring meat to the plant or to remove it therefrom. a^2 is any suitable conveyor or trolley track adapted for the convenience of the meat as elsewhere shown herein. It extends to the elevator shaft a^3 where an elevating conveying installation of the type above described is located. a^4 is a typical track located on an upper floor and it will be understood that my invention is applicable to any type of building having any reasonable number of floors and any suitable track arrangement on each floor.

It will be realized that whereas we have shown a practical and operative installation that many changes may be made without departing from the spirit of our invention and that the various parts and elements may vary in size, number, shape and relation and disposition without departing from the spirit of our invention. We wish our drawings and description to be taken therefore as in a broad sense illustrative, rather than as limiting us specifically to anything therein described and shown.

The use and operation of our invention are as follows:

Our trolley conveyor and elevator may be used in any industry wherein articles are conveyed by trolley tracks. It is herein illustrated as applied to a packing house, and we illustrate trolleys which may carry beeves, quarters of pork or other sections of meat along fixed suspended tracks. When some such article is being moved along the track for conveyance to an upper floor, it passes therealong until it reaches the hinged track section D^7. Shortly after starting its descent down such downwardly inclined section, as shown in Figure 5, it is caught by the stop on the pivoted lever E^5. The conveyor carriage, meanwhile, is preferably be-

ing constantly driven, without change of direction, at a relatively slow rate, the carriage moving upwardly past the end of the inclined track section D^7. When the carriage is in the position shown in Figure 5 it is out of contact with the pivoted track section. As it continues its relatively slow upward movement the stop C^{14}, which may of course be vertically adjustable, contacts the roller E^2 of the lever E. As the ascent of the carriage continues the stop E^7 is lifted and finally the trolley is released and slides downwardly therealong. The proportion of parts, and the speed of travel of the conveyor are preferably such that the trolley reaches the lower end of the track D^7 and the upper end of the track C^7 at about the time they are in engagement, or before the carriage has been lifted sufficiently to rotate the track D^7 into horizontal position. The decline of the portion C^8 of the track C^7 is sufficient to cause the trolley to continue its movement toward the left as shown in Figure 1. It is however, stopped by the stop C^{13}, and the carriage continues its upward movement with the meat substantially centrally suspended thereon.

In the form shown in Figures 1 and 5 the meat must be discharged from the opposite side of the carriage, and this discharge is effected for example by setting the lever G in such position that the roller G^2 will contact the lever C^{12} thereby lifting the stop C^{13}, and releasing the trolley. The parts are so spaced that this relief takes place when the track C^7 is in opposition to the hinged ends of one of the tracks K and the trolley simply glides down the track C^7 out upon the track K. This discharge of the trolley is herein shown as effected by manually controlled levers, as shown in Figure 1, except at the upper floor, where a fixed stop is shown as at G^{10}, it being understood that in no ordinary circumstances will it be desirable to have the meat pass upwardly about the sprockets.

In case none of the manual levers G are set to discharge the meat upon an intermediate floor, it will be carried to the top floor, the carriage raising the hinged ends K^1 of the intermediate tracks as it passes upwardly thereby. When the carriage reaches the top floor the fixed stop G^{10} raises the lever C^{12} and releases the trolley, which thereupon passes to the left upon the track K, as shown at the top of Figure 1.

In the form shown in Figure 12 the trolley may be received from and return to the tracks positioned on the same side of the carriage. Means for discharging the trolley to the carriage are the same as those shown in Figure 5. The track on the carriage however is pivotally mounted and the end H^6 is adapted to be engaged by the stop J which, in response to the upward movement of the carriage, tilts the track into the position shown in dotted line. The lever C^{12} need not be engaged, since owing to the reversal of the incline of the track section H^2 the trolley moves back to the right down across the stop J and upon the track section J^2.

We claim:

1. A conveyor system for packing houses, and the like comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage, a track thereon and means for moving the carriage to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the conveyor carriage track and from said track section to the rails, comprising in part a normally downwardly inclined hinged rail section adapted to bridge the gap between a fixed rail and the track on the conveyor carriage.

2. A conveyor system for packing houses and the like comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage, a track thereon and means for moving the carriage to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the conveyor carriage track and from said track section to the rails, comprising in part a normally downwardly inclined hinged rail section adapted to bridge the gap between a fixed rail and the track on the conveyor carriage, retaining means, associated with the hinged railed section, adapted to retain the trolleys thereon, and means, operated in response to movement of the conveyor, for releasing said retaining means when the hinge section is in register with the track on the carriage.

3. A conveyor system for packing houses and the like comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage, a track thereon and means for moving the carriage to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the conveyor carriage track and from said track section to the rails, comprising in part a normally downwardly inclined hinged rail section adapted to bridge the gap between a fixed rail and the track on the conveyor carriage, retaining means, associated with the hinged railed section, adapted to retain the trolleys thereon, and means, operated in response to movement of the conveyor, for releasing said retaining means when the hinge section is in register with the track on the carriage, a trolley engaging stop member associated with the track on the conveyor, and automatic means for releasing said stop to permit the trol-

leys to leave said track section and pass upon the fixed rails.

4. A conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels, trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the carriage, and from the carriage to the rails, during the continued movement of said carriage, comprising in part hinged rail sections adapted to bridge the gap between the fixed rails and the carriage, an arresting means, associated with a hinged rail section, adapted to retain the trolleys thereon, and means operated in response to the movement of the carriage, for releasing it when the hinged section is in register with the carriage, said hinged section being normally downwardly inclined.

5. A conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels, trolleys adapted to run freely therealong, a conveyor carriage and means for moving it along a generally vertical path, an inclined track section thereon adapted to be brought successively into communication with the ends of the fixed rails and adapted to receive therefrom the trolley moving therealong, and means, mounted on said carriage for limiting the movement of said trolleys along the track section on said carriage.

6. A conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels, trolleys adapted to run freely therealong, a conveyor carriage and means for moving it along a generally vertical path, an inclined track section thereon adapted to be brought successively into communication with the ends of the fixed rails and adapted to receive therefrom the trolleys moving therealong, and means, mounted on said carriage for limiting the movement of said trolleys along the track section on said carriage, said means being inoperative when said carriage is aligned with the track for which said trolley is destined.

7. A conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels, trolleys adapted to run freely therealong, a conveyor carriage and means for moving it along a generally vertical path, an inclined track section thereon adapted to be brought successively into communication with the ends of the fixed rails and adapted to receive therefrom the trolleys moving therealong, and means, mounted on said carriage for limiting the movement of said trolleys along the track section on said carriage, said means being inoperative when said carriage is aligned with the track for which said trolley is destined, comprising a stop, a stop controlling lever and a member adapted to engage it in response to movement of said carriage.

8. In a conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it past the ends of said rails, an inclined track section on said carriage adapted to receive from the rails positioned at one side of the conveyor the trolleys moving thereon, means for limiting said trolleys against movement along said track during the vertical movement of the conveyor carriage intermediate the various rails, and means for releasing it when said track is aligned with rails at the opposite side of said conveyor.

9. In a conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, past the ends of said rails, an inclined track section on said carriage adapted to receive from the rails positioned at one side of the conveyor the trolleys moving thereon, means for limiting said trolleys against movement along said track during the vertical movement of the conveyor carriage intermediate the various rails, and means for releasing it when said track is aligned with rails at the opposite side of said conveyor, comprising a latch lever mounted on said conveyor carriage and means positioned adjacent the path of said carriage and adapted to contact said lever.

10. In a conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, past the ends of said rails, a track section, pivoted on said carriage, adapted to receive from the rails the trolleys moving thereon, said section being normally downwardly inclined away from the side of the conveyor on which said rails lie.

11. In a conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, past the ends of said rails, a track section, pivoted on said carriage, adapted to receive from the rails the trolleys moving thereon, said section bein normally downwardly inclined away from the side of the conveyor on which said rails lie, and means for tilting it into inclination in the opposite direction.

12. In a conveyor system for packing

houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, past the ends of said rails, a track section, pivoted on said carriage, adapted to receive from the rails the trolleys moving thereon, said section being normally downwardly inclined away from the side of the conveyor on which said rails lie, and means for tilting it into inclination in the opposite direction, comprising a stop positioned adjacent the path of travel of the carriage and adapted to engage one end of said track.

13. In a conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, past the ends of said rails, a track section, pivoted on said carriage, adapted to receive from the rails the trolleys moving thereon, said section being normally downwardly inclined away from the side of the conveyor on which said rails lie, and means for tilting it into inclination in the opposite direction, comprising a stop positioned adjacent the path of travel of the carriage and adapted to engage one end of said track, and means for removing said stop from alignment with said track.

14. In a conveyor system for packing houses and the like comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it past the ends of said rails, a track section, pivoted on said carriage, adapted to receive from the rails the trolleys moving thereon, said section being normally downwardly inclined away from the side of the conveyor on which said rails lie, and means for tilting it into inclination in the opposite direction, and means for holding said trolleys against movement downwardly along said track section when it is in normal inclination.

15. In a conveyor system for packing houses and the like, comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it, past the ends of said fixed rails, a track section mounted upon said carriage and adapted to be aligned with the ends of said rails, means for directing the trolleys from said rails upon said track portion, means for holding said trolleys in position upon said track portion and means for releasing said trolleys from position upon said track portion.

16. In a conveyor system for packing houses and the like, comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it past the ends of the fixed rails, a track section mounted upon said carriage and adapted to be aligned with the ends of said rails, a movable rail member pivoted to the end of a fixed rail and normally downwardly inclined therefrom, means for holding the trolleys against movement downwardly along said inclined rail, and means for releasing said trolleys for movement down said inclined rail portions in response to movement of said carriage.

17. In a conveyor system for packing houses and the like, comprising a plurality of fixed rails positioned on various levels and trolleys adapted to run freely therealong, a conveyor carriage and means for moving it past the ends of the fixed rails, a track section mounted upon said carriage and adapted to be aligned with the ends of said rails, a movable rail member pivoted to the end of a fixed rail and normally downwardly inclined therefrom, means for holding the trolleys against movement downwardly along said inclined rail, and means for releasing said trolleys for movement down said inclined rail portions in response to movement of said carriage, comprising a stop lever adapted to engage and hold the trolleys, and a stop mounted on said carriage adapted to engage it and to release the trolleys.

18. A conveyor system for packing houses and the like comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage, a track thereon and means for moving the carriage to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the conveyor carriage track and from said track section to the rails, comprising in part a normally downwardly inclined hinged rail section adapted to bridge the gap between a fixed rail and the track on the conveyor carriage, said rail section being adapted to swing upwardly to permit the passage of the conveyor.

19. A conveyor system for packing houses and the like comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage, a track thereon and means for moving the carriage to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the conveyor carriage track and from said track section to the rails, comprising in part a normally downwardly inclined hinged rail section adapted to bridge the gap between a fixed rail and the track on the conveyor carriage, said rail section being adapted to swing upwardly to permit the passage of the con-

veyor, and guiding means for said hinged rail section adapted to hold it against lateral movement.

20. A conveyor system for packing houses and the like comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage, a track thereon and means for moving the carriage to bring it successively into communication with the ends of the fixed rails, and means for transferring the trolleys from the rails to the conveyor carriage track and from said track section to the rails, comprising in part a normally downwardly inclined hinged rail section adapted to bridge the gap between a fixed rail and the track on the conveyor carriage, said rail section being adapted to swing upwardly to permit the passage of the conveyor, and guiding means for said hinged rail section adapted to hold it against lateral movement, comprising an arcuate edged plate and a channeled member on the rail section adapted to engage the edge thereof.

21. A conveyor system for packing houses and the like, comprising a plurality of fixed rails mounted at various levels, trolleys adapted to run freely therealong, a conveyor carriage and means for lifting it along a generally vertical path comprising transverse shafts at the opposite ends of the range of excursion of said carriage, sprockets on said shafts, chains passing about said sprockets and secured to said carriage, means for rotating said sprockets, generally vertically disposed guide tracks for said carriages, hinged track sections adapted to bridge the gap between the ends of the fixed rails and the carriage, and a trolley receiving support on the carriage.

22. A conveyor system for packing houses and the like, comprising a plurality of rails suspended on various levels, trolleys adapted to move freely therealong, a conveyor carriage and a trolley receiving track thereon, means for moving said carriage to bring the track successively into communication with the fixed rails, a normally downwardly inclined movable rail section adapted to bridge the gap between one of the fixed rails and the track on the conveyor carriage, retaining means, associated with said movable section, and adapted to retain the trolleys thereon, means operative in response to movement of the conveyor for releasing said retaining means when the movable section is in register with the conveyor carriage, to permit the trolleys to move outwardly upon said conveyor carriage, retaining means, associated with said carriage, for normally holding the trolleys against movement therealong, and means for releasing said retaining means.

23. A conveyor system for packing houses and the like, comprising a rail suspended at one level and a plurality of additional rails suspended on various upper levels, trolleys adapted to move freely along said rails, a conveyor carriage and a trolley receiving member thereon, means for moving said trolley to bring said member successively into communication with the fixed rails, a normally downwardly inclined movable rail section adapted to bridge the gap between the lowest of said rails and the carriage, retaining means, associated with said movable section, adapted to retain the trolleys thereon, and means, operative in response to the movement of the conveyor, for releasing said retaining means when the movable section is in register with the conveyor carriage.

24. A conveyor system for packing houses and the like, comprising a rail suspended at one level and a plurality of additional rails suspended on various upper levels, trolleys adapted to move freely along said rails, a conveyor carriage and a trolley receiving member thereon, means for moving said trolley to bring said member successively into communication with the fixed rails, a normally downwardly inclined movable rail section, adapted to bridge the gap between the lowest of said rails and the carriage, retaining means, associated with said movable section, adapted to retain the trolleys thereon, and means, operative in response to the movement of the conveyor, for releasing said retaining means when the movable section is in register with the conveyor carriage, and movable track sections associated with the rails suspended on the upper levels, aligned with the carriage and adapted to receive therefrom the trolleys conveyed thereon.

25. A conveyor system for packing houses and the like, comprising a rail suspended at one level and a plurality of additional rails suspended on various upper levels, trolleys adapted to move freely along said rails, a conveyor carriage and a trolley receiving member thereon, means for moving said trolley to bring said member successively into communication with the fixed rails, a normally downwardly inclined hinged rail section adapted to bridge the gap between the lowest of said rails and the carriage, an arcuate guide for said hinged rail section and a member on said rail adapted to engage the arcuate edge thereof, retaining means, associated with said hinged section, adapted to retain the trolleys thereon, and means, operative in response to the movement of the conveyor, for releasing said retaining means when the hinged section is in register with the conveyor carriage.

26. A conveyor system for packing houses and the like, comprising a rail suspended at one level and a plurality of additional rails suspended on various upper levels,

trolleys adapted to move freely along said rails, a conveyor carriage and a trolley receiving member thereon, means for moving said trolley to bring said member successively into communication with the fixed rails, a normally downwardly inclined hinged rail section adapted to bridge the gap between the lowest of said rails and the carriage, retaining means, associated with said hinged section adapted to retain the trolleys thereon, and means, operative in response to the movement of the conveyor, for releasing said retaining means when the hinged section is in register with the conveyor carriage, and hinged track sections associated with the rails suspended on the upper levels, aligned with the carriage and adapted to receive therefrom the trolleys conveyed thereon, arcuate guides for the hinged sections and members on said sections adapted to engage the arcuate edges of said guides.

27. A conveying system for packing houses and the like, comprising a plurality of generally horizontally disposed fixed rails positioned at various levels, trolleys adapted to run freely therealong, a conveyor carriage and means for imparting to it a generally continuous movement past the ends of said rails, means for constraining said carriage to generally vertical movement, a trolley receiving track thereon, and means for transferring the trolleys from the rails to the track on the carriage and from the carriage to the rails, during continued movement of the carriage, comprising in part hinged rail sections pivoted to the ends of the horizontal rails, and adapted to bridge the gap between the rails and the carriage.

Signed at Chicago, county of Cook, State of Illinois, this 12th day of May, 1925.

AXEL K. SJOLANDER.
GOSTA BERGSTROM.