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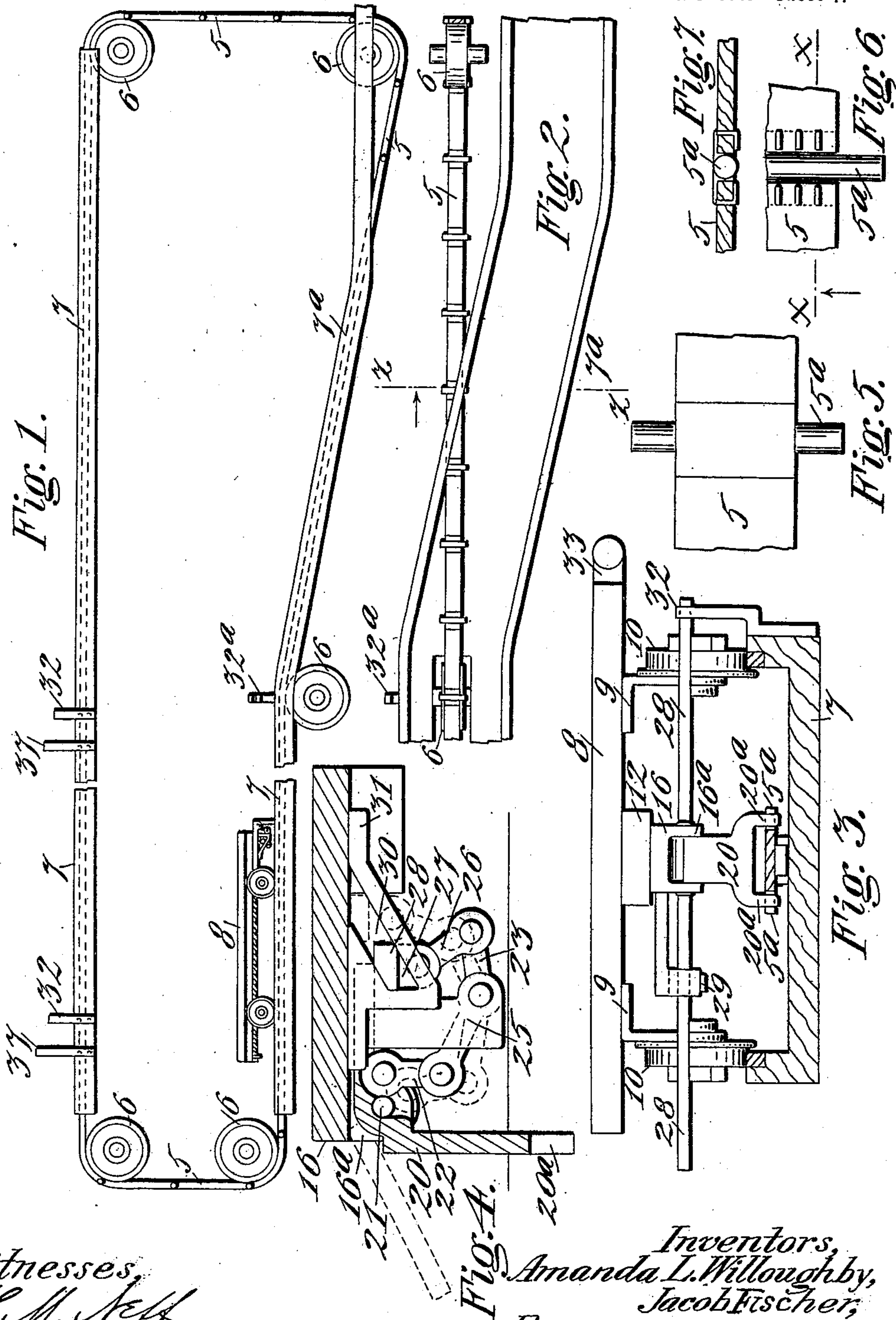
Patented Feb. 19, 1901.

A. L. WILLOUGHBY & J. FISCHER.  
DINING ROOM TRAMWAY.

(No Model.)

(Application filed June 25, 1900.)

2 Sheets—Sheet 1.



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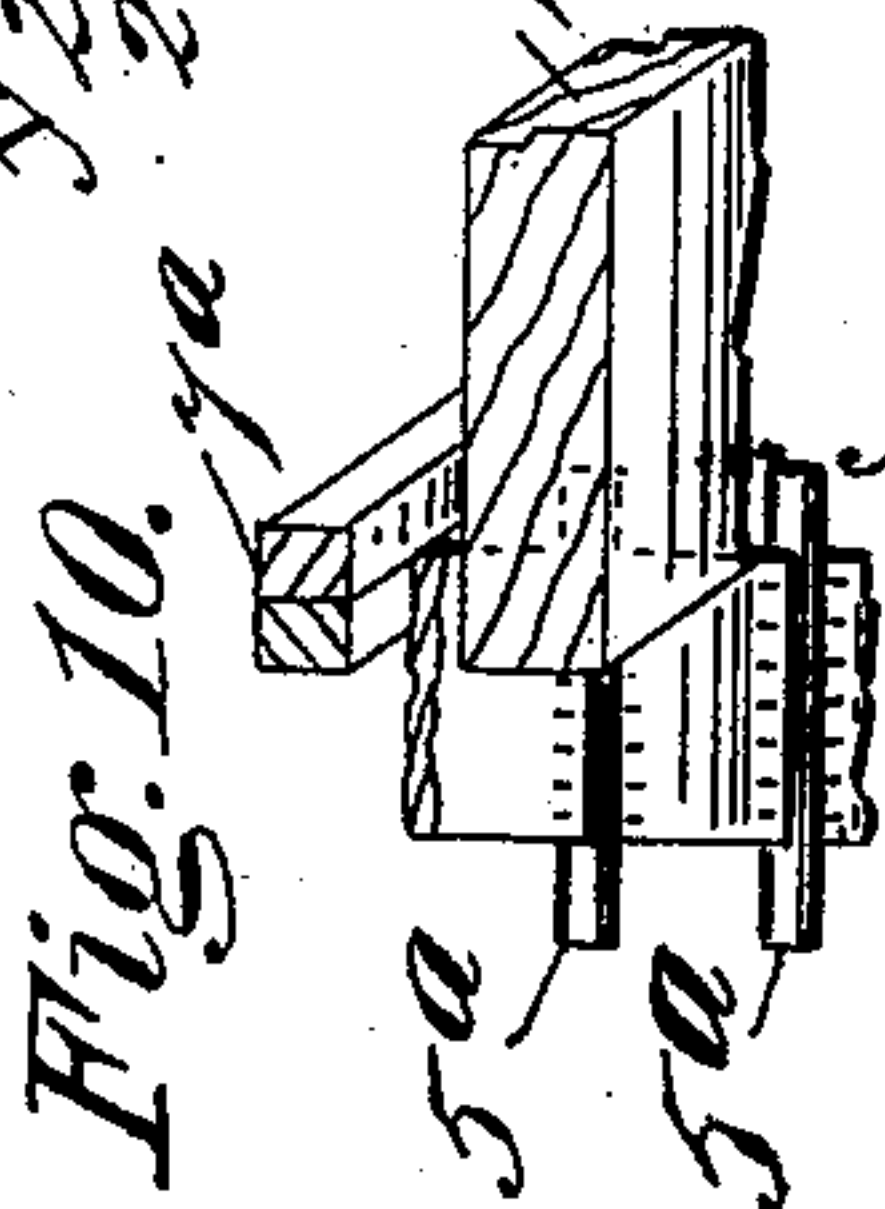
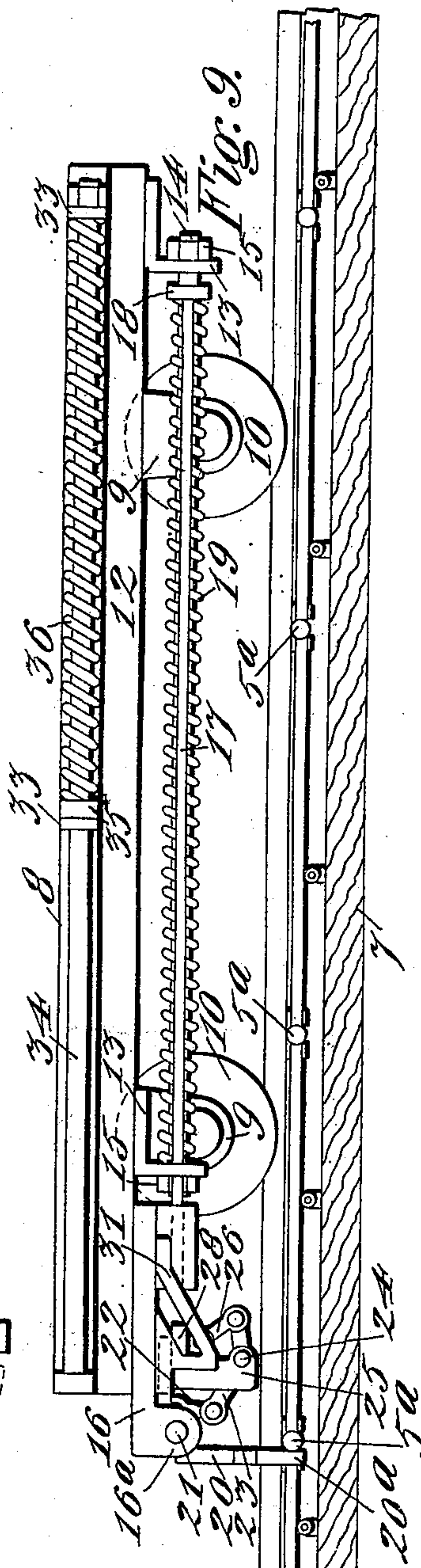
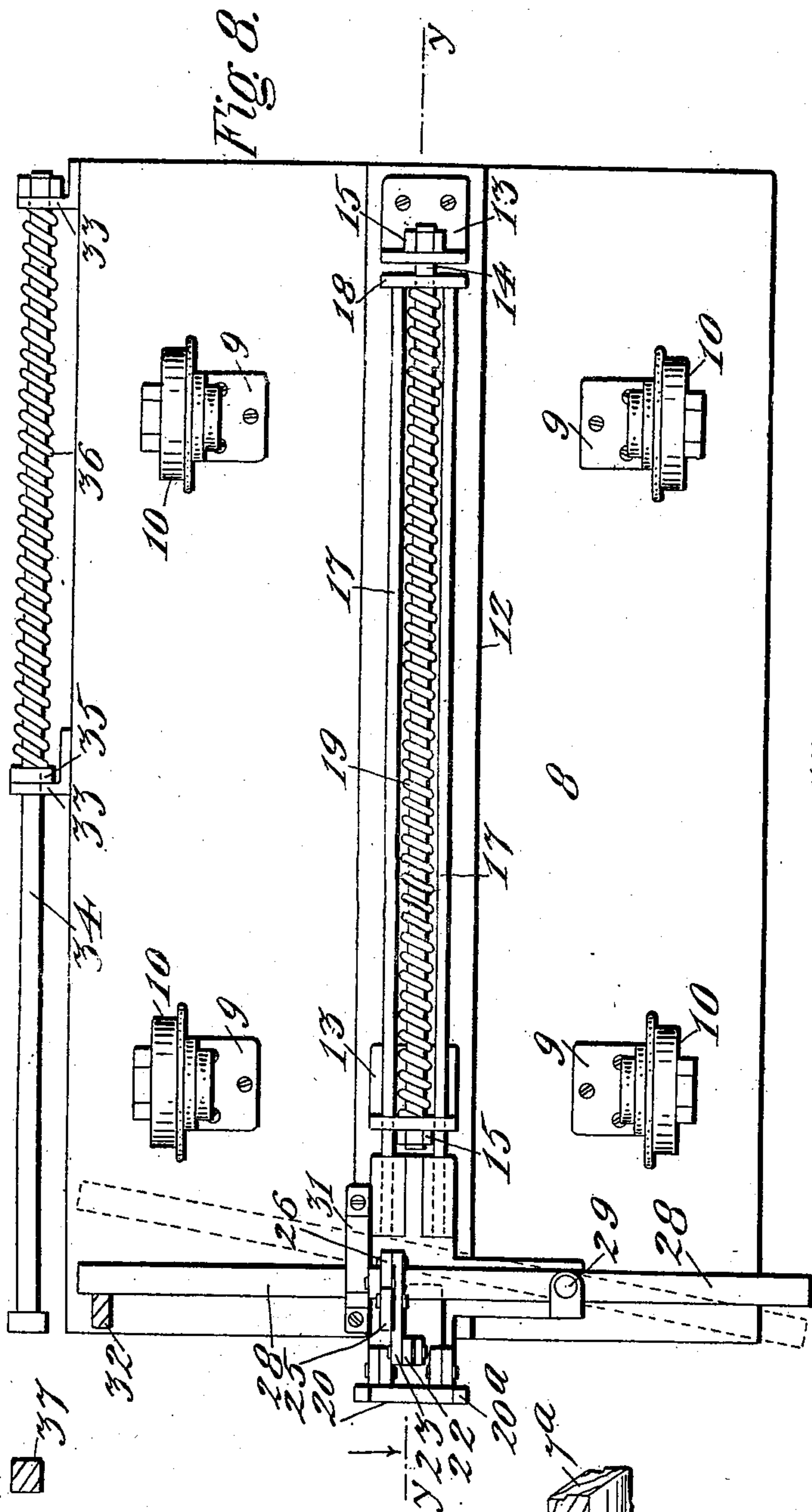
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# UNITED STATES PATENT OFFICE.

AMANDA L. WILLOUGHBY AND JACOB FISCHER, OF DENVER, COLORADO;  
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## DINING-ROOM TRAMWAY.

SPECIFICATION forming part of Letters Patent No. 668,596, dated February 19, 1901.

Application filed June 25, 1900. Serial No. 21,489. (No model.)

*To all whom it may concern:*

Be it known that we, AMANDA L. WILLOUGHBY and JACOB FISCHER, citizens of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Dining-Room Tramways; and we 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in a tray-carrying apparatus for use in restaurants, hotels, and eating-houses and may be termed a "dining-room tramway," its object being the carrying of the order-trays from the kitchen to the dining-room and back to the kitchen, whereby a great saving in time and labor is effected.

The invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a side elevation of our improved apparatus. Fig. 2 is a fragmentary top view of the lower portion. Fig. 3 is a cross-section taken through the track, showing the car in end elevation on a larger scale. Fig. 4 is a section taken through the front part of the car, parts of the mechanism being shown in elevation and on a still larger scale. Fig. 5 is a fragmentary plan view of the endless belt or carrier shown on a larger scale. Fig. 6 is an underneath view of the same, partly broken away. Fig. 7 is a section taken on the line X X, Fig. 6. Fig. 8 is an underneath view of the car shown on a larger scale than in Fig. 1. Fig. 9 is a section taken on the line Y Y, Fig. 8. Fig. 10 is a fragmentary perspective sectional view cut through the carrier and the upper side of the track on the line Z Z, Fig. 2, the parts being shown on a larger scale.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate an endless carrier, which may consist of a belt, chain, ca-

ble, or other suitable device adapted to perform the required function. This carrier is mounted on pulleys 6 and runs above upper and lower track-sections 7, which are supported in any suitable manner. The support for the track-pulleys is not shown in the drawings, as no special construction is required. The belt may be propelled in any suitable manner.

The tracks are supposed to extend from the kitchen into the dining-room. The lower section of the track at one extremity, which is supposed to be the kitchen extremity, is deflected or bent, as shown at 7<sup>a</sup>, to one side of the line of the carrier and inclined downwardly, whereby the tray-returning cars are automatically side-tracked at the kitchen end of the line. The carrier is provided with transverse pins 5<sup>a</sup>, located at suitable intervals and projecting beyond the body of the belt on opposite sides. These pins are arranged to catch a pendent device attached to the car and carry the latter along on the track.

The car-body consists of a platform 8, provided with brackets 9, in which are journaled the track-wheels 10. Attached to the under surface of the platform and extending lengthwise thereof, midway between the wheels, is a beam 12, provided with angle-brackets 13, whose depending flanges are apertured to receive the extremities of a rod 14, which is held in place by nuts 15, applied to its opposite extremities. Underneath the forward extremity of the car is located a draw-head 16. The rear extremity of this draw-head is attached to the forward extremities of the rods 17, which pass through openings formed in the depending flange of the forward bracket 13. The rear extremities of these rods are attached to a cross-head 18, slidingly mounted on the rod 14, which is surrounded by a coil-spring 19, one extremity of which bears against the cross-head, while the opposite or forward extremity engages the vertical flange of the forward bracket 13. By virtue of this construction the draw-head yields longitudinally as the carrier-pin strikes the pendant, thus relieving the car from the sudden jerk or jar which would be incident thereto with an unyielding draw-head. Between two depending lugs 16<sup>a</sup>, formed on the forward extremity of the draw-bar, is pivoted, as shown



at 21, a pendant 20, whose lower extremity is forked to straddle the belt and provided with arms 20<sup>a</sup>, which when the pendant is in a vertical position lie in the path of the laterally-projecting extremities of the belt-pins 5<sup>a</sup>. This pendant is provided with an arm extending to the rear of the hinge-pin and with which is connected one extremity of a link 22, whose opposite extremity is pivotally connected with a lever 23, fulcrumed at 24 on a depending arm 25, made fast to the draw-head 16. To the rear or opposite arm of the lever 23 is connected one extremity of a link 26, whose opposite extremity is pivotally connected with a depending lug 27, formed on a lever 28, fulcrumed on a projection carried by the draw-head underneath the car, as shown at 29. When the pendant 20 is in the vertical position, the links 22 and 26 and the lever 23 are in the position shown by full lines in Fig. 4 and the pendant is locked in the vertical position. The lever 28 passes through an inclined slot 30, formed in a bracket 31, secured to the draw-head 12 of the car. When the pendant 20 is locked in the vertical position, the lever 28 is in the forward and lower extremity of this slot.

Along one side of the upper section of the track are attached upwardly-projecting arms 32, arranged to lie in the path of one extremity of the car-levers 28, which project a short distance to one side of the car for the purpose. These projections 32 may be called "trips" and are made of different heights to engage the levers of different cars, which it is intended will be so constructed that the levers are located at varying distances above the track. The cars, if desired, may be numbered, and if it is desired that a certain car shall travel the entire length of the upper track-section this car will have its lever at such a height that it will pass all the trips 32 except the last one, or that at the extremity of the line remote from the kitchen. When the lever 28 strikes one of the trips, it is thrown from the full-line position to the dotted-line position in Figs. 4 and 8. This movement of the lever 28 raises the extremity of the lever 23, connected with the link 26, and throws its opposite extremity downwardly, imparting a corresponding movement to the link 22, whereby the pendant 20 is raised from the carrier and supported in the dotted-line position in Fig. 4, thus releasing the car. The construction of the fulcrum 29 is such that the lever 28 is allowed to move upwardly in the slot 30 during its releasing action just described. The upward movement of the lever is such that after it has performed its function of releasing the pendant from the carrier, as heretofore stated, the lever will pass over the top of the trip, since it is not desirable that the trip should form a stop for the car by engaging the lever.

To one side of the car-platform are attached two angle-brackets 33, apertured to receive a rod 34, which is held in place by a

nut applied to its rear extremity. This rod is also provided with a stop 35, which normally engages the forward bracket 33 on the rear side. Surrounding the rod and located between the rear bracket 33 and the stop 35 is a coil-spring 36. The forward extremity of this buffer-rod is adapted to engage a stationary device 37, located in its path. There may be a stop 37 at each station where it is desired the car shall stop. These stops should be of different heights, the tallest being at the end of the line remote from the kitchen, and the buffer-rods 34 on the different cars will be correspondingly arranged, so that a car designed to stop at a remote station will pass all the stops 37 located between the kitchen and that station. Hence the stops 37 and the trips 32 are correspondingly constructed and arranged. Two stops 37 are shown in the drawings, (see Fig. 1;) but it may be advisable to have only one stop 37—namely, at the end of the line remote from the kitchen to prevent the possibility of the car's passing over the end of the track. As soon as the car is released from the carrier or traveling belt by the raising of the car-pendant the car will only travel by virtue of its momentum, and ordinarily no additional stop would be required, since the upper section of the track is supposed to occupy a horizontal plane.

In use one extremity of our improved tray-carrying apparatus or tramway may be located in the kitchen, from which point it may extend through an opening in the partition separating the kitchen from the dining-room and extend along one side of the dining-room its entire length. Assuming that a trip 32 is located at each table adjacent the side of the room where the track is located, a car will stop at each table. The car is then lifted from the track, the tray or trays removed therefrom, and other trays containing empty dishes placed thereon. The car is then placed upon the lower section of the track headed toward the kitchen, care being taken to return the lever 28 to its normal position, whereby the car-pendant 20 is brought into position to be caught by the endless traveling carrier. The lower downwardly-inclined side-track portion 7<sup>a</sup> of the track is supposed to extend into the kitchen or other place where it is desired to carry the tray or empty dishes returning from the dining-room. At the beginning of this side-track section is located a trip 32<sup>a</sup>, which is provided with projections located at heights corresponding with the heights of the trips 32 and arranged to engage the levers of the different cars. The action of this trip 32<sup>a</sup> on the levers is the same as the trips 32. Hence as soon as any car reaches the trip 32<sup>a</sup> its pendant 20 will be raised and the car released from the carrier. The car will then pass downwardly by gravity on the side track 7<sup>a</sup>, whereby the dishes may be deposited at any desired point.

It will be observed that in order that the



carrier may leave the track (see Fig. 2) there must be an opening in the bed of the track and under one side thereof to allow the carrier to escape. No attempt has been made to illustrate this construction in Fig. 10. In reading this figure it must be understood that both the carrier and track are downwardly inclined and viewed in the direction of the arrow in Fig. 2.

Having thus described our invention, what we claim is—

1. In a dining-room tramway, the combination of a track, a carrier traveling between the side rails of the track and provided with stops, a car adapted to engage the track, and suitable means mounted on the car and projecting into the path of the carrier-stops, whereby the car is actuated, said means being yieldingly retained and allowed by virtue of its yielding property to move longitudinally and bodily on the car, when engaged by the carrier-stop.

2. In a dining-room tramway, the combination of a track, a carrier traveling between the side rails, and provided with stops, an adjustable pendant mounted on the car and arranged to project into the path of the carrier-stops, said pendant being yieldingly retained and permitted by virtue of its yielding capacity, to move longitudinally and bodily on the car when engaged by the carrier-stop, means mounted on the car for locking the pendant in the path of the carrier, and means located adjacent the track and arranged to actuate the locking device whereby the pendant is released from the carrier allowing the car to stop.

3. In a dining-room tramway, the combination of a track, a traveling carrier provided with lateral projections, a car, a pendant movably attached to the car and arranged to project into the path of the projections on the carrier, a lever mounted on the car for locking the pendant in the path of the carrier, and a trip located adjacent the track and arranged to unlock the lever.

4. The combination of a track, a carrier traveling along the bed of the track, a car, a spring-retained pendant mounted on the car and bodily movable longitudinally thereon, a lever also mounted on the car, an operating connection between the lever and the pendant, and means located adjacent the track in the path of the lever for actuating the lever to release the pendant.

5. The combination of a track, a carrier traveling along the bed of the track, a hinged pendant mounted on the car and arranged to project into the path of the carrier, which pendant is spring-retained and bodily movable

longitudinally on the car, a lever mounted on the car, and a connection between the lever and the pendant whereby the operation of the lever actuates the pendant.

6. The combination of a track, a carrier, a car, a draw-bar mounted on the car, a yielding means also mounted on the car and connected with the draw-bar whereby the latter is permitted to move longitudinally as occasion may require, a pendant hinged to the draw-bar and adapted to project into the path of the carrier, and a lever mounted on the draw-bar for actuating the pendant whereby the latter may be thrown out of or into the path of the carrier as desired.

7. The combination of a track composed of upper and lower sections, an endless carrier mounted to travel along the bed of both sections of said track, a car, and a pendant carried by the car and arranged to project into the path of the carrier, said pendant being yieldingly retained and bodily movable longitudinally on the car when engaged by the carrier.

8. The combination of a track composed of upper and lower sections, the lower section terminating in a side track, an endless carrier arranged to travel along the bed of said track-sections, a car adapted to travel on the track, a yieldingly-retained pendant mounted on the car and arranged to project into the path of the carrier whereby the car is actuated, said pendant being adapted to move longitudinally and bodily on the car, and a trip located at the beginning of the side track and arranged to release the pendant from the carrier.

9. The combination of a track, a carrier arranged to travel along the bed of said track, a car mounted on the track and provided with a pendant adapted to project into the path of the carrier, a yielding buffer mounted on the car, and a stop located adjacent the track and arranged to engage said buffer.

10. The combination of a track, a carrier arranged to travel along the bed of said track, a car mounted on the track and provided with a pendant adapted to project into the path of the carrier, a spring-held rod mounted on the car and projecting beyond the body thereof, and a stop located adjacent the track and arranged to engage said buffer-rod.

In testimony whereof we affix our signatures in presence of two witnesses.

AMANDA L. WILLOUGHBY.  
JACOB FISCHER.

Witnesses:

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GRACE MYTINGER.