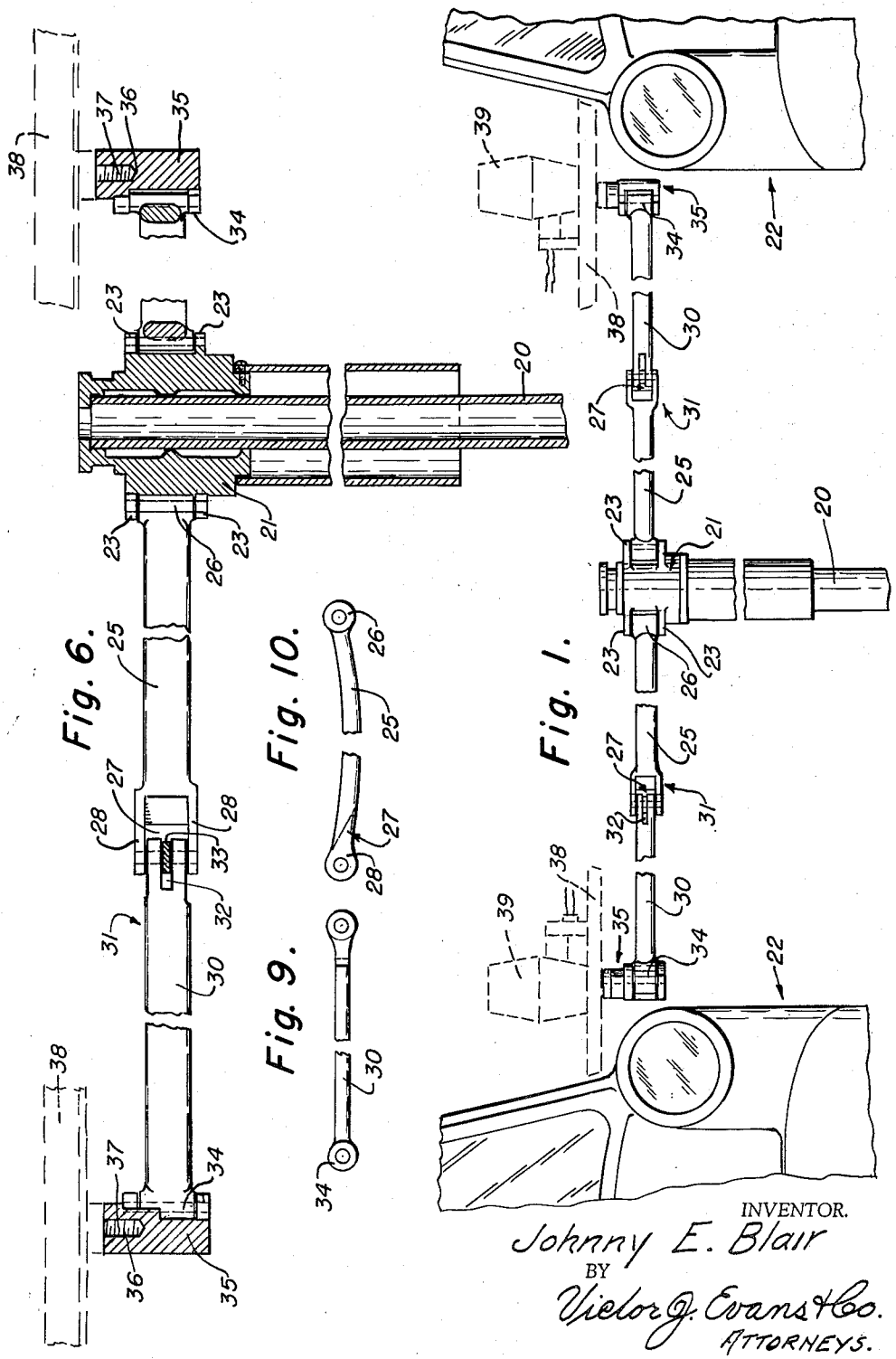
April 24, 1962 J. E. BLAIR 3,031,086

PARALLEL SERVING TRAY SUPPORT

Filed June 2, 1960 2 Sheets-Sheet 1

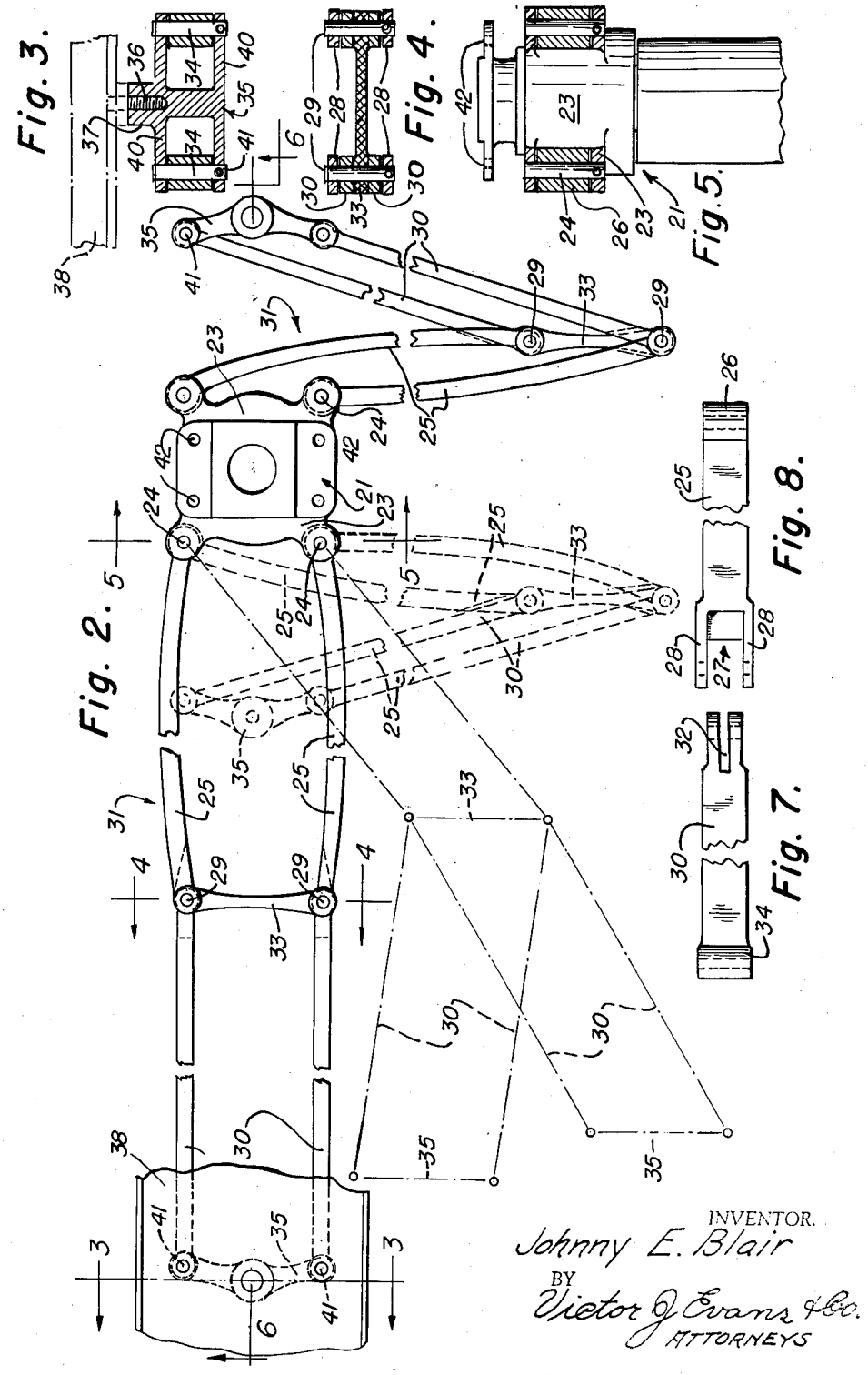


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PARALLEL SERVING TRAY SUPPORT

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1

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PARALLEL SERVING TRAY SUPPORT

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1 Claim. (Cl. 211—133)

This invention relates to a serving tray supporting mechanism, and more particularly to a serving tray support for use in drive-in restaurants or the like.

The object of the invention is to provide a supporting device which is especially suitable for use in drive-in restaurants or similar establishments and wherein trays for holding food stuffs, drinks or beverages or the like can be readily and conveniently moved towards or away from vehicles in which customers or patrons are seated so that the occupants of the vehicles can readily and conveniently gain access to the food stuffs or other articles on the trays.

Another object of the invention is to provide an extensible tray support for use in drive-in restaurants or the like, wherein vehicles such as automobiles are adapted to drive up contiguous to the tray support so that trays which support food stuffs such as sandwiches, beverages, or the like can be readily manually moved towards or away from the vehicles so that the occupants of the vehicles can conveniently partake of the food stuffs or beverages while remaining in the vehicle, and wherein according to the present invention there is provided a novel and advantageous linkage for the mechanism which serves to insure that the supporting trays will always remain in their proper aligned positions in a single horizontal plane regardless of whether the trays are in an extended or retracted or other intermediate position, it being understood that the vehicle may be parked at different positions relative to the post, that is either to the front or to the rear or to one side of the post.

A still further object of the invention is to provide a tray support which embodies a linkage mechanism that includes arms that are arranged in the form of a parallelogram so that accidental jamming of the trays will be eliminated, and wherein the supporting trays will always be in their proper aligned position with respect to the post regardless of the position of the parts.

A still further object of the invention is to provide a serving tray support which can be used in conjunction with communication systems as for example when orders are to be called into a kitchen or other locality whereby it is not necessary for the occupants of the vehicle to leave the vehicle in order to have their orders processed and delivered.

Other objects of the invention are to provide a serving tray support of the character described which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact, light in weight and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

FIGURE 1 is an elevational view illustrating the serving tray support of the present invention, and with parts broken away and in section.

FIGURE 2 is a top plan view of the serving tray support, showing the linkage on one side retracted and the linkage on the other side extended.

2

FIGURE 3 is a sectional view taken on the line 3—3 of FIGURE 2.

FIGURE 4 is a sectional view taken on the line 4—4 of FIGURE 2.

FIGURE 5 is a sectional view taken on the line 5—5 of FIGURE 2.

FIGURE 6 is a sectional view taken on the line 6—6 of FIGURE 2.

FIGURE 7 is an elevational view of one of the outer arms.

FIGURE 8 is an elevational view of an inner arm.

FIGURE 9 is a plan view of the outer arm shown in FIGURE 7.

FIGURE 10 is a plan view of the inner arm shown in FIGURE 8.

Referring in detail to the drawings, the numeral 20 indicates a vertically disposed post or upright which is adapted to have its lower end suitably secured in place, as for example the lower end of the post 20 may be embedded in concrete or the like. It is to be understood that a drive-in restaurant or the like is adapted to utilize a plurality of the devices of the present invention, but for the purpose of the present application only one has been illustrated since a description for one will suffice for all. Mounted on the upper end of the post 20 is a body member 21, FIGURE 6. The numeral 22 in FIGURE 1 indicates a pair of spaced apart vehicles or automobiles which are adapted to have occupants or persons therein who are adapted to eat or drink while remaining in the vehicle as for example as is customary in drive-in restaurants or similar localities.

Formed integral with the body member 21 or secured thereto, are horizontally disposed spaced parallel upper and lower plates 23, and upper and lower plates are arranged on each side of the body member 21. Vertically disposed spaced parallel pins 24 extend between the plates 23, for a purpose to be later described.

There is further provided on each side of the device linkage means which is indicated generally by the numeral 31, and the linkage means 31 is in the nature of a parallelogram so as to insure that the serving trays remain in a single horizontal plane at all times regardless of the adjusted position of the parts. Each of the linkage means 31 have the same construction and each comprises a pair of inner arms 25 which are curved or bowed slightly as shown in FIGURE 2 for example, and the inner ends of the arms 25 are provided with bearings 26 which pivotally or swivelly engage the pins 24. The outer ends of the arms 25 are bifurcated or cutaway as indicated by the numeral 27 so as to define on the outer ends of the arms 25 horizontally disposed spaced parallel fingers 28. A pin 29 extends through each pair of fingers 28.

There is further provided a pair of outer arms 30 for each linkage means 31. The inner ends of the arms 30 are pivotally connected to the pins 29. The inner ends of the arms 30 are provided with slots or cutouts as indicated by the numeral 32, and the numeral 33 indicates spacers or cross pieces which extend between each adjacent pair of pins 29 and which are pivotally connected to the pins 29.

The outer ends of the arms 30 are provided with bearings 34, FIGURE 1. The numeral 35 indicates a support member which is provided with a threaded recess or opening 36, FIGURE 6, whereby a serving tray such as the serving tray 38 may be supported on and attached

to the member 35, as for example by means of a threaded stud 37 which threadedly engages the opening 36. If desired speaker or microphone units 39 may be suitably mounted on or adjacent to the serving tray 38 whereby occupants of the vehicle such as the vehicles 22 can call in their orders or communicate with the kitchen or office in order to be able to place their orders without the necessity of leaving the vehicles. The support member 35 is provided with horizontally disposed spaced parallel ears 40, and pivot pins 41 extend through the bearings 34 and through the ears 40 of the support member 35, as for example as shown in FIGURE 3.

As shown in FIGURE 2 for example, the body member 21 may be provided with spaced apart apertures or bolt holes 42 whereby various types of elements or members such as display signs can be attached to the member 21 through the medium of suitable securing elements such as screws, bolts or the like.

From the foregoing, it will be seen that there has been provided a tray support which is especially suitable for use in supporting trays such as the trays 38 that are adapted to be used in drive-in restaurants or the like so that occupants of vehicles such as the vehicles 22 can readily and conveniently gain access to the food or beverages on the trays. Thus, the occupants of the vehicles can conveniently partake of the food or beverages while remaining in the vehicle and according to the present invention there is provided a novel linkage mechanism which insures that the trays will be maintained in their proper aligned position parallel to the post as the trays are moved towards or away from the vehicle. The linkage consists of arms which are arranged in the form of a parallelogram so that the tray will not necessarily become jammed, and wherein movement of the tray will be facilitated. The arms such as the arms 25 and 30 are pivotally connected together as for example by means of the previously described pins, and the elements such as the cross-pieces 33 help maintain the arms in their proper spaced apart relation.

It is to be understood that a drive-in restaurant or other locality using the present invention is adapted to be equipped or provided with a plurality of the tray supporting mechanisms of the present invention so that a plurality of vehicles may be driven up contiguous to the device as for example as shown in FIGURE 1 a pair of linkage mechanisms 31 are connected to each body member 21, and the post 20 has the body member 21 on its upper end. The linkage mechanism is constructed so that the trays will be kept in their proper aligned position regardless of the position of the vehicles so that for example as shown in FIGURE 2, regardless of the extended or retracted or angled position of the linkage, the support member 35 will remain parallel to the body member 21, and the support members 35 will remain parallel to the post so that corners of the trays on the support members will not jam into the vehicles or otherwise get out of alignment.

In addition the linkage is constructed so that the parts are prevented from moving too far in any one direction and the tray may be provided with suitable handles which are adapted to be conveniently gripped in order to shift or move the tray to the desired location. The various pivot pins or bolts can be secured in place in any suitable manner, as for example by means of set screws or the like. Ball bearings can be used wherever desired or required between the various moving parts, so as to insure that there will be a minimum amount of friction between the various moving elements.

It will therefore be seen according to the present invention a tray can be moved up flush with the window of an automobile or other vehicle so that food or the like can be removed from or placed on the trays such as the trays 38 and the linkage arrangement is constructed in the unique fashion as previously described so that the trays will always remain in the proper aligned position regardless of the positions of the trays and regardless of the extended or retracted position of the linkage. The arms are provided with cutouts or recesses such as the slots 32 and the recessed portion 27 so as to provide sufficient clearance which permits the parts to move during the use thereof, as for example as shown in FIGURE 2 the linkage can move from the solid line position shown to the dotted line position or vice-versa, and at all times the support member 35 will remain in a single horizontal plane. Since the tray 38 is connected to the support member 35 as at 36, it will be seen that the effect of this will be that the tray 38 will likewise remain in the desired position.

The parts can be made of any suitable material and in different shapes or sizes.

As stated previously the main feature or aspect of the present invention is the fact that the tray will always remain parallel to the post regardless of the position of the vehicle, that is whether the vehicle is directly opposite the tray or to one side of the tray. Heretofore, similar devices have been sluggish in operation and with the present invention the linkage is constructed so that a smooth operation is insured and thus the customers can more readily move the trays to the desired location. The curvature of the arms 25 provide added clearance so that as for example as shown in dotted lines in the left side of FIGURE 2 when desired the linkage 31 can be moved to a close-in position with respect to the body member 21. In addition, the parts are constructed so that accidental shifting or movement or flushed of the linkage and tray will be prevented and due to the parallelogram arrangement, the customer will always have the tray properly lined up with respect to the vehicle. The tray can be moved with a slight finger pressure thereon and the tray will remain in a single horizontal plane as it moves in or out. In addition, the linkage is constructed so that when the tray is not being used or no longer needed, the tray can be readily pushed back into a collapsed or retracted position. Thus, a person can readily move a tray up flush with the window of an automobile or other vehicle so as to facilitate the use of the tray by persons in the vehicle and the device is constructed so that it is rugged and wherein relatively heavy weights can be supported thereon.

An important advantage or feature is that the customer can readily and easily push the tray into the post or pull the tray out to the car without the necessity of exerting any effort in aligning the tray since the parallelogram formation insures that the parts will be automatically guided, since the mechanism is constructed so that it is self-aligning.

If desired the arms may all be made of straight stock or material instead of making certain of the arms curved or arcuate.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

What is claimed is:

In a tray support, a vertically disposed post, a body member mounted on the upper end of said post, spaced parallel upper and lower plate portions on each side of said body member, a pair of vertically disposed spaced pins extending between the upper and lower plate portions on each side of said body member, a pair of inner arms having bearings on their inner ends pivotally connected to each of said pairs of pins, the other ends of the inner arms being bifurcated so as to define spaced parallel horizontally disposed fingers, vertically disposed pins extending between said fingers, a pair of spaced parallel outer arms having their inner ends pivotally connected to said last named pins, bearings on the outer ends of the other arms, pins extending through said last named bearings, and a support member including horizontally disposed spaced apart ears pivotally connected

to said last named pins, the inner arms having a slightly curved formation in a horizontal plane and disposed so that their convex sides face towards each other, the inner ends of the outer arms each having a slotted portion, crosspieces engaging said slotted portions, a serving tray superimposed upon each of said support members and fixed thereto, and wherein the trays will remain in a single horizontal plane regardless of the extended or retracted or adjusted position of the parts, each of the curved inner arms nesting together when in the retracted position.

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