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FIXTURE FOR EXTENSION LEAF TABLES

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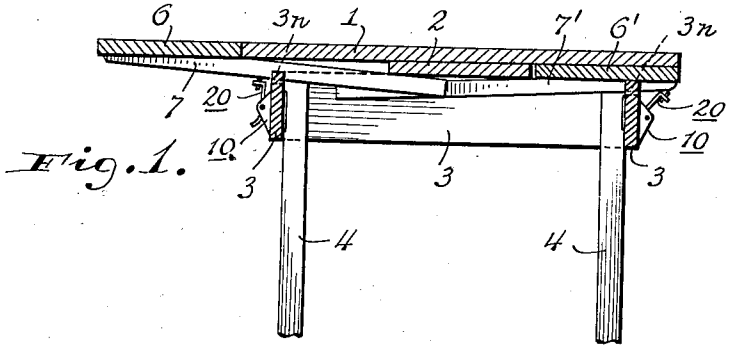


Fig. 1.

Fig. 2.

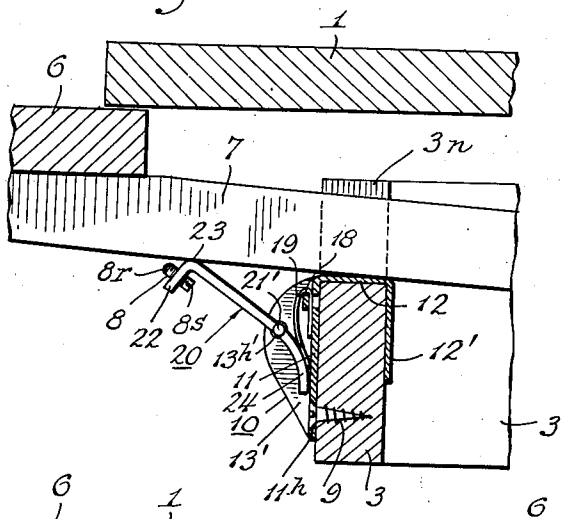
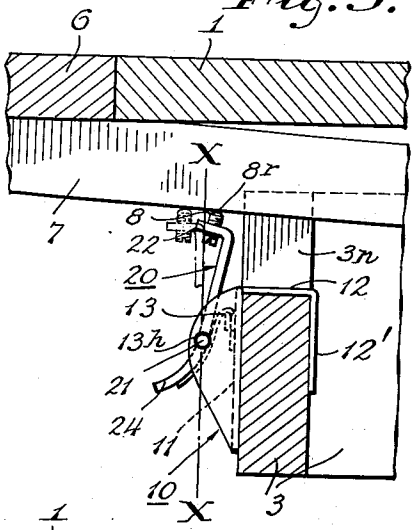


Fig. 3.



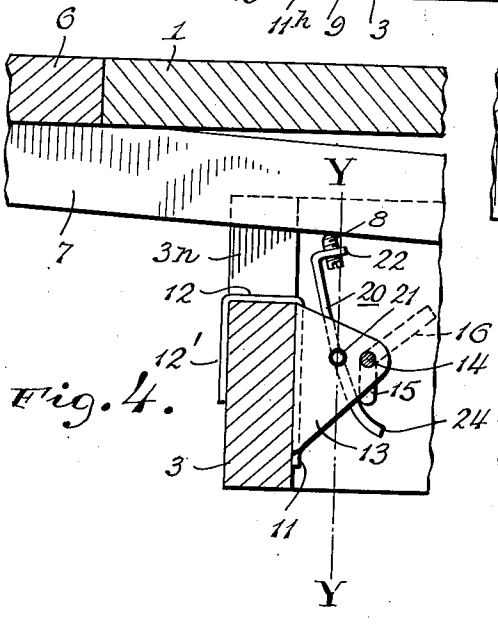


Fig. 4.

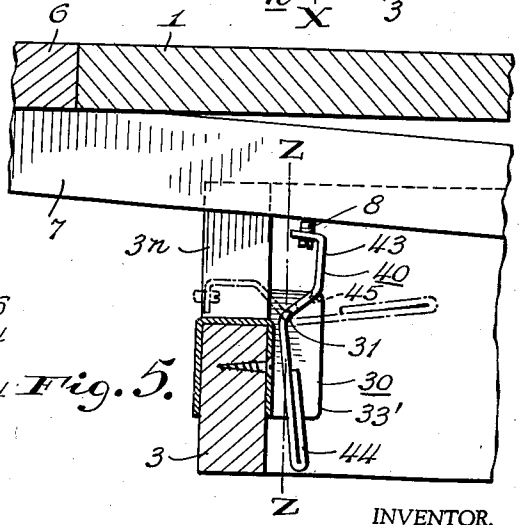


Fig. 5.

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FIXTURE FOR EXTENSION LEAF TABLES

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5 Claims. (Cl. 311—56)

This invention relates to extension leaf tables of the type provided with an extensible table leaf at one or both sides of the table, which is normally (i. e., in closed position) slid beneath the main table top and pulled out when in use. It is necessary in this type of table, that there be a relative vertical movement between the extension leaf and the main table top (an extent depending upon the thickness of the main table board) in order that the top surface of the leaf be flush with the top surface of the table proper. This invention is directed to an exceedingly simple and inexpensive device for effecting this required vertical movement between the extension leaf and the main table top.

One of the objects of this invention, therefore, is to overcome the objections and defects in tables of the class described, heretofore made, and to provide an exceedingly simple and inexpensive fixture (which may be readily applied to extension leaf tables), containing but a single movable part. A further object is to provide such a fixture which may be quickly and easily applied to existing extension leaf tables. These fixtures when applied to the table are out of sight and hence do not mar the appearance of the table.

A still further object of this invention is to provide a simple fixture for causing the required elevational movement of the extension leaf relative to the main table top, and which will at the same time lock the leaf in extended operative position. A further object is to implement such a fixture with a simple provision for adjusting it to various thicknesses and dimensions of extension leaves and their supporting bars and for warping or other mis-alignment in the extension leaf.

For the attainment of these and such other objects as may hereinafter appear or be pointed out I have shown an exemplification of my invention in the accompanying drawing, wherein:

Fig. 1 is a side elevation, partly in section, of a table having extensible leaves at both sides, and showing two devices of this invention in place;

Fig. 2 is a side view, in section, of the device of this invention; in this view the extension leaf is in lowermost position and is shown nearing withdrawal position;

Fig. 3, in side view, shows the condition of the device of Fig. 2, with the extension leaf in fully extended and elevated position;

Fig. 4, in side elevation, shows the device of this invention fastened in place on the table reversely to that shown in Figs. 1 to 3; and

Fig. 5, in side elevation, shows a slightly modified form of the invention.

In Fig. 1 is shown a table, partly in section, which comprises the main table board or boards 1 secured to a cross bar 2, in the customary manner to provide clearance between the underside of main table boards 1 and the side rails or skirt 3 which encircles the table on all four sides; secured to the rails are the four legs 4. Either one or both sides of the table may be provided with extensible leaves; in Fig. 1, there is shown a left extension leaf 6 (in extended or opened position) and a right extension leaf 6' (shown in retracted or closed position). The extension leaves are secured to a pair of supporting bars, only one of each pair being visible in the figures. Left extension leaf 6 is secured to supporting bars 7; right extension leaf 6' is secured to bars 7'. The clearance provided between the underside of main table board 1 and the top of rails 3 is just sufficient for the thickness of the extension leaf, as shown by the right extension leaf 6' which, being in retracted position, is positioned between the main top 1 and the rail 3. The rails are provided with notches, 3n, see also Fig. 2, in which the supporting bars, 7 or 7', may clear.

When in use, the top of the extension leaf must be flush with the top surface of the main table, as shown by the relative position of 6 and 1. Hence, in withdrawing the extension leaf from its retracted position (see 6') to its extended position (see 6), the extension leaf is required to be elevated a distance at least as great as the thickness of the main table boards 1. To accomplish this elevational adjustment of the extension leaf and to maintain the leaf in elevated position, is the purpose of the device of this invention.

This device, one of which is associated with each supporting bar, 7 or 7', of the extension leaves—so that a table having an extension leaf at only one side, the leaf having two supporting bars, would require two devices or fixtures, and a table having extensible leaves on both sides, would require a set of four fixtures—comprises but two main parts, viz., a bracket member 10 and a lever member 20 pivotally mounted thereon. The bracket, which may be made cheaply as a one-piece metal stamping, has a main plate 11 which is placed against the table rail 3, see Figs. 2 and 3, and a hook-like extension 12 and 12' at the upper portion of its main plate 11. Hook extension 12—12' is fitted in the recess or notch 3n provided in the top of the rail 3 (to accommo-

date the supporting bar 7, as already described). The distance between the main plate 11 and extension 12' is such that the bracket fits snugly over the rail as seen in Figs. 2 and 3. It may be incidentally observed that the extension 12 serves as a wear plate against which the bottom of the supporting bar 7 may rub. The main plate 11 may be provided with a screw-hole 11h for a wood screw 9, which firmly secures the bracket in position on the table rail. Projecting from the said main plate 11 in a direction opposite to that of hook extension 12—12' are a pair of side pieces or flanges, a left flange 13', Fig. 2, and a right flange 13, Fig. 3, the two side flanges forming a channel together with the main plate or web 11.

The lever member 20 is pivotally mounted in the channel 13'—11—13. For this purpose, the side flanges 13 and 13' are provided with small holes 13h and 13h', respectively, which serve as bearings for small lugs 21 and 21', respectively, which project from both sides of lever member 20. The two lugs 21 and 21' are colinear so that lever member 20 may pivot on axis 21—21' from the position shown in Fig. 2 to the position of Fig. 3, for a purpose soon explained.

The upper portion of the lever member 20 is bent to form a short ledge 22, the corner of the bend 23 being rounded or smoothed. The ledge 23 is tapped to accommodate a short bolt 8 having a rounded end 8r and a slotted end 8s to receive a screw driver.

The lever member is shown in Fig. 2 in the position it assumes (i. e., tilted forward or to the left as viewed in the figures) when the extension leaf 6 is in retracted or partly retracted position underlying main board 1 or while the extension leaf is being withdrawn leftward, as appears in Fig. 2. It will be seen from Fig. 2 that in this forwardly tilted position of the lever member, there is sufficient clearance between the rounded corner 23 of the lever and the underside of the main table 1 for the thickness of the supporting bar 7 plus the thickness of the extension leaf 6. It might be here pointed out that the purpose of rounding the corner 23 is to provide a smooth surface upon which the supporting bar 7 may rest—when in retracted position—and upon which the bar may slide—while the leaf is being extended or retracted. The lower part of lever member 20 is formed to provide a slightly curved portion 24, the purpose of which is to provide a stop against the main plate 11, as shown in Fig. 2, limiting the forward or leftward tilting of the lever to provide sufficient clearance and no more.

The parts are shown in Fig. 2 near the end of the leftward withdrawal of the extension leaf; a slightly further leftward movement of extension leaf 6 will enable it to clear the left edge of main table 1, whereupon the extension leaf is raised to the position shown in Fig. 3. As the leaf 6 with its supporting bar 7 is elevated, the lever 20 is caused to turn clockwise, as viewed in Figs. 2 and 3, on its axis 21—21', by a piece of spring steel 19 between the lever and the plate 11 of the bracket. Spring 19 may be looped as shown in Fig. 2 so that it is supported on a finger 18 struck out from the main plate 11. One leg of the spring bears against the plate 11 and the other, against the lever.

As the extension leaf 6 is raised to the position shown in Fig. 3, spring 19—which has been compressed by the forward or leftward tilt of the lever, Fig. 2—causes a clockwise movement of the lever, the ledge 22 of which comes into underlying relation to the supporting bar 7, as shown in Fig. 3. The ledge 22 itself may serve to support bar 7 to hold leaf 6 flush with table 1. I prefer, however, to implement the ledge with bolt 8 and to rest the bar 7 on the smooth rounded end 8r of the bolt, as shown in Fig. 3. The bolt is threaded in the lever ledge 23, as already described, so that it may be adjusted to vary the distance between its supporting end 8r and the underside of the table 1. In this way, the bolts of the two fixtures associated with the pair of supporting rods of the extension leaf may be adjusted relative to each other to bring the leaf flush with the table top in spite of a warped condition in the leaf or a mis-alignment of the table itself.

It will be seen from Fig. 3 that in the position of the lever shown in that figure, the supporting point 8r of the lever is somewhat to the right of a vertical plane X—X through the pivotal axis 21—21'. Hence a pressure upon the leaf 6 will tend to tilt the lever further clockwise, which tendency has no effect upon the lever, it being stopped as shown. There is no tendency, therefore, of the lever to be tilted, by pressure exerted on the leaf or otherwise, in a counter-clockwise direction. The device or fixture of this invention is thus an effective self-locking means, preventing inadvertent dropping of the leaf, and enabling it to support as great a weight as the structure of the table will bear.

When it is desired to retract the extensible leaf from its position shown in Fig. 3, it is first moved a slight extent forward, to the left as viewed in that figure, to bring the point 8r of the lever to the left of plane X—X, as shown in dot-and-dash lines. By a slight pressure upon the leaf, the lever may now be tilted further counterclockwise to the position shown in Fig. 2, the leaf at the same time being dropped to its lowermost position. The leaf may now be shoved rightward, see Fig. 2, to retract it under main table 1, its supporting bars riding on the rounded corner 23 of the lever.

The device or fixture of this invention may be fastened to the table in a position reversely that shown in Figs. 1, 2 and 3, i. e., with the projecting flanges 13—13' and lever 20 extending inwardly of the table (more particularly, the table rail 3) rather than outwardly as shown in Figs. 1, 2 and 3. This alternate positioning of the device is shown in Fig. 4, wherein the parts bear the same reference characters as in previous Figs. 1 to 3. It will be observed from Fig. 4 that by positioning the device on the rail 3 so that the flanges 13, 13' and lever 20 extend inwardly or rearwardly (to the right, as viewed in the figures), the parts are concealed from view, except for the flat plate 12'.

However, a difference in operation between the device positioned as in Figs. 2 and 3 and its operation when positioned as in Fig. 4 should be noted. With reference to Fig. 3 it was pointed out that, preparatory to returning the extension leaf to retracted position, it must be first pulled outwardly—to the left in Fig. 3—to move the lever from its position slightly to the right of plane X—X, to a position (dot-and-dash lines, Fig. 3) slightly to the left thereof, so that, by pressing on the extension leaf, the lever may be tilted and the leaf may be dropped to the condition of Fig. 2. Such a forward (leftward) withdrawal movement of the extended leaf would have no effect on lever 20 of Fig. 4, inasmuch as the erect position of the lever is to the left of vertical plane Y—Y through the pivotal axis 21—21'.

Nor can the leaf be moved rightward as would be necessary to tilt the lever in a clockwise direction, since this movement is blocked by the abutting of the extension leaf 6 with main table board 1.

The only possible way of releasing the device of Fig. 4 is by exerting a manual pressure on the lower end 24 of the lever to tilt it clockwise as viewed in that figure, at least to a position just to the right of plane Y—Y, so that pressure upon the extended leaf will now cause further clockwise tilting of the lever and a lowering of the leaf. Inasmuch as extension leaf tables of the type under consideration have two supporting bars upon which the extension leaf is secured, a fixture of this invention being associated with each bar, and in order that one hand may be left free to move the extension leaf, the two fixtures are connected together so that the other hand may release them in unison. For this purpose, a rod or shaft 14 is extended between the two fixtures, and conveniently journalled in the flanges 13. At each fixture, rod 14 is provided with a lug or arm 15 which overlies the arm 24 of the lever. Rod 14 extends beyond table rail 3 where it is provided with a suitable handle arm 16. By turning handle 16 clockwise as viewed in Fig. 4, the levers of both fixtures may be simultaneously turned—also clockwise—preparatory to retracting the extension leaf.

In Fig. 5 is shown a slightly modified form of my invention which embodies some of the features of the device of Figs. 2–3 and of the device shown in Fig. 4. It resembles the device of Fig. 4 in that the operative parts thereof are concealed; it resembles the device of Figs. 2–3 in that merely a slight forward movement of the extended leaf is sufficient to enable the leaf to be retracted. The device of Fig. 5 differs from the device of previous Figs. 2–3–4, in that the use of a spring is dispensed with.

The lever 40, pivoted at 31 on the side flanges 33' 33 of bracket 30, is shaped somewhat differently from that of lever 20 of previous figures, for a number of reasons, one of which is to position the adjustable bolt 8 to the right or rearwardly of the plane Z—Z through pivotal axis 31. Furthermore, the pivotal axis 31 is so located relative to the bracket that the lever may tilt counterclockwise, as viewed in Fig. 5, the upper portion of the lever clearing in the rail notch 3n. The lower end 44 of the lever is counter-weighted, for a reason soon apparent.

The lever is shown in Fig. 5 in a substantially erect position, supporting the extension leaf in extended, raised condition. Preparatory to retracting the leaf, it is pulled forward a slight extent to a position just to the left or forward of plane Z—Z, so that pressure exerted downwardly on the leaf will cause a tilting of the lever to the dot-and-dash position shown in Fig. 5, the leaf at the same time dropping to lowermost position, with its supporting rod resting on portion 43 of the lever, in which position the leaf may be retracted to underlie the main table 1. The bolt 8, upon which the supporting bar 7 rests, as in the device of previous figures, is adjustably held in a tapped hole, at the upper end of the lever. In order that it may be reached for adjustment, a passage 45 is provided in the lever for a screwdriver.

The leaf is extended in the manner explained in connection with the device of Figs. 2 and 3, namely, by simply pulling the leaf outwardly until it clears the main table board and is raised upwardly. Thereupon, lever 40, which during the withdrawal movement is in the dot-and-dash position, Fig. 5, turns clockwise as viewed in the figure—impelled by the counterweighted end of the lever—to the substantially erect position, Fig. 5, supporting the leaf in raised position.

I claim:

1. A fixture for a table of the type which includes a main board, an extensible leaf having a supporting bar, and side rails dropped to permit the extensible leaf to be slid under the main board and notched for the said supporting bar, said fixture comprising, in combination, a bracket fastened to the said table rail at its said notch, and a lever pivotally mounted in the said bracket, the upper end of the said lever underlying the said supporting bar of the extensible leaf, the said lever being tiltable from an inclined position one side of a vertical plane through the said pivotal axis affording sufficient clearance between the notched rail and the underside of the main table board for retracting the extensible leaf and its said supporting bar, to a substantially erect position in which the said upper end of the lever abuts the supporting bar to maintain the extended leaf flush with the main table board, the second mentioned position being to the other side of the said vertical plane through the pivotal axis and the said bracket being adapted to stop the lever in the second mentioned position, whereby pressure exerted upon the extended leaf has no tendency to lower the leaf.

2. A fixture for a table of the type which includes a main board, an extensible leaf having a supporting bar, and side rails dropped to permit the extensible leaf to be slid under the main board and notched for the said supporting bar, said fixture comprising, in combination, a bracket having a hook-like extension fitting over the said side rail at its said notch to hold the fixture in place, a portion of the said extension being seated in the notch to present a wearing plate to the said supporting bar, and a lever pivotally mounted in the said bracket, the upper end of the lever being bent to present a smooth, rounded corner and a short normally-directed ledge, and provided with a short bolt threadedly held in the said ledge, the lever being tiltable from an inclined position with its said rounded corner presenting a wearing surface to the said supporting bar and affording sufficient clearance beneath the main table board for retracting the said extensible leaf and its said supporting bar, to a substantially erect position in which the said bolt abuts the supporting bar, and the said bolt being adjustable in the said ledge, to maintain the extended leaf flush with the main table board.

3. A fixture for a table of the type which includes a main board, an extensible leaf having a supporting bar, and side rails dropped to permit the extensible leaf to be slid under the main board and notched for the said supporting bar, said fixture comprising, in combination, a bracket fastened to the said table rail at its said notch, and a lever pivotally mounted in the said bracket to underlie the said supporting bar of the extensible leaf and having an upper end and a lower portion, and a spring interposed between the said bracket and the said lower portion of the said lever, the said lever being tiltable from an inclined position compressing the said spring and affording sufficient clearance between the notched rail and the undeside of the main table board for retracting the extensible leaf and its said sup-

porting bar, to a substantially erect position in which the said upper end of the lever abuts the supporting bar to maintain the extended leaf flush with the main table board, the said compressed spring being effective upon withdrawal of the extensible leaf, to turn the lever from the first to the second mentioned position.

4. A fixture for a table of the type which includes a main board, an extensible leaf having a supporting bar, and side rails dropped to permit the extensible leaf to be slid under the main board and notched for the said supporting bar, said fixtue comprising, in combination, a bracket fastened to the said table rail at its said notch, and a lever pivotally mounted in the said bracket with its upper end underlying the said supporting bar of the extensible leaf and tiltable from an inclined position rearwardly of a vertical plane through the said pivotal axis affording sufficient clearance between the notched rail and the underside of the main table board for retracting the extensible leaf and its said supporting bar, to a substantially erect position in which the said upper end of the lever abuts the supporting bar to maintain the extended leaf flush with the main table board, the second mentioned position being forwardly of the said vertical plane through the pivotal axis, the lower end of the lever serving as a manipulative member for tilting the lever from the second said position to a position slightly rearward of the said plane, preparatory to retracting the leaf.

5. A fixture for a table of the type which includes a main board, an extensible leaf having a supporting bar, and side rails dropped to permit the extensible leaf to be slid under the main board and notched for the said supporting bar, said fixture comprising, in combination, a bracket fastened to the said table rail at its said notch, and a lever pivotally mounted in the said bracket with its upper end underlying the said supporting bar of the extensible leaf and tiltable from an inclined position affording sufficient clearance between the notched rail and the underside of the main table board for retracting the extensible leaf and its said supporting bar, to a substantially erect position in which the said upper end of the lever abuts the supporting bar to maintain the extended leaf flush with the main table board, the lower end of the lever being counterweighted to tilt the lever from the first to the second mentioned position when the leaf is extended.

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