Jan. 10, 1928.

1,655,798

J. A. RICHARDS

ADJUSTABLE TABLE

Filed Dec. 28, 1925

2 Sheets-Sheet 1

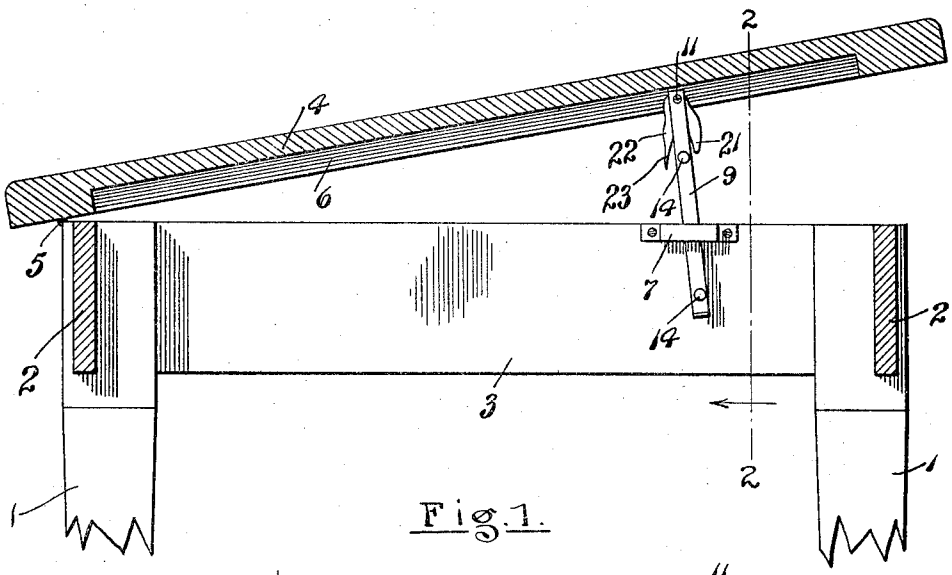


Fig. 1.

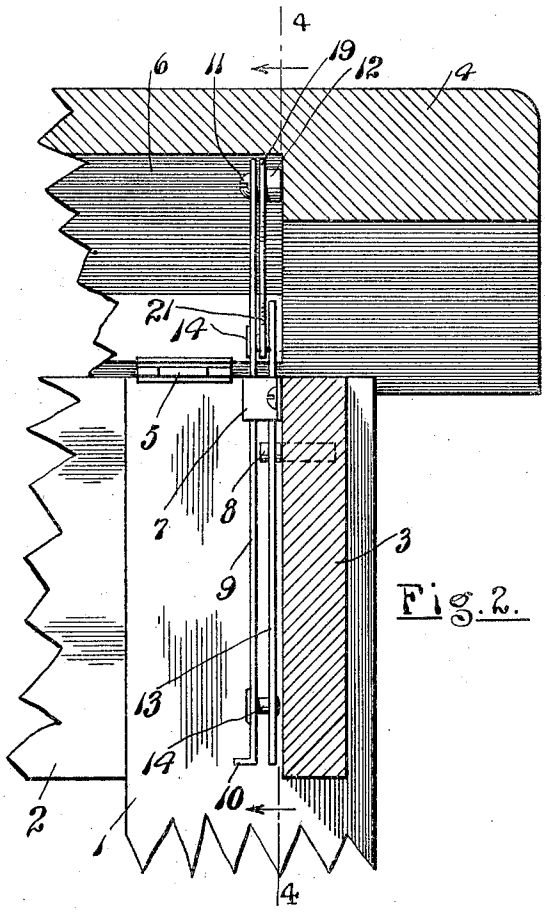


Fig. 2.

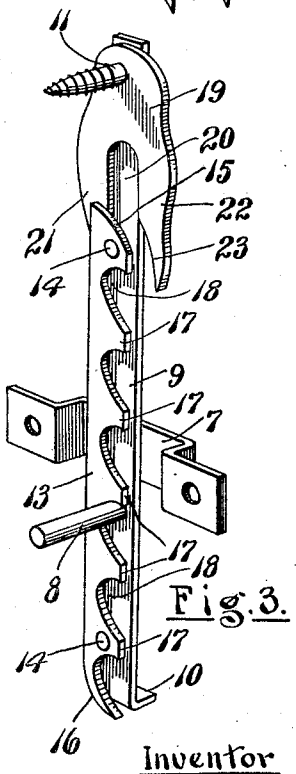


Fig. 3.

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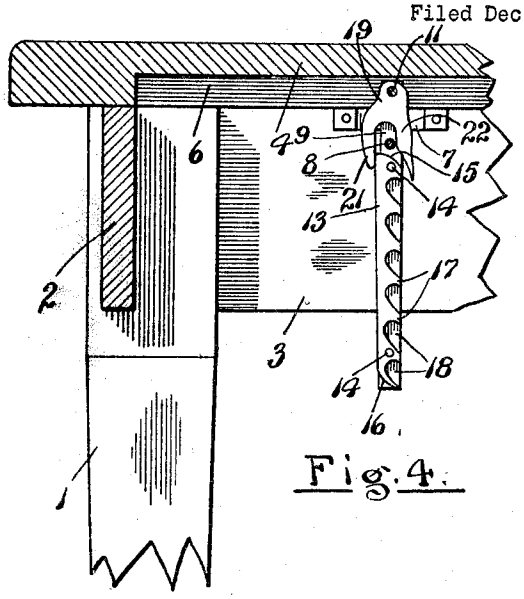


Fig. 4.

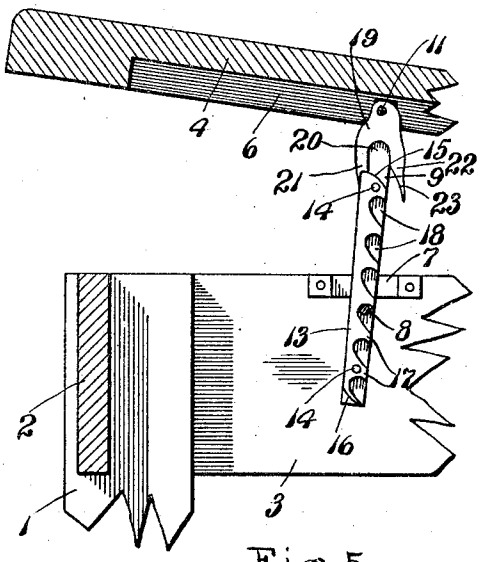


Fig. 5.

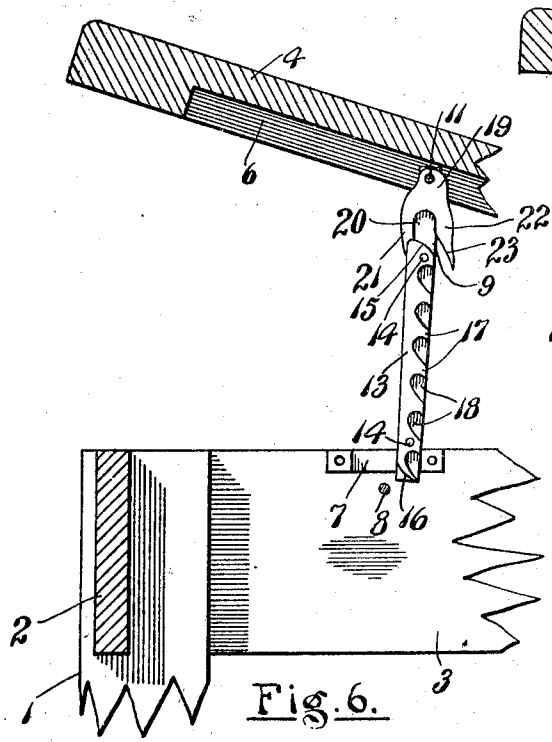


Fig. 6.

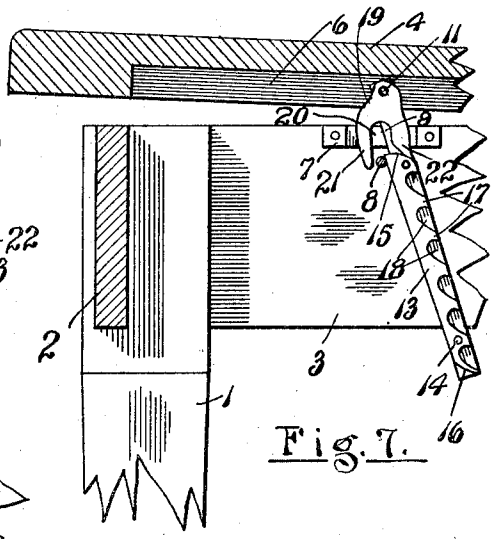


Fig. 7.

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE TABLE.

Application filed December 28, 1925. Serial No. 77,929.

This invention relates to an adjustable table wherein a top hinged adjacent one edge to an underframe for the table may be adjusted or tilted to different angular positions.

It is a primary object and purpose of the present invention to provide means for effecting this adjustment and for holding the table top securely in any position to which it may be adjusted, together with means for readily and easily releasing the top so that it may be returned to normal horizontal position, this, without doing more than engaging the edge of the table top opposite that adjacent which it is hinged and moving it up and down in accordance with the law governing the mechanism which I have produced for this purpose.

A further object of the invention is to provide adjusting devices for the tilting table top which are simple in construction, readily and easily made and assembled and which are very durable and efficient in service; and to further provide means to insure that they will operate at all times irrespective of how rapidly or roughly the table top is manually operated to effect a change in position.

To these ends the construction illustrated in the accompanying drawings has been produced, in which drawings,

Fig. 1 is a transverse vertical section through the upper part of a table made in accordance with my invention, the top being shown tilted at an angle to the horizontal.

Fig. 2 is an enlarged fragmentary vertical section substantially on the plane of line 2—2 of Fig. 1 and looking in the direction indicated by the arrow.

Fig. 3 is a somewhat enlarged perspective view of the tilting mechanism, two of which are interposed between the table top and frame, the view of said mechanism being taken from an outer side thereof.

Fig. 4 is a fragmentary vertical section on the plane of line 4—4 of Fig. 2, and looking in the direction indicated by the arrows, the top being in lower horizontal position.

Fig. 5 is a like view with the top tilted to an intermediate position between its horizontal position, and its extreme tilted position.

Fig. 6 is a similar view and section showing the top raised to its highest point and above any point at which it may be held in tilted position, this being an operation which is performed when it is desired to change from any tilted position back to lower horizontal position, and,

Fig. 7 is a similar sectional view showing the top approaching lower horizontal position when it has been changed from any tilted position back to horizontal position.

Like reference characters refer to like parts in the different figures in the drawings.

The table is supported by the legs 1 secured to the corners of a lower supporting frame having spaced apart parallel sides 2 and spaced apart parallel ends 3. The top 4 is hingedly connected at 5 to one side of the frame and adjacent one side edge of the top. This top on its under side is formed to have a shallow recess 6 covering the major portion of its under side, there being downwardly extending flanges of shallow depth at each side and end of the top, as shown, which are around the recess 6. Connected to the inner side of each end 3 of the frame and toward the side 2 of the frame opposite that at which the top is hinged, is a metal stirrup 7 and a short distance below this stirrup a pin 8 is secured to each end 3, the same projecting inwardly for a short distance.

The adjusting and supporting devices for the table top, of which there are two, each include a bar 9 of flat metal at the lower end of which a flange or lip 10 is turned inwardly at right angles. A screw 11 passes through the upper end of the bar 9 and into the downwardly extending flange of the top located around the recess 6, and a spacing collar 12 is placed around this screw so as to space the bar 9 a short distance from the inner side of its adjacent end 3 of the table supporting frame.

Connected to and spaced apart from the bar 9 is a ratchet bar 13. This is located outside of the bar 9 in parallelism therewith and connected thereto by suitable rivets or studs 14 on which the necessary spacing sleeves or collars are located. The bar 13 is located very close to the inner side of the adjacent end 3 of the table supporting frame and at its upper end terminates a distance short of the upper end of bar 9 so that its upper end is located, when the table top is in horizontal position, below the adjacent pin 8, as fully shown in Fig. 4. The upper end of the bar 13 has a curved end 16. One edge of the bar 13 is formed with a series of spaced apart teeth 17 separated by recesses 18 as best shown in Fig. 3.

A member 19 of flat metal is suspended from each screw 11, the screw passing through the upper end of the member and said member lying in a plane between the planes of bars 9 and 13 so that the lower portion of the member may pass between the said bars. This member 19 is vertically slotted as indicated at 20 from its lower end upwardly for a distance to provide two depending fingers 21 and 22 the latter of which at its lower portion and at its inner edge has a portion cut away and is formed with a curved edge 23 as best shown in Fig. 3.

With the top in lower horizontal position as shown in Fig. 4, when the free side edge of the table is grasped to elevate the same to a position such as shown in Fig. 1 or Fig. 5, bars 9 and 13 at each side of the table are elevated and the curved ends 15 of the said bars 13 come against the pins 8. This causes the attachment comprising the connected bars 9 and 13 to swing to the left (referring to Fig. 4) so that bars 13 may pass by the pins 8 until the first notch 18 is reached; and if a continued upward movement is given to the table top, the notches 18 will successively pass by the pins 8 until a desired point is reached, whereupon the pins will engage in certain notches 8, as shown in Fig. 5, thereby holding the top in an elevated and tilted position. The tendency of the fixtures is to swing on the axis of screws 11 to a vertical position so that this insures the proper engagement of the pins 8 in the notches of the bars 13. The table is thus securely held and supported in upper tilted position and will remain in such position until it is either further elevated to succeeding notches or is operated to return it to lower position.

In the operation of returning the top to lower horizontal position, the free side edge of the table must be grasped and the same lifted to its extreme upper position shown in Fig. 6. The bars 9 and 13 extending downwardly through the stirrup 7 serve to stop the upward elevation of the top in the position shown in Fig. 6, by reason of engagement of the lips 10 on bars 9 against the under edges of the stirrups 7. As soon as the lower ends of bars 13 pass by the pins 8 the bars will swing so as to assume vertical position, as shown in Fig. 6, and so that the pin 8 will be against the smooth edge of the bar 13 instead of engaging with the ratchet or notched edge thereof when the top is lowered. That is, with the lowering of the top from the position shown in Fig. 6 to that shown in Fig. 7 the bars 13 will ride against the pins 8 at their smooth edges until the upper ends of said bars are reached whereupon the fixture will swing from the position shown in Fig. 7 to that shown in Fig. 4.

It will be noted that with this downward movement of the top and attached supporting fixtures, the bars 9 and 13 swing a considerable distance to one side of the vertical end thereby providing for the entrance of the pins 8 into the slots 20 of the members 19 as shown in Fig. 7. The members 19 with the depending fingers 21 and 22 serve as an insurance that the pivoted fixtures consisting of the connected bars 9 and 13 shall not swing too far to one side should the table be operated violently and further the slots 20 act to receive the pins 8 and insure that the operation of the fixture shall be automatic and sure at all times. That part of each finger 21 cut away therefrom at its lower end is removed to permit the necessary swinging of the fixture as shown in Fig. 7 and at the same time leave an opening sufficient for the reception of the pins 8. The construction disclosed is relatively simple, is sure and automatic in its operation, is durable and efficient and has proved to be especially practical in actual operation. Various changes in minor detail of structure may be had without departing from the invention defined in the appended claims, and I consider myself entitled to all forms of structure which come within the scope of said claims defining the invention.

I claim:

1. In combination, in a table an undersupporting frame, a table top hinged to said frame adjacent one of its edges, pins extending inwardly from the frame, a stirrup attached to the frame above each pin, a bar pivotally connected to the top at each end thereof and extending downwardly through each stirrup, a second bar having a plurality of spaced apart ratchet teeth at one edge, spaced from and connected to the first bar and having its upper end located a distance from the upper end of the first bar, each of said second ratchet bars being located at the outer side of its associated first bar and adapted to engage with the adjacent pin.

2. A construction containing the elements in combination defined in claim 1, each of said ratchet bars at its upper end being curved downwardly toward said ratchet teeth and at its lower end being likewise curved downwardly toward said ratchet teeth, substantially as and for purposes described.

3. In a table, a rectangular supporting frame, a table top hingedly connected adjacent one side edge to the frame at one side thereof, a stirrup secured to each end of the frame and near its upper edge toward the opposite side of the frame, a pin connected to each end of the frame a short distance below each stirrup, a fixture connected to and adjacent each end of the table top, comprising a flat bar pivotally connected at its upper end to the top and extending downwardly through said stirrup, said bar at its

lower end having an inturned lip, and a second bar disposed at the outer side of the first bar spaced a short distance therefrom and rigidly connected thereto, said second bar at its inner edge being formed with a plurality of spaced ratchet teeth with recesses between the teeth in which said pins are adapted to be received and having its outer edge plain and smooth, the upper end of said second bar being located a distance below the upper end of the first bar.

4. A construction containing the elements in combination defined in claim 1, combined with a member suspended at its upper end from the pivot which connects said first bar to the table top, said member lying in a plane between the first and second bars and being vertically slotted upwardly from its lower end to a point a distance above the upper end of the second ratchet bar.

5. In combination, a table having an under frame and a top hinged at one edge to said under frame, a pin projecting from said under frame, and a ratchet bar having one smooth edge and one ratchet toothed edge, said ratchet bar being pivotally attached to said top and adapted to swing relative to said pin when the top is at its extreme upper or lower position to engage either one of said edges of the ratchet bar with the pin, said pivotal connection being located so that gravity will swing the ratchet bar to engage its ratchet toothed edge with the pin when the table is in its lowermost position and will swing the ratchet bar so that its smooth edge will be engaged with the pin when the top is in its highest position.

In testimony whereof I affix my signature.

JAMES A. RICHARDS.