Dec. 5, 1933. E. W. NORTH 1,937,584

TABLE LOCK

Filed April 17, 1931 3 Sheets-Sheet 1

Fig. 1.

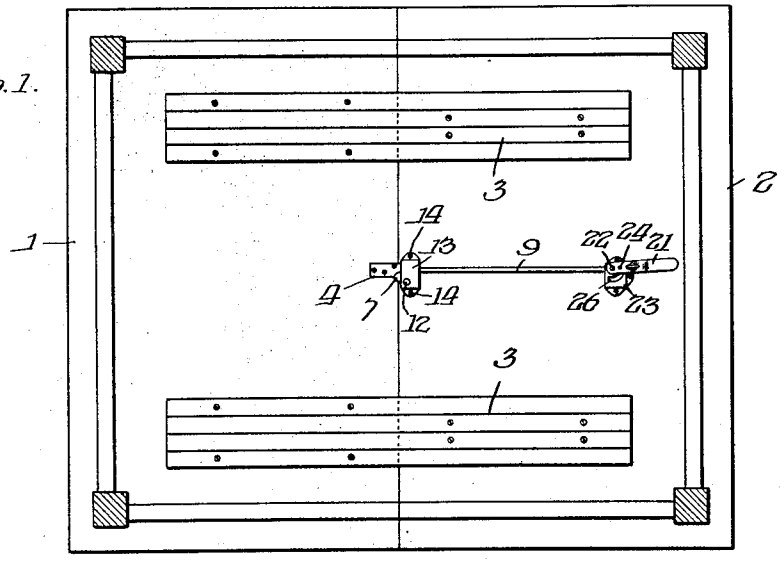
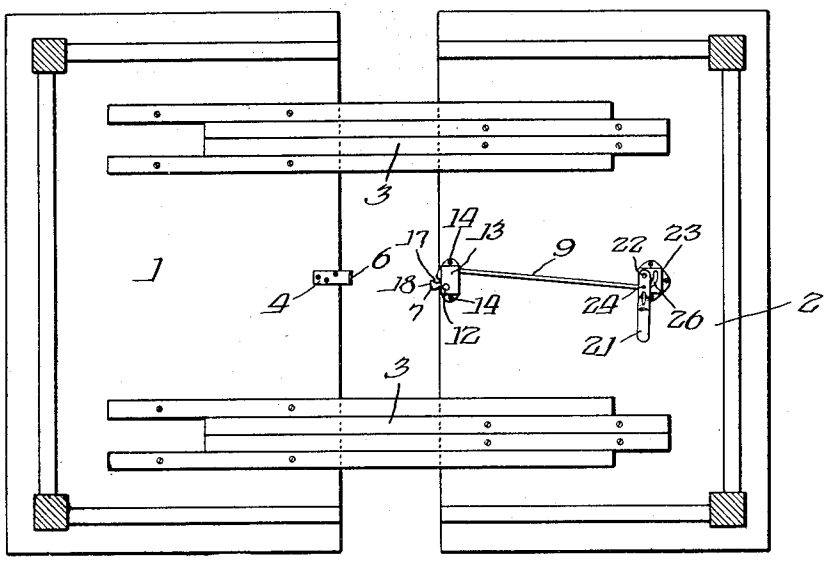


Fig. 2.



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TABLE LOCK

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Fig. 3.

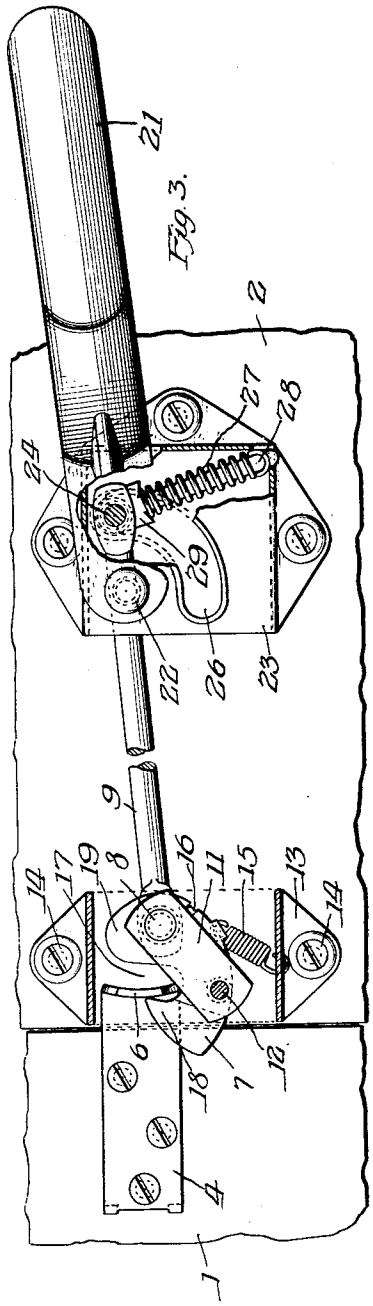
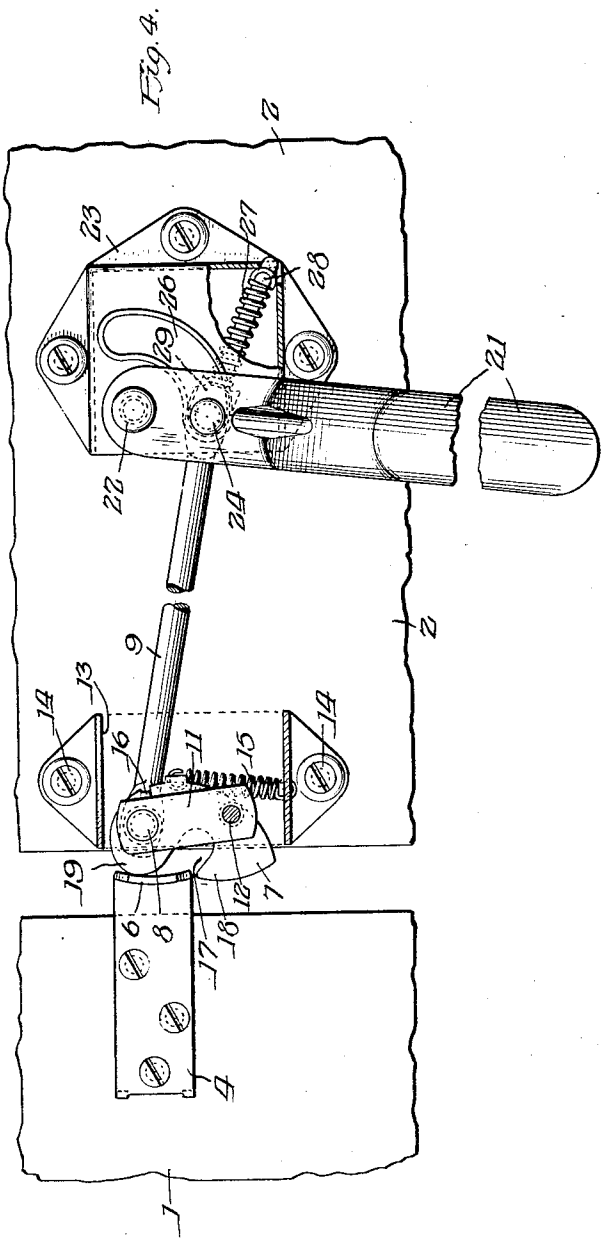


Fig. 4.



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TABLE LOCK

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Fig. 5.

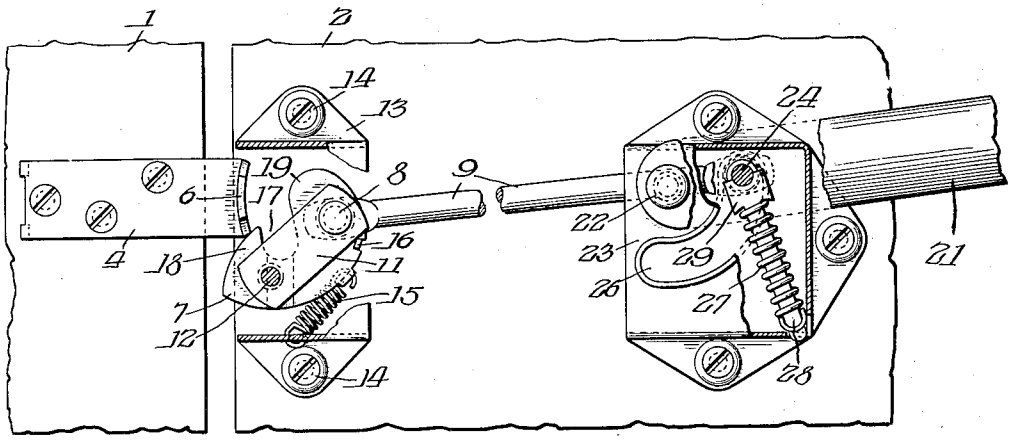


Fig. 6.

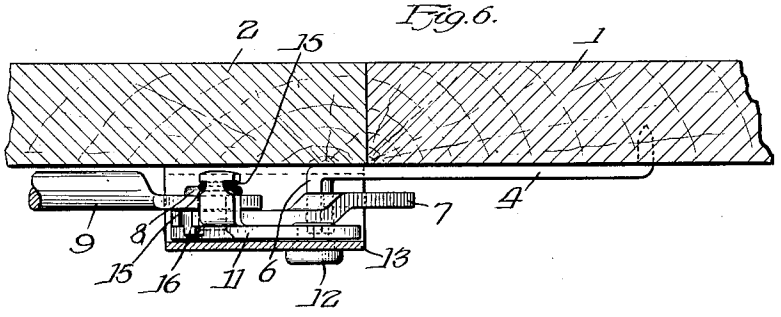
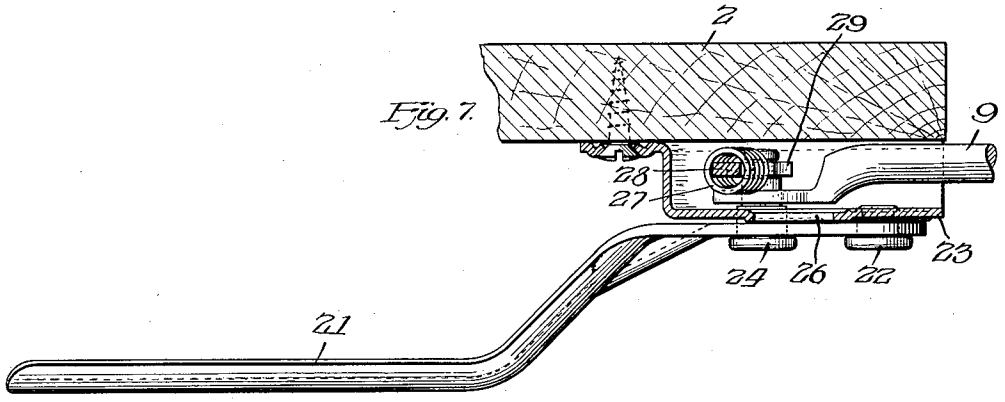


Fig. 7.



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UNITED STATES PATENT OFFICE

1,937,584

TABLE LOCK

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Application April 17, 1931. Serial No. 530,866

12 Claims. (Cl. 45—9)

This invention relates to fastening devices in general and more particularly to such a device especially well adapted for use in securing together two sections of a separable table top.

Devices of this character are usually manufactured to meet strong competition in price and it has, therefore, been considered necessary in order to manufacture the devices economically, to make them in the simplest form and eliminate many desirable features that would be incorporated if the cost of the device was not of prime importance.

It is the purpose of this invention to provide a fastening device embodying novel refinements not heretofore present in devices of this character or which have not been incorporated due to attempts at economical manufacture.

For example, table top latches heretofore have not been fully automatically operable in any sense, that is, it has been necessary to manually operate the latch to some extent. It is within the contemplation of this invention to provide a latch which is fully automatic and which will automatically assume latched position when the sections of the table top are closed regardless of the position in which the latch may have been left, due to prior operations, and which will permit closing of the table sections regardless of the position of the latch, and to combine such automatic features into a latch which will positively separate the table sections when moved into unlatched position.

Other and further objects of this invention, such as the provision of means for positively closing the latch members regardless of warping of table sections, and their corresponding advantages will be apparent as the same becomes better understood from an examination of the following description given in connection with the accompanying drawings, wherein:

Fig. 1 is an under plan section of a table having a latching device embodying the principles of this invention attached thereto, the table being shown in closed position,

Fig. 2 is a view similar to Fig. 1 illustrating the table in open position,

Fig. 3 is an under plan elevation of a latching device shown in latched position,

Fig. 4 is a view similar to Fig. 3 illustrating the latching mechanism in unlatched or open position,

Fig. 5 is a view similar to Fig. 3 illustrating one of the automatic features and the latch in the act of being locked,

Fig. 6 is a partial side elevation of the latch in closed position, and

Fig. 7 is a partial side elevation of a handle actuating mechanism.

Referring more particularly to the drawings, the table top is illustrated as having two separable sections 1 and 2 slidable upon guides 3. The table section 1 is provided with a latch keeper or strike 4 along one edge, the end of which projects beyond the edge of the section and terminates in the angular tongue 6 adapted to be engaged by the latching mechanisms secured to section 2 of the table top.

The latching mechanism comprises a latch member or hook 7 pivotally connected by a pin 8 to one end of a pull rod 9 which pin also connects one end of a link 11 to the rod 9. The other end of link 11 is pivotally secured by a pin 12 to a housing or bracket 13, the latter being fastened adjacent the edge of the table section 2 by screws or the like 14. A spring 15 having one end secured to hook 7 and the other to housing 13 maintains hook 7 in extended position but allows the hook to yield into retracted position independently of the pull rod. Latch member 7 is also provided with a tongue 16 struck outwardly therefrom and which engages one edge of link 11 slightly distant from pin 8. This tongue limits the pivotal movement of the hook 7 relatively to the link in one direction and constitutes a positive driving connection for the hook through rod 9 in the other direction whereby counterclockwise movement of link 11 about its pivot 12 will positively unlatch hook 7 against the action of spring 15. The hook member 7 is formed with a slot 17 to engage tongue 6 and upon one side of which lies a hook portion 18 arranged to engage one side of the tongue 6 when in locked position and upon the other side of which lies a projecting portion 19 arranged to engage the other side of tongue 6 to separate the leaves on unlatching movement of the hook.

It follows that upon movements of rod 9, limited by link 11, latch member 7 will be swung about pivot 8 in a clockwise direction to cause the member to take a latched position or in a counterclockwise direction to cause the latch to take an unlatched position.

In order to actuate rod 9 a handle 21 is provided which is pivoted at one end 22 to a casing 23, the latter being secured to the underside of table section 2 at a point within easy operating reach. It is understood, of course, that rod 9 is of sufficient length to permit the casing to be secured at any desired location. The outer

end of rod 9 is pivotally secured to handle 21 intermediate its ends by a pin 24 which extends into an arcuate slot 26 formed in the top of casing 23 to limit the movements of the handle. These limiting positions determine the latched and unlatched positions. In moving from unlatched to latched position pin 24 passes beyond a line joining pivot pins 8 and 22 and tension upon rod 9 will therefore tend to maintain the latch locked.

In order to maintain the handle in either one of its two extreme positions a compression spring 27 is provided which surrounds a rod 28 having a head portion 29 which engages pin 24, spring 27 being under compression between head 29 and an interior corner of the casing. This corner of the casing is provided with an aperture to permit the free end of rod 28 to project therethrough during the movement of handle 21 from one extreme position to the other.

It follows from the above that as handle 21 is moved about its pivot 22 within its permissible arcuate movement, determined by arcuate slot 26, spring 27 will impart a snap action to the handle so that the handle will always be in either one extreme position or the other.

The foregoing latch mechanism involves several novel and desirable features among which are the following: If the handle 21 is left in open or unlatched position after the table sections have been separated (Fig. 4), and the table sections are pushed together with the handle and associated mechanism in this position, tongue 6 will strike the projecting portion 19 of hook 7 and rotate hook 7 about pin 12 as an axis and push rod 9 and consequently handle 21 toward latched positon. As soon as handle 21 has passed its central position spring 27 will throw the handle and latching mechanism into fully latched position. On the other hand, should the table sections be separated and the latch mechanism returned to latched position, and an attempt is made to close the table sections, tongue 6 will engage the outer curved surface of the hook portion 18 and swing hook 17 about pin 8 as an axis against the action of spring 15. Hook 7 will yield until tongue 6 has reached its open position (Fig. 5) after which the hook will snap into closed position in engagement with the rear surface of tongue 6 to force the same tightly into closed position.

It is also apparent that should the table sections be slightly warped or the dowel pins swollen or misaligned slightly, the positive action of the hook upon the keeper will permit forcing the table sections together by manipulation of the operating handle.

It will be appreciated that the foregoing features have been incorporated in combination with a latching member which not only serves to secure the table sections tightly together but which also functions as a camming means to positively separate the table sections upon unlatching movement thereof.

Other inherent and novel advantages will be apparent from the foregoing description by those skilled in the art to whom it will also be apparent that slight changes may be made in the details of construction without departing from the spirit and scope of this invention as defined in the following claims.

I claim:

1. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to said latch member and at a point removed therefrom to a fixed pivot, said rod being pivotally attached to said member and means connected to said latch for moving the latter about its pivot independently of movements of said rod.

2. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to a fixed pin and at another point removed therefrom to said actuating rod and means connected to said latch for moving the latter about its pivot independently of movements of said rod.

3. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to a fixed pin and at another point removed therefrom to said actuating rod, said rod being connected to said latch member and means connected to said latch for moving the latter about its pivot independently of movements of said rod.

4. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to a fixed pin and at another point removed therefrom to said actuating rod, said link also being connected to said latch member and means connected to said latch for moving the latter about its pivot independently of movements of said rod.

5. In a latching mechanism, a keeper, a latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to said latch member and at a point removed therefrom to a fixed pivot, said rod being pivotally attached to said link at a point removed from said fixed pivot, and means for urging said latch member in one direction.

6. In a latching mechanism, a keeper, a latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to said latch member and at a point removed therefrom to a fixed pivot, said rod being pivotally attached to said link at a point removed from said fixed pivot, and resilient means for urging said latch member in one direction.

7. In a latching mechanism, a keeper, a latch member arranged to engage said keeper, an actuating rod for said member, a link pivoted at one point to said latch member and at a point removed therefrom to a fixed pivot, said rod being pivotally attached to said link at a point removed from said fixed pivot, and means permanently associated with said mechanism for imparting a snap action to said rod.

8. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper, an actuating rod for said latch member, said latch member being connected to said rod for movements therewith and for independent movements relatively thereto, and resilient means connected to said rod for imparting a snap action to said rod.

9. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper, an actuating rod for said latch member, said latch member being connected to said rod for movements therewith and for independent movements relatively thereto, means for resisting said independent movements, and means for imparting a snap action to said rod.

10. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said

keeper to selectively draw said keeper thereto and positively force said keeper therefrom when rotated in opposite directions, an actuating member for moving said latch member into latched and unlatched position, and a spring acting upon said member for imparting a snap action to said actuating member.

11. In a latching mechanism, a keeper, a pivoted latch member arranged to engage said keeper to selectively draw said keeper thereto and positively force said keeper therefrom when rotated in opposite directions, said latch member being mounted for bodily movement about a pivot lying without the member and for pivotal movement about a pivot within said member, an actuating member for moving said latch member into latched and unlatched position, and a spring associated with said member for imparting a snap action to said actuating member.

12. In a latching mechanism, a keeper a pivoted latch member arranged to engage said keeper to selectively draw said keeper thereto and positively force said keeper therefrom when rotated in opposite directions, said latch member being mounted for bodily movement about a pivot lying without the member and for pivotal movement about a pivot within said member, means for resiliently resisting said latter movement, an actuating member for moving said latch member into latched and unlatched position, and resilient means permanently associated with said member for imparting a snap action to said actuating member.

EDWIN W. NORTH.