

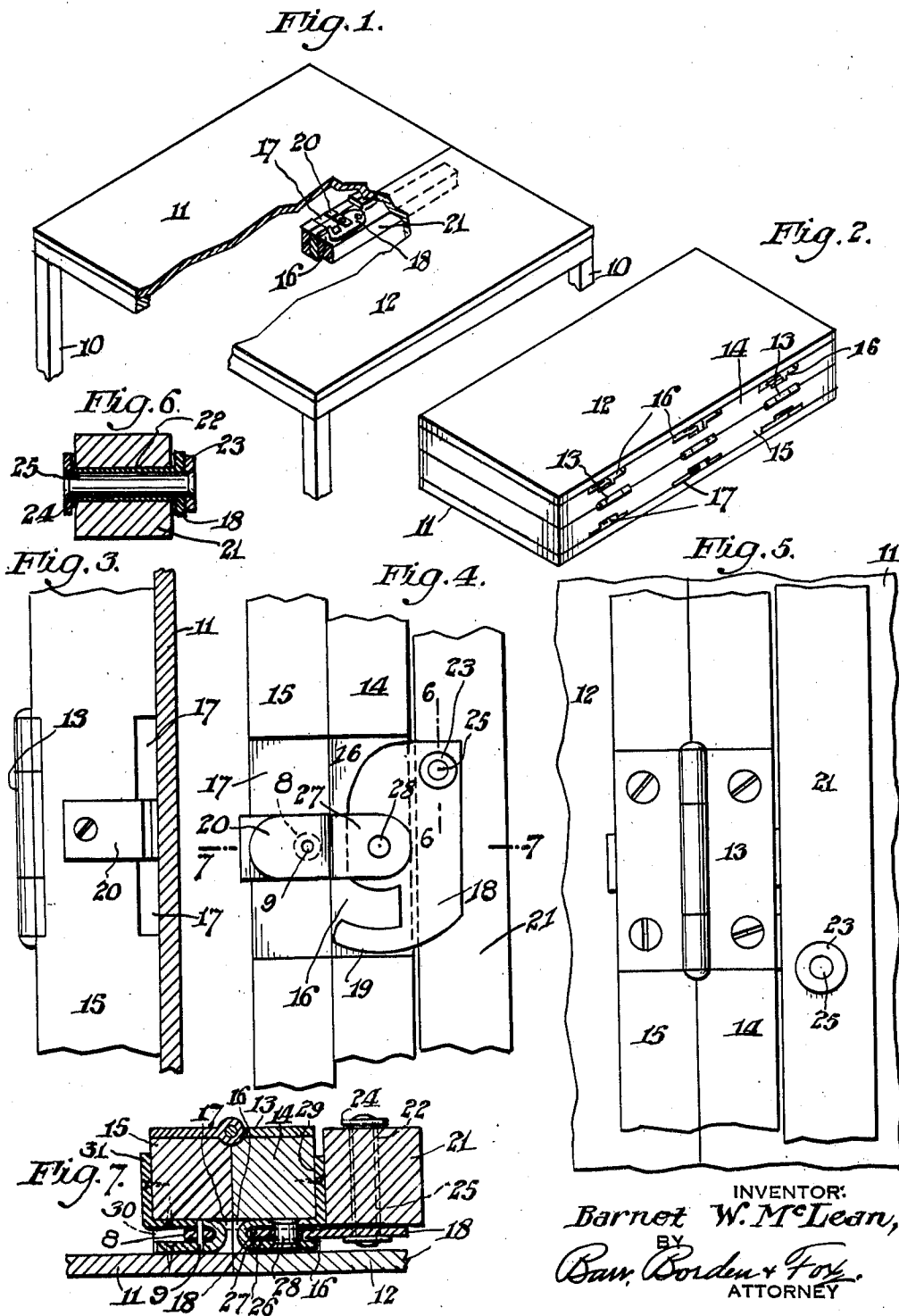
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INTERLOCKING MECHANISM FOR HINGED PARTS

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INTERLOCKING MECHANISM FOR HINGED PARTS

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The present invention relates to hinged parts and more particularly to an interlocking mechanism for retaining the parts in one position.

Some of the objects of the present invention are to provide an improved latch for securing two hinged parts together; to provide a latch mechanism wherein one hinged part can be held fixedly against the other part and temporarily locked against hinged movement; to provide a mechanism which is particularly suited to interlocking two sections of a table top together so that a substantially continuous plane supporting surface is formed; to provide an interlocking mechanism for hinged parts wherein provision is made to prevent one part sagging with respect to the other part; to provide a novel pivot means for a latching mechanism; and to provide other improvements as will hereinafter appear.

In the accompanying drawing, Fig. 1 represents a fragmentary perspective, partly broken away, of a folding table equipped with an interlocking mechanism embodying one form of the present invention; Fig. 2 represents a perspective of the table in folded condition showing the assembled position of the interlocking mechanism; Fig. 3 represents a detail in side elevation of keeper and rail assembly; Fig. 4 represents a detail in plan of the latch and keeper assembly, the table top being removed to expose these parts; Fig. 5 represents a detail bottom plan of Fig. 4; Fig. 6 represents a section on line 6—6 of Fig. 4; and Fig. 7 represents a section on line 7—7 of Fig. 4.

Referring to the drawing, one form of the present invention is shown by way of example as applied to a table having legs 10 suitably hinged to the table top in order to be folded out of the way within the confines of the frame of the top. The top of the table is formed by two plane sections 11 and 12 which are connected for folding by means of hinges 13, the arrangement being such that when the legs 10 are folded against the sections, the latter can be swung about the hinges so that one section is juxtaposed with respect to the other in parallel spaced relation. When thus folded and held by any suitable fastening means the folded parts form a box in which table cloths or other articles can be stored, while the table is not in use.

The device of the present invention is for use when the sections 11 and 12 are swung to table forming position, in order to not only lock the sections together firmly and rigidly, but also be easy of access, simple to operate and, as far as

possible, concealed from view. For this purpose the meeting transverse rails 14 and 15 of the respective sections are provided respectively with recesses 16 and 17, so located and positioned that each forms a continuation of the other when the rails 14 and 15 are in abutting relation to bring the top sections into a common plane. Since the top sections are supported by the aforesaid rails it is evident that the recesses and any mechanism therein is concealed when the table is ready to use. Also, these recesses are very unobtrusive when the sections are folded back because only a narrow slot in each rail is even then visible. Another important essential resides in the fact that no part of the interlocking mechanism protrudes when the hinged parts are folded or in closed position.

For locking the rails 14 and 15 together, a latch 18 is mounted in the recess 16 for engagement with a keeper 20 in the opposite recess 17. As shown, the latch 18 is formed from thin flat metal of elongated shape, one portion of which is pivoted in the recess 16 and terminates in a hook 19, while a side extension projects laterally from the rail 14 for pivotal connection with an actuator bar 21. This pivotal connection transmits motion to the latch 18 when the actuator bar 21 is moved and consists of a sleeve 22 which passes through the bar 21 and through the latch and projects sufficiently at both ends to provide clearances respectively between the latch 18 and the bar 21, and a washer 24 and the bar 21. A rivet 25 passes through the bushing 22 and is headed over on washers 23 and 24 in the usual manner. Thus, the provided clearances prevent any binding friction between the moving parts and ensure a smooth pivotal action at all times. The pivot for the latch 18 consists of a bushing 26 interposed between the spaced sides of an anchoring member 27 and passing through the latch 18. This bushing 26 serves as a spacer between the sides of member 27 to provide clearance for the free movement of the latch, and also prevents undue mushrooming of the pivotal rivet 28 which traverses the sides of the member 27 and the bushing 26. As shown, this anchoring member 27 seats on the floor of the recess 16 and is fixed in position by an angularly disposed extension 29 which is secured or otherwise made fast to the side of the rail 14. The space in the member 27 is formed by reversely bending the member so that in effect the latch receiving portion is substantially U-shaped to allow the latch to travel

in its arcuate path when moved to its locking position.

The keeper 20 is mounted in the recess 17 in true alignment with the pivot 28 of the latch 18, and consists of a U-shaped latch receiving part seated in the recess 17 and rigidly fastened to the rail 15 by means of angular extension 31 screwed to the side of the aforesaid rail 15. Thus the keeper 20 provides a latch receiving slot 30. In this connection it should be noted that the engaging face of the hook 19 is formed on an arc having the pivot 28 as a center, while within the slot 30 there is a cooperating roller 8 mounted on a pin 9 which extends transversely of the keeper 20. Thus where the hook 19 enters the slot 30 it rolls into locking relation with the roller 8. The position of the keeper 20 is reversed with respect to the anchoring member 27 so that the two bases of the U-shaped parts are opposite each other. Since the keeper 20 is of U-shape, the sides thereof lie respectively beside the sides of the latch when the latter enters the keeper and thus prevent undesirable side to side movement of the latch while further ensuring a snug engagement.

It should be noted that the bar 21 is so elongated as to bring either end in close proximity to the side of the table when the latter is set up for use, and hence, the bar is readily accessible at all times, and can be easily reciprocated to carry out the desired control of the latch.

In connection with the latch construction it should be noted that the location of the pivots on the respective legs of the bell crank-shaped latch is such that the movement of the actuating bar 21 is a combined arcuate and linear one and hence in both of its extreme positions the angular relation of the two pivots tends to resist any improper movement of the bar 21. Thus, there is a double insurance against looseness, rattle, and untimely release of the parts.

While in the foregoing and in the accompanying claims the illustrative use of the invention is in combination with a table top formed by hinged sections, it is to be understood that various hinged parts can be connected together by the interlocking mechanism of the present invention without departing from the invention. In the specific form, here shown, there is one device of this invention used adjacent each hinge, and this is the preferred assembly since each hinge is thus braced when the parts are in either open or closed position.

Having thus described my invention, I claim:

1. The combination of an interlocking mechanism and a folding table, consisting of a table top formed of two sections arranged to abut along two opposed edges when alined in the same plane, a rail fixed to the underside of one section parallel to one of said opposed edges,

said rail having a recess covered by said section, a keeper mounted in said recess, a second rail fixed to the underside of the other section parallel to the other of said opposed edges, said second rail having a recess covered by the adjacent section and opposite said first recess, a pivot attached to said second rail to extend transversely of the second rail recess, a latch mounted on said pivot to swing to engage said keeper to lock said rails and sections together, said keeper and latch being concealed within said recess hinges interconnecting said rails on the opposite sides respectively of said rails from said recesses, and a reciprocable bar connected to said latch for operating purposes.

2. The combination of an interlocking mechanism and a folding table, consisting of a table top formed of two sections arranged to abut along two opposed edges when alined in the same plane, a rail fixed to the underside of one section parallel to one of said opposed edges, said rail having a recess covered by said section, a keeper mounted in said recess, said keeper having a curved part, a second rail fixed to the underside of the other section parallel to the other of said opposed edges, said second rail having a recess covered by the adjacent section and opposite said first recess, a pivot attached to said second rail to extend transversely of the second rail recess, a latch mounted on said pivot to swing to engage said keeper to lock said rails and sections together, said latch having a hook provided with a face formed on an arc with said pivot as a center to engage the curved part of said keeper, said keeper and latch being concealed within said recesses hinges interconnecting said rails on the opposite sides respectively of said rails from said recesses, and a reciprocable bar connected to said latch for operating purposes.

3. The combination of an interlocking mechanism and a folding table, consisting of a top formed of two sections, rails mounted on the bottom of said top and respectively adjacent to and substantially coextensive with the meeting edges of said sections, hinges interconnecting said rails for folding said sections, each rail having a recess bounded on one side by a top section, said recesses being normally juxtaposed, a latch pivoted in one rail recess, a keeper in the other rail recess for engagement by said latch to lock said sections together and with the latch and keeper substantially concealed, and a manually operable member parallel to one rail and connected to said latch for moving said latch into and out of engagement with said keeper, said member terminating in close proximity to one end of a top section.

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