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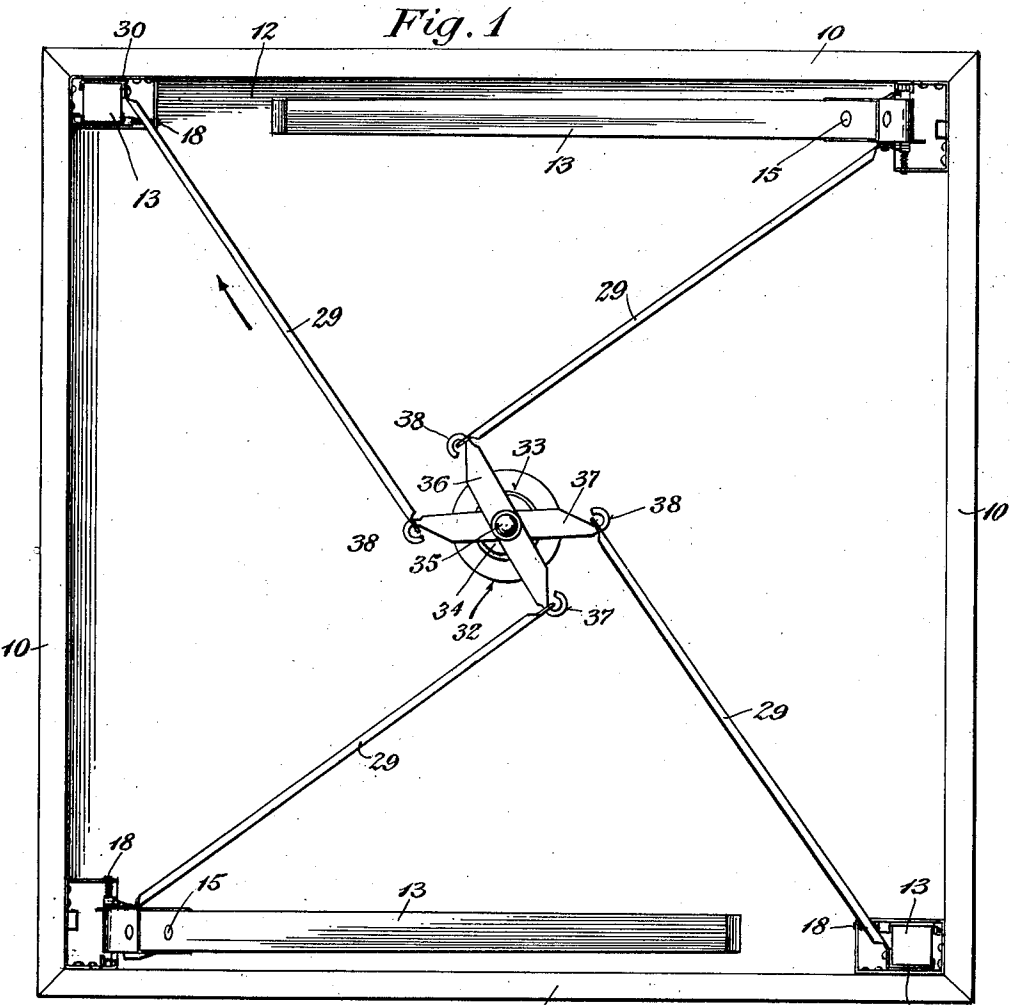
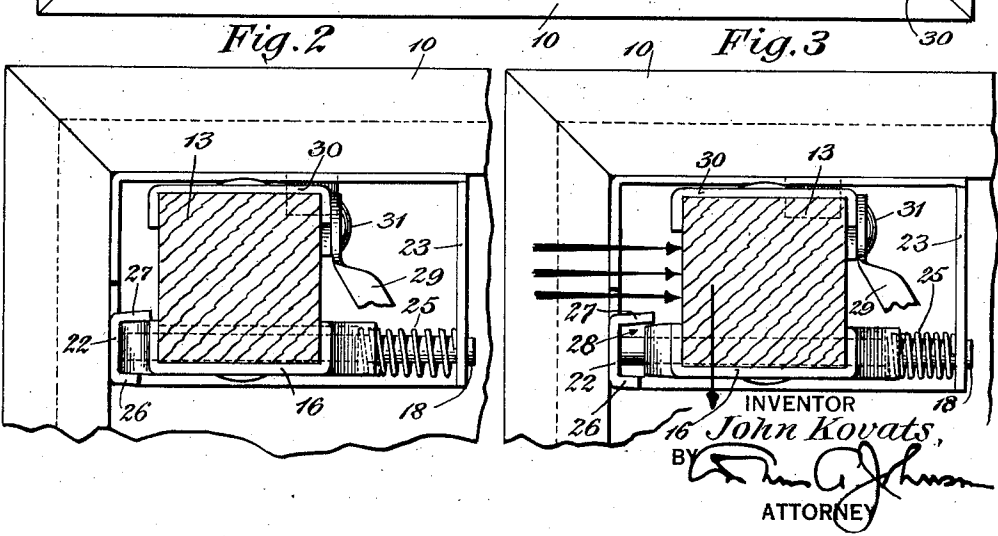
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2,215,006

FOLDING TABLE

Filed June 21, 1938

2 Sheets-Sheet 1



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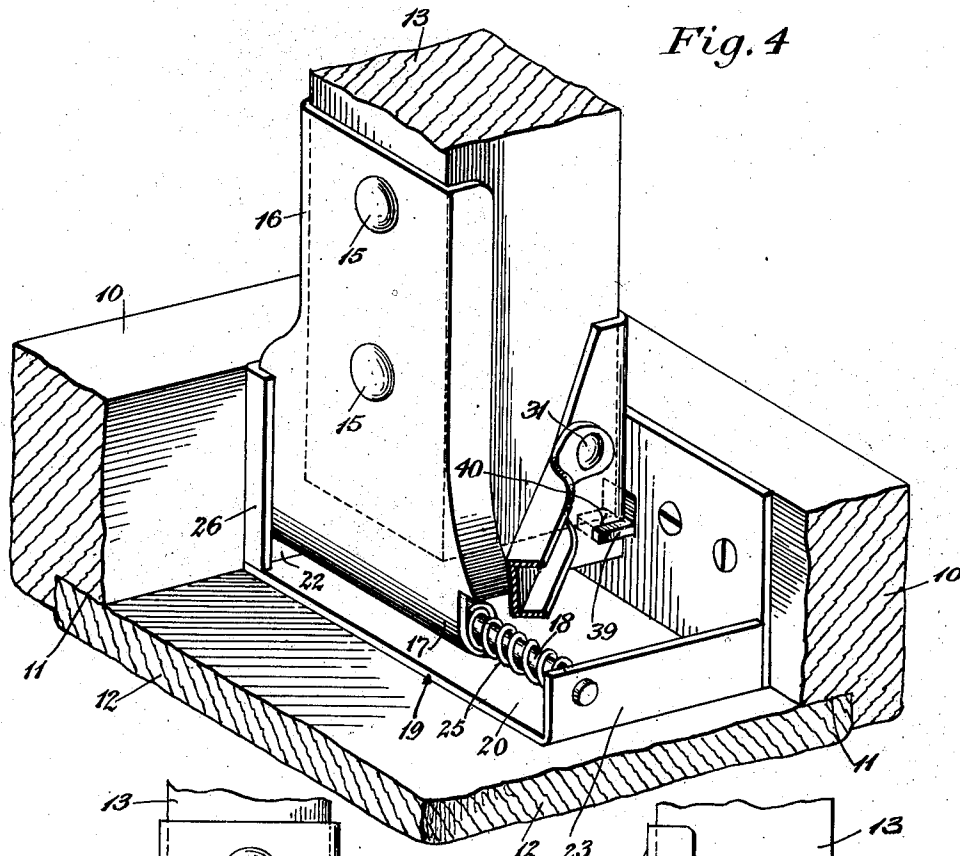
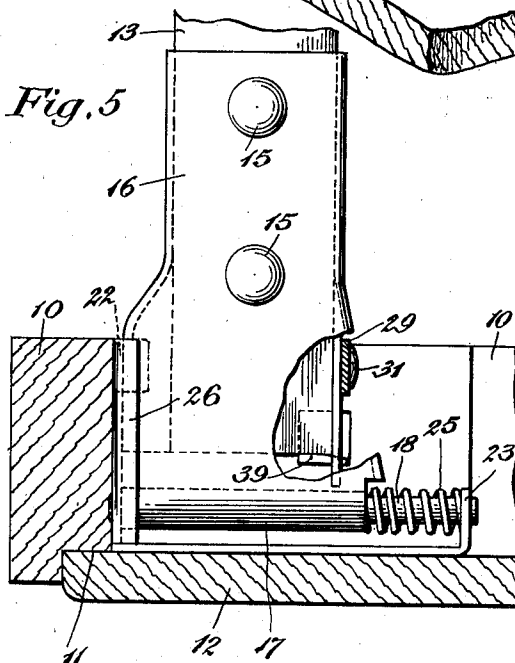
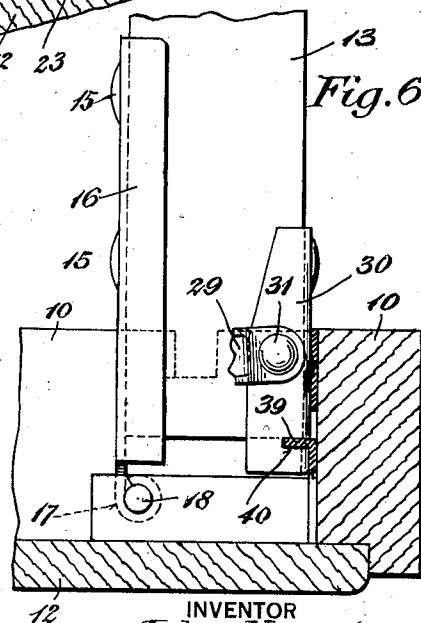
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2,215,006

FOLDING TABLE

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2 Sheets-Sheet 2



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FOLDING TABLE

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10 Claims. (Cl. 311—85)

This invention relates to folding tables and more particularly to an improved hinge connection for attaching the supporting foldable legs to the table top including cooperating means carried thereby for positively holding the legs in the fully extended position.

Heretofore, it has been customary to provide many articles of furniture, and especially card or game tables, with folding legs so that the tables, when not in use, could be folded and conveniently stored. It has been difficult, however, to devise a hinge connection which would be of such construction as to render the manipulation of the leg of the table to either folded or extended position comparatively simple and attended with little exertion, and also rigidly support the table when in use. To overcome this difficulty, some folding leg structures have been developed with locking devices to prevent movement of the legs when extended, but these prior constructions have had the disadvantage of necessitating considerable manual exertion both to lock the legs in the extended position and to unlock the same when it was desired to collapse the table for storage purposes.

Furthermore, even though the legs might be locked against accidental collapse when in the extended position, these prior constructions did not insure that the pivotal connection between the legs and table top would be immobile, and these tables in many instances were not rigid in use.

It is an object of the present invention to provide an improved hinge connection which not only serves to maintain the legs in the extended position but effectively braces the legs as well so that the table, when set up for use, is extremely rigid.

The present invention obviates the difficulties of the constructions heretofore proposed by providing a hinge support for the legs which supports the same against movement when fully extended for use. The holding means, as herein disclosed, form a part of the hinge support and are so disposed relative to the pivot pin of the hinge that the leg is held against movement by positive means acting on opposite sides of the pivot. This construction not only prevents pivotal movement of the legs, but also braces the same and insures an immobile connection between the pivoted legs and the table top. Means carried by the hinge resiliently acting against the legs, automatically move the same into engagement with the positive holding means of the hinge support as the legs approach the fully extended position, and

hold the same in engagement in such position until manually actuated to release the holding means.

The means for holding the legs in engagement with the plurality of holding means of the hinge support are identical, which permits of economy of manufacture and time in fabricating a table. Furthermore, this construction permits the plurality of holding means associated with each leg to be simultaneously released, thus simplifying the manual manipulation of the table legs when it is desired to collapse the table for the purpose of storage.

Another feature of the present invention is the provision of actuating mechanism for conjoint movement of diagonally opposed legs mounted on the underside of the table top. The means for mounting the actuating mechanism, in addition to the operating function, also serves to strengthen the table top. The actuating mechanism is so disposed relative to the diagonally opposed legs that manual actuation of one leg through the operation of the actuating mechanism causes a release of the plurality of the positive holding means of the diagonally opposed leg, so that the opposed leg will follow the actuated leg during movements of the latter.

Other features and advantages of the invention will hereinafter appear.

In the drawings:

Figure 1 is a bottom plan view of the table showing two of the interconnected legs in a folded position and the remaining two legs in a fully extended position.

Fig. 2 is an enlarged fragmentary bottom plan view of one of the corners of the table showing the leg in fully extended position with the holding means effective.

Fig. 3 is a similar view showing the position of the leg and the holding means therefor, when the same has been released by movement of the leg in the direction of the three arrows.

Fig. 4 is an enlarged perspective view looking at the hinge support of the leg in the direction of the arrow of Fig. 1.

Fig. 5 is an elevational view of the hinge support of the leg with a portion of the same broken away to illustrate one of the locking means employed.

Fig. 6 is an elevational view, partly in section, of the hinge support of the leg.

This invention is adapted for tables for various types, but is especially intended for use on what are commonly known as card tables in which the legs are foldable against the under-

side of the table top so that the table may be compactly folded and stored in a minimum of space, and the invention is, therefore, shown in the drawings as applied to this type of table.

5 In the preferred form of the invention, the table comprises a suitable marginal frame 10 of any desired shape and may be, as herein shown, substantially square. The frame, preferably, is notched as at 11 to receive a suitable
10 table top 12 of the same shape as the frame, which is secured thereto by any conventional means desired. The table top 12 may be of any material, such as wood or fiber board, and may be finished or covered with some suitable mate-
15 rial on the top or normally exposed surface thereof. The table is provided at each corner with a supporting leg 13, which is pivotally secured to the table by means of a hinge support so as to fold or swing against the underside
20 thereof. The legs, as they are all mounted in the same manner, each swing in the same direction in relation to the periphery of the table from their individual corners and lie substantially parallel with the individual members of
25 the frame when they are folded against the underside of the table top.

As the means for mounting each leg is identical as that for mounting each of the other legs, one set of dies may be used for making all the
30 mountings, and they are, therefore, each interchangeable, and, for the sake of brevity, only one of the mountings will be described in detail.

Each leg 13, preferably, is secured by studs 15 to a metal U-shaped plate 16 provided with a
35 barreled portion 17 preferably wider than the width of the leg and extending beyond the top end face of the leg adapted to accommodate a hinge pin 18.

A member 19, disposed in a corner formed by
40 adjoining ends of the members of the marginal frame 10, comprises a metallic substantially box-like bracket having a base 20 engaging the underside of the table top, a long side member 21,
45 and two comparatively shorted side members 22 and 23. The members 21 and 22 fit flat against the inner sides of the adjoining members of the frame 10 to be fastened thereto with
50 screws 24. Preferably, wood screws are used which pass through holes provided therefor in the walls 21 and 22, and, when tightened, pull the latter securely against the frame members. This arrangement is such that the bracket serves to brace the frame members and effectively prevents them from relative spreading.

55 The walls 22 and 23 are provided with apertures to receive the opposite ends of the pin 18 carried by the barrel portion 17 of the plate 16 to complete the pivotal connection. It will be now understood that the width of the barrel
60 portion 17 is made wide in order to provide a substantially rigid connection which prevents the plate 16 and the leg carried thereby from tilting or wobbling longitudinally relative to the pin. This wide spaced support makes it possible
65 to manufacture the parts without maintaining close manufacturing tolerances and thereby also facilitates the assembling operations of the table.

A coiled spring 25, disposed about the pin 18,
70 is positioned between the barrel portion of the plate 16 and the wall 23 of the bracket, and is of sufficient strength to normally urge the leg to a position abutting the member 22 of the bracket.

75 To brace and securely hold the leg in the ex-

tended position, the side member 22 at the free end thereof terminates in a laterally offset portion 26 which, together with lug 27 lanced therefrom, forms a channel 28 adapted to receive the
5 distended portion of the plate 16. The channel 28, as best shown in Fig. 2, is substantially the same width as the length of one leg of the U-shaped plate 16, so that the leg is positively held against pivotal movement about the pin
10 when in the stopped position, as shown by the above-referred to figure. This construction, as the channel is adapted to receive a substantial part of the plate 16, will also tend to brace the leg and thereby obviate any tendency of the
15 leg to wobble in the supporting position. It will be understood that the spring 25 maintains the plate 16 and the leg carried thereby in the stopped position until manually released therefrom. The leg may be quickly and conveniently
20 folded, however, by simply exerting a small thrust against the side of same so as to move the barreled portion 17 of the plate 16 longitudinally of the pin 18 against the action of the spring 25. It will be seen that the leg will be
25 freed from the holding engagement of the walls of the channel and may be moved to the folded position against the underside of the top.

To permit a more convenient operation of the
30 table, the diagonally opposed legs of the same are, preferably, as herein shown, interconnected for simultaneous movement to and from the folded and extended position. To this end, there are provided four substantially radially extended
35 single links 29 formed for lightness and strength of channel metal strips and flattened to spatulate form at opposite ends. The outer end of each link 29 is pivotally secured to a U-shaped
40 bracket 30 preferably secured to the side of each leg 13 opposite the plate 16 by studs 31 and the inner end thereof is pivotally connected to a rocker mechanism 32 secured centrally to the
45 underside of the table top. The rocker mechanism 32, as shown by Fig. 1, comprises a wood block 33 and an overlying metal wear plate 34 having secured thereto, by means of a centrally
50 located stud 35, a pair of rocker arms 36-37, each adapted to rotate about the stud 35 independently of the other. The opposite ends of each arm are preferably provided with suitable
55 hook-like projections 38 adapted to engage apertures formed in the spatulate inner ends of the links. The wood block 33, which may be glued to the underside of the table top, tends to stiffen and reinforce the same which, when formed of
extreme light material, might otherwise tend to buckle.

It will be seen, referring to Fig. 1 of the drawings, that each link has an end pivotally secured to a leg and the opposite end thereof secured to the end of one of the rocker arms. The links are
60 so disposed that a pair of the same interconnect diagonally disposed legs through one of the rocker arms. It will now be apparent that, through the links and rocker arm, movement of one leg of a
65 diagonally disposed pair will impart a corresponding movement to the other. In use, when it is desired to move the legs of the table to the extended position, it is only necessary to grasp two of the legs and move the same to the fully
70 extended position, the remaining two legs of the table, as will now be understood, will follow the actuated legs into the extended position.

It will be seen that, as the legs approach the fully extended position, the springs 25 will urge
75

the same into the normal position when extended, causing engagement of the holding means hereinbefore described.

To insure an even greater rigidity to the table in use, and to more effectively brace the legs, additional means associated with the bracket 30 have been provided for positively holding the legs against movement. For this purpose, referring now to Fig. 4, a lug 39 lanced from the side member 21 of the bracket is so disposed as to engage a kerf or slot 40, as best shown in Figs. 5 and 6, formed in an elongated leg of the bracket 30 when the leg is in its normal position when fully extended. The bracket 30, it will be seen, is held in stopped engagement with the lug 39 by the spring 25, so that, although two means are provided for positively holding the legs extended, the manufacturing costs of the table have not been materially increased. This construction also permits the two means to be released simultaneously, thus greatly simplifying the manual manipulation necessary to collapse the table for storage purposes.

When it is desired to collapse the table, one of the legs may be grasped and, by imparting a lateral thrust thereto, the leg can be moved against the action of the spring to a position wherein the plate 16 and bracket 30 are no longer stopped from pivotal movement, and the leg may be pivotally moved toward its closed position. The leg, diagonally opposed from the actuated leg, will be also collapsed, due to the interconnecting links and rocker arm. The interconnected links, although securely held against pivotal movement about the pin, is yet free to move longitudinally of the same, and, as should be clearly seen, the leg, being free to move in one direction, will move in that direction when the link exerts a pulling force on the leg diagonal to the path of free movement. The remaining two legs are collapsed in the same manner, and it is not thought necessary to again explain the folding operation of these legs.

In use, it will be seen that the table is extremely rigid, for each leg is rigidly held against movement when the legs are in the fully extended position by stop means positive in action disposed on opposite sides of the pivotal pin. The table, although extremely rigid in the fully extended position, yet is capable of being quickly and easily collapsed so that the legs underlie the top member and can be stored in a minimum of space.

Variations and modifications may be made within the scope of this invention and portions of the improvements may be used without others. I claim:

1. In a folding table, a bracket for attachment to the corner of the table; means attachable to a leg for pivotally moving the leg about said bracket including a plate and a hinge pin associated therewith carried by said bracket; a bracket carried by the leg; link means having an end pivotally secured to said last-named bracket interconnecting diagonally opposed legs of said table for conjoint movement; a plurality of positive stop means carried by said table bracket disposed on opposite sides of the hinge pin for engaging the plate and bracket carried by the leg for holding the same against pivotal movement; and means for urging said plate and bracket into engagement with said stop means.

2. In a folding table of the type described, comprising hinge means for pivotally connecting a plurality of legs to said table comprising brackets

for attachment to the corners thereof; means attachable to a side face of each leg including a plate having a barreled portion adapted to receive a hinge pin carried by each bracket; brackets secured to the face of each leg opposite said plates; diagonally disposed link means interconnecting diagonally opposed legs for conjoint movement, each having an end thereof secured to said last-named brackets; and stop means carried by each table bracket for engagement with the oppositely disposed plate and bracket carried by each leg for preventing pivotal movement of the same when fully extended.

3. In a folding table of the type described, comprising hinge means for pivotally connecting a plurality of legs to said table comprising brackets for attachment to the corners thereof; means attachable to a side face of each leg including a plate having a barreled portion adapted to receive a hinge pin carried by each bracket; brackets secured to the face of each leg opposite said plates; diagonally disposed link means interconnecting diagonally opposed legs for conjoint movement, each having an end thereof secured to said last-named brackets; and stop means carried by each table bracket for engagement with the oppositely disposed plate and bracket carried by each leg for preventing pivotal movement of the same when fully extended, at least one of said means comprising a channel-shaped member formed integral with each table bracket for receiving an edge of the plate carried by a leg.

4. In a folding table of the type described, comprising hinge means for pivotally connecting a plurality of legs to said table comprising brackets for attachment to the corners thereof; means attachable to a side face of each leg including a plate having a barreled portion adapted to receive a hinge pin carried by each bracket, each leg having a limited sliding movement longitudinally of said pin; brackets secured to the face of each leg opposite said plates; diagonally disposed link means interconnecting diagonally opposed legs for conjoint movement, each having an end thereof secured to said last-named brackets; and stop means carried by each table bracket for engagement with the oppositely disposed plate and bracket carried by each leg when each leg has been moved to the one limit of its movement longitudinally of the pin for preventing pivotal movement of the same when fully extended, said means comprising an offset portion formed integral with each table bracket for flat facewise engagement with the plate carried by each leg and a lug lanced from said table bracket insertable within a slot provided in the bracket secured to the opposite face of each leg.

5. A leg actuating mechanism for a folding table including a bracket member for attachment to the corners thereof; means attachable to each supporting leg including a hinge pin for pivotally moving the same about said bracket, said means having a limited movement longitudinally of the pin; stop means carried by each bracket cooperating with said means when the same has been moved longitudinally of the pin to the one limit of movement thereof for holding each leg when fully extended against pivotal movement about its associated pin; and diagonally disposed link means carried by the underside of said table interconnecting diagonally opposed legs for conjoint movement to and from the extended and folded positions, said link means adapted upon manual release of the holding means of one leg

of an interconnected pair to cause a longitudinal movement of the associated leg relative to its respective pin whereby the stop means of that leg are rendered inoperative so that the connected leg may follow the movement of the actuated leg.

6. In a folding table, a bracket for attachment to the corner of the table; means attachable to a leg for pivotally moving the leg about said bracket including a plate and a hinge pin associated therewith carried by said bracket; a link means having an end pivotally secured to said last-named bracket interconnecting diagonally opposed legs of said table for conjoint movement; and a plurality of stop means carried by said table bracket disposed on opposite sides of the hinge pin for engaging the plate and bracket carried by the leg for holding the same against pivotal movement, said link means adapted upon manual release of the holding means of one leg of an interconnected pair to cause a longitudinal movement of the associated leg relative to the pin of said associated leg whereby the stop means of that leg are rendered inoperative so that the connected leg may follow the movement of the actuated leg.

7. In a folding table, the combination of a rectangular table top, four legs; means for hinging the legs on the table top at the corners thereof for movement to and from extended and folded positions including four brackets carried by the table, one bracket at each corner of the table; means attachable to each leg adapted to receive a hinge pin carried by each bracket, each leg when extended is adapted to occupy alternate positions relative to its bracket and being movable longitudinally of its pin from one position to the other; means for resiliently urging each leg to one of the alternate positions; means for holding the legs against pivotal movement when in extended position; and link means carried by the underside of said table top interconnecting a plurality of legs for conjoint movement upon the manual actuation of one of said legs, said link means causing the interconnected legs to move longitudinally of their pins to the other of the alternate positions and then to folded position, when the manually actuated leg is moved to folded position.

8. In a folding table, a table top; a plurality of legs for said table top; means for securing said legs to said table top for pivotal movement to extended and folded positions, said means including a hinge pin for each leg about which each leg may be pivotally moved; means for moving each leg longitudinally of its pin when the leg is pivotally moved to the extended position and for holding the leg in one of alternate positions on said pin; means for holding said leg against pivotal

movement when in said last-named position; and means carried by said top interconnecting a plurality of legs for conjoint movement to their folded position upon the manual actuation of one leg longitudinally of its pin to the other of its alternate positions then pivotally to the folded position, the last-named means upon movement of the actuated leg to the folded position causing said interconnected legs to move longitudinally of their respective pins and then pivotally about their pins to their folded position.

9. In a folding table of the type described, hinge means for pivotally connecting a plurality of legs to said table comprising brackets for attachment to the corners thereof; means attachable to a side face of each leg including a plate having a portion adapted to receive a hinge pin carried by each bracket, each leg when extended is adapted to occupy alternate positions relative to its bracket and being movable longitudinally of its pin from one position to the other; means carried by each bracket and cooperating with each leg to lock each leg in the extended position when the legs are moved longitudinally of the pins to the one limit of movement thereof; and link means carried by the underside of said table interconnecting a plurality of legs for conjoint movement to the folded position upon the manual actuation of one leg to move it longitudinally of its pin to the other limit of movement thereof and then to its folded position, the movement of the actuated leg to the folded position causing the interconnected legs to move longitudinally of their pins to the other of the alternate positions and thence to folded position.

10. In a folding table, a table top; a plurality of legs for supporting said top; means for hinging the legs on the table top at the corners thereof for movement to and from extended and folded positions including a hinge pin about which each leg may pivot and having a limited movement longitudinally thereof when in the extended position; automatic means for moving each leg longitudinally of its pin to one of alternate positions when the same is pivotally moved to extended position; means for holding each leg against pivotal movement about its pin when automatically moved to said alternate position; and link means carried by the underside of said table interconnecting diagonally opposite legs for conjoint movement, said link means operative to cause a leg to follow the movement of a diagonally opposite leg when the same is manually moved longitudinally of its pin to free it from said holding means and then pivotally about its pin to the folded position.

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