

1,030,459.

Patented June 25, 1912.

2 SHEETS—SHEET 1.

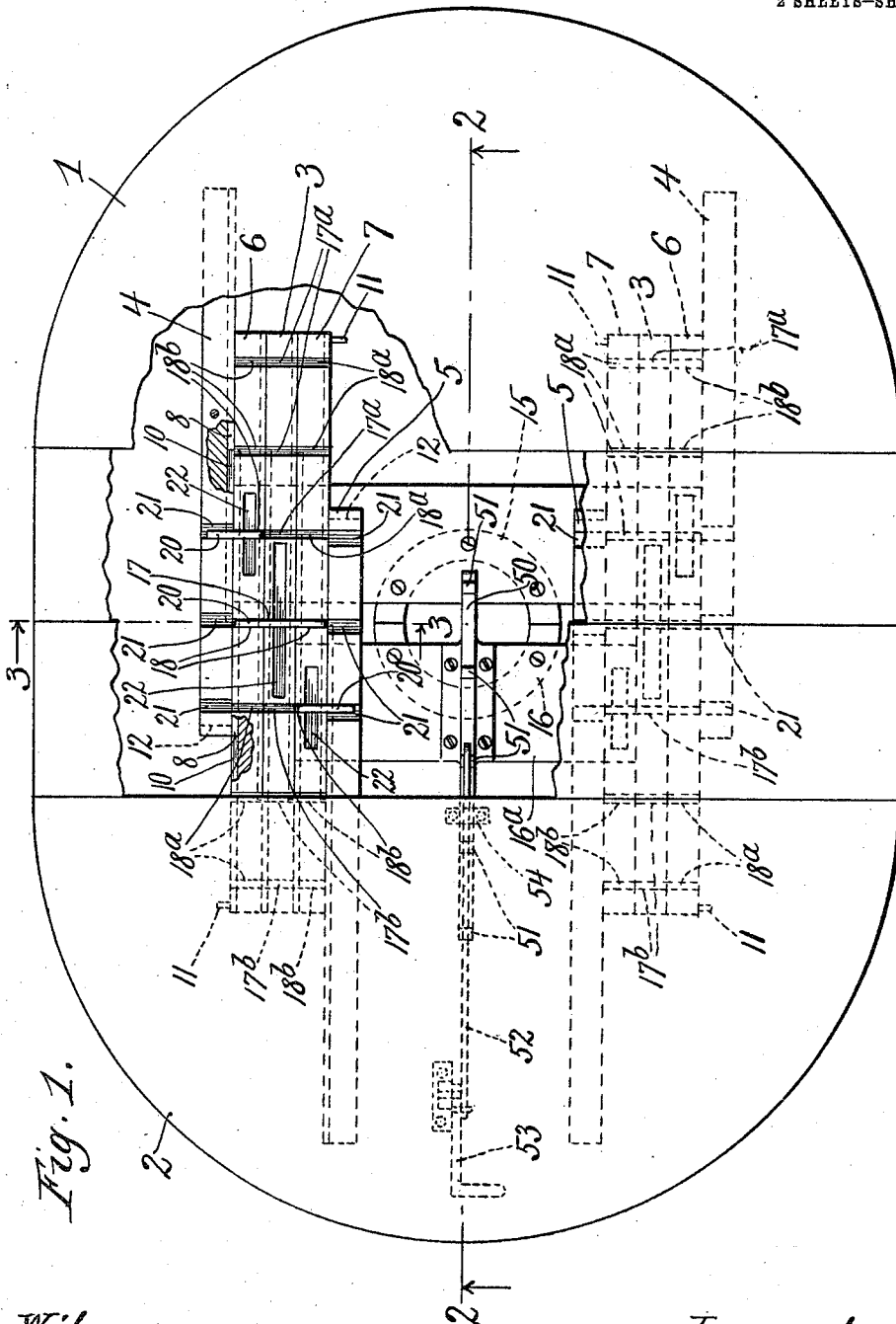


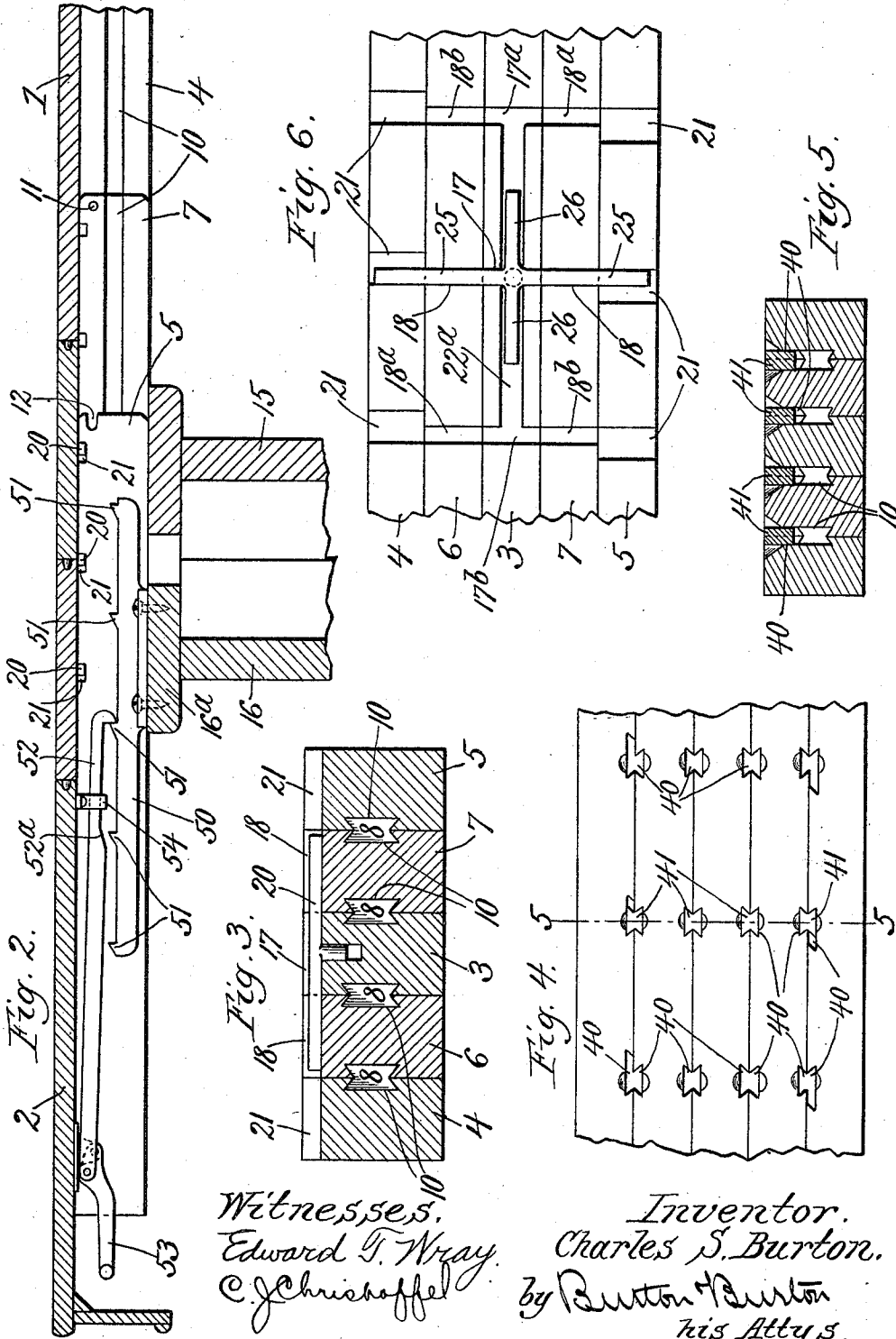
Fig. 1.
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2 SHEETS-SHEET 2.

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UNITED STATES PATENT OFFICE.

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EXTENSION-TABLE.

1,030,459.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed October 25, 1909. Serial No. 524,299.

To all whom it may concern:

Be it known that I, CHARLES S. BURTON, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented new and useful Improvements in Extension-Tables, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide means for locking together the slides of an extension table for limiting the extension at a plurality of points short of the maximum limit of extensibility of the slides.

Specifically, it has the further purpose of providing such locking device for the slides in connection with means for crowding and locking the table-top members inwardly with respect to slides which may carry pedestal members which are not rigid with the table members respectively, so that in pedestal extension tables which have provision for extending the table top without extending the pedestal but which also have provision for extending the pedestal, the table top may be securely locked together at all stages of extension,—that is, with any desired number of fillers interposed,—and not merely at the point at which the pedestal is locked and the point of maximum extension.

It consists of the features of construction shown and described as indicated in the claims.

In the drawings:—Figure 1 is a top plan view of a table embodying this invention, the table top being in part broken away to disclose the extension locking devices, the table being shown partly extended and locked against further extension. Fig. 2 is a vertical longitudinal section at the line 2—2 on Fig. 1. Fig. 3 is a detail section at the line 3—3 on Fig. 1. Fig. 4 is a detail plan view of a portion of one set of slides showing a modification of the device for locking the slides. Fig. 5 is a section at the line 5—5 on Fig. 4. Fig. 6 is a detail plan view of one of the central slides, and a key for engaging them in its engaging position.

The two table top members, 1 and 2, are connected by two sets of slides, comprising middle slides, 3, 3, extreme slides, 4, 4 and 5, 5, the slides, 4, 4, pertaining to one table member and the slides, 5, 5, pertaining to the other table member, and intermediate slides,

6, 6, between the slides, 4, 4, and the middle slide and pertaining to the same table member, and slides, 7, 7, between the middle slide and the slides, 5, 5, and pertaining to the same table member as the latter. These slides may be understood as constructed in the customary manner of extension table slides in this respect,—that they are provided with means for limiting their relative sliding movement to limit the extension of the table, the customary means consisting, as shown in Fig. 1, of the dove-tail elements, 8, 8, by which the adjacent slides are connected for sliding, said dove-tail elements being two for each slide joint, one secured to each one of the two adjacent slides and running in the dove-tail slot, 10, of the other slide, each of said dove-tail elements being in the end portion of the slide to which it is secured so that the slides may run relatively to each other their entire length less the sum of the lengths of the two dove-tail elements, being stopped in their sliding movement for extension by the meeting of said two dove-tail elements and being stopped in the opposite direction with their ends even, by a pin or stud, 11, projecting from one face of one of the slides near the end and taking into a short slot, 12, in the opposed face of the adjacent slide, stopping at the end of said slot, as stated, when the two slots are even or unextended.

When a pedestal is provided having one member, 15, pertaining to one table member and the counterpart pedestal member, 16, pertaining to the other table member, each pedestal member may be carried by the slides—above named “intermediate slides”—of the member to which they pertain so that the top element of such table member carried by the extreme slides pertaining to such member may have a range of movement relatively to its pedestal element equal to the sliding movement of the extreme slides with said intermediate slides, thus permitting the table to be extended an amount equal to double this range of sliding movement without extending the pedestal; and by providing clamping and locking devices on the pedestal member and table-top member which coöperate for crowding and securing the table top member inward relatively to the pedestal member, the table top may be locked securely either with or without interposed slides; that is, either at closed

position, or at position extended by interposition of any number of fillers up to the maximum which can be accommodated in the range of extension stated. But in order to thus lock the table top securely at any position except either with the maximum number of fillers which can be accommodated without extending the pedestal or with none at all,—that is, with the table top members closed together,—there must be provided a plurality of locking means on the pedestal and table top member respectively adapted for engagement at each stage of extension corresponding to the number of fillers introduced, and this involves some complication in such locking devices. Furthermore, whenever the pedestal is unlocked and extended, the table top cannot be locked up at all at any point short of the maximum extension, because any attempted locking or crowding of the table top members together with the intervening fillers merely operates upon the unsecured pedestal members which yield to any force tending to clamp the top. These defects in respect to locking, it may be seen, will be avoided, and it will be possible to lock up such a table securely at any stage of extension—that is, with any number of fillers,—by means of one locking device only adapted for engaging the table top of one member with the corresponding pedestal member and crowding the top member inward, provided the extension of the slides can be limited not only at their point of maximum extension, as in the ordinary construction, but at as many intermediate points as there may be intermediate numbers of slides between zero and the maximum number. Primarily, therefore, the present invention is designed to provide means for thus locking the slides to limit their extension at stages corresponding to all the different numbers of fillers which may be interposed.

The simplest construction for the purpose of locking the slides together so as to limit their extension at a point short of their maximum extensibility consists in the provision of transverse slots or notches, 17, at the middle point, and 17^a and 17^b, at intervals respectively right and left from the middle point of the middle slides, 3, such intervals in both directions from said middle point being equal to one-half the unit filler width, and providing corresponding transverse slots or notches, 18, on the upper edges of the next adjacent or “intermediate” slides, 6, 6, such slots, 18, being made at the middle point of the length of said intermediate slides, and the slots, 18^a and 18^b, being respectively at intervals inwardly and outwardly therefrom substantially one-half the unit filler width. When the middle and intermediate slides are closed up with their ends even, their corresponding trans-

verse slots will be alined with each other, and a key, 20, being lodged in the middle slots thus alined will serve to lock both the intermediate slides to the middle slide so as to prevent any extension which would require relative movement of these slides. The extreme slides, 4 and 5, to which the table top members respectively are secured are similarly provided with slots, 21, in the portion of said slide which is exposed when the table top members are spread, the first being at a distance from the middle point equal to one-half the unit filler width, and the remainder in said exposed portion at intervals from the first equal to one-half the unit filler width. When the table-top members are extended for receiving one filler, the middle and intermediate slides being locked together by the key, 20, as described, the extension will be made by movement of the extreme slides relatively to the intermediate slides to the point at which the first slots, 21, of said extreme slides respectively are alined transversely with the middle slots respectively of the other slides, the second slots, 21, of the extreme slides being then alined transversely respectively with the first inner slots, 18^a, respectively of the adjacent slides, and being at this position exposed immediately adjacent to the inner margins of the two table top members respectively. Another key, 20, being lodged in said last-mentioned slots of the extreme and intermediate slides, the extension of the table is limited at this point so as to admit one filler.

The slots, 21, of the extreme slides are cut back or elongated toward the middle a distance equal to the slack which it is necessary to provide to accommodate the tenons and which can be taken up in locking up the table; and when the locking devices herein-after described are operated for this purpose, the table top members and their slides, 4 and 5, can move inward to the extent necessary for such clamping, though they are checked against moving outward by the keys lodged in their slots as described. For any additional degree of extension of the table top which does not require extension of the intermediate slides with respect to the middle slides, the table-top members being drawn out to register or aline the first or second of the slots, 21, of the extreme slides with the second outer slots, 18^b, of the intermediate slides, a key, 20, will be lodged in the slots thus alined, limiting the extension to two or three fillers as desired. When the extreme slides are drawn out to the limit of their construction with respect to the intermediate slides four fillers can be interposed. When greater extension is required than can be provided by movement of the table top members with respect to the intermediate slides, and requiring, therefore,

movement of the intermediate slides with respect to the middle slides, the key, 20, which locks the intermediate to the middle slides being lifted from the alined notches the slides will be extended one or more stages in each direction and the key reinserted in any of the alined notches. Preferably, it will remain in the middle notch of the middle slide, being alined with the second and third inner notches, 18^a, of the intermediate slides, unless the extension required is such as to carry the end of the intermediate slides past the middle of the middle slide, and in that case the key will be lodged in the second notch, 17^a, or the third notch, 17^b, from the middle of the middle slide, and the corresponding notches of the adjacent intermediate slides. In such case,—that is, when the degree of extension requires the movement of the intermediate slides so far as to carry their ends past the middle point of the middle slide,—an additional key, 20, will be required to lock the two intermediate slides separately to the middle slide, since there will not be notches of all three slides alined at any one point. It will be understood that at each stage of locking of the slides by the keys, the necessary slack for accommodating the tenons is provided in the elongation of the notches of the extreme slides which are attached to the table top members and are taken up by the locking devices in locking up the top. For convenience in taking care of the keys, which, as thus far described, are not attached in any permanent manner to the slides, longitudinal pockets may be formed for them in the upper edges of the slides at any conveniently accessible points. Such pockets, 22, are shown in the different slides.

So long as the extension desired is not such as to require the extreme slides, 4 and 5, attached to the table top members to be drawn out so far as to carry their ends past the middle point of the middle slides, and so long as this can be effected by distributing the extending action so that part of it will occur by the relative movement of the intermediate with respect to the middle slides, and part by relative movement of the extreme with respect to the intermediate slides, all the slides may be lapped and have slots alined with the middle slot of the middle slide. This is on some accounts the preferable manner of providing for the extension, because it renders it possible to lock together all the slides of each set by a single key lodged in their slots thus alined at the middle point. This, however, requires a key long enough to extend across all the slides. Such a key would be too long by the amount of the added thickness of the two extreme slides to be accommodated when the table was fully closed up, because such accommodation would require notches in

the extreme slides which would extend under the edges of the table top members, being at the very middle point of the table, and because, furthermore, if they could be thus engaged the table would thereby be rendered entirely inextensible. In order to make it possible to use such a long key under the circumstances indicated which would make its use desirable, I prefer to provide a special form of key shown in Fig. 6 in the form of a cross, one member, 25, being in length equal to the width of all five slides, while the other member, 26, crossing the first at the middle point of both, is in length equal to the width of only three slides. I then provide in the middle slide a longitudinal slot, 22^a, crossing the transverse notch, 17, said longitudinal slot being long enough to accommodate the longer member, 25, of the cross key, 25—26, when the shorter member, 26, is extending transversely and lodged in the alined notches of the middle and intermediate slides. The key will be thus placed when the table is closed up without extension, thus locking the middle and intermediate slides as already described, and permitting the table to be extended by the movement of the extreme slides with respect to the intermediate slides. At any adjustment for extension at which slots of all five slides are alined, this key will be shifted so as to have its longer arm extending transversely to engage all five of the slots while its shorter arm is accommodated in the longitudinal slot, 22^a. In the ordinary construction of the extension slides for extension tables, one-half of the total extensibility can be made available with the slides so lapped that they may all have slots alined with the middle slot of the middle slide and thereby adapted to be all secured by the single cross key described.

In a modification shown in Figs. 4 and 5, all the slides are provided on their adjacent surfaces with transverse notches, 40, at the middle point of the length and at intervals therefrom,—in both directions on the middle and intermediate slides and in the direction away from the table member to which they are attached on the extreme slides,—equal to one-half the unit filler width. The extension of the table by movement of the slides, it will be seen, can be limited in any manner desired by inserting keys, 41, in any registered slots, thus locking the two adjacent slides whose slots are thus registered. In this modification the slots of the extreme slides to which the table members are attached are cut back on the side remote from the middle point the amount of the slack necessary to provide for the tenons and to be taken up in the locking of the top. Preferably, the notches, 40, and the keys, 41, are dove-tailed in cross

section so that the keys may be more safely retained and may resist the tendency to distort them into oblique position by the opposite pull of the adjacent slides upon their opposite edges.

For taking up the slack and locking up the table top of a table provided with these means for limiting the extension of the slides, any familiar drawing and locking device may be employed having its two engaging elements carried one by the extreme slides pertaining to one table top (most conveniently by the top itself which connects these slides) and the other by the intermediate slides pertaining to the same table member, for which purpose such intermediate slides are preferably connected by a bridge, 16^a, as described. There are shown in the drawings such drawing and locking devices comprising a ratchet plate, 50, secured to the bridge 16^a having ratchet teeth, 51, at intervals corresponding to one-half a unit filler width, a pawl, 52, suitably mounted on the table top, 2, and guided for longitudinal movement in position to permit it to engage the ratchet teeth, and a lever, 53, mounted on the table top connected with the pawl and adapted to be rocked for drawing the pawl longitudinally outward and thrusting it longitudinally inward, the construction adapting the pivot of the pawl to the lever to be rocked past the fulcrum of the lever in the drawing movement and the lever being constructed to be stopped against the table top or any convenient abutment which may be provided when the pawl pivot has thus passed the fulcrum, so that the device will be locked at the culmination of the drawing action. The throw of the lever and consequent thrust and draw of the pawl may be considerably more than the slack to be taken up, and in the excess of the thrusting movement above this necessary slack the pawl may be caused to rise out of the path of the ratchet teeth by any means operating to divert upward its inner end. The means shown consists in forming an inclined shoulder, 52^a, on the lower edge of the pawl which reaches the guide bearing, 54, provided for the pawl in the latter part of the inward thrust movement of the pawl, and in the remainder of the movement causes the pawl to ascend as desired. By this means, when the lock is released, relaxing the clamping action, the pawl being taken out of the path of the ratchet teeth permits the extension of the table top with respect to the bridged slides, so that at the next locking, the pawl will engage a ratchet tooth one or more steps outward from the innermost teeth with which it was engaged for locking the table in closed position.

I claim:—

1. In an extension table, in combination with the table top members and the slides

by which they are connected for extension; adjacent slides throughout the sets having notches which are registered with each other at the several stages of extension and keys for lodgment in the registered notches to engage the slides with each other resisting extension, the slides to which one of the table-top members is attached having their notches wider than the keys; a bridge connecting the next adjacent slides; cooperating devices mounted respectively on said table-top member and bridge for engagement when the table-top members are spread to any pre-determined stage of extension, one of said devices being movable on the part on which it is mounted for drawing the table member inward relatively to the bridge, and means for operating said movable element and for locking it at advanced position of the table-top member.

2. In an extension table, in combination with the table top members, the slides by which they are connected for extension, such slides having notches extending across their upper edges, those of adjacent slides being adapted for registration with each other at the several stages of extension; keys adapted to be lodged in the notches of the middle slide of suitable length to extend into the notches of the two opposite adjacent slides, and keys adapted to be lodged in the notches of the slides attached to the table-top members respectively, extending into the registered notches of the intermediate slides adjacent thereto respectively.

3. In an extension table, in combination with the table top members, the slides by which they are connected for extension having notches extending across their upper edges, those of adjacent slides being adapted for registration with each other at the several stages of extension; keys adapted to be lodged in said notches extended across two or more slides for locking them together, certain of the slides having longitudinal pockets in their upper edges for accommodating the keys when out of service for locking.

4. In an extension table, in combination with the table-top members, slides by which they are connected for extension having notches extending across their upper edges, those of adjacent slides being adapted for registration with each other at the several stages of extension; a key in the form of a cross having one of its arms long enough to engage simultaneously a notch of the middle slide and registered notches of the extreme slides and of all the intermediate slides and having the shorter arm of suitable length to engage the middle slide and the two opposite adjacent slides only, said middle slide having a longitudinal pocket crossing its middle notch long enough to accommodate the longer arm of said cross key.

5. In an extension table, in combination with table top members and slides by which they are connected for extension; with-drawable keys for connecting adjacent
5 slides, the slides having means for engaging such keys positioned in the respective slides for registration with each other at the several stages of extension; a bridge connecting corresponding slides of the two sets
10 on the support and cooperating devices mounted respectively on one table top member and on the bridge for engagement when the table top members are spread to any predetermined stage of extension, one of
15 said devices being movable on the part on which it is mounted for drawing the table members inward relatively to the bridge, and means for operating said movable element and for locking it at advanced position
20 of the table top members.

6. In an extension table, in combination with table top members and a supporting member, and slides by which the top members are connected with each other and with
25 the supporting member, said slides being in

two sets at opposite sides of the middle longitudinal line of the table, adjacent slides in each of the sets having key seats which are registered with each other at the several stages of extension, keys for lodgment in
30 such key seats to engage the slides with each other for resisting extension; cooperating devices mounted respectively on one of the top members and on the supporting
35 member for engagement when the top members are spread to any predetermined stage of extension, one of said devices being movable on the part on which it is mounted for drawing the table top member inward rela-
40 tively to the supporting member, and means for operating said movable element and for locking it at advanced position of the table top member.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 20th day
45 of May, 1907.

CHAS. S. BURTON.

Witnesses:

EDWARD T. WRAY,
M. G. ADY.