C. S. BURTON.

EXTENSION TABLE LOCK.

APPLICATION FILED NOV. 8, 1909.

994,907.

Patented June 13, 1911.

4 SHEETS—SHEET 1.

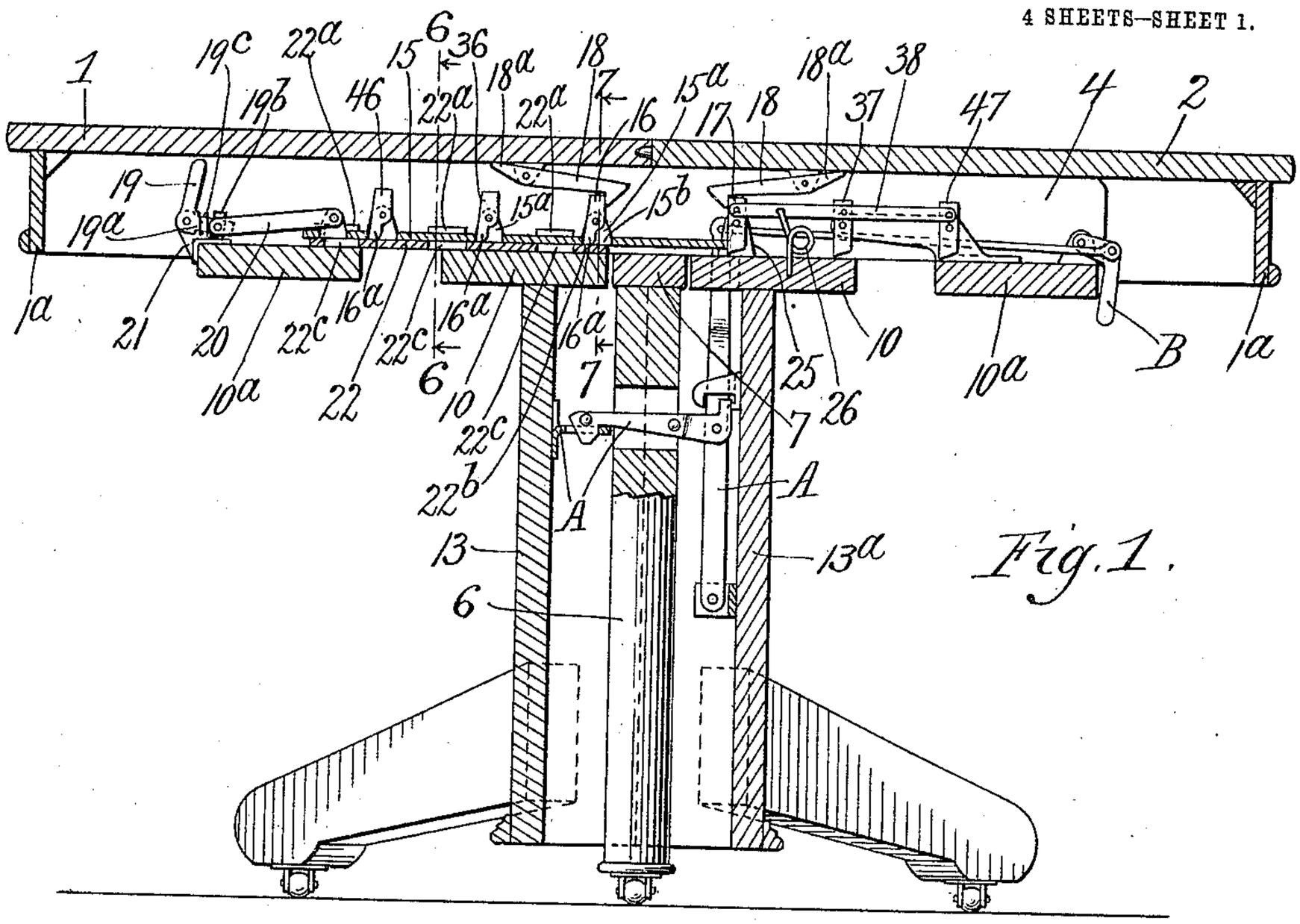

Fig. 1.

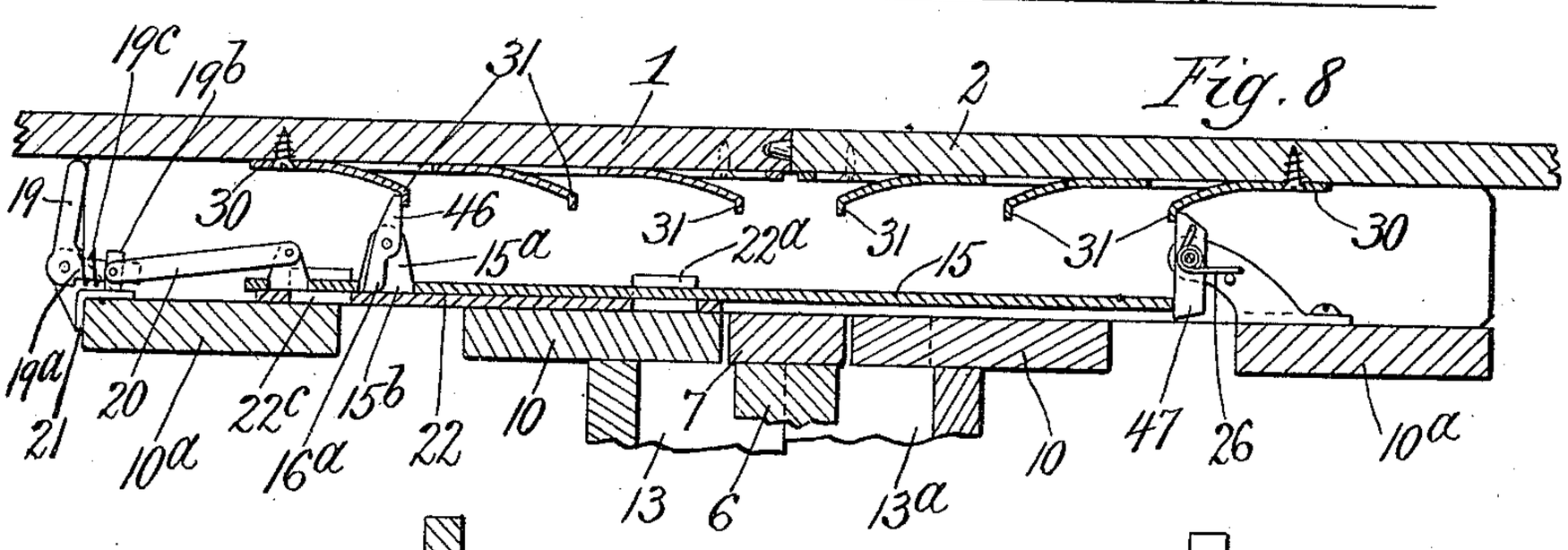

Fig. 8

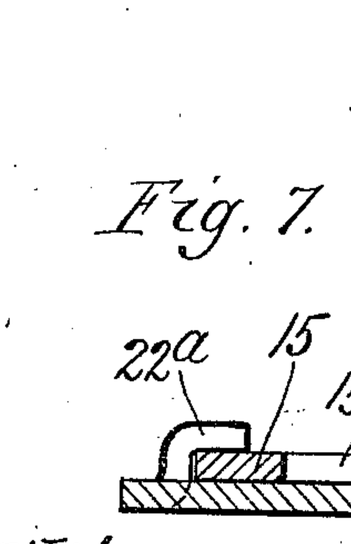

Fig. 7.

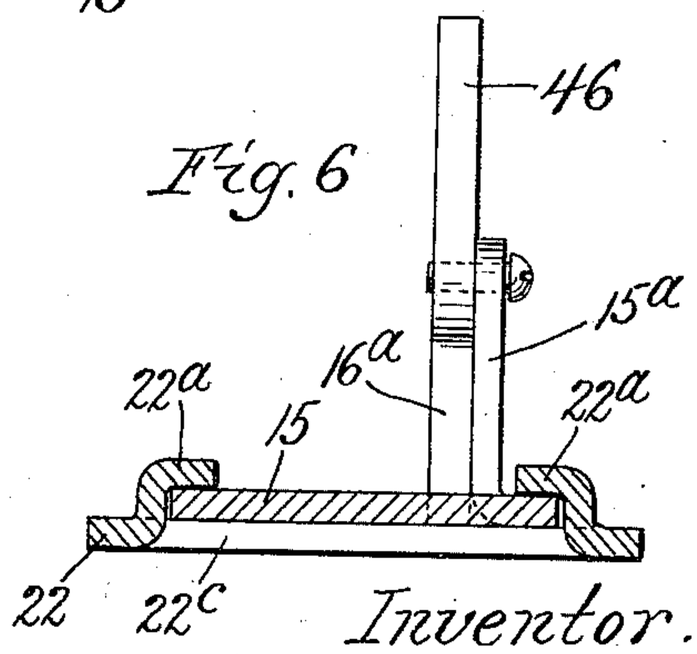

Fig. 6

Witnesses.
Edward T. Wray.
C. J. Christoffel.

Inventor.
Charles S. Burton.
by Burton & Burton
his Attys.

C. S. BURTON.

EXTENSION TABLE LOCK.

APPLICATION FILED NOV. 8, 1909.

994,907.

Patented June 13, 1911.

4 SHEETS—SHEET 2.

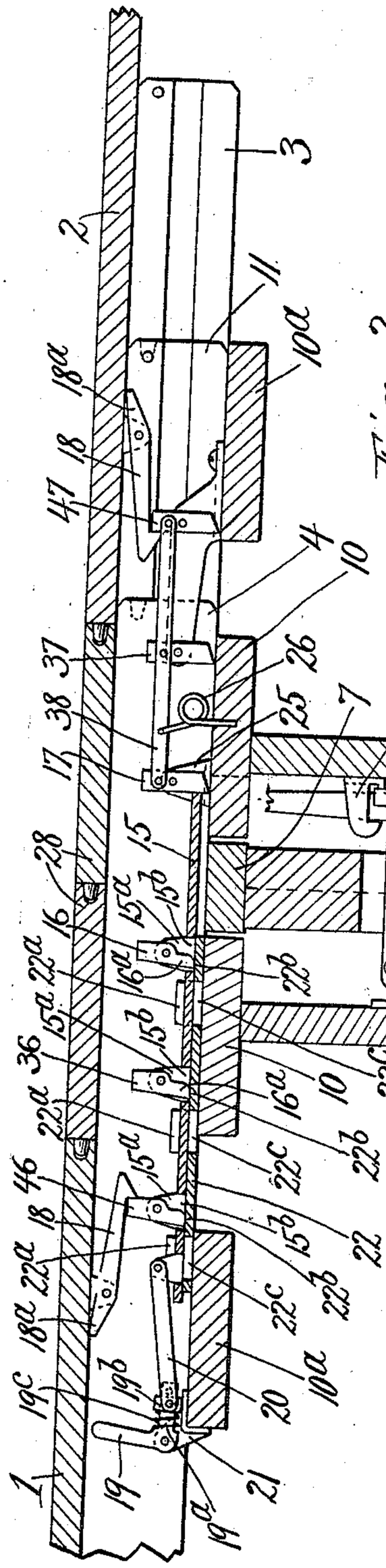

Fig. 2.

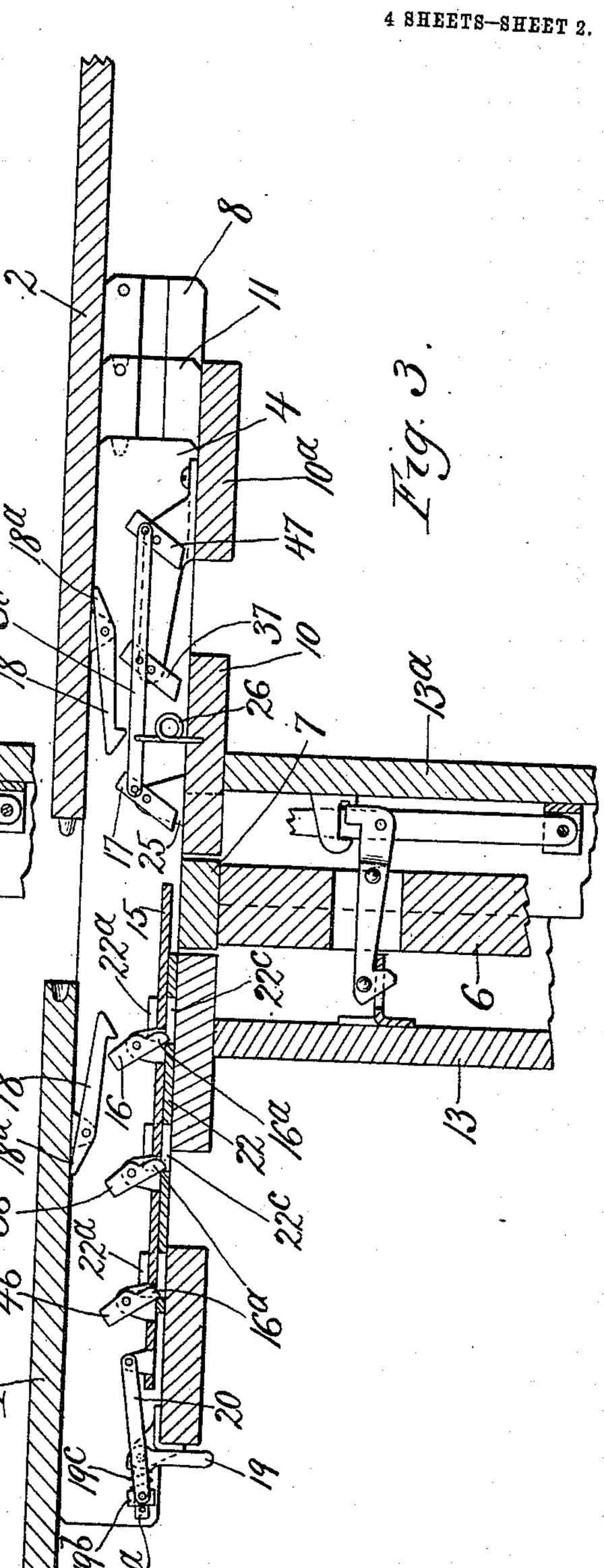

Fig. 3.

Witnesses.
Edward T. Wray.
C. J. Chrisoffel.

Inventor.
Charles S. Burton.
by Burton & Burton
his Attys.

C. S. BURTON.

EXTENSION TABLE LOCK.

APPLICATION FILED NOV. 8, 1909.

994,907.

Patented June 13, 1911.

4 SHEETS—SHEET 3.

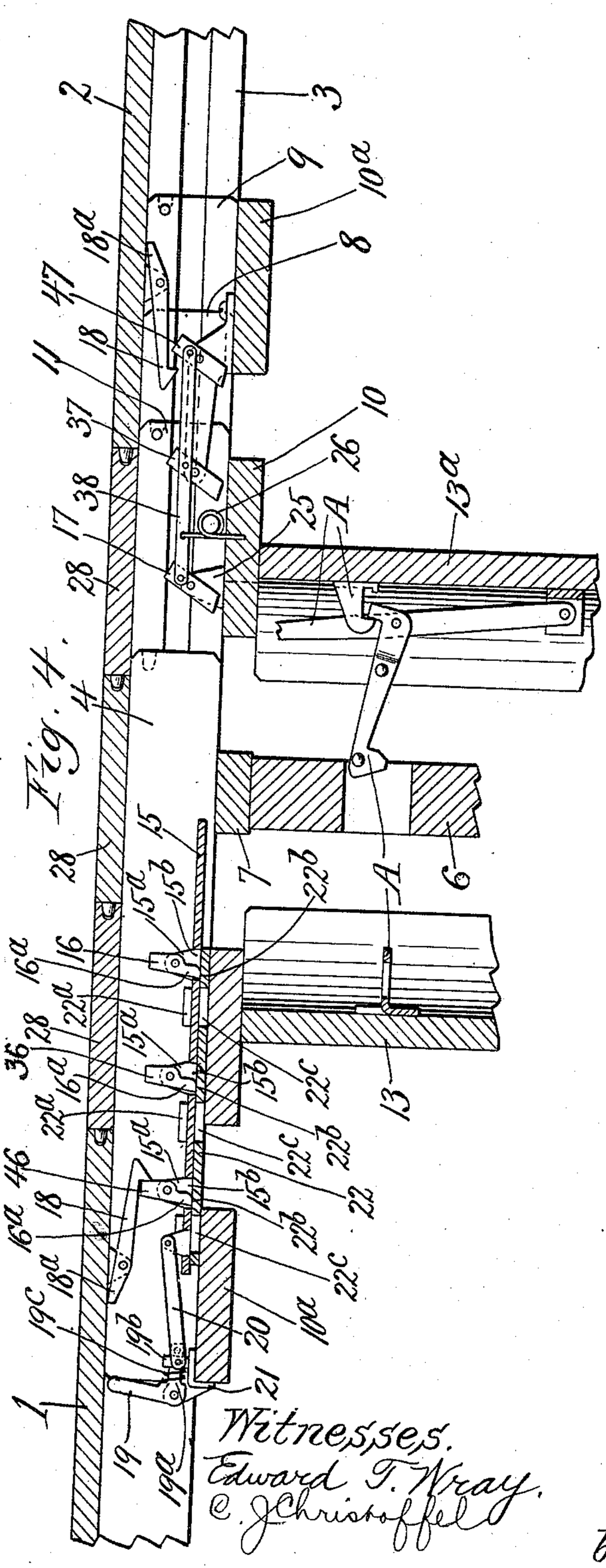

Fig. 4.

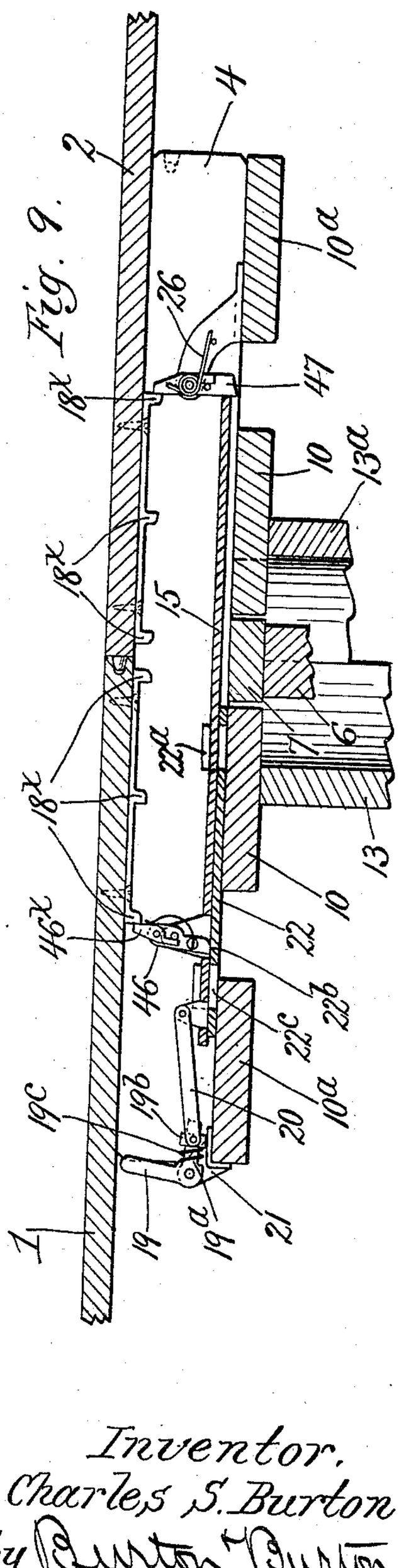

Fig. 9.

Witnesses.
Edward T. Wray.
C. J. Chrisoffel.

Inventor.
Charles S. Burton.
by Burton & Burton
his Attys.

C. S. BURTON.

EXTENSION TABLE LOCK.

APPLICATION FILED NOV. 8, 1909.

994,907.

Patented June 13, 1911.

4 SHEETS—SHEET 4.

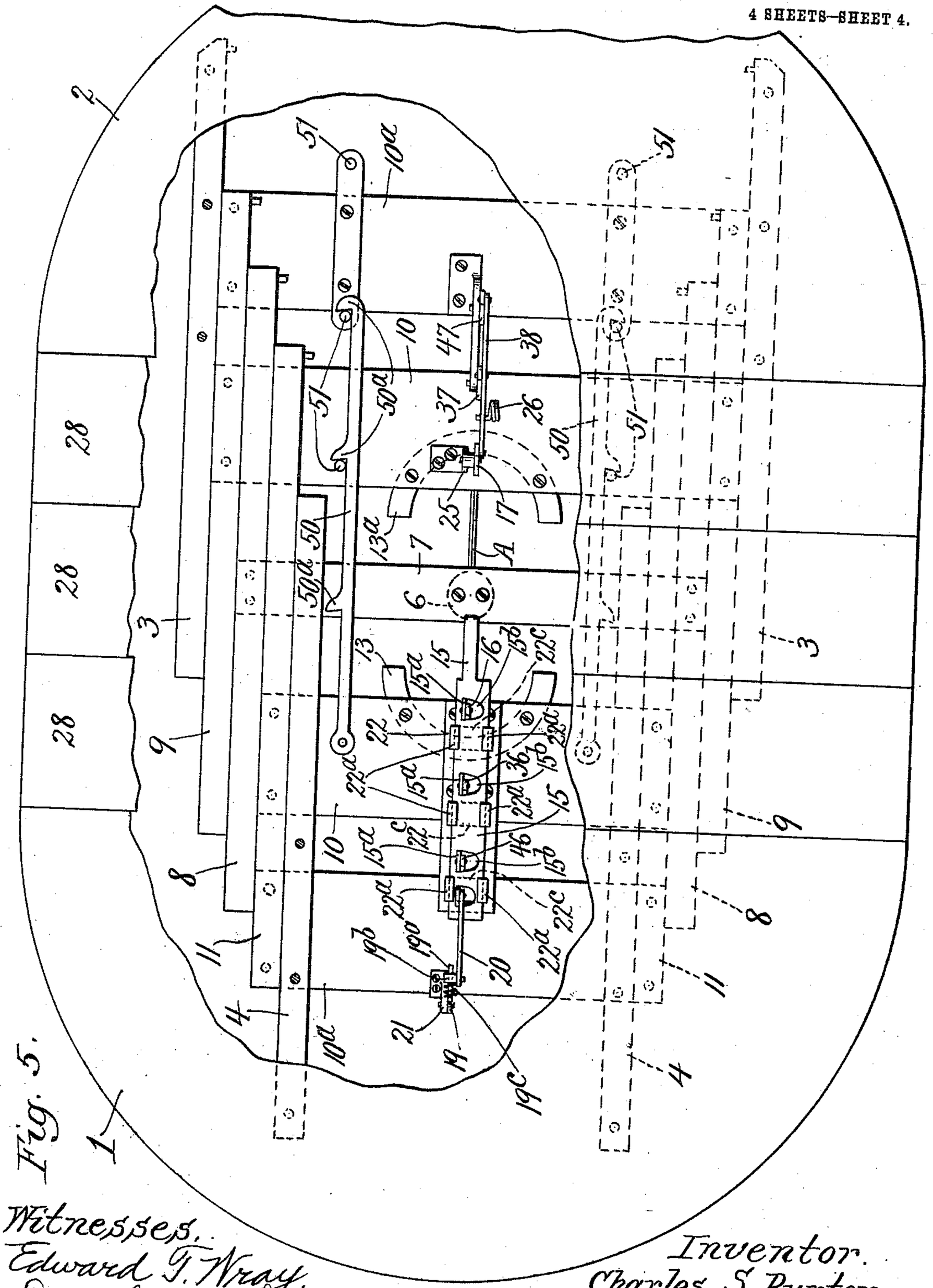

Fig. 1.

Witnesses.
Edward T. Wray.
C. J. Chrichoffel.

Inventor.
Charles S. Burton
by Burton & Burton
his Attys.

UNITED STATES PATENT OFFICE.

CHARLES S. BURTON, OF OAK PARK, ILLINOIS, ASSIGNOR TO EMIL TYDEN, OF HASTINGS, MICHIGAN.

EXTENSION-TABLE LOCK.

994,907. Specification of Letters Patent. **Patented June 13, 1911.**

Application filed November 8, 1909. Serial No. 526,715.

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-Table Locks, 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 two members of an extension table so as to adapt the table to be pulled over the floor in any direction without liability to spreading the divided members by partial extension, and also to provide means for binding together the two members when they are extended with interposed leaves or fillers so that the table when thus extended shall be as rigid, as to the top at least, and as easily movable over the floor without spreading the members or the leaves as if it were constructed rigidly with the full length to which it may be thus extended.

Specifically, the purpose of the invention is to adapt and apply means for so locking together the members of an extension table when it is of the pedestal type and is provided with means for locking the pedestal members together.

Specifically it has the further purpose of locking together the members of the top of a pedestal extension table when the construction is such as to permit the extension or spreading of the table top members without the extension or spreading of the pedestal members, and also of providing means for locking and binding the top together rigidly when it is thus extended with the interposed fillers without the extension of the pedestal.

Incidentally it has also the purpose of providing conveniently operated means for releasing or unlocking the members of the table, whether locked together in unextended relation or in extended relation with the interposed fillers.

The invention consists of the features of construction which are shown and described as indicated in the claims.

In the drawings:—Figure 1 is a vertical longitudinal section of a pedestal extension table containing this invention, the parts being at closed and unextended position of the table,—that is, without fillers. Fig. 2 is a similar view of the upper portion of the table on a larger scale, showing fillers interposed between the members of the top the latter being extended and locked, the pedestal remaining unextended and locked. Fig. 3 is a view similar to Fig. 1 showing the locking devices of the top released or unlocked and the table members in the process of being spread apart preparatory to inserting fillers. Fig. 4 is a view similar to Fig. 2 showing the table extended both as to top and pedestal, the top being also further extended relatively to the pedestal with fillers interposed, the parts being at locked position of the top. Fig. 5 is a plan view of the table extended as in Fig. 4 with the top partly broken away to disclose the structure. Fig. 6 is a detail section at the line 6—6 on Fig. 1. Fig. 7 is a detail section at the line 7—7 on Fig. 1. Fig. 8 is a section similar to Fig. 2 showing a modified form of the invention. Fig. 9 is a view similar to Fig. 2, showing another modification.

The two members, 2 and 1, of the table top, finished in the customary manner with a skirt or molding, 1^a, are secured respectively to the extension slides, 3, 3 and 4, 4, the slides, 3, 3, being the outermost and the slides, 4, 4, the innermost of the customary two sets of slides located at opposite sides of the table. It is immaterial which member of the table is attached to the inner and which to the outer pair of slides. The center leg, 6, is secured in the usual manner by means of the cross bar, 7, to the two center slides, 8, 8. The slides, 9, 9, intermediate the middle slide and the outer slide in each of the two sets are connected by bridging bars, 10, 10^a, and the corresponding slides, 11, 11, intermediate between the middle and the inner slides of the two sets are similarly connected by like bridging bars, 10, 10^a. In the case of a pedestal table, as illustrated, the bridging bars, 10, nearer the parting plane serve as caps for the pedestal members, and the term "pedestal caps" may be applied to them when described in the structure in connection with a pedestal table. A pedestal being shown in the drawings, I have shown the two pedestal members, 13, 13^a, provided with means for locking them together, such as fully illustrated and described in my Patent No. 765,644, and which need not be particularly described here beyond being identified by the general letter, A, referring to all the locking parts in the

pedestal and the letter, B, referring to the hand-operated lever for operating them at one end of the table.

On the bridging bar or pedestal cap, 10, of the member, 1, of the table top there is mounted a slide bar, 15, having pivoted to it a dog, 16, which extends upward, and at one position of the bar, as hereinafter more particularly explained, is located rigidly in its upwardly extending position, while at another position it is free to tilt backward for a purpose hereinafter explained. The bar, 15, extends across the center-leg-carrying bar, 7, and at closed position of the table top members projects over the inner edge of the opposite bridge bar or pedestal cap, 10, on which there is pivotally mounted in a bracket, 25, a lever, 17, which extends upward and normally at unlocked position with an outward inclination toward the end of the table, as seen in Fig. 3. To the under side of the two members, 1 and 2, of the table top there are pivoted hook-nosed latches, 18, 18, which normally by gravity drop to the position shown in Fig. 1, having short tail pieces, 18^a, which stop against the under side of the table top to prevent them from dropping lower than as shown. On the outer bridge bar, 10^a, of the member, 1, there is mounted a bell crank lever, 19, one arm of which serves as an operating handle while the other arm, 19^a, is connected by a link, 20, with the slide bar, 15, the link, 20, and bell crank lever arm, 19^a, being proportioned so that when the bar, 15, is thrust inward to locking position of the parts, as shown in Fig. 1, the pivot of the link to the bell crank lever is a little below a direct line between the fulcrum of the bell crank lever and the pivotal connection of the link, 20, to the slide bar, 15, and the parts are stopped at that position on the bracket, 21, which supports the bell crank lever, and any outward thrust of the bar, 15, is thereby prevented and the locking of the parts is effected. The bracket, 21, is preferably so mounted with respect to the outer edge of the bridge bar, 10^a, that the handle of the bell crank lever can be swung around to vertical position depending past the said outer edge, having thus a range of movement of somewhat more than 180 degrees so as to operate the bar, 15, with the full throw of the lever arm, 19^a. The slide bar, 15, is mounted for sliding in a guide plate, 22, in which the guides, 22^a, are conveniently made by striking up the metal from the plate as illustrated, and the bar itself has the lugs, 15^a, for pivoting the dog, 16, and an aperture, 15^b, formed in the bar accommodates a tail-piece, 16^a, of the dog when the latter is at erect or operative position. At the inthrust position of the bar, this tail-piece is lodged and stopped upon the guide plate at the portion, 22^b, between the two apertures formed by striking up the guides, 22^a, and the dog is thereby held rigidly erect. When the slide bar is drawn outward to unlocking position this tail-piece rides back over the aperture, 22^c, which is formed by striking up one of the guides, 22^a, and at this position the dog is free to tip backward—that is, outward—the tail descending into the aperture. On the table top member, 2, the lever, 17, mounted in the bracket, 25, is provided with a spring, 26, tending to hold it in its outwardly inclined position and to yieldingly resist its movement in either direction from that position. When a second pair of locking dogs is provided, as shown, the two dogs on the table members, 2, being connected by a link, 38, the spring in question is connected for action upon this link, as seen in the drawings and more particularly hereinafter explained, but in any case it operates on the dog, 17, as above stated.

Considering the parts thus far described, it may be understood that the pedestal members being locked together and the bar, 15, being at position to which it is drawn by rocking the handle of the bell crank lever, 19, outward,—that is, for retracting the bar, 15, back toward the end of the table,—the two table members being pushed together, the noses of the latches, 18, will ride up over the ends of the dogs, 16 and 17, and will drop down in engagement therewith. This will occur before the table members are closed together and the rocking of the bell crank lever, 19, inward will thrust the bar, 15, toward the opposite table member, its dog, 16, engaging the latch, 18, on that member and advancing the member to meet the opposite member which will at the same time be advanced in the opposite direction to meet the member, 1, by the action of the end of the bar, 15, against the lower end of the lever, 17, causing its upper end which is engaged with the latch, 18, to move inward a distance equal to the thrust of the bar, 15, and equal therefore to the advance movement of the end of the dog, 15, engaged with the latch. The two table top members, therefore, are equally advanced to meet each other and the parts will be so proportioned that their meeting is effected by the time the bell-crank-lever arm, 19^a, and the link, 20, are in line, the slightest movement beyond this position causing the parts to be locked. In order to provide for the slightest swelling of the table top members which is liable to occur, the pivotal connection of the link, 20, to the lever arm, 19^a, may be made in a block, 19^b, which is mounted for slight sliding movement in the lever arm, 19^a, in which a spring, 19^c, is provided to hold the block thrust out to the limit of its range of movement but permitting it to yield slightly in case positive resistance is encountered, as when the table top members fully meet be-

fore the link, 20, and lever arm, 19ª, reach alinement in the rocking movement of the lever. The pedestal remaining locked, the table top may be extended to the extent of the movement permitted between the slides, 3 and 9, as to one member and the slides, 4 and 11, as to the other member. Usually this extension movement is designed to be sufficient to permit the introduction of two fillers, as 28, 28, so that the table may be extended by this means without the extension of the pedestal, so far as it is prudent to permit it to overhang the support afforded by the pedestal feet. In order that these fillers may be introduced, the range of extension permitted by the slides must be enough more than the width of the fillers to allow for the tenons which are to connect them with each other and with the table top members, and such extension having been made and the slides introduced the table top members must be closed together in order to present a finished appearance. For so closing them, which may require some force if the tenons are tightly fitted, and for locking them in any event, it is desirable to provide specific devices, and for that purpose the bar, 15, is provided at its outer end with second and third dogs, 36 and 46, corresponding to the dog, 16, and upon the outer bridge bar, 10ª, of the opposite member there are pivotally mounted second and third dogs, 37 and 47, corresponding and similar in all respects to said dog, 17, and connected thereto by a link, 38, so that the movement of the two dogs under the thrust of the bar, 15, will be the same, the movement of the dogs, 37 and 47, at the upper end being therefore equal to the movement of the dogs, 36 and 46. The intervals between the successive dogs, 15, 36 and 46 and 17, 37 and 47, is equal to half the unit filler width, so that these dogs are in position to be engaged by the latches, 18, when the table top members are extended for accommodating one or more fillers, precisely as the first pair of dogs, 16 and 17, are adapted for such engagement when the members are closed together without the fillers. The bell-crank lever, 19, being operated precisely as for locking the table members together without the fillers will operate similarly for locking them together with the fillers.

It will be observed that the devices described are adapted to draw and lock the table top members tightly together when the pedestal is extended, only in case such extension is to a stopped limit, because being once unlocked from each other the two pedestal members (or, in the absence of a pedestal, the bridges, 10, 10,) will yield apart upon any pressure reacting upon them for crowding the table top members together, and such pressure will therefore operate for such crowding together only when the pedestal members or bridges, 10, 10, are stopped in their own separating movement. It will be understood that the ordinary construction of extension table slides affords such stoppage at the limit of extension of the slide construction, and that this limit is only enough more than some predetermined multiple of the unit width of fillers or leaves to allow a convenient space to accommodate the tenons, so that the fillers may be introduced and the table members then crowded together to close up the joints as the tenons enter their sockets, and this amount of crowding movement the devices above described are adapted to perform. But with the provision shown for engaging the table top members at a plurality of stages by means of dogs or latches succeeding each other at intervals equal to half the unit width of the fillers, it will be seen that it is possible to insert either an odd or an even number of fillers, from one up to the full number to which the table top members can be spread, without spreading the pedestal or bridges, 10, and at each stage of extension to lock the parts together with symmetrical extension of the table,—that is, so that it will be extended equally both ways from the center of the pedestal, when there is a pedestal, or, in any event, from the bridges, 10. It will also be seen that if the range of extension provided for without spreading the bridges or opening the pedestal is two units of the filler width (which is the customary provision in tables constructed for this mode of extension), by providing in the extension devices for separation of the pedestal members (or bridges, 10, 10,) only to the same extent,—two units of the filler width,—the table may be extended four units of the filler width, or any less number, and positively locked at each stage of the extension. In like manner, if the extension devices are constructed for extending the table top members three or four units of the filler width without separating the pedestal members or bridges, 10, 10, the table as a whole may be extended six or eight times the filler-width unit, or any less number of times that unit, and locked at every stage of extension.

Upon releasing the top locking devices by throwing the bell crank lever, 19, over to the position shown in Fig. 3, the dogs, 16 and 17, are withdrawn from the latch shoulders enough to permit the table top members to be spread far enough for the operator to insert his hand between them and disengage the latches from the dogs for further extension; and this method when satisfactory will dispense with the necessity of pivoting the dog, 16, to the bar, 15, as shown. But the pivoted construction described is designed to obviate the necessity of any attention by the operator to the mat-

ter of disengaging the dogs and latches, for when the bar, 15, is withdrawn the full limit of the throw of the bell-crank lever, the tail, 16ª, of the dog, 16, is overhanging the aperture, 22ᶜ, in the guide plate, 22, and upon the table top member being withdrawn in the spreading, the dog is tipped back outward and the latch readily relieves itself from it. The same construction of the laches, 36 and 46, operates in the same manner. The dogs, 17, 37 and 47, on the other table member being left free to rock over their fulcrums outwardly as soon as the bar, 15, is withdrawn from the lower end of the dog, 17, are retracted by their springs to the oblique position leaning outward toward the end of the table shown in Fig. 3, and are readily rocked further in the same direction upon the encounter of the latches with them as that table member is withdrawn in spreading, and thus the latches readily pass out over them, the dogs being returned by the spring, 26, to their normally inclined position. It is not necessary to provide the dogs, 16, 36 and 46, with retracting springs, because the first effect of the inthrust of the bar, 15, will be to tilt the dogs back to their operative position as the tails encounter the margin of the slot, 22ᶜ, and ride up out of the slot on to the surface of the plate, 22.

In Fig. 8 there is shown a modification consisting in the omission of all except the outer dogs, 46 and 47, and providing on the table members means at a plurality of points for engagement of these dogs equivalent in effect to a plurality of latches, with the outermost of which the dog engages when the table members are to be closed together without a filler, the next being in position to be engaged for like purpose when a single filler is inserted, and the next following being in a position for like engagement when two fillers are inserted. This construction may be carried to any extent, according to the range of extensibility of the table top with respect to the pedestal, the intervals between the engaging points being one-half the unit of the filler width, so that the table top may be closed up symmetrically, whether the number of fillers inserted is odd or even. In the construction shown, the means for thus engaging the dogs at a plurality of points consists in a plate, 30, having spring tongues, 31, struck out from it, separated by the required interval of half a unit filler width and adapted for engagement of the dogs.

It will be obvious that instead of making the latches which are carried by the table top the yielding element in the means of connecting the operating device with the table top, the dogs may be made yielding or have their terminals made yielding, and the table top may then be provided with positively mounted shoulders or stops for engagement with the dogs. Such a construction is shown in Fig. 9, in which the dogs, 46, are made in two parts, the terminal part 46ˣ, being pivoted to the other part and adapted to yield forward,—that is, toward the parting plane of the table,—to permit the abutments, 18ˣ, which are to take the place of the latches, to pass over and become engaged in front of the dogs. In this modified construction the dogs, 47, are made in two parts and pivoted together at the fulcrum, the terminal part being stopped against the other part so as to operate as rigid therewith in the drawing and locking movement of the dog, but to yield inwardly therefrom to permit the abutment, 18ˣ, to ride over the end of the dog for engagement in front of it.

It will be understood that when this invention is applied to a pedestal table, the device which is provided for locking the pedestal members together in effect locks together the bridges of the two table members upon which one of the top-locking elements is mounted,—that is to say, said bridges being in such construction the pedestal caps. When it is applied to an ordinary five-legged table having no pedestal, the corresponding bridges must nevertheless be locked together at the closed position in order to bring into operation the top-locking devices. In such case, any simple expedient may be employed for connecting the bridges, such as hooks, 50, 50, on one bridge-engaging studs, 51, on the opposite bridge. By making these hooks with a plurality of stud-engaging offsets, 50ª, at intervals in the length of the hooks equal to the unit filler width, or providing a plurality of studs, 51, at like distances, or by both of these expedients, it is possible to lock the bridges to each other at different stages of extension, thus increasing the range of extensibility of the table top within which it may be locked up.

The same expedient of hooks provided with double means for engagement at intervals may be used in a pedestal table in the same position on the bridges as above described, being in that case, in addition to the ordinary pedestal-locking device which operates at a lower position in the pedestal.

I claim:—

1. In an extension table, in combination with the two table members and the slides by which they are adapted to be extended; a bridge on each member connecting two corresponding slides thereof; means for locking the bridges together; each table member having two coöperating elements adapted to be engageably disengaged, carried one by the bridge and the other by the table top pertaining to such member, the element which is carried by the bridge of one table member being extended toward the

parting plane and adapted to encounter and actuate the corresponding element of the other table member; means for advancing and retracting said actuating element toward and from the parting plane and for locking it at advanced position.

2. In an extension table, in combination with the two table members and their respective extension slides; a bridge on each member which connects two corresponding slides thereof; coöperating devices on the two table members each comprising two elements adapted to be disengageably engaged, one carried by the bridge and the other by the table top; means upon one table member for advancing and retracting the bridge carried element toward and from the parting plane; means on the other table member exposed to the advancing movement of said advanced and retracted element and connected with the bridge-carried element on said other member for actuating the latter in direction for engagement with the coöperating element on the table top, and means for locking said advanced and retracted element at advanced position.

3. In an extension table, in combination with the two table members and their respective extension slides, a bridge on each member connecting two corresponding slides thereof and means for locking the two bridges together; a bar carried by the bridge of one table member for reciprocation toward and from the parting plane; a dog carried by said bar and means on the table top of said member adapted for engagement with the dog in the advancing movement of the bar; means for advancing and retracting the bar and for locking it at advanced position; coöperating elements on the other table member, one carried by the bridge and the other by the table top, adapted to be disengageably engaged, the bar of the first member being extended for encounter with the bridge-carried element of the other member and adapted by such encounter in the advance movement to actuate said element for engaging the table top element of said other member.

4. In an extension table, in combination with the two table members and their respective extension slides; a bridge on each member connecting two corresponding slides thereof; means for locking the bridges together; coöperating devices carried respectively by the bridge and the table top on each member, said coöperating devices being adapted for mutual engagement to resist movement of the table top with respect to the bridge away from the parting plane, one of said devices being movable on the part on which it is mounted toward and from the parting plane, and means for so moving it and for securing it in the position at which the table top is advanced toward the parting plane by such movement, the movable element on one table member being actuated by the movable element on the other table member, and said elements being extended toward the parting plane for actuation of the one by the other in the table-top-advancing movement.

5. In an extension table, in combination with the table members and their respective extension slides; a bridge on each member connecting two corresponding slides thereof and means for locking the bridges together; a slide bar mounted upon the bridge of one table member; a dog carried by such bar; a latch carried by the top of said table member adapted for engagement with said dog in direction for resisting the outward or extending movement of the table top with respect to the bridge; means for thrusting the bar inward toward the parting plane and for securing it at such inthrust position; a lever dog pivotally mounted between its ends on the bridge of the opposite table member and a latch carried by the top of the corresponding table member adapted for engagement with the dog in direction for resisting the outward or extending movement of the top with respect to the bridge of said table member; means interposed between the bar and the lower end of said lever dog in the path of the advance movement of the bar for actuation of said lever dog by said bar in the inward or table-closing movement of the latter.

6. In an extension table, in combination with the table top members and their respective slides; a bridge on each member connecting two corresponding slides thereof; coöperating devices on the bridge and table top respectively of each member for disengageably engaging them together against extension movement of the top with respect to the bridge, and means on one table member for advancing the table top relatively to the bridge toward the parting plane and for locking it at advanced position; means for drawing and securing the bridges together, the bridge-and-top-engaging devices of the two members having parts extended toward each other for encounter as the table members approach, the device encountered on the second member being adapted to be moved by such encounter in direction for advancing the table top toward the parting plane relatively to the bridge.

7. In an extension table, in combination with the two table top members and their respective extension slides, a bridge on each member connecting two corresponding slides thereof and means for locking the bridges together; a dog pivotally connected to said slide bar; means on said dog and the bearing of the slide bar for holding the dog rigid with the slide bar at one position of the latter in its bearing, the bearing being

adapted to permit the dog to tilt back with respect to the bar at another position; a latch on the corresponding table top for engagement with the dog in direction for advancing the top relatively to the bridge toward the parting plane and for holding it at such advanced position; means for operating the bar and for locking it at advanced position.

8. In an extension table. in combination with a table top member, extension slides pertaining thereto and a bridge which rigidly connects such slides; means for advancing the table top with respect to such bridge and slides, and for locking it at advanced position, comprising a slide bar mounted on the bridge; a dog pivotally connected with such slide bar having a tail-piece extending rearwardly from its pivot, the bearing for the slide bar having a seat on which the tail-piece of the dog is stopped at advanced position of the dog and a recess into which such tail-piece may recede for tilting the dog at retracted position; means for advancing and retracting the bar, and a latch on the table top for engagement with the dog, one of said engageable members being adapted to yield for permitting the latch to pass the dog to reach engaging position.

9. In a pedestal extension table, in combination with the table top members and their respective pedestal members; slides connected rigidly with the pedestal members respectively and slidably with the corresponding table top members; means for locking the pedestal members together; cooperating devices mounted on the table top and pedestal of each member for disengageably engaging with each other such pedestal and table top elements for resisting their relative extension, said coöperating devices on one table member comprising means extended from one of them for encounter with the corresponding device on the other table member in the locking movement for communicating the locking movement to said devices on said other member.

10. In an extension table, in combination with separable table top members, slides which connect them for extension to a fixed limit; fillers adapted to be interposed between them when extended; a bridge on each table member connecting corresponding slides thereof; means extending from bridge to bridge for securing the two bridges to each other, provided with means for so securing them at a plurality of relative positions differing by the amount of the unit filler width and multiples thereof, one table member having two coöperating elements adapted to be engageably disengaged, one of said elements carried by the bridge and the other by the table top pertaining to such table member, and means for advancing and retracting one of said elements toward and from the parting plane of the table members after said elements are engaged and for locking it at the position at which it holds the table-top member advanced with respect to the bridge.

In testimony whereof, I have hereunto set my hand at Chicago, Illinois, this 24th day of June, 1907.

CHAS. S. BURTON.

Witnesses:
EDWARD T. WRAY,
M. GERTRUDE ADY.