

Aug. 6, 1935.

A. L. SLEE

2,010,041

LOCKING DEVICE

Filed Oct. 11, 1933

3 Sheets-Sheet 1

Fig. 1.

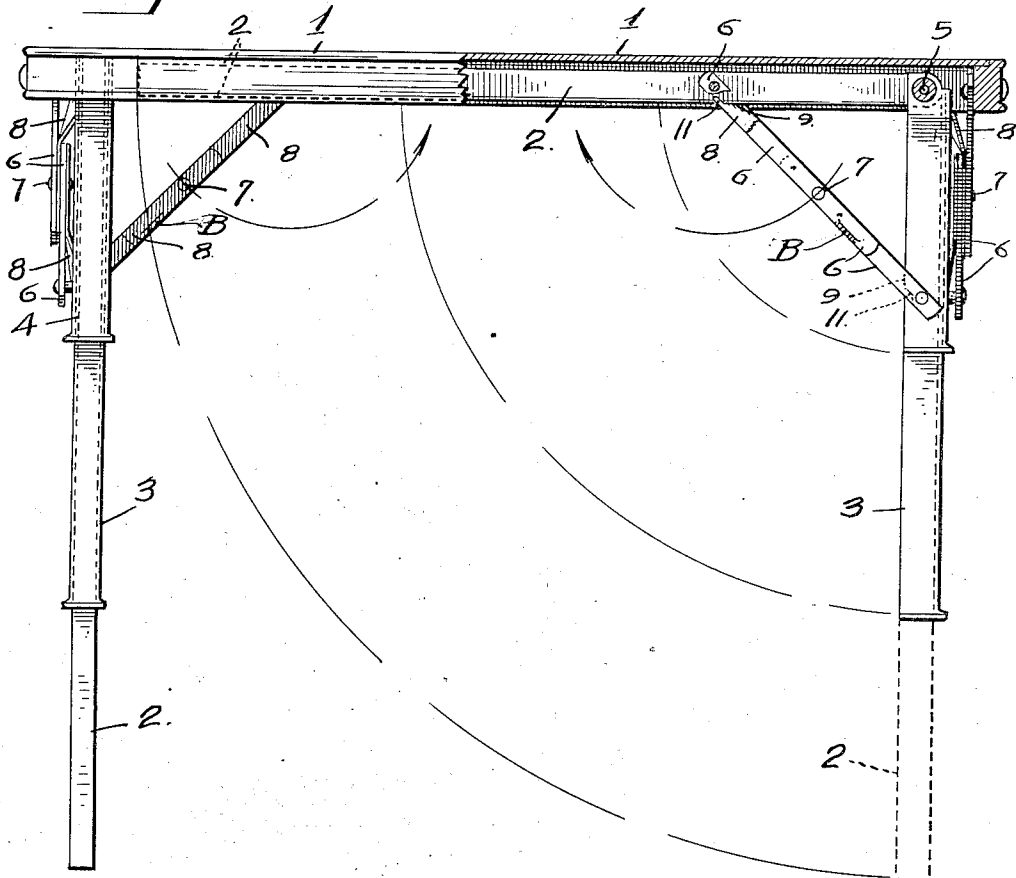
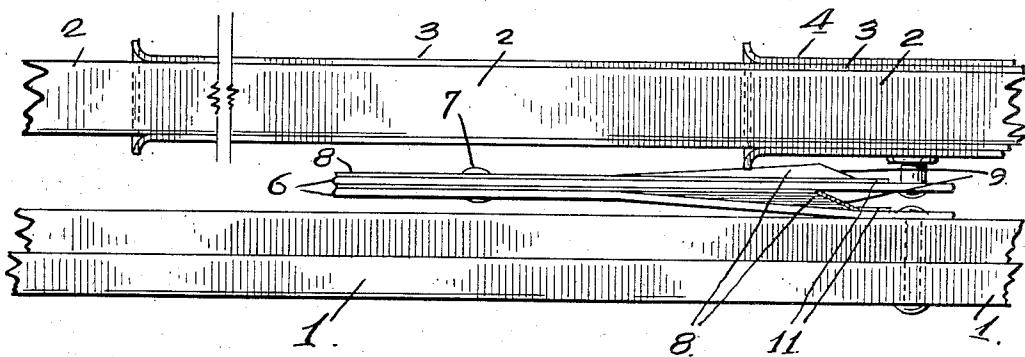


Fig. 6.



INVENTOR.

Arthur L. Slee.

Aug. 6, 1935.

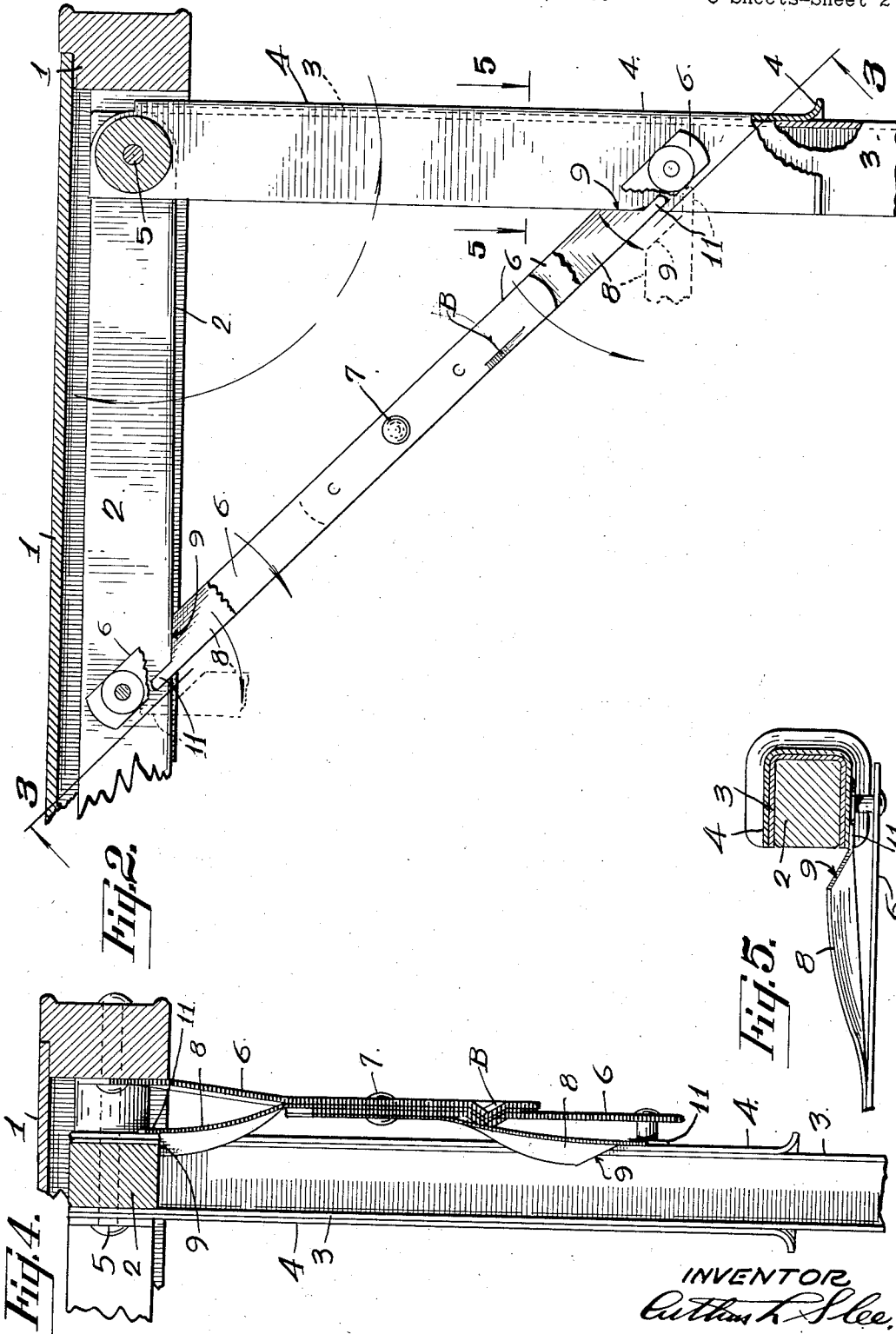
A. L. SLEE

2,010,041

LOCKING DEVICE

Filed Oct. 11, 1933

3 Sheets-Sheet 2



Aug. 6, 1935.

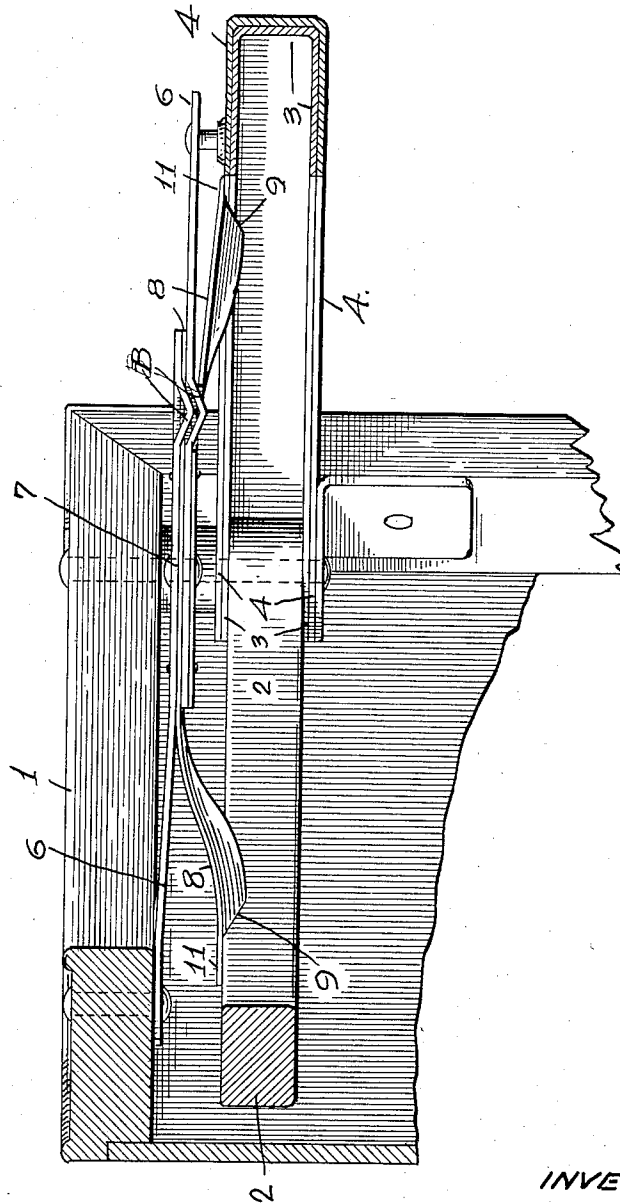
A. L. SLEE

2,010,041

LOCKING DEVICE

Filed Oct. 11, 1933

3 Sheets-Sheet 3



INVENTOR.

Arthur L. Slee.

UNITED STATES PATENT OFFICE

2,010,041

LOCKING DEVICE

Arthur L. Slee, San Francisco, Calif.

Application October 11, 1933, Serial No. 693,083

12 Claims. (Cl. 311—95)

My invention relates to improvements in locking devices for locking one or more legs in extended and/or folded position upon a table having a plurality of sets of nested folding legs, where each set contains several nested legs of several different lengths for supporting said table at several different elevations when certain legs are extended into operative or supporting position and the remaining legs are folded.

The primary object of the present invention is to provide a new and improved leg-locking device for the type of folding table disclosed in United States Patent Number 1,891,734, issued to me on the 20th day of December, 1932.

Another object of the present invention is to provide a locking means for a multi-legged folding table which will be automatically actuated by the simple expedient of extending or releasing the usual standard type of folding leg-brace to positively lock and unlock both folded and extended legs in or from their respective positions, thereby eliminating the necessity for additional operations in the manipulation of the table.

A still further object of the present invention is to provide a new and improved locking device of the character set forth, having a maximum simplicity and economy of operation and construction to reduce the cost of manufacturing and assembling the device upon any standard folding card table.

I accomplish these objects by means of the improved device disclosed in the accompanying drawings, in which—

Fig. 1 is a side elevation, partly in section, of a multi-legged folding table, disclosing my improved locking device attached thereto;

Fig. 2 is an enlarged broken view, partly in section, of the upper right-hand portion of Fig. 1;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a side elevation projected from Fig. 2;

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 2 but illustrating the dotted releasing instead of the full line locking position of the locking device; and

Fig. 6 is a plan view of Fig. 2 with the top portion of the table removed and the locking device disclosed in folded position.

Referring to the drawings, the numeral 1 is used to designate the top or rails of a multi-legged folding table of the type referred to in the above mentioned patent, reference to which is hereby made for a full disclosure.

The usual table legs 2 are nested, when the table is set to full height, within intermediate channel

legs 3 which legs 3 are in turn nested within the shorter legs 4, all of said legs 2, 3 and 4 being pivotally mounted upon a common pivot 5 secured to the table top 1 at each corner thereof, so that a table is provided with a plurality of sets of nested legs, each set containing several legs of different lengths whereby said table top 1 may be supported at several different elevations above a supporting surface, by extending four legs of the same length, one from each set. By selecting different combinations of short legs on two corners of the table and longer legs upon the other side or corners, various inclinations and elevations may be obtained for various purposes.

The usual type of folding braces are employed which usually consist of two arms 6 hingedly connected as at 7. One end of each brace is usually pivotally connected to the under side of the table 1 and the other end is pivotally connected, in the present instance, to the shorter channel leg 4, as disclosed in Figs. 1 and 6 of the drawings.

On the back of each arm 6 I have provided a flat spring latch 8 rigidly secured to the adjacent arm 6, said latches having their free ends extending in opposite directions. That is to say, from the pivot 7 toward the table top and legs respectively when said brace is diagonally extended to brace the extended or folded legs of the table. The said free ends are beveled or inclined as at 9 so that when the brace 6 is diagonally extended, the beveled ends 9 lie parallel to and engage the inside of the extended legs and the under side of any folded legs respectively. These beveled ends 9 are also laterally offset at an angle or inclination to the plane of the arms 6 so that the inclined offset and beveled end 9 will form a cam surface with respect to the sides of the legs when said brace is partially or wholly released, as disclosed in Fig. 5 of the drawings, the purpose of which will hereinafter be more fully set forth.

The free ends of the spring latches 8 are also provided with extensions 11 which rest against the outer sides of the legs 4 to limit the movement of said latches and thereby effectively retain said latches 8 in operative position.

Owing to the thinness of the sheet metal channels from which the legs 3 and 4 are formed, the edges on the open sides of said channels effectively seat themselves within the shoulder formed at the junction of the bevel 9 and the extension 11, as disclosed in the lower portions of Figs. 3 and 4 of the drawings. One corner of the solid leg 2, when folded and the legs 3 and 4 are ex-

tended, is also similarly engaged, as disclosed in the upper portion of Fig. 3 of the drawings.

The stop B, shown in Figs. 1, 2, 3, and 4 of the drawings, is the usual stop provided in standard braces for folding card tables to prevent the arms 6 from being moved past a longitudinally aligned or extended position and consists of a pair of struck-up lugs one on each arm nesting one within the other. But such stop forms no part of the present invention and is entirely superfluous in view of the positive stop provided by the beveled ends 9 of the spring latches 8 which engage both folded and extended legs and positively prevent the arms 6 from being moved beyond an extended or locking position.

In operation:

When it is desired to set the table to full height, all of the legs 2, 3 and 4 of different lengths in each set are extended and as the braces 6 are extended to secure said legs in said extended or supporting position, the beveled surface 9 of each of the lower spring latches 8 is moved parallel to and engage the inner sides of the extended legs, as disclosed in Figs. 2, 3 and 4 of the drawings, and the corners or edges of the nested legs of each set are engaged by the shoulder formed by the now parallel beveled ends 9 and the extensions 11 and positively locked together in nested relation. Thus, the leg 2 will be effectively reinforced by the channel 3 throughout approximately two-thirds of its length, and the channel 3, in turn, will be effectively reinforced throughout approximately one-half of its length by the channel or leg 4, thus effectively reinforcing the leg 2 and producing a tapered effect to impart greater rigidity and strength to said leg 2.

By partially releasing the braces 6 and folding all of the regular or standard legs 2 of the table 1 against the under side of said table and again extending the braces 6, the folded legs 2 will be automatically and positively locked in such folded position and the remaining nested legs 3 and 4 will be engaged and also automatically and positively locked together in extended or supporting position by the beveled ends 9 of the spring latches 8 which beveled ends are now parallel with the sides of the folded and extended legs by reason of the diagonal position of the brace 6, as fully disclosed in Figs. 2, 3 and 4 of the drawings.

If a lower elevation for the table 1 is desired, the braces 6 are again partially released and the intermediate legs 3 are folded and nested upon the already folded long legs 2, said intermediate legs readily passing the beveled ends 9 of the partially released spring latches 8 to nest with said legs 2.

Should the operation be reversed at this position, that is to say, the shorter legs only have been previously used and it is desired to extend instead of fold the intermediate legs, the legs 3 may readily unfold and pass the beveled ends 9 of the partially released spring latches 8 as said beveled ends 9 in this position serve as cam surfaces which, when engaged by the legs 3 in unfolding or in being extended, serve to recede said spring latches 8 and readily permit the passage in either direction of said legs 3.

If the arms 6 are now again extended, both folded legs 2 and nested legs 3 are automatically and positively locked in folded position against the under side of the table top 1 and extended positions, respectively by the beveled ends 9 of the spring latches 8, which beveled ends are moved

parallel to said legs by the normal diagonal position of the extended braces 6.

When all of the legs are folded against the table top for storage or transportation, the spring latches 8, by reason of their resiliency, are readily squeezed between the folded arms 6 of the brace, as disclosed in Fig. 6 of the drawings, which figure also discloses the open sides of the nested channel legs 3 and 4 and the leg 2 also nested therein.

Thus it will be observed that the mere normal operation of the braces of the standard type now in use with most folding card tables, operating in conjunction with the latches 8, will automatically and positively lock all legs of different lengths together and thereby impart greater strength and rigidity to said legs, when the full height of the table is desired, and will also automatically and positively lock all extended as well as all folded legs when the braces and legs are moved to secure an intermediate or low elevation of the table.

It is also obvious that the latches function and operate automatically in either direction, that is to say, to engage and positively lock, or to fully disengage and unlock, without other operation than the manipulation of the braces 6.

I claim:

1. The combination with a table having a plurality of sets of folding legs, each set containing legs of different lengths for supporting said table at different elevations, and also having a folding brace for each set to hold one leg of said set in extended supporting position, of means actuated by said brace, when extended, for locking together all of the legs of one set to impart greater strength and rigidity to said legs.

2. The combination with a table having a plurality of sets of folding legs, each set containing legs of different lengths for supporting said table at different elevations, and also having a folding brace for each set to hold one leg of said set in extended supporting position, of means actuated by said brace, when extended, for locking together all of the legs of one set to impart greater strength and rigidity to said legs; and for automatically releasing said legs when said brace is released.

3. The combination with a table having a plurality of sets of folding legs, each set containing legs of different lengths for supporting said table at different elevations, and also having a plurality of folding braces, one for each set, to hold extended one leg of said set, of means actuated by said brace for automatically locking another leg of said set together with the extended leg and for locking another leg in folded position on said table when said brace is extended to locking position.

4. The combination with a table having a plurality of sets of folding legs, each set containing legs of different lengths for supporting said table at different elevations, and also having a plurality of folding braces, one for each set, to hold extended one leg of said set, of means actuated by said brace for automatically locking another leg of said set together with the extended leg and for locking another leg in folded position on said table, when said brace is extended to locking position, and for automatically unlocking said extended and folded legs when said brace is released.

5. The combination with a table having a plurality of sets of legs, each set containing legs of different lengths for supporting said table at different elevations, and also having a plurality of folding braces, one for each set, to hold one of

said legs extended, of latches, mounted upon each brace for engaging and locking either one or more of the remaining legs of the set to the extended leg, and for locking one or more folded legs in folded position when said brace is extended.

6. The combination with a table having a plurality of sets of legs, each set containing legs of different lengths for supporting said table at different elevations, and also having a plurality of folding braces, one for each set, to hold one of said legs extended, of latches mounted upon each brace for engaging and locking either one or more of the remaining legs of the set to the extended leg, and for locking one or more folded legs in folded position when said brace is extended; and for releasing said extended and folded legs when said brace is released from extended position.

7. The combination with a table having a plurality of sets of folding legs, each set containing several legs of different lengths whereby said table may be supported at several different elevations by extending certain of said legs and folding other legs of each set, said table also having folding braces, one for each set, of spring latches mounted upon said braces and moved by said braces, when extended, to engage and lock said extended and folded legs in their respective positions.

8. The combination with a table having a plurality of sets of folding legs, each set containing several legs of different lengths whereby said table may be supported at several different elevations by extending certain of said legs and folding other legs of each set, said table also having folding braces, one for each set, of spring latches mounted upon said braces and moved by said braces, when extended, to engage and lock said extended and folded legs in their respective positions, and also moved to release said extended and folded legs when said brace is released.

9. The combination with a table having a plurality of sets of folding legs, each set containing several legs of different lengths whereby said table may be supported at several different elevations by folding certain legs of the same length and extending other legs, of a folding brace having one end connected to said table and the other

end connected to one of said legs of one set; and a plurality of means mounted upon said brace for automatically locking the folded and extended legs in their respective positions when said brace is extended.

10. The combination with a table having a plurality of sets of folding legs, each set containing several legs of different lengths whereby said table may be supported at several different elevations by folding certain legs of the same length and extending other legs, of a folding brace having one end connected to said table and the other end connected to one of said legs of one set; and a plurality of means mounted upon said brace for automatically locking the folded and extended legs in their respective positions when said brace is extended, and for automatically releasing said extended and folded legs when said brace is released.

11. The combination with a table having a plurality of sets of nested folding legs, each set containing several legs of different lengths whereby said table may be supported at several different elevations by extending certain of said nested legs and folding the remaining legs, and also having a folding brace, one for each set, connected to said table and to one of the nested legs; and spring latches mounted upon said brace and having beveled ends for paralleling and locking the extended and folded legs when said brace is moved to extended position.

12. The combination with a table having a plurality of sets of nested folding legs, each set containing several legs of different lengths whereby said table may be supported at several different elevations by extending certain of said nested legs and folding the remaining legs, and also having a folding brace, one for each set, connected to said table and to one of the nested legs; and spring latches mounted upon said brace and having beveled ends for paralleling and locking the extended and folded legs when said brace is moved to extended position, and for moving said latches and the beveled ends thereon to form cam surfaces when said brace is released, whereby said latches may be receded to release the legs when said cam surfaces are engaged by said legs.

ARTHUR L. SLEE. 50