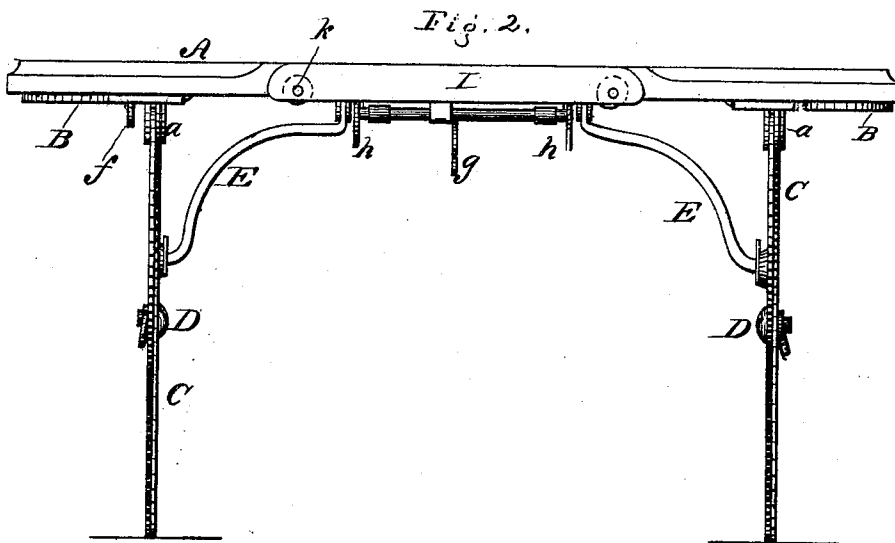
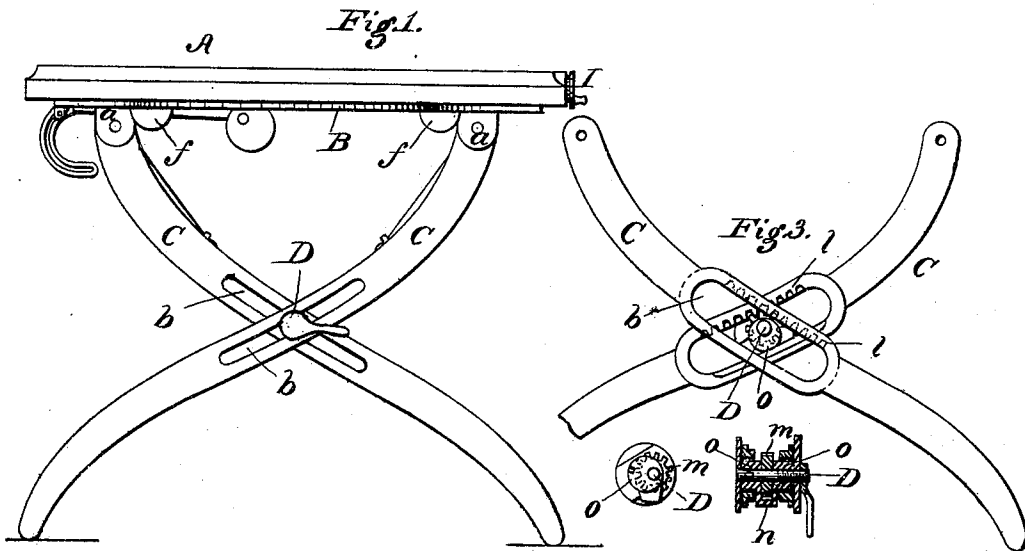


W. A. ROOT.
FOLDING TABLES.

No. 179,961.

Patented July 18, 1876.



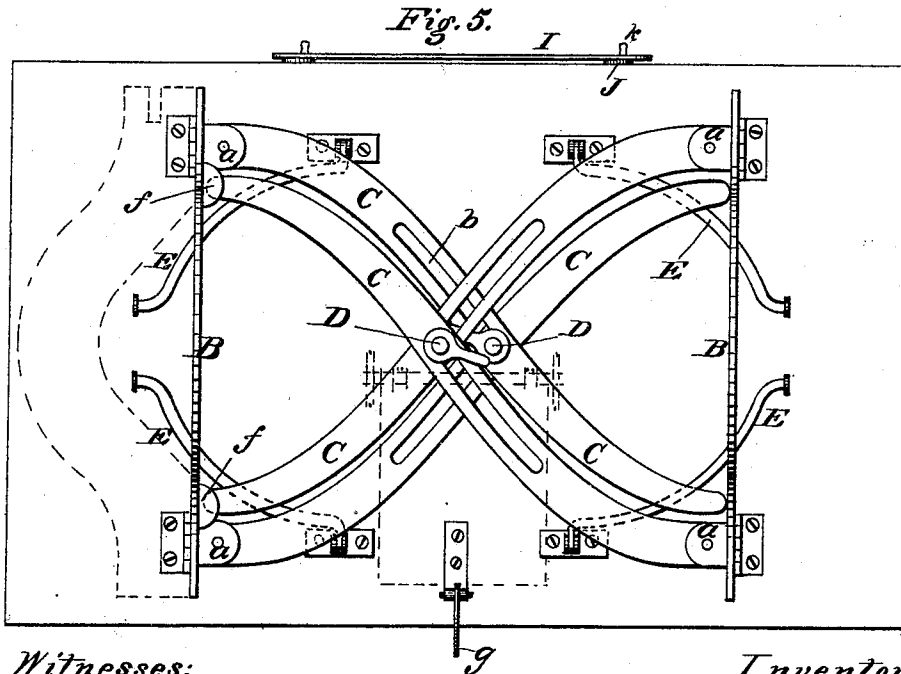
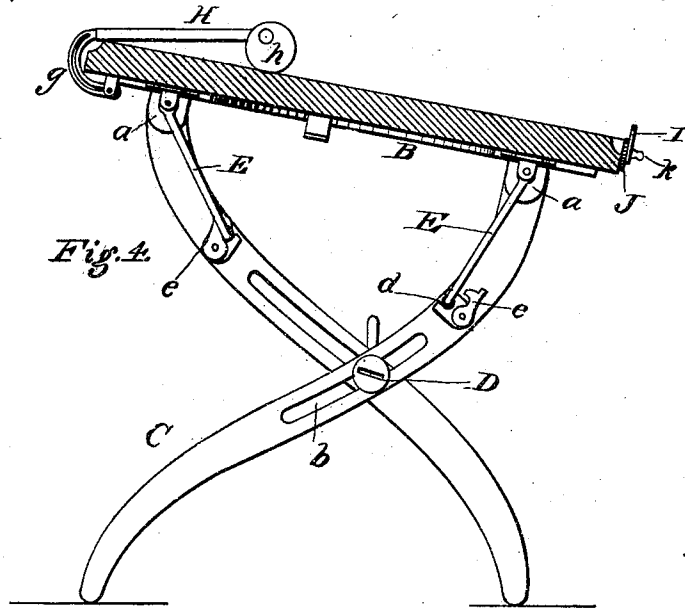
Witnesses:
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Inventor:
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His attys.

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UNITED STATES PATENT OFFICE.

WINTHROP A. ROOT, OF ILION, NEW YORK.

IMPROVEMENT IN FOLDING TABLES.

Specification forming part of Letters Patent No. **179,961**, dated July 18, 1876; application filed June 5, 1876.

To all whom it may concern :

Be it known that I, WINTHROP A. ROOT, of Ilion, in the county of Herkimer and State of New York, have invented certain Improvements in Adjustable Folding Tables, of which the following is a specification :

My improvements consist in a peculiar manner of arranging the folding legs to admit of the table-top being raised and lowered, and set at any desired inclination; in a shelf or stand arranged so that it may retain a horizontal position notwithstanding the inclination of the table-top; in an adjustable guard-plate to prevent the fall of objects from the top when it is set in an inclined position; and in other features of minor importance, as herein after fully explained.

Figure 1 represents an end elevation of my table with the top in a horizontal position; Fig. 2, a front elevation of the same; Fig. 3, a view illustrating a modified arrangement for locking and adjusting the crossed legs; Fig. 4, a vertical transverse section of the table with its top set at an inclination; Fig. 5, a bottom-plan view of the table folded up.

A represents the solid flat top of the table, provided on the under side, at opposite ends, with two transverse hinged plates, B, each of which latter is provided, at opposite ends, with lugs *a*, to which are pivoted the upper ends of two legs, C, arranged to cross each other at the middle, and clamped together by a compression-bolt, D, passing through slots *b*, made in them for the purpose, as shown. The hinging of the plates B, to which the legs are attached, admits of the latter being folded down compactly over each other upon the under face of the top, as shown in Fig. 5, in which condition the table presents a very small and compact appearance.

The pivoting and slotting of the legs in the manner shown admit of their relative positions being changed, in such manner as to raise and lower the top, and give the same an inclination in any direction whatever.

For the purpose of holding the legs in an upright position, and preventing them from folding down, I hinge to the under side of the top A four braces or arms, E, having heads or enlargements on their free ends, and provide the legs C with corresponding recesses *d*, to

receive said heads, and also with hooks *e*, to lock the heads therein, as shown. When the braces are thus locked in position, they hold the legs firmly and rigidly, and render the table very solid.

In order that the action of the braces may not be affected by the adjustment of the legs on their pivots, the hinges of the braces and the pivots of the legs are arranged in line, or so as to coincide with each other, as shown, so that the braces will always enter their places, and always hold firmly without being strained or twisted, regardless of the position in which the legs may stand when in use.

In order that the braces, when folded down against the top, may not interfere with the plates B, the latter are curved outward at the middle, as shown in dotted lines in Fig. 5, so that the braces may be folded down inside of the plates before the latter are turned up on edge by the folding down of the legs. When the legs are folded down the ends of the braces extend under the plates B, as shown.

Another advantage gained by curving the plates B outward is, that they are given a broader bearing on the table-top, and the table thereby given additional steadiness.

For the purpose of holding the legs down firmly in place when folded, one of the plates B is provided with two lugs, *f*, under which the feet of the legs of the other plate may be engaged, as shown in Fig. 5. The legs thus fastened hold down, in turn, the braces, and thus secure the whole firmly together, so that it may be carried conveniently and without danger of breaking or disarranging the parts.

In order that a lamp, heated iron, or other object may be used on the table safely when the top is inclined, I provide the top with a shelf, H, which may be maintained in a horizontal position, notwithstanding the forward inclination of the top. This shelf consists of a flat board connected at one end to the table by a curved slotted arm, *g*, working over a pin supported between studs on the under side of the table-top. At its free end the shelf is provided with a transverse shaft having two eccentric heads or disks, *h*, on its ends.

When in use the shelf is placed on top of the table, and sustained at the upper end by

resting thereon, and at the lower end by the eccentrics *h*, which are rested upon the table-top and turned until the shelf is raised to a horizontal position. When not required the shelf is turned up against the under side of the table-top and secured by a pivoted button, *i*, provided for the purpose, as shown in Fig. 2. Against the lower or front edge of table-top I mount an adjustable guard-plate, *l*, having its ends mounted on two eccentric pins, *k*, on revolving disks J, as shown in Figs. 1, 2, and 5, so that by turning the disks by means of the pins *k*, which are protruded through the plate for the purpose, the plate may be caused to project above the edge of the table, as shown in Fig. 4, so as to prevent objects thereon from sliding off, or, lowered flush with the edge, as shown in Fig. 1, so as to be out of the way and free from liability to injury. In order to facilitate the adjustment of the table-top at an inclination, and to secure the same adjustment of the legs at both ends, the arrangement represented in Fig. 3 may be adopted. Each pair of legs has its slots provided with a toothed rack, *l*, on one side, and as a pinion, *m*, mounted on the clamping-screw, and arranged to engage in the racks of both legs. The pinions thus arranged form lifting or rolling fulcrums between the legs, and serve to give the two pairs of legs precisely the same movement or adjustment as they are effected by the tipping of the table-top.

When, however, the height of the table is to be changed, it is necessary to disengage the pinions from the racks, for which purpose the compression-bolt D, on which the pinion is mounted, is provided at its middle with an eccentric, *n*, and at its ends with two eccentrics, the latter seated in loose plates or bearings *p*, mounted in the slots in the legs, as shown, so that upon turning the bolt D the eccentrics will throw it forward or backward in the slots, and cause it to engage or disengage the pinions, as required. The bolt will be provided at one end with a large head or handle by which to turn it, and to hold it from turning while its nut is being

turned. It is obvious that my pivoted folding legs may be used with different braces, that the braces arranged, as shown, may be united to the legs in a different manner, and that instead of locking the folded legs down by studs F, on the plates B, the latter may have notches cut in their ends to receive the legs and permit them to extend beyond, so that a shorter top may be used.

Having thus described my invention, what I claim is—

1. In combination with the top A, the transverse plates B hinged thereto, and the slotted and crossed legs C, pivoted to the plates B, and provided with a clamping-screw, D, substantially as shown and described.

2. The laterally-swinging braces E, provided with the enlarged heads, in combination with the folding legs C, provided with the recesses *d* and the hooks *e*, constructed and arranged as shown, whereby the heads of the braces are caused to lock edgewise into the legs and held therein by the hooks.

3. In combination with the pivoted crossed legs, adjustable on their pivots, as described, the folding braces E, hinged at points in line with the pivots of the legs, as and for the purpose described.

4. In combination with the pivoted crossed legs C, provided with the slots *b*, and racks *l*, the pinion *m*, mounted and arranged to operate substantially as shown.

5. In combination with the tilting table-top A, the shelf H, provided with the slotted arm *g*, and eccentrics *h*, as shown.

6. In combination with the table-top A, the guard-plate I, and the disks J, provided with the eccentric pins K.

7. In combination with the hinged plates B, having the legs C pivoted thereto, the studs or lugs *f*, or their equivalents, to retain the legs in place when folded.

WINTHROP AUGUSTUS ROOT.

Witnesses:

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