

D. T. Robinson.
Extension Table.

N^o 93,557

Patented Aug. 10, 1869.

Fig. 1.

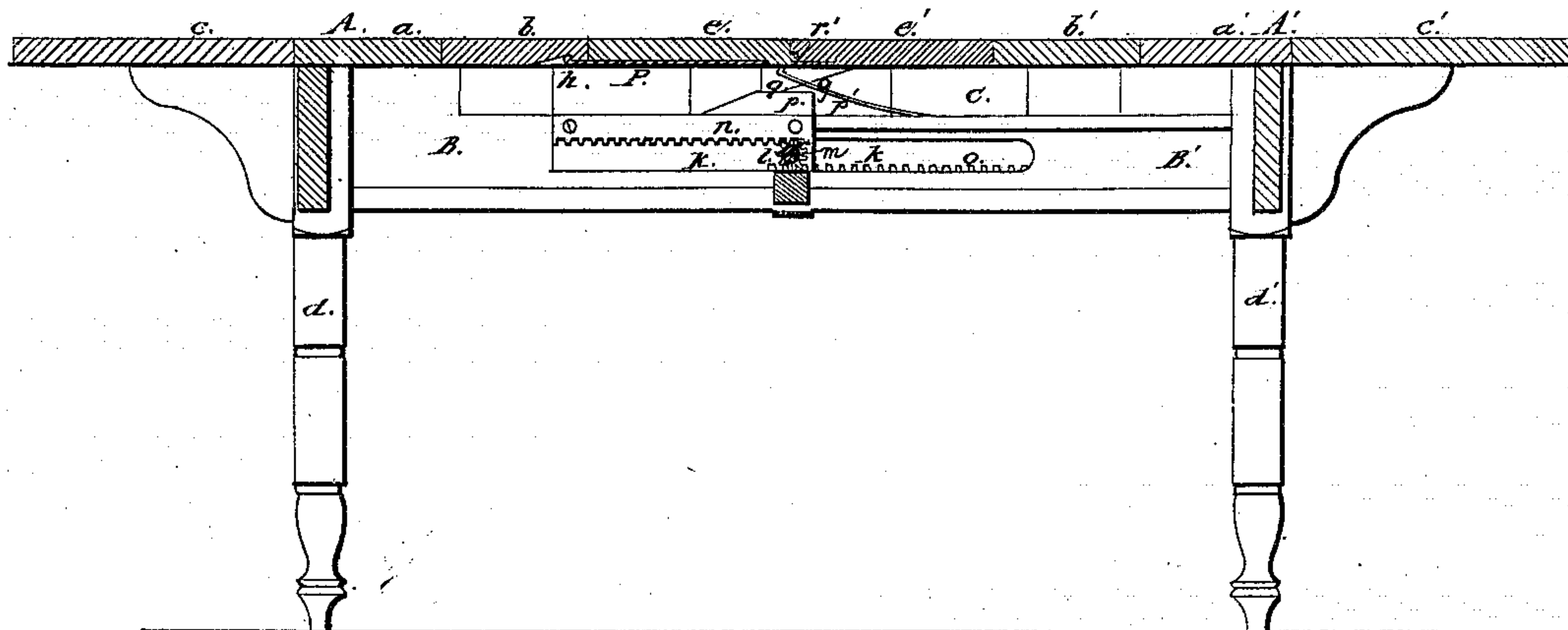


Fig. 2.

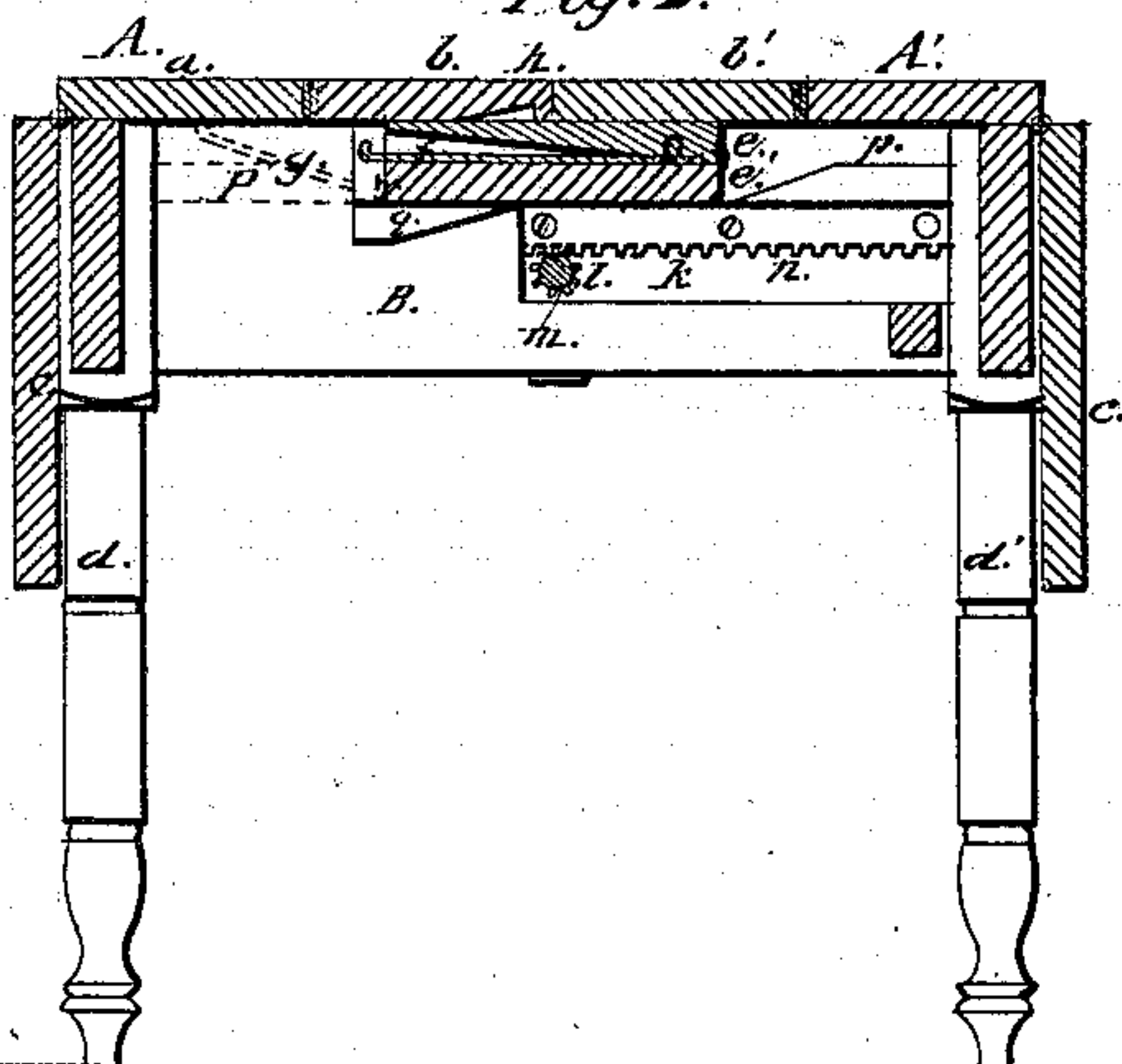


Fig. 3.

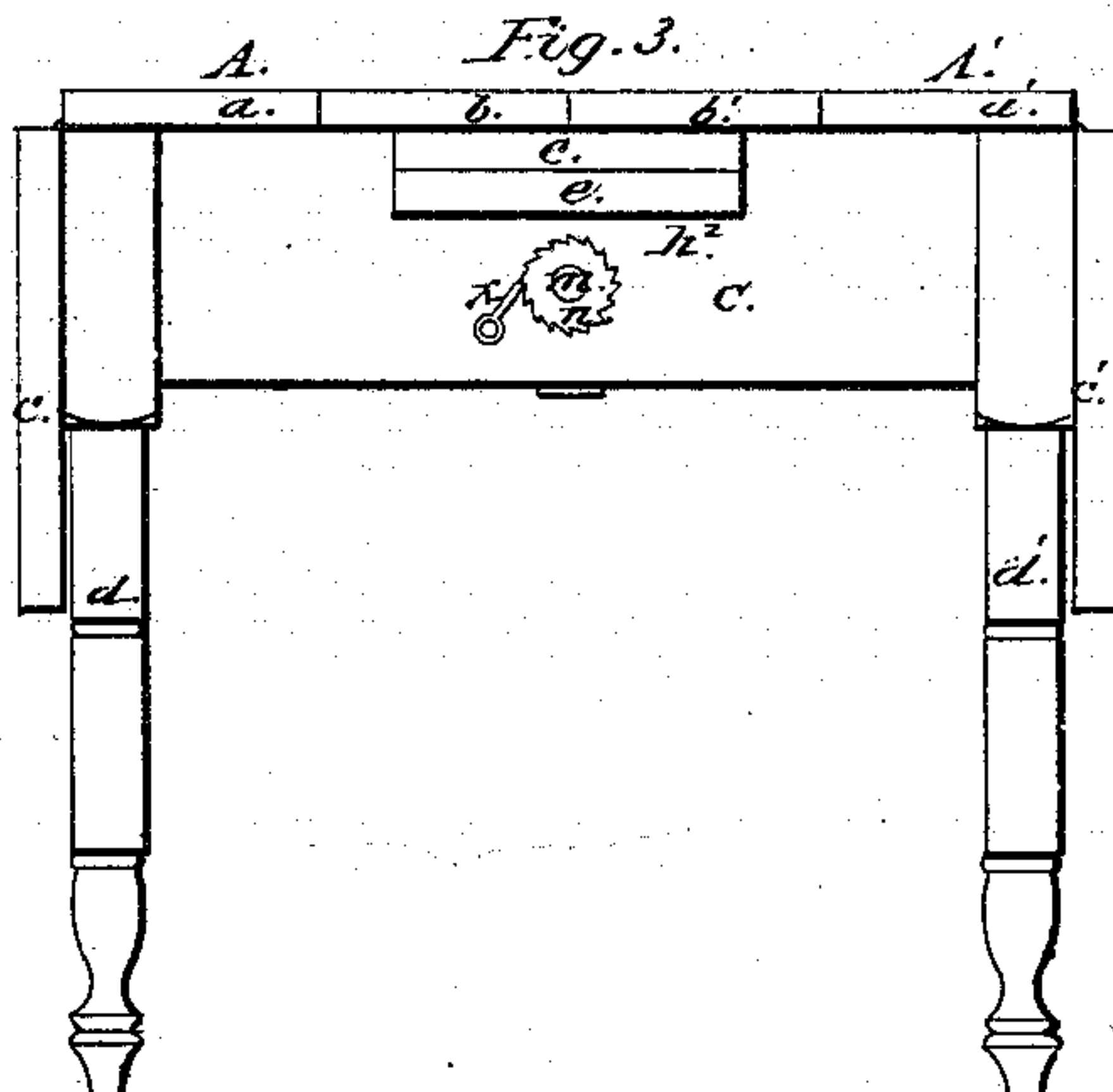


Fig. 4.

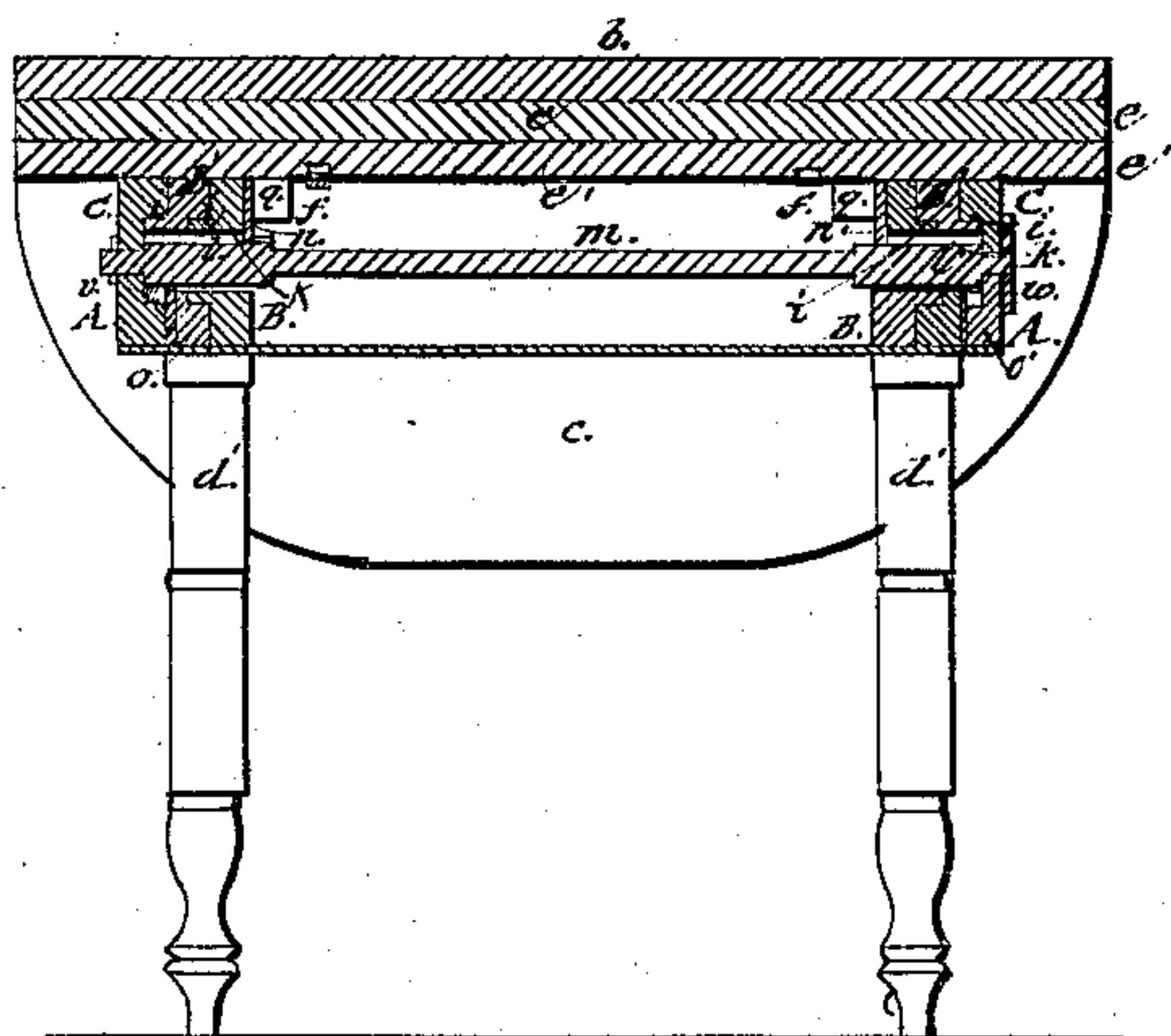
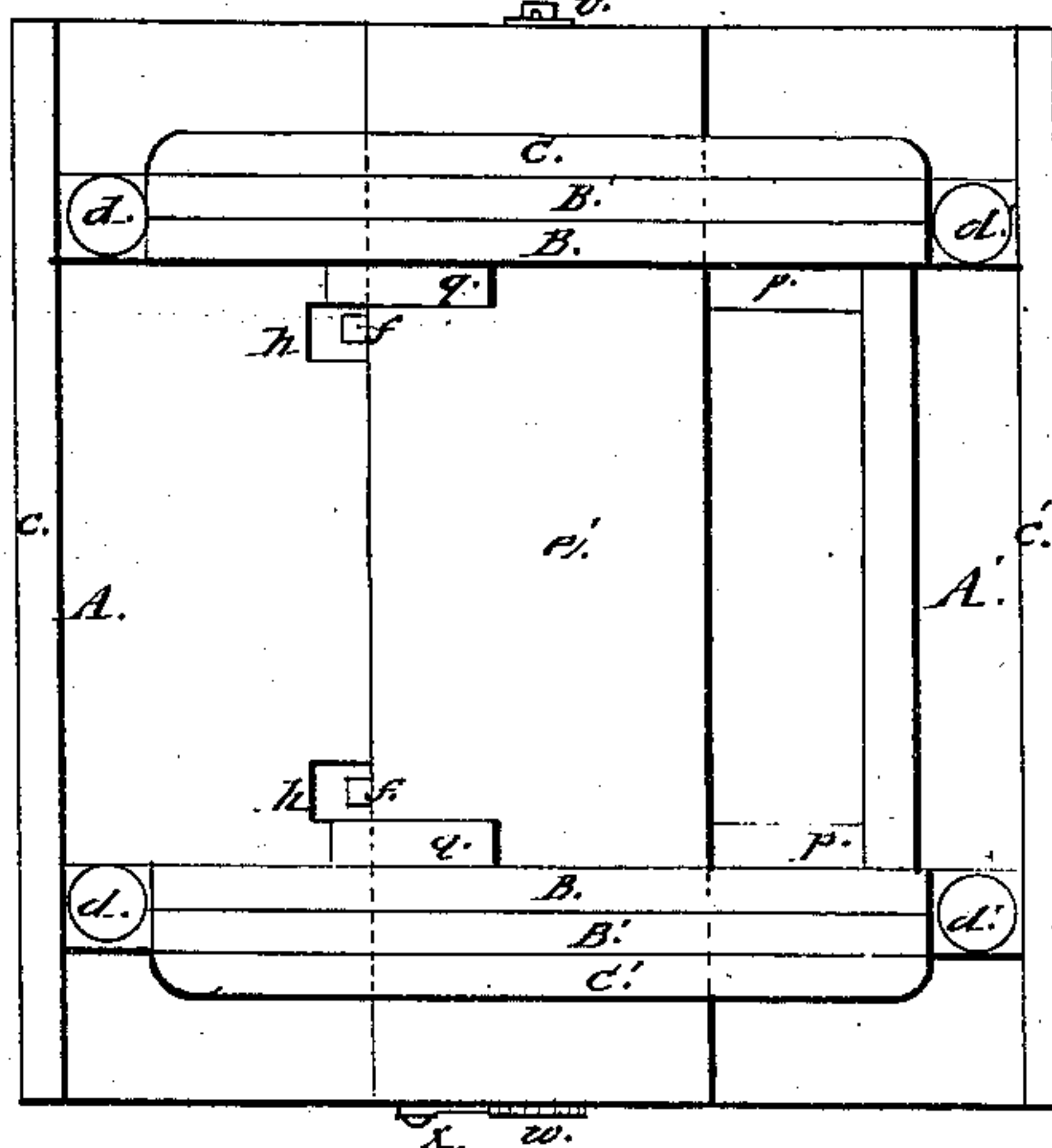


Fig. 5



Witnesses;
Edward Griffith
Edmund A. Hewitt.

D. T. Robinson.
by his Attorney
Frederick Curtis.

UNITED STATES PATENT OFFICE.

DANIEL T. ROBINSON, OF BOSTON, ASSIGNOR TO WM. B. WICKES, OF SHARON, MASSACHUSETTS.

IMPROVEMENT IN EXTENSION DINING-TABLES.

Specification forming part of Letters Patent No. 93,557, dated August 10, 1869.

To all whom it may concern:

Be it known that I, DANIEL T. ROBINSON, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have made an invention of a new and useful Automatic Extension Dining-Table; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawings making part of this specification, and in which—

Figure 1 is a longitudinal section of a table containing my invention in an extended state. Fig. 2 is a like section of it in a closed state. Fig. 3 is an end elevation, Fig. 4 a vertical and transverse section, Fig. 5 a bottom view, of the said table.

My present invention has for its object the production of an extension dining-table, which may be extended or contracted automatically simply by the turning of a crank, thus allowing the size of a table to be increased or diminished with the expenditure of very little power, and with a fraction of the time and labor now required to effect the same object.

This invention consists in providing the inner edges of the end portions or primary leaves of a table with hinged leaves, and in uniting such end portions, thus provided, by means of guides or rails sliding within one another, and provided with racks and pinions in such manner that upon turning the shaft in one direction—the shaft upon which the pinions are mounted—the end portions of the table shall be caused to recede from one another, the separation thus effected increasing to a considerable extent the intervening area, this area being filled by two auxiliary or extension leaves, which, when the table is contracted to its normal or closed state, are disposed midway between its primary hinged leaves and end portions, the rails which support and unite such end portions being provided with inclined planes or lifting-grades, moving in a direction contrary to that taken by the primary leaves, the whole being so constituted and organized that the parting and receding of the primary leaves from one another shall contract the lifting-grades of the sliding rails, and first raise bodily the two auxiliary leaves, a continuation of the recession of the said pri-

mary leaves having the effect of drawing the upper auxiliary leaf laterally from the lower one by means of hooks and catches and secondary inclined lifters applied to the under side of the latter, the operation of the different parts being hereinafter explained.

In the drawings, to which allusion has before been made as accompanying this specification, and which illustrate the invention herein to be described, A A' denote the two primary end portions of an extension-table as composed of two horizontal leaves, *a a' b b'*, the former of which is fixed and the latter hinged to it, and of the usual drop-leaf, shown at *c c'*, and two legs, *d d'*, the two end portions of the table thus constructed being united by two longitudinal rails situated alongside of each other and provided with tongues and grooves *i i'*, for guiding their movements and retaining them in a proper horizontal position, the position and movements of the rails being further strengthened by two outlying bars, C C', disposed alongside of them, and confined to them by means of tongues and grooves, the width of the rails and bars being equal.

A rectangular opening or notch, *h²*, is cut in each rail, and also in the bars C C', the former being represented at *h²*, and the latter, at these openings, being of equal depth, which is of such extent that when the two auxiliary extension-leaves shown at *e e'* are deposited one upon the other, the upper surface of the highest of the two shall be on a plane with the top of the said rails and bars. The inner end of each rail B B' is provided upon its upper surface with an inclined plane or lifting-grade, *p p'*, the apex of such grade being outermost.

A horizontal channel, *k*, is cut through each rail for passage of a toothed pinion, *l l'*, fixed to each end of a horizontal transverse shaft, *m*, upheld in bearings *v* made in the side guide-bars C C' before mentioned, a rack being affixed to the upper margin of the channels of the two inner rails, and to the lower margin of the channels of the two outer rails, the former being shown at *n n'* and the latter at *o o'*, the two racks upon one side of the table meshing into the contiguous pinion.

A revolution of the pinion in one direction will of course separate the two sets of rails

and their primary leaves, and contract the lifting-grades p and p' , and vice versa when revolved in the opposite direction.

A spring-hook, g , is affixed to the upper surface of the apex of the lifting-grade of each outermost rail B B' , as represented, such hooks being to take into notches r r' made in the adjoining edge of the lower auxiliary leaf, and draw this leaf along with the moving rails until it surmounts the said grades, and is deposited upon them and the top of the side bars, the top leaf being, as is a necessary consequence, carried with it.

Furthermore, I apply to the under side of the lower auxiliary leaf, and between its notches r r' , before mentioned, two secondary inclined planes or lifters, q q' , which act in conjunction with side extensions or prolongations of the lifting-grades p p' to complete the elevation of this lower leaf, or to bring it to a level with the primary leaves.

The lower part of the outer edge of the upper leaf e is provided also with spring-hooks similar to the hooks g , the object of the said hooks f f' being to take into notches h made in the lower part of the adjacent edge of the primary hinged leaf.

It will be evident that, by this arrangement of hooks and notches, the outward movement of the leaf b , as it recedes from its fellow, will draw the upper auxiliary leaf with it from off the lower one until the two auxiliary leaves are separated, when the inner one of the upper one will fall to the level of the lower one, and rest upon the ends of the secondary lifters q q' , which are left projecting beyond the edge of their leaf for this purpose.

To one extremity of the pinion-shaft, and outside of one of the bars C' , I affix a ratchet-wheel, w , and to the bar I pivot a pawl, x , in order that after the table has been lengthened the pawl may be put into connection with the ratchet, and the movement of the latter reversed, by which means the different parts of the table are contracted and drawn tightly and firmly together.

The bars constitute the side rails of the table when the latter is in a contracted state, the pawl and ratchet serving a like useful purpose to bind the table together when in this state as in an extended state.

The above description embraces the mechanical description of an extension-table embodying my improvements, its operation being as follows: Supposing, as a starting-point, the table to be closed. A crank is applied to the pinion-shaft, which is then rotated in the direction of its blue arrow. This rotation of the pinion-shaft and its pinion, through the agency of the oppositely-arranged racks n o , forces apart the two end portions and the primary leaves of the table, as well as the two pairs of rails, and causes them to approach each other. As the two auxiliary leaves are supported upon the rails, and between their lifting-grades, the meeting of the latter raises

the former into the increasing area created by the reversion of the primary leaves, the revolution of the pinion-shaft being continued until the said primary leaves are separated to a sufficient extent to receive the two auxiliary leaves upon an extended horizontal. As the separation of the primary leaves by the rotation of the primary shaft reaches one-half their extent of movement, the spring-hooks g g' of the outer lifting-grades p p' seize hold of the upper leaf and hold it in position against one primary leaf, while the notches h h' of the opposite primary leaf, taking hold upon the spring-hooks f of the uppermost leaf, draw the latter from off the former, so that one edge shall rest upon the end bars, the opposite upon the projecting ends of the secondary lifter; it being understood that action of these secondary lifters upon the lifting-guides is such as to raise the lower leaf into a horizontal position upon a level with the others, the extended table thus created being shown at Fig. 1 of the drawings.

To contract the table, the inner edge of the auxiliary leaf carrying the spring-catches f is first to be raised above that of its fellow, when the crank is to be turned in a direction opposite to that first indicated, and the primary shaft rotated until the two leaves arrive at the same vertical plane, when the inner edges of the two folding primary leaves are to be raised above them, and the turning of the crank and the rotation of the pinion-shaft continued until these latter-mentioned leaves meet and close in a horizontal plane over the auxiliary leaves, which, by the recession of the elevating-grades, drop within the notches of the side rails of the table.

The ratchet and pawl before mentioned serve at all times to keep the portions of the table tightly in contact, and serve a valuable purpose in preventing a loose and shaky condition of the same.

As the auxiliary leaves are contained in the table itself, the labor of removing them to a closet or other locality is avoided, and the annoyance consequent upon the ordinary mode of disposing them obviated.

The changes of the size of the table by my invention are effected rapidly and very easily, so much, so in fact, that a child may accomplish them.

I claim as my invention, and desire to secure by Letters Patent of the United States, as follows:

1. The combination of the movable auxiliary leaves of an extension dining-table with its primary leaves or end portions, in such manner that, by turning of a shaft in one direction, such auxiliary leaves shall be automatically elevated into a plane horizontal with the said primary leaves and end portion, and when the shaft is turned in an opposite direction shall be lowered beneath the closing primary leaves, in the manner substantially as herein described.

2. As a means of effecting the elevation of the auxiliary leaves, the duplicate series of lifting-grades, the traversing of such grades being effected by the racks *n o* and pinions *l l'* or their equivalent devices, the whole being in manner and for the purpose substantially as before explained.

3. In combination with the auxiliary leaves

e e' and the primary leaves *a a'* and *b b'*, and their operating mechanism, the spring-catches *f f'* and *g g'*, operating in manner as explained.

DANIEL T. ROBINSON.

Witnesses:

GEO. A. LORING,

EDWARD GRIFFITH.