April 29, 1941. H. D. JOHNSON 2,240,301

FOLDING TABLE

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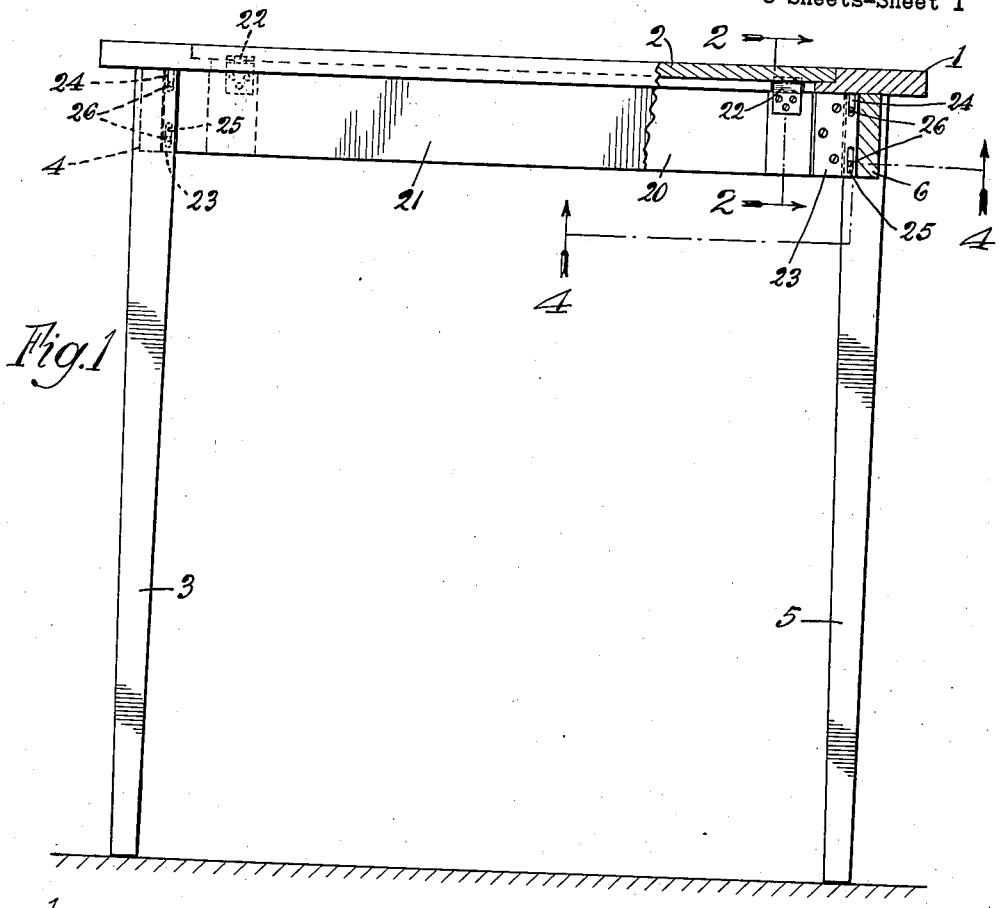

Fig. 1

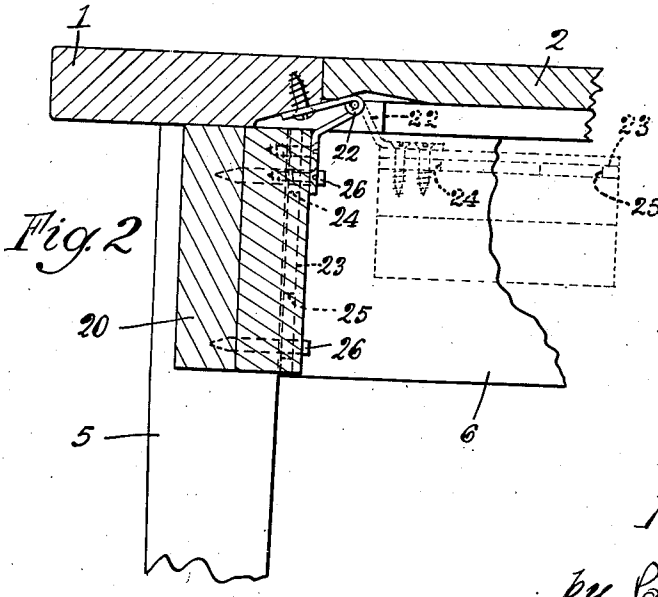

Fig. 2

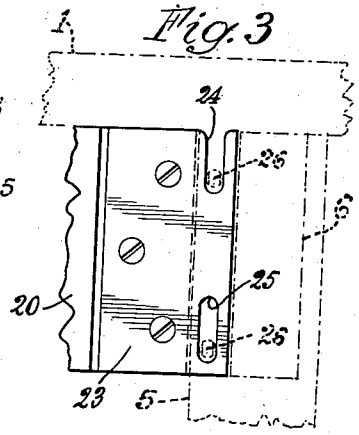

Fig. 3

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Fig. 4

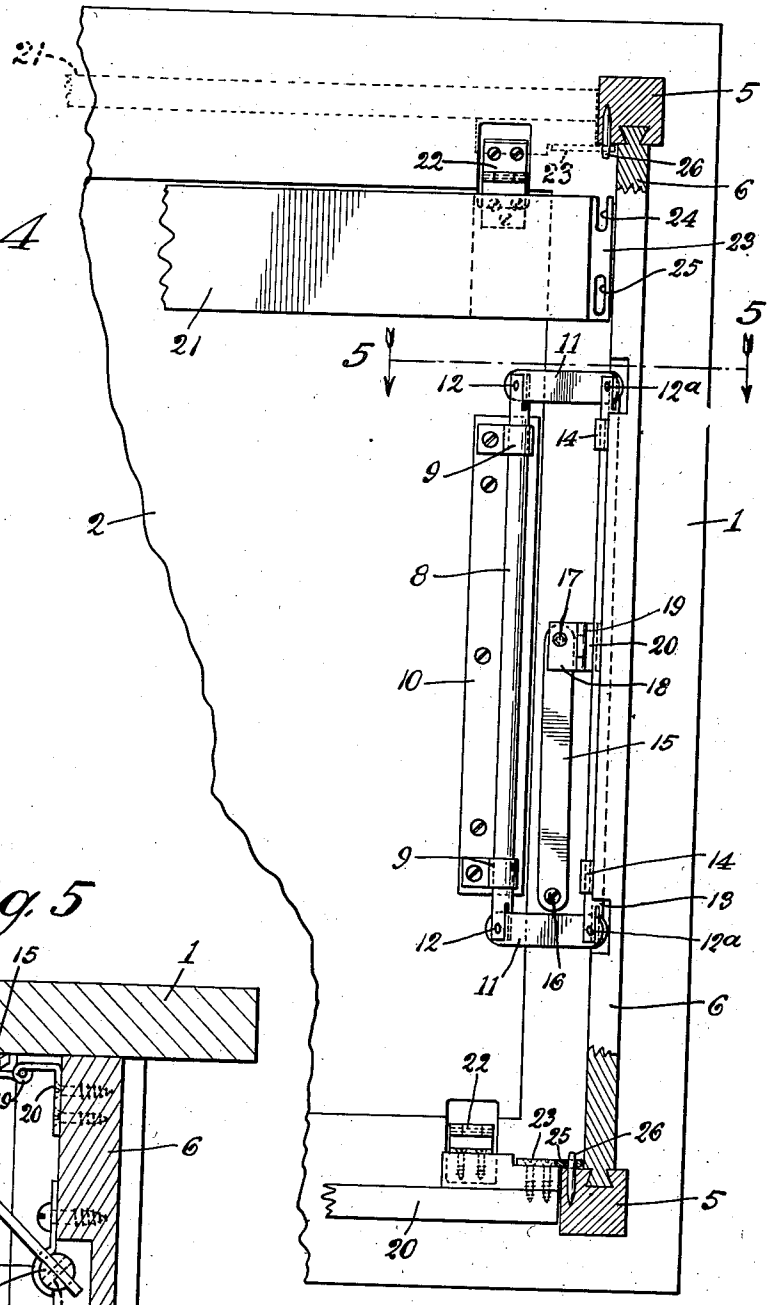

Fig. 5

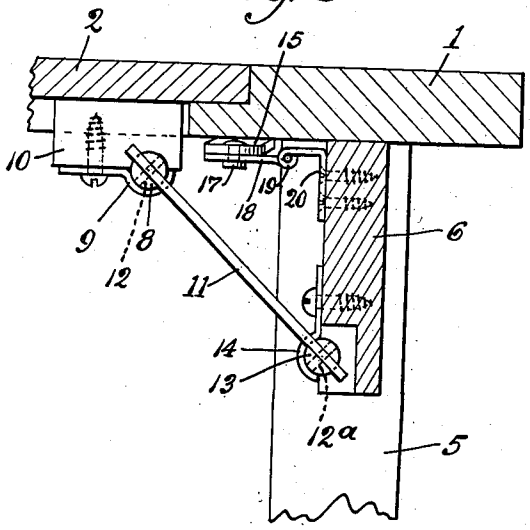

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Fig. 6

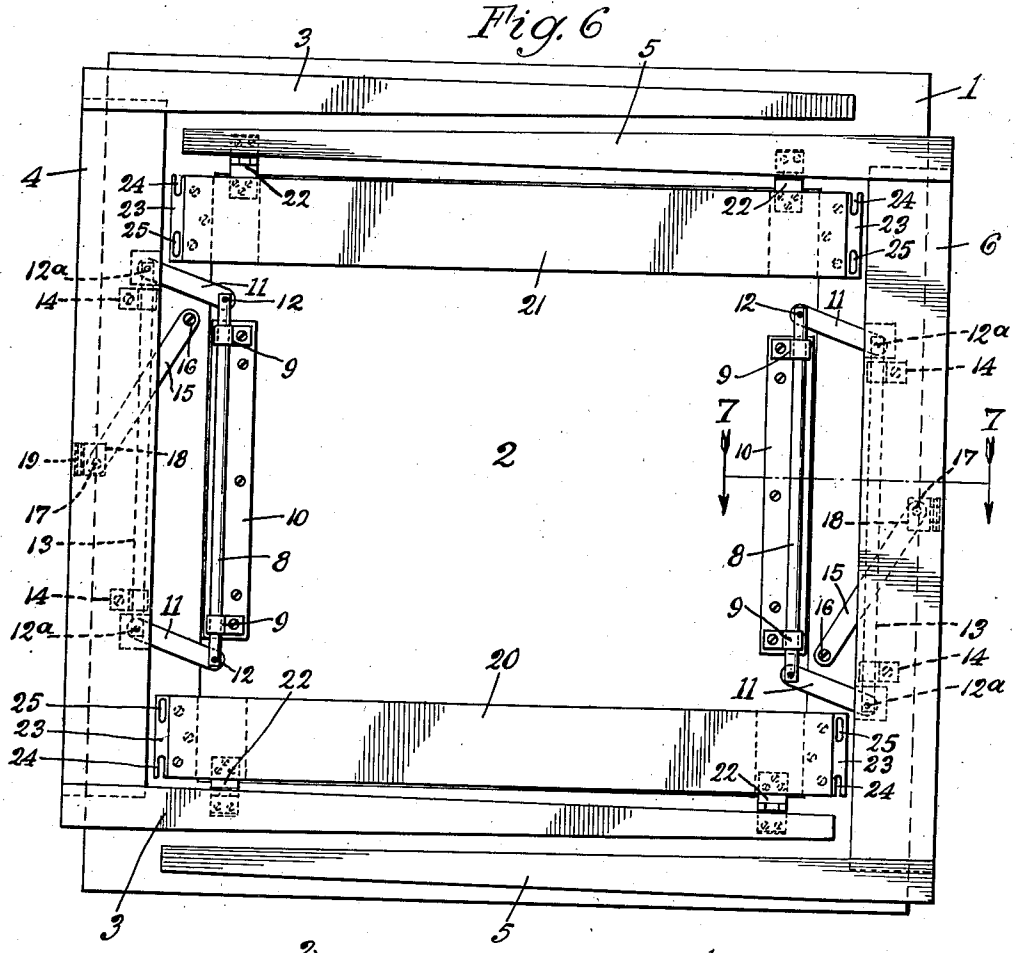
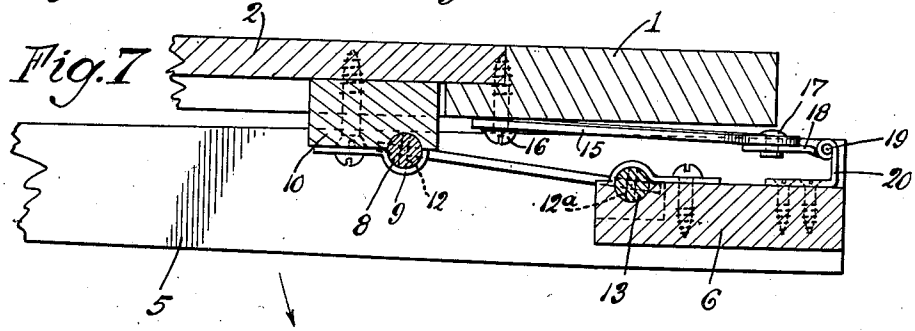


Fig. 7



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UNITED STATES PATENT OFFICE

2,240,301

FOLDING TABLE

Harry D. Johnson, English, Ind.

Application March 17, 1939, Serial No. 262,476

8 Claims. (Cl. 311—86)

My invention relates to an improvement in tables, and has for its particular purpose the provision of a folding legged card table.

Another purpose is the provision of means for folding the legs and associated cross elements of a table.

Another purpose is the provision of a folding table which shall have the structural strength and general appearance of a permanently assembled table.

Another purpose is the provision of improved hinge means.

Other purposes will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawings wherein:

Figure 1 is a side elevation with parts in section;

Figure 2 is a section on the line 2—2 of Figure 1;

Figure 3 is a detail;

Figure 4 is a section taken on the line 4—4 of Figure 1;

Figure 5 is a section on the line 5—5 of Figure 4;

Figure 6 is a plan view, from below, of the table when folded; and

Figure 7 is a section on the line 7—7 of Figure 6.

Like parts are indicated by like symbols throughout the specification and drawings.

Referring to the drawings, 1 generally indicates a table top which is shown as having an inset central portion 2, of different material than the rest of the top. It will be understood that this inset is not a necessary part or limitation.

I illustrate one pair of legs 3, 3 connected by a transverse structural element or cross support 4. A second pair of legs 5, 5 is connected by a similar structural element 6. These two pairs of legs are hinged at opposite sides of the table top 1 by the hinged structure below described. I may employ, for example, a link rod 8 mounted in any suitable bearings 9 in the table element 10, which forms part of or is associated with the table top 1. Linked at each end of the rod 8 is a link 11, each such link being rotatable about a pivot 12. Similarly connected as at 12a to the outer ends of the two links 11 is a second rod 13, held by bearing members 14 to any suitable portion of the transverse connecting member 4 or 6. It will be understood that the rod 8 is rotatable in relation to the table top and that the rod 13 is rotatable in relation to the structural member 4 or 6, and that, by reason of the employment of the links 11, a relative longitudinal movement of the rods 8 and 13 is possible, the links always holding them and their associated parts in parallelism.

This is important, in practice, since it is desirable to have the legs laterally spaced apart, when they are folded in the position of Figure 6, against the bottom of the table top. But when they are unfolded, and in vertical and table supporting position, it is important that they be uniformly spaced in relation to the corners of the table. I therefore provide means effective, in response to rotation of each pair of legs into and out of supporting position, to impart whatever lateral or transverse movement is necessary. I employ, for example, a link 15 pivoted at one end, as at 16, to the bottom of the table top, and pivoted at the other end, as at 17, to a member 18 which in turn is linked, as at 19, to a bracket 20 secured to the member 4 or 6. Therefore, when the pair of legs is moved from the folded into the unfolded position, the effect of this rotation, as guided by the link 15, will be to impart a transverse movement of the pair of legs and the connecting member 6. When the unfolding movement is completed, the parts are in the position in which they are shown in Figure 5, with each leg squarely centered at the appropriate position in relation to the adjacent corner.

In order to hold the legs firmly extended, and in order to complete the structure of the table, I hinge, between each pair of legs, along each of two opposite sides of the table, the hinged side members 20, 21. These members may be hinged to the table top by the simple hinges 22. They are provided at each end with a plate 23 having notches 24 and slots 25. Penetrating these notches and slots are pins 26 on the adjacent portion of the leg structure. The projecting ends of the pins are preferably tapered to facilitate alinement with the slots 25 and notches 24.

When the legs have been unfolded into supporting position, and when the side members 20, 21 have been swung into vertical position, in relation to the table top, and the pins 26 have been engaged with the slots and notches 24 and 25, the result is a table structure which is as solid as if it were doweled or glued together, but which none the less may very readily be dismounted and folded.

When folded, both sets of legs fold flatly against the bottom of the table top, as shown in Figure

6 and in dotted lines in Figure 2, and the members **20**, **21** swing inwardly against the bottom of the table top. The parts are so disposed that the link members including the rods **8** and **13** lie close to the bottom of the table top, and the result is a compact table, which occupies a minimum space.

It will be realized that, whereas I have described and illustrated a practical and operative device, nevertheless many changes may be made in the size, shape, number and disposition of parts without departing from the spirit of my invention, provided said changes are within the scope of the claims. I therefore wish my description and drawings to be taken as in a broad sense illustrative or diagrammatic, rather than as limiting me to the precise showing of the description and drawings.

I claim:

1. In a folding table, a table top, a plurality of pairs of legs movably secured to said table top at opposite edges thereof, each such pair being connected by an apron adapted, when the legs are extended, to lie in a plane generally perpendicular to the plane of the table top, additional aprons hinged to the table top and located between each said pair of legs, said aprons being adapted, when in extended position, to bridge the gap between a leg at each end of each additional apron, and hinge connections between the pairs of legs and the table top, each such hinge connection being pivoted to the table top and to the apron connecting a pair of legs, and further including spacing links adapted to permit endwise movement of each such apron, with its associated legs, in relation to the table top.

2. In a folding table, a table top, a plurality of pairs of legs movably secured to said table top at opposite edges thereof, each such pair being connected by an apron adapted, when the legs are extended, to lie in a plane generally perpendicular to the plane of the table top, additional aprons hinged to the table top and located between each said pair of legs, said aprons being adapted, when in extended position, to bridge the gap between a leg at each end of each additional apron, hinge connections between the pairs of legs and the table top, each such hinge connection including a hinge rod pivotally secured to the apron connecting a pair of legs, an additional hinge rod pivoted to the table top, spacing links connecting and pivoted to the ends of said hinge rods, and means responsive to the rotation of each pair of legs into and out of supporting position in relation to the table top to impart an endwise movement of such pair of legs and its connecting apron.

3. In a folding table, a table top, a leg assembly including a pair of legs and a connection between them independent of the table top, a hinge member separately pivoted on table top and leg assembly along widely spaced parallel axes, adapted to permit relative lateral and angular displacement of leg assembly and table top, the plane defined by the two pivot axes when the legs are in the open position being inclined to the table top, means interposed between the table top and leg assembly responsive to relative angular movement thereof, for compelling relative longitudinal displacement of table top and leg assembly along a line parallel with the pivot axes.

4. In a folding table, a table top, a leg assembly including a pair of legs and a connection between them independent of the table top, a hinge member separately pivoted on table top and leg assembly along widely spaced parallel axes, adapted to permit relative lateral and angular displacement of leg assembly and table top, the plane defined by the two pivot axes when the legs are in the open position being inclined to the table top, means interposed between the table top and leg assembly responsive to relative angular movement thereof, for compelling relative longitudinal displacement of table top and leg assembly along a line parallel with the pivot axes, said means including a link pivoted at one end on the table top and at the other end on the leg assembly.

5. In a folding table, a table top, a leg assembly including a pair of legs and a connection between them independent of the table top, a hinge member separately pivoted on table top and leg assembly along widely spaced parallel axes adapted to permit relative lateral angular displacement of leg assembly and table top, the plane defined by the two pivot axes when the legs are in the open position being inclined to the table top, means interposed between the leg assembly and table top for forcing that portion of the leg assembly which engages the table top to move in a plane generally parallel with the table top when relative angular movement of table top and leg assembly takes place, said means including a link pivoted on an axis perpendicular to the plane of the table top, a pivoted connection between the other end of the link and the leg assembly, the axis of which is generally parallel with the hinge axes and a pivot joint in the link, the axis of which is generally parallel with the pivot axis of link and table.

6. In a folding table, a table top, a leg assembly including a pair of legs and a connection between them independent of the table top, a hinge member separately pivoted on table top and leg assembly along widely spaced parallel axes, adapted to permit relative lateral and angular displacement of leg assembly and table top, the plane defined by the two pivot axes when the legs are in the open position being inclined to the table top, means interposed between the table top and leg assembly responsive to relative angular movement thereof, for compelling relative, longitudinal displacement of table top and leg assembly along a line parallel with the pivot axes, and for forcing that portion of the leg assembly which engages the table top to move in a plane generally parallel with the table top when relative angular movement of table top and leg assembly takes place.

7. In a folding table, a table top, a leg assembly including a pair of legs and a connection between them independent of the table top, a hinge member separately pivoted on table top and leg assembly along widely spaced parallel axes, adapted to permit relative lateral and angular displacement of leg assembly and table top, the plane defined by the two pivot axes when the legs are in the open position being inclined to the table top, means interposed between the table top and leg assembly responsive to relative angular movement thereof, for compelling relative, longitudinal displacement of table top and leg assembly along a line parallel with the pivot axes, and for forcing that portion of the leg assembly which engages the table top to move in a plane generally parallel with the table top when relative angular movement of table top and leg assembly takes place, said means including a link pivoted at one end on the table top and at the other end on the leg assembly.

8. In a folding table, a table top, a leg assembly including a pair of legs and a connection between them independent of the table top, a hinge member separately pivoted on table top and leg assembly along widely spaced parallel axes, adapted to permit relative lateral and angular displacement of leg assembly and table top, the plane defined by the two pivot axes when the legs are in the open position being inclined to the table top, means interposed between the table top and leg assembly responsive to relative angular movement thereof, for compelling relative, longitudinal displacement of table top and leg assembly along a line parallel with the pivot axes, and for forcing that portion of the leg assembly which engages the table top to move in a plane generally parallel with the table top when relative angular movement of table top and leg assembly takes place, said means including a link pivoted on an axis perpendicular to the plane of the table top, a pivoted connection between the other end of the link and the leg assembly, the axis of which is generally parallel with the hinge axes and a pivot joint in the link, the axis of which is generally parallel to the pivot axis of link and table.

HARRY D. JOHNSON.