H. A. FRANK.

FOLDING TABLE.

APPLICATION FILED APR. 20, 1916.

1,240,963. Patented Sept. 25, 1917.

Fig. 1.

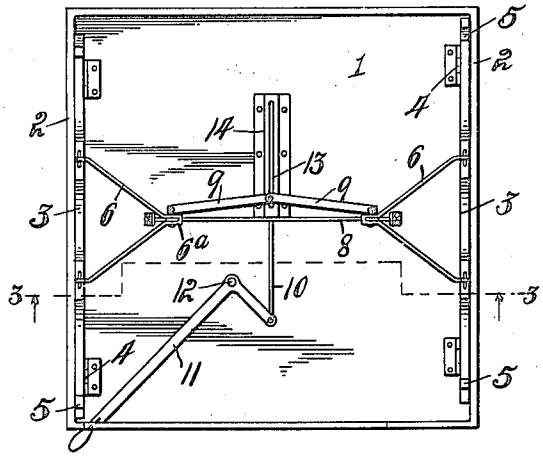


Fig. 2.

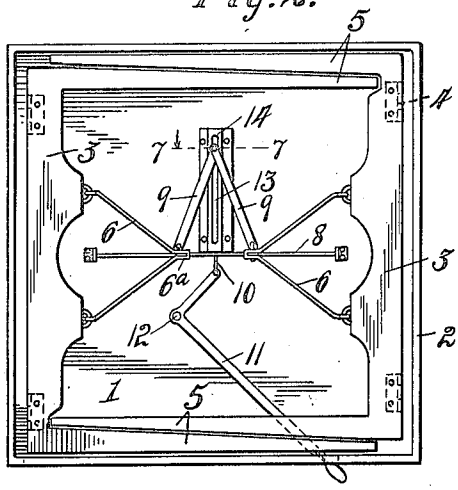


Fig. 3.

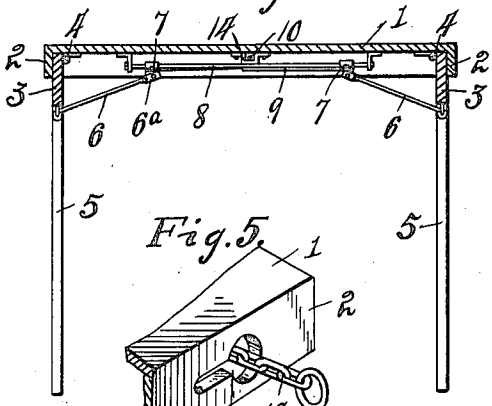


Fig. 4.

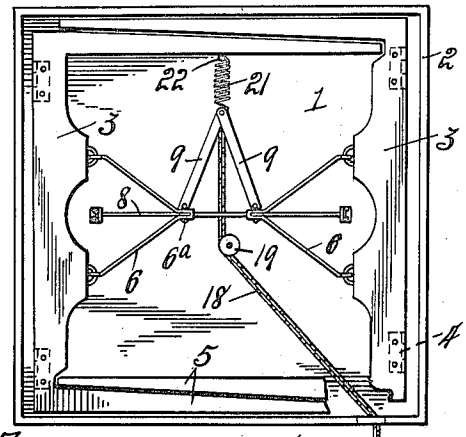


Fig. 5.

Fig. 6.

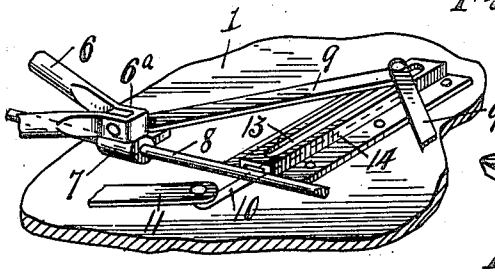


Fig. 7.

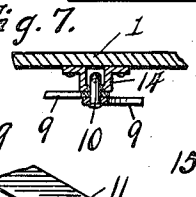


Fig. 8.

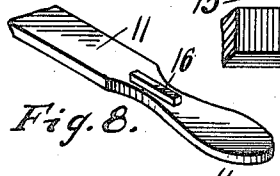
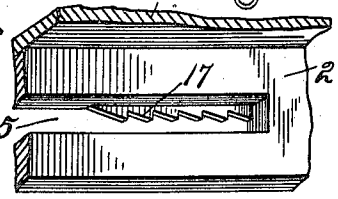


Fig. 9.



Inventor.

Harry A. Frank,

By Owen, Owen & Crampton,

His Attys.

UNITED STATES PATENT OFFICE.

HARRY A. FRANK, OF TOLEDO, OHIO.

FOLDING TABLE.

1,240,963. Specification of Letters Patent. Patented Sept. 25, 1917.

Application filed April 20, 1916. Serial No. 92,509.

To all whom it may concern:

Be it known that I, HARRY A. FRANK, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Folding Table; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to articles of furniture and particularly to tables of the folding type.

The object of my invention is the provision in a table of the class described of improved means for controlling the folding and unfolding movements of the legs thereof, whereby to increase the practicability and commercial value of tables of this class.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred and one modified embodiment thereof are illustrated in the accompanying drawings, in which—

Figures 1 and 2 are bottom plan views of a table embodying my invention with the legs thereof in unfolded and folded positions, respectively. Fig. 3 is a section on the line 3—3 in Fig. 1. Fig. 4 is a bottom plan view of a slightly modified form of the invention with the legs in folded position. Fig. 5 is an enlarged perspective view of a portion of the table shown in Fig. 4. Fig. 6 is an enlarged perspective view of a portion of the operating mechanism in the position shown in Fig. 2. Fig. 7 is an enlarged section on a line 7—7 in Fig. 2. Fig. 8 is an enlarged perspective view of the handle portion of the operating lever in the preferred form of the invention, and Fig. 9 is an enlarged perspective view of an edge portion of the table showing the ratchet means with which the lever handle engages.

Referring to the drawings, 1 designates a table top which is preferably provided around the inner edge thereof with a depending flange 2. A pair of cross-bars 3, 3 are hinged at one side thereof to the under side of the top 1, one bar being adjacent to each of the opposite portions of the flange 2 and in position to adapt it, when in upright or set-up position with respect to the table top, to be braced against outward movements by said flange, as shown in Figs. 1 and 3. Each bar 3 is connected to the top 1 by hinges 4.

Legs 5, 5 project transversely from each bar 3 at the ends thereof and in opposition to its hinged edge, so that each pair of legs and the connecting bar 3 coöperate to form a U-shaped member. When the legs of the two bars are in folded or reclining position the legs of one bar preferably alternate with those of the other. Each cross-bar 3 has the legs of a bail-like member 6 hingedly connected thereto, said member, in the present instance, being of V-form and having its looped portion 6^a, which is disposed centrally of its leg ends pivotally connected to a block 7, which is mounted on a guide bar 8 for sliding movements lengthwise thereof. The bar 8 is disposed at the under side of the table top 1, being secured thereto at its ends, and extends transversely of the cross-bars 3, 3 so that the slide blocks 7, 7, which are connected to the respective cross-bars 3, 3, have inward and outward sliding movements thereon when the cross-bars have folding and unfolding movements with respect to the table top, as is apparent.

The slide blocks 7, 7 are connected together at one side of the bar 8 by a pair of toggle links 9, 9, the inner ends of which have common pivotal connection with one end of a control rod 10, which extends transversely of said links and of the bar 8 and connects at its other end to the short arm of a bell crank lever 11, which is pivoted to the under side of the table top 1, as at 12, at the opposite side of the bar 8, to that at which the links 9 are disposed. The end of the rod 10 which is connected to the toggle link 9, 9 is bent at right angles to its body part and projects outward through a guide slot 13 provided in a guide plate 14 that is secured to the under side of the table top 1 at the side of the guide bar 8 with the links 9, and in transversely disposed relation thereto. The guide plate 14 has its central slotted portion offset from the table top to form a space therebetween into which the rod 10 projects, the links 9 being attached to the bent end of said rod at the outer side of the guide-plate. It is thus evident that the inner or connected

ends of the toggle links 9 are confined within a predetermined path of reciprocatory movement by the guiding action of the guide plate 14 when the rod 10 is reciprocated.

The outer end of the lever 11 preferably projects through a registering slot 15 (Fig. 9) in a side flange of the table and is held at or adjacent to the limit of its oscillatory movement in either direction by the engagement of a tooth 16 on its handle portion with a set of ratchet teeth 17 at the respective end of the slot 15.

It is evident with this form of my invention that a movement of the lever 11 to the right from the left-hand position shown in Fig. 1 will effect an outward movement of the connected ends of the toggle links 9, 9 with respect to the bar 8, thereby causing an inward sliding movement of the slide blocks 7 and the bar 8 and a consequent inward folding of the leg sets 3, 5, placing the parts in the position shown in Fig. 2. It is also evident that a reverse movement of the control lever 11 will effect a straightening of the toggle links 9, 9 and a consequent outward throwing of the table legs to unfolded or set-up position.

In the modified form of the invention shown in Figs. 4 and 5 a chain or flexible control member 18 has been substituted for the control members 10 and 11 of the form first described. The draft member 18 attaches to the links 9, 9 at the point of connection thereof and extends therefrom to the opposite side of the guide bar 8 transversely thereof, thence in engagement with a guide sheave 19 and then through an opening 20 in the table flange 2. The opening 20 is preferably of the key-hole type to adapt different links of the chain to be placed in hooked engagement with the restricted portion thereof, as is apparent, when it is desired to secure the chain in position to retain the table legs in unfolded position. In this form of the invention a coiled contractile spring 21 connects a pin or anchoring part 22 of the table with the connected ends of the toggle links 9 and normally acts to retain said toggle links in the collapsed position shown in Fig. 4. It is evident that an outward drawing of the control member 18 from the normal position thereof shown in Fig. 4 will effect a straightening of the toggle links 9, 9 against the tension of the spring 21 and cause an outward throwing of the cross-bars 3 and table legs 6 to set-up position.

I wish it understood that the invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications without departing from the spirit of the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. A table having a top portion, legs hinged to the top portion adjacent to each of opposite edges thereof, means connecting said legs and having a set of toggle links which when straightened effect an outward unfolding of the legs and when collapsed effect an inward folding of the legs, and means having connection with said toggle links and operable to control the movements thereof and to normally urge their movement in one direction.

2. In a table, a top, legs hinged to said top adjacent to opposite edges thereof, a guide secured to the top between said legs and disposed longitudinally of the plane of folding and unfolding movements thereof, slide parts mounted on said guide, means connecting said slide parts to respective of said legs, and means connecting both of said slide parts and operable to impart relative inward or outward movements in unison thereto to impart folding and unfolding movements respectively to the legs.

3. In a table, a top, legs hinged to said top adjacent to opposite edges thereof, a guide carried by the under side of said top between said legs, slide parts guided by said guide, members connecting said slide parts to respective of said legs whereby inward movements of said parts will impart inward folding movements to the legs and vice versa, a pair of toggle links connecting said slide parts, and control means connected to said toggle links and operable from adjacent a side edge of the table to move said links to impart inward and outward movements thereto.

In testimony whereof, I have hereunto signed my name to this specification.

HARRY A. FRANK.