No. 829,439. PATENTED AUG. 28, 1906.

M. G. DE SIMONE.

EXPANDING TABLE.

APPLICATION FILED JAN. 10, 1905.

3 SHEETS—SHEET 1.

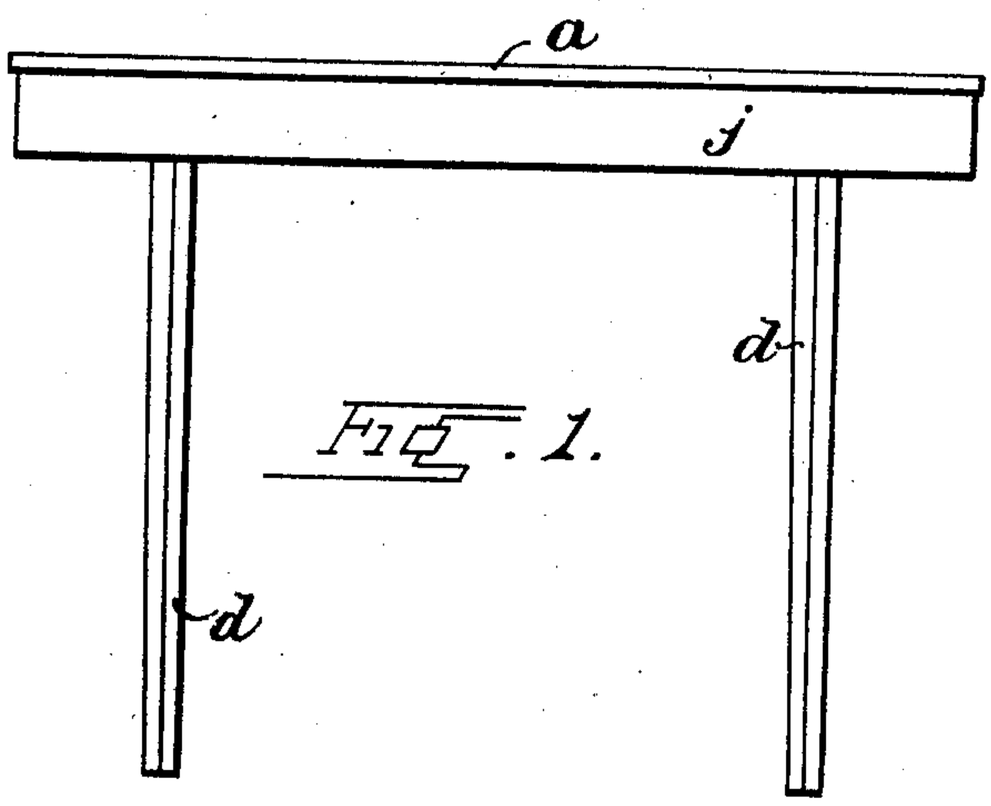

Fig. 1.

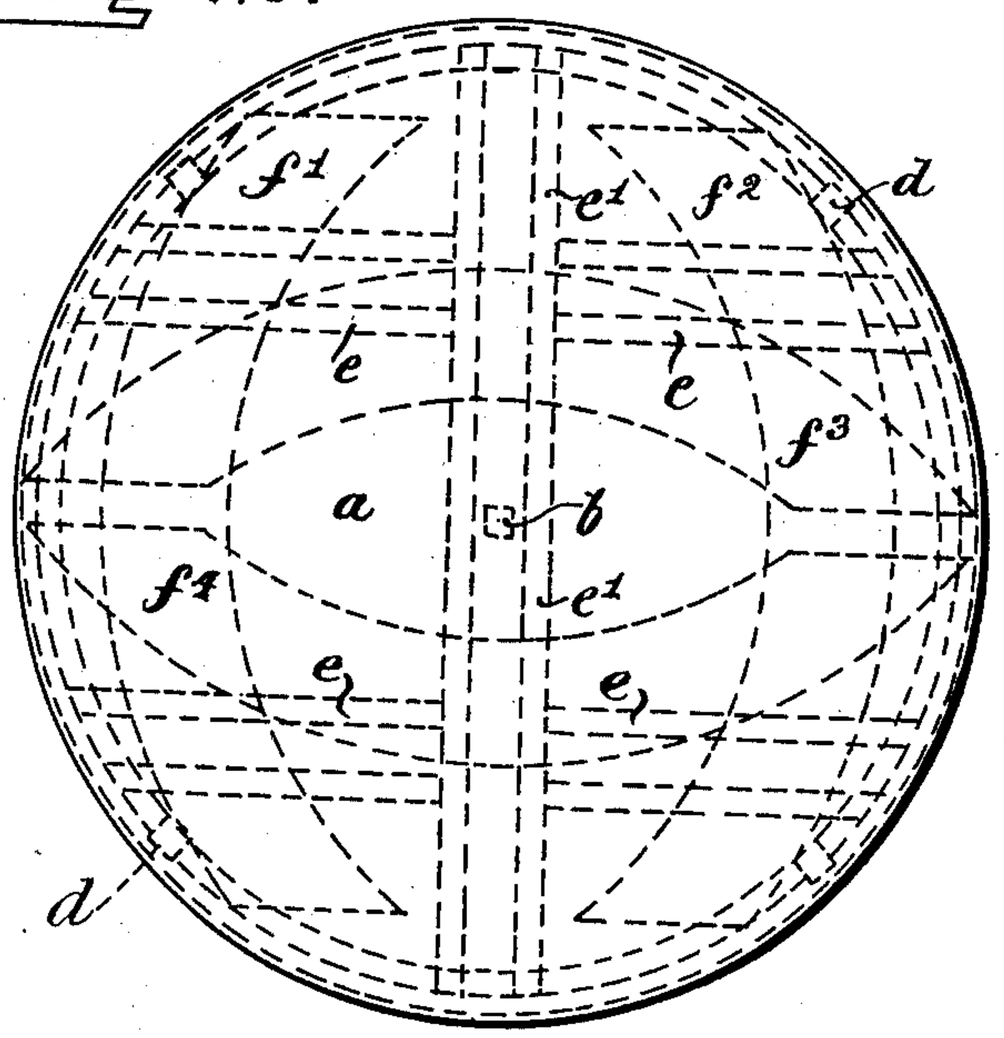

Fig. 2.

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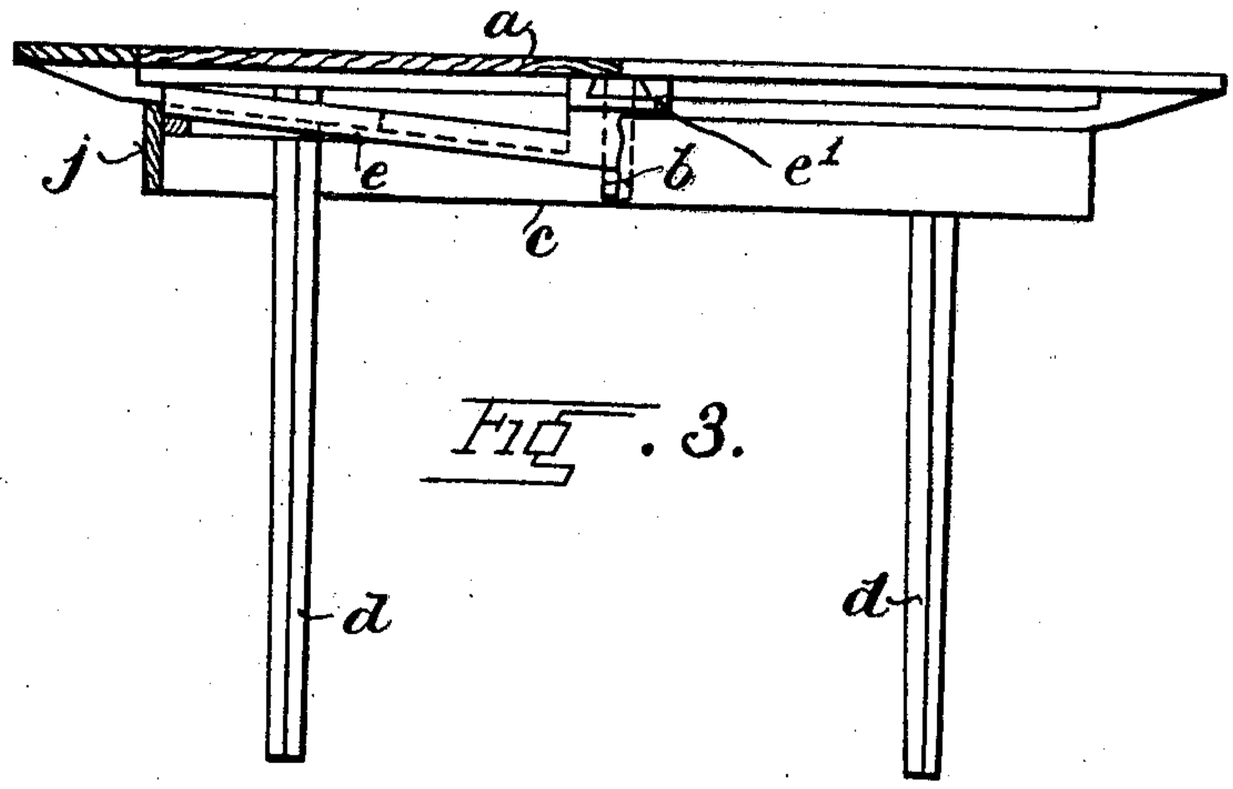
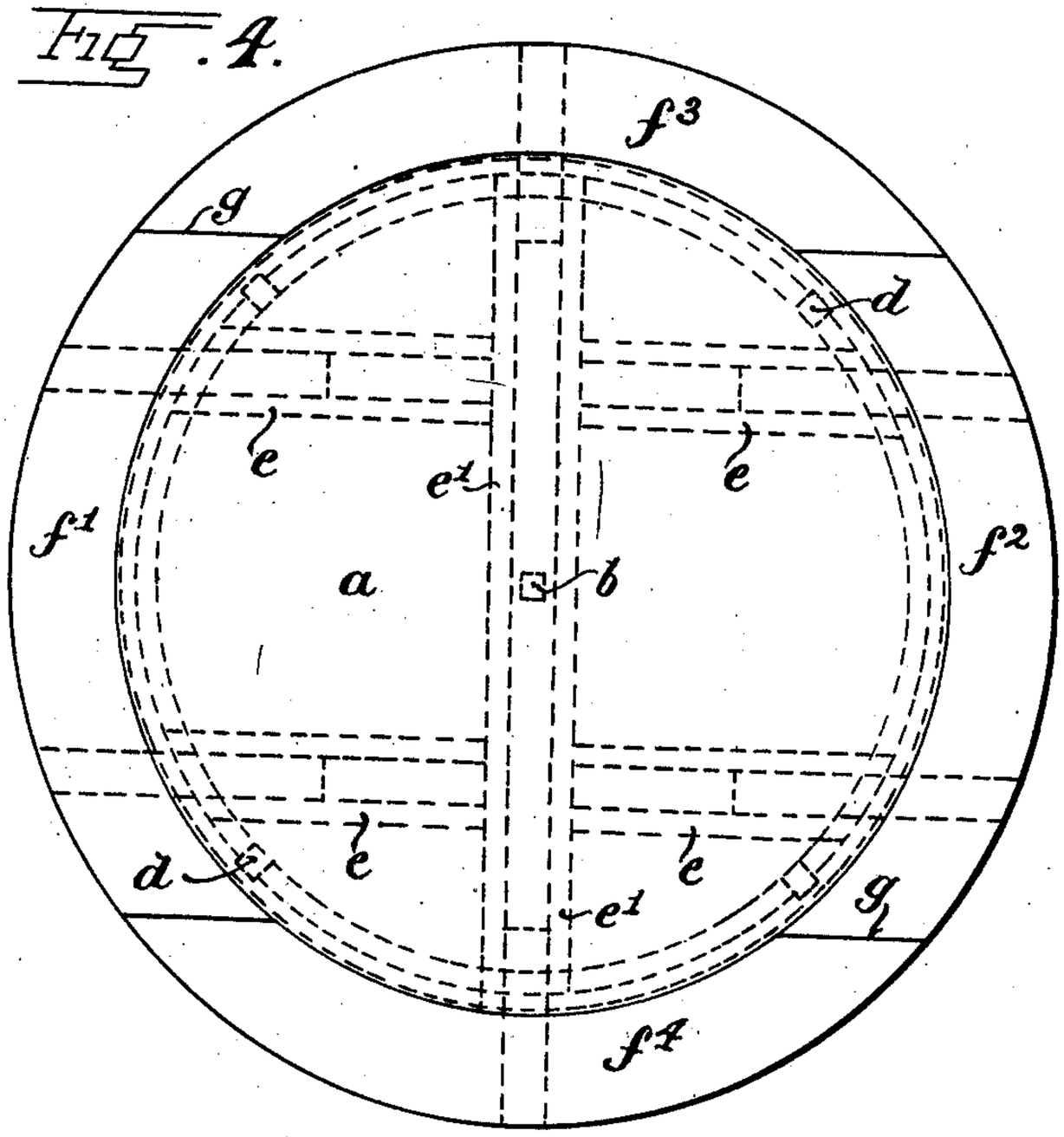


Fig. 3.

Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5

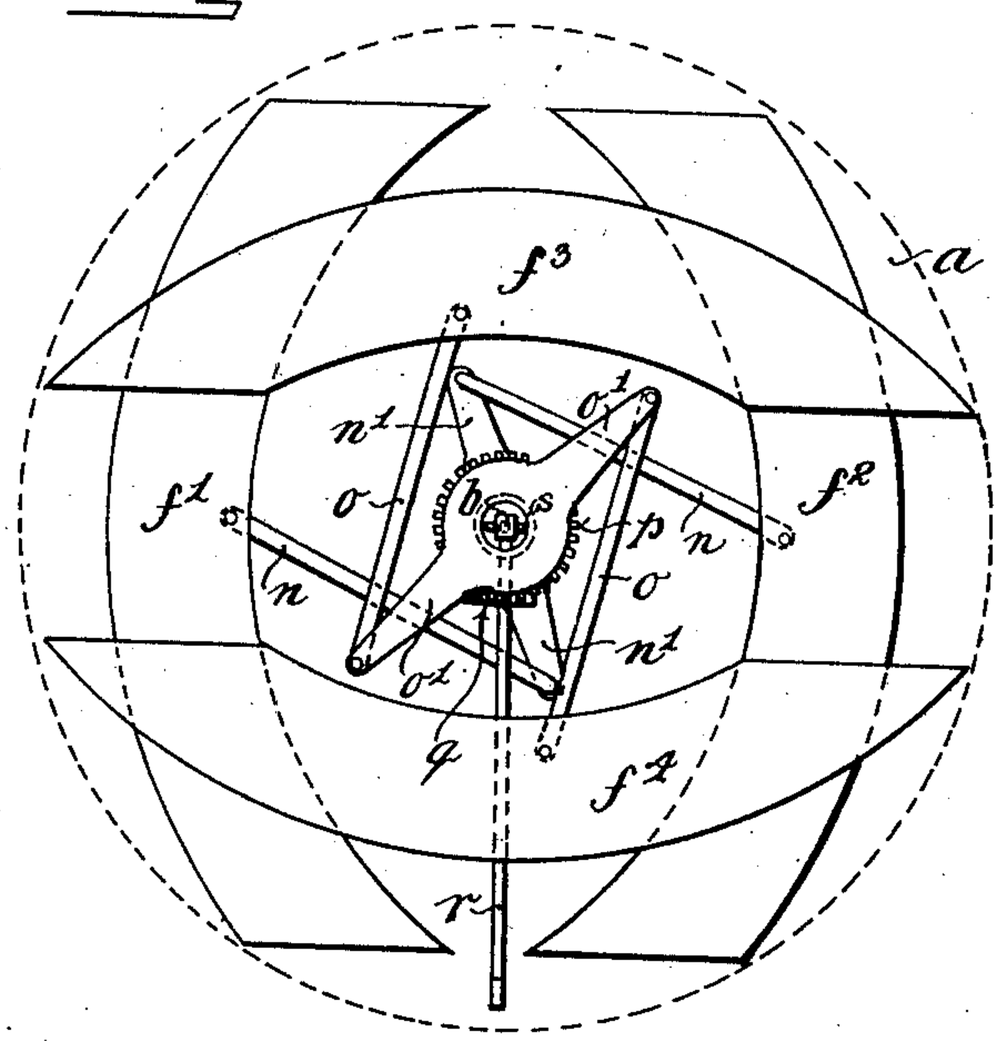


Fig. 6

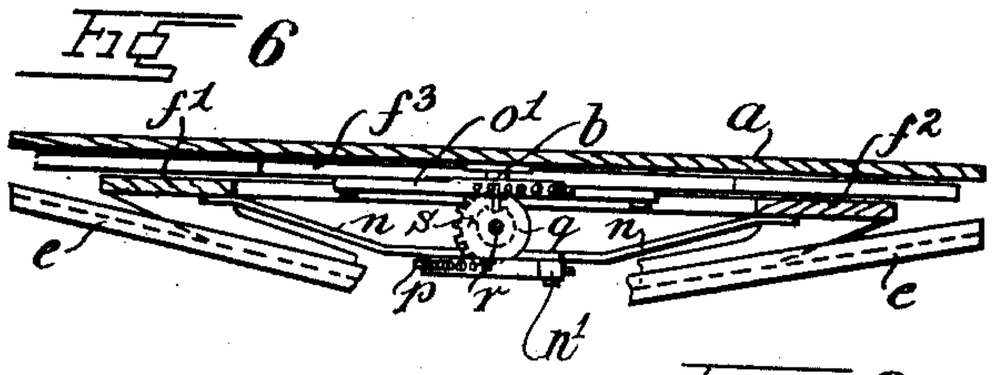


Fig. 7.

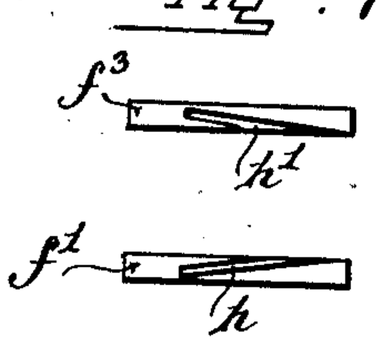
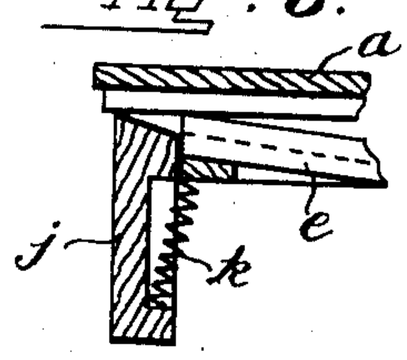


Fig. 8.



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UNITED STATES PATENT OFFICE.

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EXPANDING TABLE.

No. 829,439. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed January 10, 1905. Serial No. 240,501.

To all whom it may concern:

Be it known that I, MICHELE GUGLIELMO DE SIMONE, of 37 Southampton Row, in the county of London, England, am in possession of an invention for Improvements in or Relating to Expanding Tables, of which the following is a specification.

This invention relates to expanding tables.

It is the object of this invention to provide improved means whereby a table of circular shape can be readily expanded with considerable increase of area and sitting capacity and without dividing or unfolding the normal or closed table-top and still retaining the circular shape.

The type of table to which the invention relates is that in which leaves or sections are provided which are normally stored beneath the central member and are adapted to be adjusted around the latter when it is desired to expand the table. According to my invention the sections are adapted to be moved directly outward to their extended positions without requiring a vertical adjustment after being extended.

In cases where it is desirable to reduce the depth of the closed table-top some of the said sections may be slid directly under the central member and lie between same and its support, while the other member or members may be slid under the central member upon guides inclined downward toward the middle thereof, a slight vertical movement of the central member being all that is necessary to allow the sliding member to pass thereby.

The edges of the central member or the table in its closed form which will be in more general use than the other will preferably be fitted with a downwardly-extending rim in the form of an annulus or sections thereof separate from the top and held up in position by springs, so that it will when the table is closed hide the sections stored thereunder, while the rim can be readily depressed to allow the sections to be pulled out when the table is to be enlarged.

The accompanying drawings illustrate one form of my invention and a modification thereof.

Figure 1 is an elevation of the table in its closed or reduced form. Fig. 2 is a plan of Fig. 1. Figs. 3 and 4 are similar views to Figs. 1 and 2, showing the table in its expanded form. Fig. 5 is a plan with the table-top removed and showing mechanical means for expanding the table. Fig. 6 is a sectional elevation of part of Fig. 5. Fig. 7 is a detail, and Fig. 8 is a detail showing the spring-pressed rim.

Referring now to Figs. 1, 2, 3, and 4, a is the central circular member of the table supported by a central vertical pin b, sliding in a socket carried by the table-frame c, which is preferably supported on four legs d d, which legs are disposed as near as convenient to the edge of the circular member a.

The movable sections or extension-pieces are shown as four in number—viz., f' f^2 f^3 f^4—arranged in two pairs, one pair f' f^2 being movable toward and from each other along one diameter of the table-top, and the other pair f^3 f^4 being similarly movable toward and from each other along another diameter of the table-top crossing the first-named diameter at right angles, as seen in plan. Two bars e e are provided which form guides for the two movable sections f' f^2, and which are themselves connected by two bars e' e', that form guides for the two sections f^3 f^4. Two of the said guide-bars—namely, e' e'—are horizontal and the others e e are inclined downwardly and inwardly, so as to leave room for the sections f' f^2 f^3 f^4 to rest beneath the central member a. For sake of strength the guide-bars e e are shown as made of two members suitably spaced apart. The outer movable sections f' f^2 f^3 f^4, which form an annulus around the central member a, are divided on a line g running parallel with one set of guide-bars, whereby the sliding movement of the members f' f^2 may be lengthwise of the dividing-line g. Further, the abutting faces of the sections on the line g are formed with tongues and grooves, whereby said faces are more securely locked and form a more stable joint when the table is expanded. Fig. 7 shows such an arrangement of tongue h and groove h'.

In operation assuming the table to be closed, with the two sections f' f^2 resting on the inner ends of the incline guides e e and the other two sections f^3 f^4 resting on the horizontal guides e' e' and supporting the central member a, which is kept in position by its central socket and pin b, first, the horizontal sections f^3 f^4 are pulled out beyond the central member a, and the latter is then allowed to move down until its surface is on a level with the surface of the sections f^3 f^4. Then the two sections f' f^2 are slid up the inclined guides e e and past the edges of the central member a, which is slightly

raised for the purpose. In this sliding movement the tongue *h* will engage and slide into the groove *h'*, and the whole table is now a complete and enlarged circular table, with a top on one level and firmly supported. (See Figs. 3 and 4.)

The increased area is considerable; but what is more important the circumference and the consequent seating capacity is also increased.

If a circular rim is used, such as indicated at *j*, Figs. 1 and 3, it is preferable to mount the same so that it can be depressed while the sections are slid out. This movement may be accomplished by mounting the rim on springs, as indicated at *k*, which springs will serve to keep the rim *j* pressed up tight in the position shown in Fig. 1, but may be readily depressed to the position shown in Fig. 3 for convenience of drawing out the sections. Where four sections are used, it is preferable to connect the opposite sections—namely, f' f^2 or f^3 f^4—by levers or slides so arranged that the pulling out of one will push out the opposite one. Suitable stops will be provided to limit the movement of the sections and determine their correct position. Such an arrangement of levers is shown in Figs. 5 and 6, where, however, additional means are shown for mechanically operating the sections from the center by means of a handle. In these figures the sections f' f^2 are connected by levers *n n* to a central disk or lever *n'*, while the sections f^3 f^4 are connected by similar levers *o o* to another disk or member *o'*. The disks *n'* and *o'* are mounted on suitable bearings and are formed with teeth *p* around their periphery. The disks *n'* and *o'* are suitably spaced apart, so that a sector or mutilated toothed wheel *q* may gear with one or other of them. Said wheel *q* is mounted on a horizontal shaft *r*, extending to some convenient spot on the table-frame and fitted with a squared end, to which a handle may be fitted for rotating same. In use the parts will be expanded from the position shown in Figs. 5 and 6 by rotating the spindle *r*, rotation of which will cause the wheel *q* first to engage and rotate the disk *o'* and move the sections f^3 f^4 out of position. The tooth part of the wheel *q* will then engage and operate the disk *n'* in a similar manner and extend the sections f' f^2. Meanwhile the gap in the wheel *q* will leave the disk *o'* stationary. In order that the central member *a* may be raised at the proper time, the spindle *r* is fitted with a cam *s*, which serves to raise same at the proper time and to allow the sections to pass thereby.

If desired, other means than the handle shown may be provided for operating the spindle *r*. It is obvious that the outline of the table may be other than strictly circular, although this shape is preferred. The sections may be more than four in number, and each section may be formed in more than one piece, if desired. The sections may be stored in any suitable number of planes.

What I claim, and desire to secure by Letters Patent, is—

1. In an expanding table of general circular outline, the combination with the table-frame, and a central member of general circular outline supported by said table-frame, of an even numbered plurality of sections one-half of which are slidable toward and away from each other along opposite radii of one diameter of said central member, and the other half of said sections are slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the meeting edges of the sections that constitute the one half with the sections that constitute the other half, being arranged in lines parallel in plan with the line of motion of that half of the sections which is designed to be drawn out last in expanding the table, and guides carried by the table-frame, along which said sections can be slid underneath the central member and drawn out therefrom, whereby the said sections, when drawn out, form a complete annulus of general circular outline around said central member.

2. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, and guides carried by the table-frame along which said sections can be slid underneath the central member and withdrawn therefrom.

3. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame along which said sections can be

slid underneath the central member and withdrawn therefrom, and tongues and grooves parallel with the line of motion of said last-moved sections on the opposing faces of the respective parallel joints.

4. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame, along which said sections can be slid underneath the central member and withdrawn therefrom, a vertically-sliding rim on the under side of the central circular member, and means for keeping said rim in position and for allowing it to be depressed as and when required when the sliding sections are moved in and out.

5. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame along which said sections can be slid underneath the central member and withdrawn therefrom, tongues and grooves parallel with the line of motion of said last-moved sections on the opposing faces of the respective parallel joints, a vertically-sliding rim on the under side of the central circular member, and means for keeping said rim in position and for allowing it to be depressed as and when required when the sliding sections are moved in and out.

6. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame along which said sections can be slid underneath the central member and withdrawn therefrom, a vertically-sliding rim on the under side of the central circular member, and springs for keeping said rim in position and allowing of its being depressed as and when required for the purpose set forth.

7. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame along which said sections can be slid underneath the central member and withdrawn therefrom, a central horizontal rotary lever pivoted on the table-frame, and links connecting the ends of said lever to two opposite sections of the annulus whereby the said opposite sections are moved simultaneously in and out substantially as and for the purpose set forth.

8. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame along which said sections can be slid underneath the central member and withdrawn therefrom, central horizontal rotary-disk levers pivoted on the table-frame, links connecting diametrically opposite points on each disk to two opposite sections of the annulus, teeth on the edges of said rotary disks, a mutilated toothed

wheel adapted to operate the said disk-levers alternately, and a spindle for operating said mutilated wheel substantially as and for the purpose set forth.

9. The improved expanding circular table comprising in combination a table-frame, a central vertically-movable member supported by said table-frame, four radially-sliding sections adapted to form when extended an annulus around said central member, two of said sections being slidable toward and away from each other along opposite radii of one diameter of said central member, and the other two sections being slidable along opposite radii of another diameter of said central member at right angles to the first-named diameter, the joints in which annulus are parallel in plan to the line of motion of those two sections that are drawn out last in expanding the table, guides carried by the table-frame along which said sections can be slid underneath the central member and withdrawn therefrom, central horizontal rotary-disk levers pivoted on the table-frame, links connecting diametrically opposite points on each disk to two opposite sections of the annulus, teeth on the edges of said rotary disks, a mutilated toothed wheel adapted to operate the said disk-levers alternately, a spindle for operating said mutilated wheel, a pin on the central circular member extending downward and terminating adjacent to said operating-spindle, and a cam on said operating-spindle, said cam being adapted to engage said pin and thereby raise and lower the central circular member of the table as and when required, substantially as and for the purpose set forth.

10. The improved expanding circular table comprising a central circular table-top, four radially-sliding members adapted to form when extended an annulus around said central table-top, parallel joints between said sliding members, tongues and grooves on the opposite faces of said joints, a horizontal cross-bar immediately beneath the central circular table-top, guides in said cross-bar, a slipper on the opposite sections of the annulus and sliding in said guides, a central squared pin fastened on the under side of the central circular table-top and extending downward therefrom, a socket for said pin in said cross-bar, inclined guide-bars disposed transversely to said cross-bar below the table-top and carrying and supporting said cross-bar, slippers on the other sections of the annulus and sliding in said inclined guides, table-legs and under body supporting said cross-bar and guide-bars, an annular rim mounted to slide vertically on the under-body near the edge of said central circular table-top, springs connecting said annular rim to said under body and forcing the rim upward, stops for determining the position of said rim, all substantially as and for the purpose set forth.

11. The combination in an expanding table, of a frame, a central member supported on said frame, a series of sections fitting beneath such member and movable outwardly to form an extension thereof, and a single means for moving some of said sections outwardly, and then moving the remaining sections outwardly by continuous operation.

12. The combination in an expanding table, of a frame, a central member supported on said frame, a series of sections fitting beneath such member and movable outwardly to form an extension thereof, and mechanical means operating to first move some of said members to their extreme outward positions, and then to move the remaining members to such positions.

13. The combination in an expanding table, of a frame, a central member supported on said frame, a series of sections fitting beneath said member and movable outwardly to form an extension thereof, a rim fitting beneath said central member, and movable downwardly to permit said sections to pass between it and said member, and means for raising said rim when said sections are in their housed positions.

14. The combination in an expanding table, of a frame, a central member supported on said frame, a series of sections fitting beneath said member and movable outwardly to form an extension thereof, a rim fitting beneath said central member and movable downwardly to permit said sections to pass between it and said member, and springs for raising said rim when said sections are in their housed positions.

15. The combination in an expanding table of a frame, a central member supported on said frame, a series of sections fitting beneath such member and movable outwardly to form an extension thereof, toothed members connected to different sections, and a mutilated toothed wheel adapted to engage and operate said toothed members alternately.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

MICHELE GUGLIELMO DE SIMONE.

Witnesses:
ROBERT M. SPEARPOINT,
D. R. DE SIMONE.