

E. NAPOLI.
 AUTOMATIC OR SELF OPENING EXTENSION DINING TABLE.
 APPLICATION FILED JUNE 21, 1910.

1,003,490.

Patented Sept. 19, 1911.
 2 SHEETS—SHEET 1.

Fig. 1

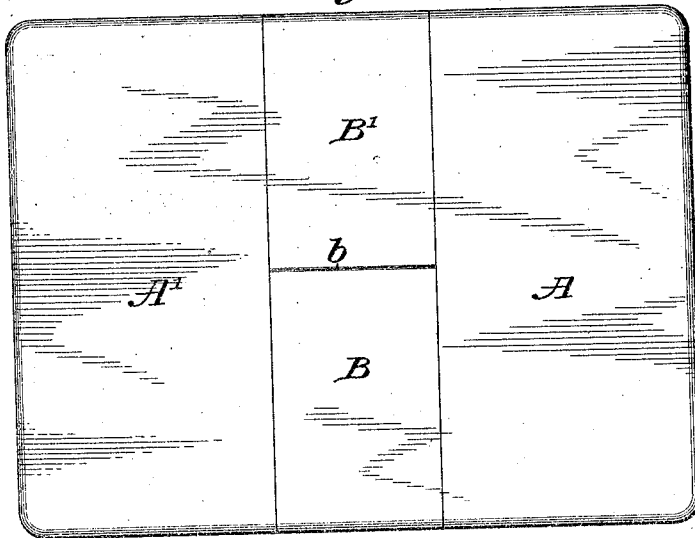
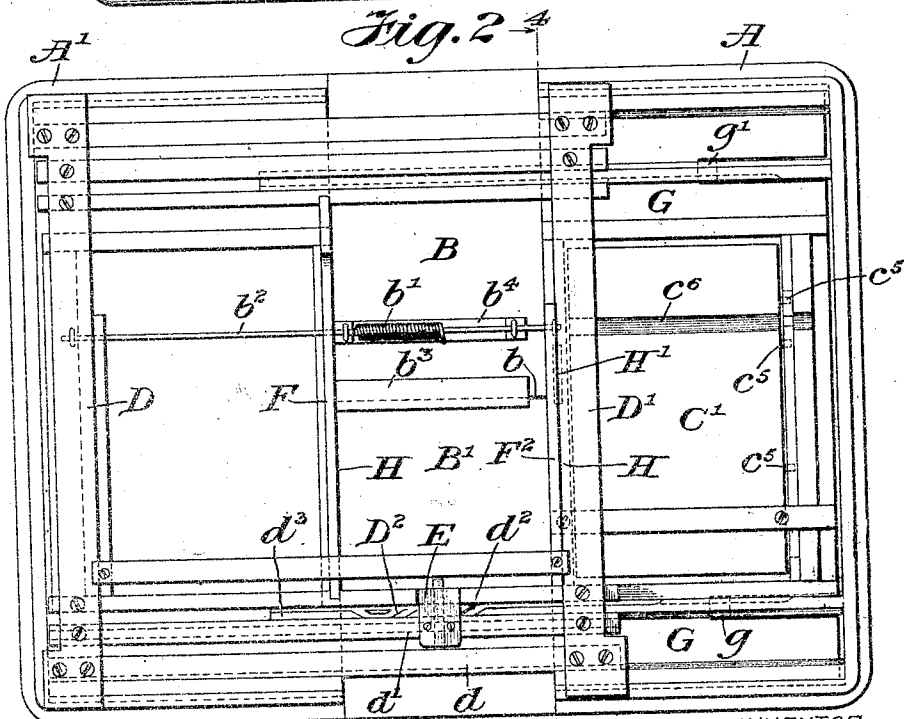


Fig. 2



WITNESSES

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Fig. 3

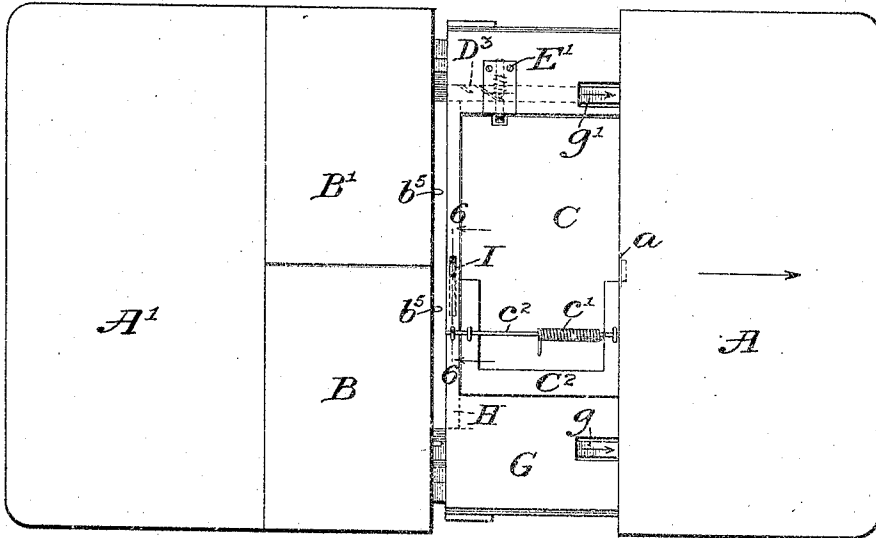


Fig. 5

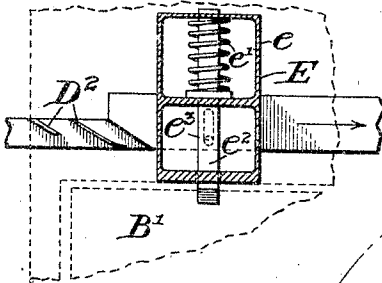


Fig. 6 A

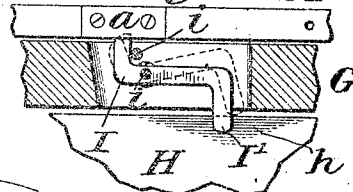


Fig. 7

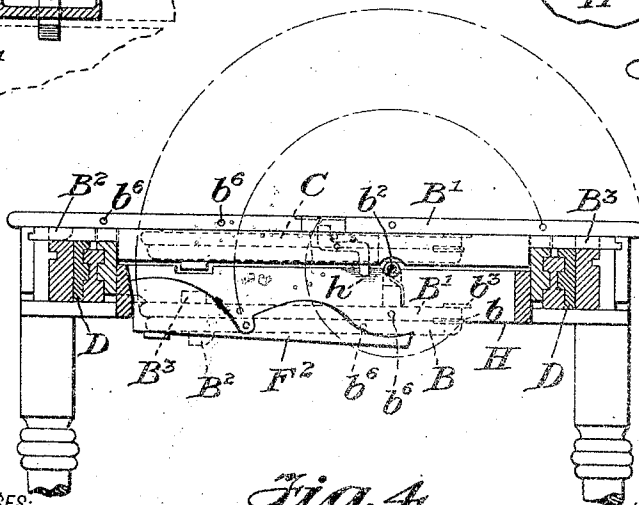
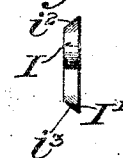


Fig. 4

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UNITED STATES PATENT OFFICE.

EUGENIO NAPOLI, OF NEW YORK, N. Y.

AUTOMATIC OR SELF-OPENING EXTENSION DINING-TABLE.

1,003,490.

Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed June 21, 1910. Serial No. 568,127.

To all whom it may concern:

Be it known that I, EUGENIO NAPOLI, a subject of Victor Emanuel III, King of Italy, with application for declaration of intention for American citizenship filed in the office of the clerk of the United States Circuit Court for the Southern District, residing at No. 2380 Arthur avenue, in the county of New York, borough of the Bronx, city of New York, and State of New York, have invented a new and useful Automatic or Self-Opening Extension Dining-Table, of which the following is a specification.

My present invention relates to extension dining tables and has for its object to provide such a table having means of extension completely concealed and carried by the table itself, and which upon occasion automatically takes its proper place in the construction.

One of the inconveniences of the dining table in constricted quarters, such as small apartments and tenements in the larger cities, has been the difficulty of finding a place in which to dispose the separate leaves which are not in use, and which heretofore have generally formed the accepted method of extending such tables when desired.

It is a main object of my invention to provide storage space within the table itself for these extra leaves, which are seldom needed. The construction which I show and describe in the present case provides for two such leaves, but it will be obvious after considering the specification and drawings that the principle of the invention may be extended to other numbers of leaves, or that one only may be employed, in a small table. The leaves fold up when not in use, and are stowed by a single manipulation below the top of the table, which closes over them so as to present the usual substantially unbroken surface; when it is desired to extend the table the two parts of the permanent top are drawn apart, and thereupon one of the leaves is released and is automatically ejected from its resting place by means of a suitable spring, and then unfolded in position upon the slides; the parts of the table may then be pressed together, the dowels upon the extra leaf and the permanent parts of the top fitting into place in the usual manner. A detent is provided which causes one of the leaves to operate at a time, the detent serving to hold the second leaf or other

leaves dormant until the table be pulled farther open, automatic means being provided to release the detent after the first leaf has come into position; and thereupon the second leaf, or other leaves, is also released from its resting place and brought into proper position.

It has heretofore been proposed to stow the leaves in the space beneath the table top when the occasion to do so arises; but all of the tables with which I am acquainted have been objectionable for one reason or another, requiring the manipulation of catches and handles, which are liable to get out of order and are not automatic in their action. In some cases also only the top of the table moves and the legs remain stationary, which is apt to make the whole structure loose and unsteady after it has been in use but a little while, since the heavy parts of the top move so as to overhang the legs, and are held against tipping by the dowels alone. The arrangement of my invention, however, uses the ordinary slides and legs connected to them in the usual way, and superposes the new parts upon them, avoiding the objections pointed out. Since the whole operation of the table is automatic and does not require skilled or indeed any, manipulation other than the mere pulling open of the table, to bring the extension leaves into their proper places, it avoids the objections of those forms in which latches and detents must be moved by hand.

The accompanying drawings show an embodiment of the invention. In them, Figure 1 is a top plan view; Fig. 2 is an inverted plan view, the legs being removed for clearness. Fig. 3 is a top plan view with the table partly open; one leaf being in position and the other about to rise from its resting place. Fig. 4 is a section upon the line 4, 4 of Fig. 2 looking to the right, but with the parts in their normal position. Figs. 5, 6 and 7 are details of the locking mechanism; shown upon an enlarged scale.

In Fig. 1, A, A¹ are the parts of the permanent top of the table. B, B¹ are the parts of a single leaf, jointed together at *b*; as seen in Figs. 2 and 4, this joint is reinforced by a plate *b*², which may be made of thin wood or of metal so that the joint will not sag. The construction is also indicated in the dotted lines in Fig. 4. Reverting to Fig. 2, the usual underrunning

arrangements or slides of an extension table are indicated at d , d^1 , d^2 , d^3 , etc.; and cross-braces D^1 , D^2 are also indicated. One of the slides carries a latch E, the construction of which is shown more clearly in Fig. 5. It consists of a case or box e , preferably of metal, a bolt e^2 with a spring e^1 around its spindle, and a pin e^3 fast in the bolt, and working in a slot in the case. Upon the rail or slide d^3 is a guide D^2 , which coöperates with a pin in the bolt of the latch and withdraws the latter, allowing it to return by the force of the spring after the guide, which is practically a cam, has acted and passed. The office of this latch is to hold the folding leaf B in place when the parts A, A^1 of the table are to be brought together. A spring b^1 surrounds a rod b^2 and is attached at one end. The office of this spring is to unfold the leaf when the latch F is operated as the cam D^2 passes its pin. As seen in Fig. 4, the dotted line position of the leaf B is that which it takes when folded, it being shown in that figure in solid lines in its position when extended. The guide F^2 , shown in solid lines in Fig. 4, is upon the other side of the leaf B, and the holes b^3 , b^4 for the dowels (not shown) upon the part of the permanent top are designedly located in positions directly opposite the dowels b^5 , b^6 shown in Fig. 3, so that the paths of the latter with reference to the guide F^2 may be approximately indicated, as they are in Fig. 4 by the dotted circles; it will be understood that these circles are only approximations; the true paths being complicated by reason of the lower part of the leaves swinging about both the rod b^2 and the hinge b as centers.

Referring now to Figs. 3 and 4, taken in connection with Fig. 2, I shown the method of operation of the second one of the leaves, the two parts of which are lettered C, C^1 . In Fig. 3 the leaf C is shown as provided with reinforcing parts C^2 , and is mounted upon a rod c^2 about which it turns, the spring c^1 acting like the spring b^1 of the leaf B. The leaf is carried in a frame G, provided with an automatic catch I, presently to be more fully described, which holds the frame G under the part A of the permanent top until it is desired to release it. After it is released the frame G slides out from under the part A and a cam D^3 operates a latch E^1 , like that which secures the leaf B. When the table is closed the two folded leaves B and C are disposed one above the other, the leaf C being shown in dotted lines in Fig. 4, because one of the cross-rails of the frame G is between it and the observer. As seen in Fig. 2, a groove c^3 passes across the under part C^1 of the leaf, so that when the leaf B is folded there will be room for the passage of the spring b^1 . By making the structure of the top a little deeper this

groove may be omitted, as will be manifest, since there will then be room enough for the spring. In order to insure the consecutive operation of these two sets of leaves, I arrange an automatic catch which is illustrated in Figs. 6 and 7, and in a smaller view in plan in Fig. 3. Fig. 6 is partly in section on the line 6, 6 of Fig. 3, and Fig. 7 is an end elevation looking to the right, of the latch shown in Fig. 6. As will be observed the latch, which holds leaf C dormant, consists of an elbow-catch I having a downwardly projecting portion I^1 ; it is pivoted at i^1 and works against a stop i . The upper part of this catch is beveled off as shown at i^2 in Fig. 7, as is also the lower part, at i^3 in the same figure. The upper portion engages with a recess behind a plate a in the top part A of the table, and when the table is closed the beveled portion i^2 causes the catch to slide out of the way of the plate a , and then to engage with it; while when the top part A is drawn to the right, as shown by the arrow in Fig. 3, plate a draws the frame G along with it, thus drawing along the leaves C, C^1 and allowing the leaves B, B^1 to be thrown up into their proper places. If no further extension of the table be desired, the usual dowels b^5 are brought into place and the table being closed together becomes firm. If, however, it be desired to have a greater length, the part A is pulled out still farther until the lower part I^1 of the catch I engages with the beveled portion i upon a cross-bar H (see Figs. 2 and 4) which releases the top of the table, permitting it to slide until the frame G has come against the stops g , g^1 ; a little farther movement of the top then draws the cam D^3 past the latch E^1 (see Fig. 3) releasing the latter; whereupon the spring c^1 on the rod c^2 throws up the leaves C, C^1 .

The table which I have shown is intended to be and is in fact automatic in its action, in that by the mere opening of the permanent parts of the top the extension leaves are brought into place upon the top of the rails or slides, so that by simply pushing the permanent parts of the top toward one another the operation is complete. It is obvious that this is the best method of operation, since it avoids trouble for those who are not familiar with mechanical matters; but the spring may be of such strength as merely to start the leaves from place without completing the operation, or the arrangement may be such that they are simply released so as to be movable by hand, without departing from the invention. In those of my claims in which I have used the word "automatically", I mean to refer to the table when equipped with the springs for the purpose above described; in the strict sense the action is not automatic, since it must be

started manually, but I have used it as a convenient term which will not be misunderstood.

5 I claim and desire to protect by Letters-Patent of the United States, is:

1. An extension table comprising a divided permanent top, slides, and means for supporting them; a leaf composed of two parts 10 hinged together and turning about a center eccentric to the hinge, a spring for unfolding the leaf and bringing it into the plane of the permanent top, a detent for holding the leaf in its folded position against the 15 tension of the spring, and means, operated by pulling apart the divisions of the top, for releasing the detent at desired times.

2. In an extension table, the combination of a permanent top divided into sections, slides and means for supporting them; 20 a leaf composed of a plurality of parts hinged together and turning about a rod eccentric to the hinge, a spring carried by the rod and fastened at one end thereto, 25 the other end being under tension against the leaf, a latch upon the frame holding the leaf in its concealed position against the tension of the spring, a pin in the latch, and a cam upon one of the slides cooperating 30 with the pin, the slide moving when the sections of the permanent top are drawn apart; whereby when the table is opened the latch is drawn back and releases the folding leaf, the spring rotating it about 35 the rod until it unfolds and assumes a position in the plane of the permanent top.

3. In an extension table, the combination of a permanent top divided into sections, slides and means for supporting them; with a plurality of folding leaves each composed 40 of two parts hinged together and turning about a rod eccentric to the hinge, a spring about the rod one end of which is secured thereto and the other end of which presses against the leaf, a latch for each of the fold- 45 ing leaves, a cam for each of them located upon the slides which move with the opening of the top, a detent for preventing the action of one of the leaves until the other has been brought into extended position, and means 50 for releasing the detent by further extension of the table.

4. In an extension table the combination of a divided permanent top, the slides and means for supporting them; with a plu- 55 rality of folding leaves disposed below the permanent top when the table is closed, each leaf composed of two parts hinged together, 60 the parts swinging about a rod eccentric to the hinge, a spring attached at one end to the rod and bearing against the leaf so as to give it a tendency to swing around the rod, a latch for each leaf, with means upon 65 the slides for releasing the latches in desired order; a detent for the leaves other than the first, and means, operated by the further opening of the table, to release the detent at desired times.

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Witnesses:

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