April 3, 1962 N. L. DAILEY 3,027,664

COMPACTLY COLLAPSIBLE IRONING TABLE

Filed Nov. 25, 1958 2 Sheets-Sheet 1

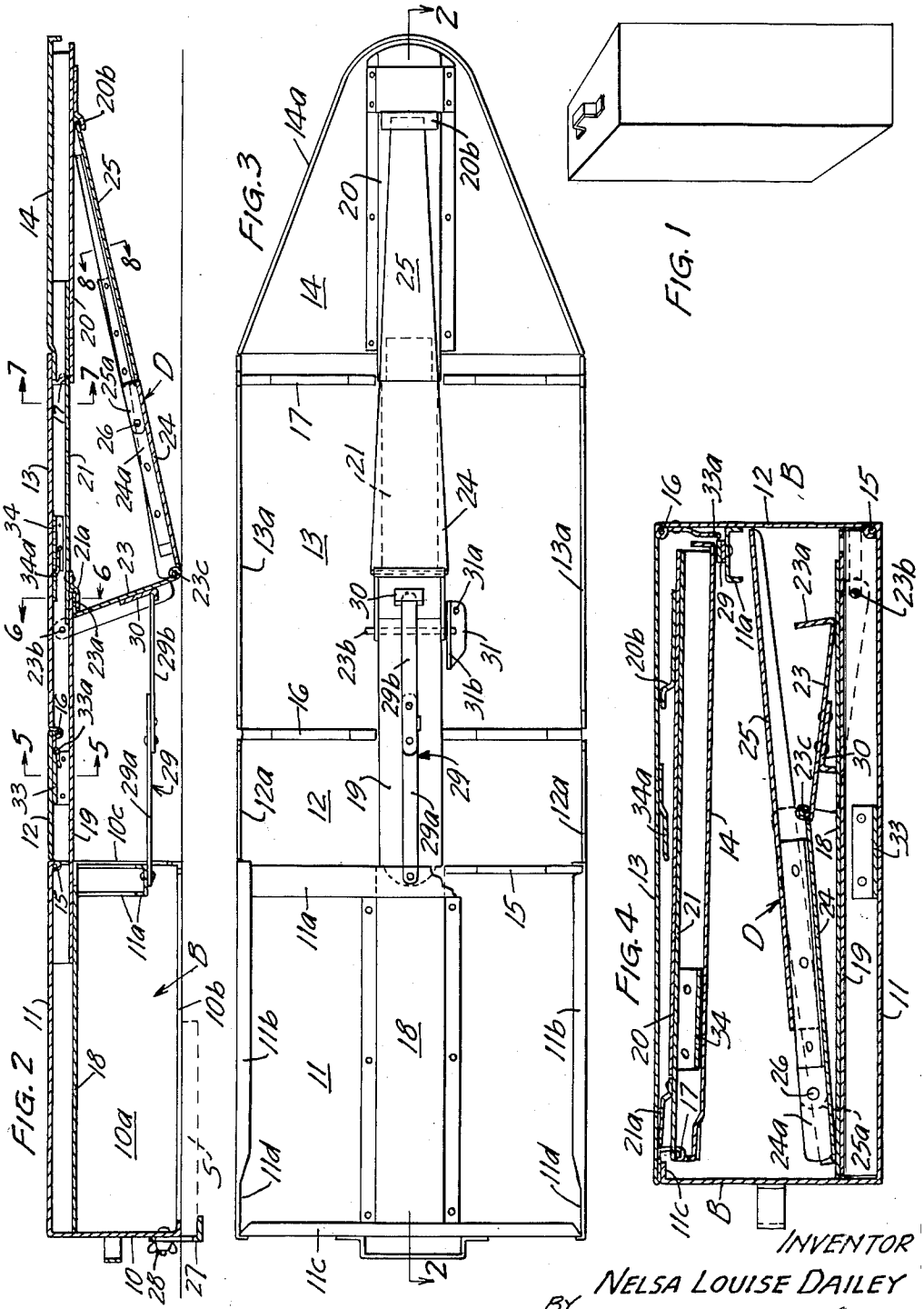


FIG. 1

FIG. 2

FIG. 3

FIG. 4

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Filed Nov. 25, 1958 2 Sheets-Sheet 2

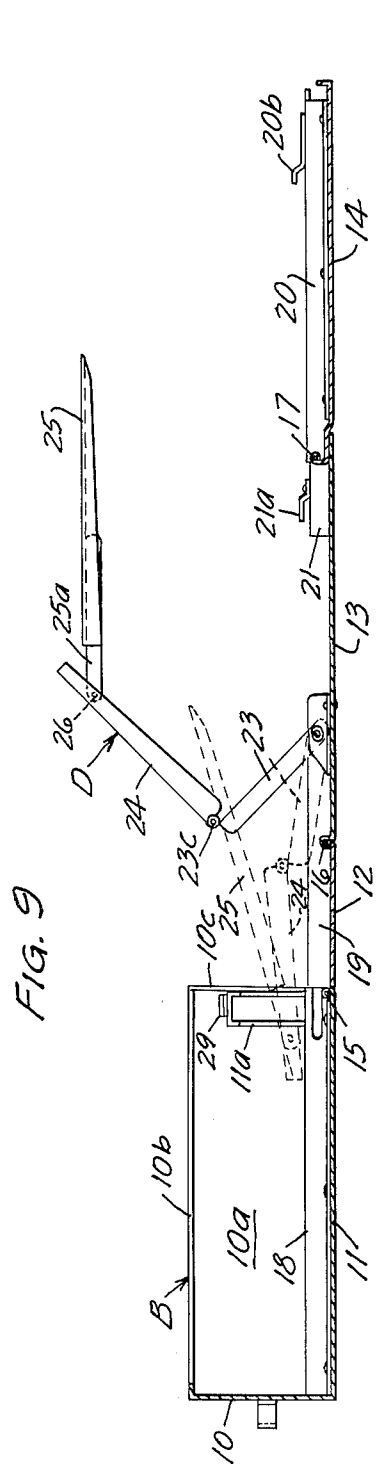


FIG. 9

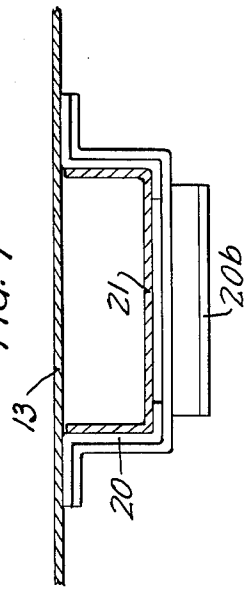


FIG. 7

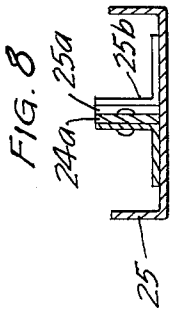


FIG. 8

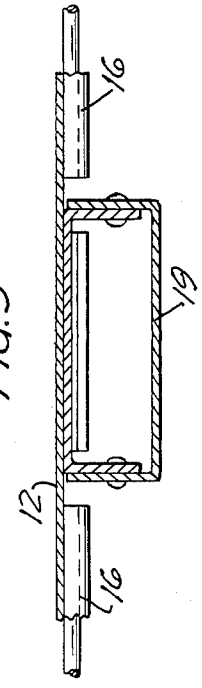


FIG. 5

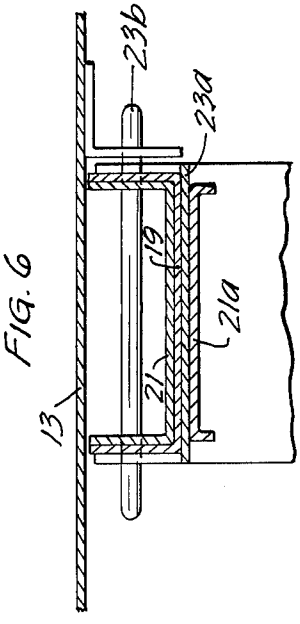


FIG. 6

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COMPACTLY COLLAPSIBLE IRONING TABLE

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5 Claims. (Cl. 38—122)

This invention relates to ironing tables and particularly to a construction collapsible into extremely small, compact or nested form for travel and shipment but nevertheless extensible in use for full utility service in ironing.

Ironing tables of the prior art generally employ a unitary, elongated table top connected with cross leg structures and bracing means, all of which are collapsible against the unitary top or relatively small devices which utilize collapsible components but which when assembled for use, offer only a very small horizontal ironing surface without provision for adequate clearance under the forward portion of the top and which are totally impractical for the ironing of skirts, dresses, trousers, coats and the like.

It is an object of the invention to provide a rigid and highly efficient ironing table comprising a plurality of hinged table sections interconnected for nesting and collapsing in very compact form for carrying in a suitcase or for constituting per se, an encased structure while nevertheless when extended or set up for use, providing an overhanging aggregate ironing surface approximating that of most domestic ironing tables now in use.

Another object is the provision of a combined ironing table and small portable case adapted for travel purposes and shipment wherein several interconnected walls of a rectangular case constitute hinge sections of a full ironing board when extended for use and wherein collapsible means all nested and confined within the case when the device is compacted, rigidify the several sections into a unitary top and provide diagonal, tensioned bracing for the forward portion of the top.

A further object is the provision of a combined ironing table and portable case of the class described which has accommodation within for a light iron and a pad or cover and an electrical service cord.

A further and more specific object is the provision in an ironing table of the class described for collapsing into a very compact form, a supporting or base section and a plurality of hinge sections interconnected and collapsible with said base section, with means on the base section and means on the forward section for underlying the hinge connections to rigidify the entire table when the same is set up for use and having also diagonal brace structure collapsible generally against the base section, for bracing and tensioning the forward portion of the over-all table in use.

These and other objects and advantages of the invention will be more apparent from the following description made in conjunction with the accompanying drawings wherein like reference characters, throughout the several views, refer to similar parts and in which:

FIG. 1 is a perspective view showing an encased form of my invention, collapsed in the external form of a small, rectangular traveling case;

FIG. 2 is a vertical section taken approximately along the line 2—2 of FIG. 3 with the ironing table set up for use and with the forward portion of the table top in overhanging relation to a supporting medium;

FIG. 3 is a bottom plan view of said embodiment of the invention with the table set up for use;

FIG. 4 is a cross section on a vertical plane taken longitudinally relative to the table top construction of the compacted and encased device;

FIG. 5 is a detail cross sectional view taken on the line 5—5 of FIG. 2 showing the slideway and slide brace channel connected with the rear section or base shell of the structure;

FIG. 6 is a detail cross section taken on the line 6—6 of FIG. 2 showing a portion of the forward slideway, underlying horizontal brace structure and hinged anchoring of the diagonal brace mechanism;

FIG. 7 is a detail view taken on the line 7—7 of FIG. 2 showing more of the forward slideway structure;

FIG. 8 is a detail cross section taken on the line 8—8 of FIG. 2 showing the hinge connection between the forward and intermediate portions of the diagonal brace; and

FIG. 9 is a longitudinal, vertical section of the ironing table embodiment inverted from the position shown in FIG. 2 and showing in full lines, partially collapsed positions of the diagonal bracing mechanism and in dotted lines, the fully collapsed position of the same, prior to retraction of the underlying horizontal brace channel into the base shell.

The embodiment of my compactly collapsible ironing table illustrated in the drawings utilizes a base or support structure indicated as an entirety by the letter B in the form of a rigid shell having a narrow rear end **10**, rigidly interconnected side walls **10***a*, an open bottom **10***b*, an open forward end **10***c* and a rigid top **11** which constitutes the first and rear section of my ironing table top in use. The rigid base shell B may be constructed from relatively light sheet material such as the more rigid aluminum alloys or some other suitable sheet material. The open forward end **10***c* of the base shell is reinforced and the side walls **10***a* interconnected by a cross bar **11***a* spaced slightly above the open bottom edge and rigidly interconnected at its outer ends with side walls **10***a*. A narrow rectangular second or intermediate table top section **12** is provided, hinged to the forward edge of the rear or first section **11** by hinge mechanism **15** and is of a width and area when swung downwardly from the position shown in FIG. 2, to precisely cover and close the open forward end **10***c* of the base shell.

A third and relatively wide table-top section **13** is provided, hinged to the forward edge of the narrow second section **12** by hinge mechanism **16** and is rectangular in shape and of a size and area to completely cover the open bottom **10***b* of the rectangular base shell, when collapsed.

To the forward end of the intermediate top-section **13** a forward section **14** is hingedly attached by hinge mechanism **17** later to be described in detail, which permits forward section **14** to be swung under and collapsed snugly against the interior surface or bottom of the intermediate section **13**. Forward section **14** tapers forwardly from its rear edge which is hingedly connected with the section **13** and terminates in a rounded nose, the maximum width of section **14** being slightly less than the width of interconnected section **13** to facilitate the inward collapsing within the confines of section **13** heretofore recited. The sections **12**, **13** and **14** preferably have for reinforcing purposes and to prevent sharp edges from being present, narrow, downturned integral flanges at the sides thereof numbered **12***a*, **13***a* and **14***a* respectively.

Means are provided to rigidify the interhinged table-top sections **11**, **12**, **13** and **14**, part of said means being slidably collapsible within the base shell B and another part of said means being slidably retractible in the forward section **14** of the top. In the embodiment illustrated, rear section **11** (the top wall of the base shell B) on its undersurface, medially and longitudinally thereof rigidly carries a channel slideway **18** in which a rigid

channel brace 19 is slidably mounted for extension forwardly as shown in FIG. 2, underlying the transverse hinges 15 and 16 which interconnect the narrow second or intermediate section 12 of the table top with the rear section 11 and the wide intermediate or third section 13.

Forward section 14 centrally and longitudinally at its undersurface when extended, rigidly carries channel slideway 20 wherein the rigid channel slide brace 21 is slidably mounted for extension rearwardly as shown in FIG. 2, longitudinally of the table top when the hinge sections are extended and swung to horizontal, operating position. The rearward end of channel slide brace 21 interfits and for a short distance telescopes with the forward end of the horizontal channel brace 19, as shown in FIGS. 3 and 6. To further increase the rigidity of such telescoping or interfitting, an overlapping lip 21*a* on slide brace 21 frictionally engages below an angle lip 23*a* rigidly affixed and integrally formed with the depending base portion 23 of a diagonally disposed brace structure indicated as an entirety by the letter D, said base portion or channel link 23 being swingably connected with the slide brace 21 by pintles 23*b*, as shown in FIGS. 2 and 6. Base portion 23 as shown, is of shallow channel construction and at its outer or free end has strong hinge connection 23*c* with an intermediate, diagonally disposed brace section 24 which in turn is pivotally and ruggedly connected by a pivot hinge 26 with the forward tongue 25 (also of preferably channel construction) of the diagonal brace structure. The hinge pivot 26 (see FIGS. 2, 4 and 9) is disposed rearwardly some distance of the forward end of channel brace section 24 so that the two diagonal brace sections 24 and 25 (tongue) may in operation be longitudinally aligned and rigidly integrated as shown in FIGS. 2 and 3; and so that the shorter section 24 may be collapsed backwardly upon the slideway 18 with the tongue section 25 collapsed forwardly upon section 24, as shown in FIG. 4. The successive steps of collapsing the diagonal brace mechanism are illustrated in FIG. 9 where the forward rigidifying brace 21 has been retracted forwardly into the slideway 20, the section 24 has been swung forwardly upon the channel base portion 23 of the mechanism and the forward tongue portion 25 has been partially swung forwardly on its hinge pivot 26 for ultimate collapsing against the channel side of the shorter section 24.

Thereafter, the base section 23 is swung rearwardly while at the same time the collapsed diagonal sections 24 and 25 may move rearwardly beneath the reinforcing cross piece 11*a* which traverses the forward open end of the base shell B. The full lines show the partial collapsing of the brace section and the dotted lines of FIG. 9 show the full collapsed position of the brace structure, prior to retraction of the rigidifying horizontal brace channel 19 into the slideway 18 of the base shell. The fully collapsed and retracted position of the diagonal brace structure and the rigidifying horizontal brace 19 is shown in FIG. 4. To provide for the aforementioned collapsing of tongue, brace section 25 upon the shorter brace section 24 and the proper positioning of the hinge pivot 26, an extension hinge bar 25*a* rigidly secured to an angle bracket 25*b*, is mounted centrally and longitudinally within the confines of channel tongue 25, projecting somewhat beyond the rear end of tongue 25, as shown in FIG. 2. This extension is hingedly connected by pivot 26 to a bar 24*a* which is centrally, edgewise and longitudinally affixed to the medial portion of the shorter brace section 24, as by means of an angle bracket 25*b* (see FIG. 8).

It will be seen from FIGS. 2 and 3 that when the table top is set up for operation, it is supported at its rear end by the base shell B and rigid rear section 11 and at its intermediate portion by contact of the hinge connection 23*c* with a supporting surface, at which time the base portion or link 23 of the diagonal brace structure is moved past dead center relation and is urged by weight of the table top and downward pressure in ironing, to the position shown in FIG. 2, thus tending to keep the diagonal portion of the brace construction comprising links 24 and 25 in tensioned position for bracing the forward portion of the table top. However, it is often desirable to support the entire structure from a narrow horizontal surface or shelf and to this end, I provide an angle clamping bracket 27 which may be housed within the base B, having a pair of vertical slots in the vertical flange thereof which may be adjustably bolted by nutted bolts 28 through a pair of apertures formed in the rear wall 10 of the base shell, thereby clamping the shell to a narrow shelf support S. In such use, it is desirable to have a rigid brace 29 between the cross bar 11*a* at the open end of the base shell and the lower end of the base section 23 of diagonal brace mechanism D. The brace 29 as shown, comprises a pair of hinged bars 29*a* and 29*b*, the rear of which (29*a*) is pivoted to the middle of the cross bar 11*a* and the forward bar or link 29*b* of which is adapted to abut at its forward end, and L-shaped plate 30 affixed appropriately centrally and intermediately of the height of base section 23 of the diagonal brace structure (see FIGS. 2 and 3). The links 29*a* and 29*b* at overlapping portions are provided with conventional detents and recessed portions for retaining operative and longitudinally aligned position when in use. In collapsed position, brace 29 is mounted compactly above cross bar 11*a* (see FIG. 4).

For interlocking the two telescoping, rigidifying brace channels 19 and 21 together at the overlapped portions, a small angle lock 31 is pivoted on a rivet 31*a* to the underside of table top section 13 and may be swung to the full line position shown in FIG. 3 to accommodate the extended end of one of the pintles 23*b* in a suitable locking aperture formed in the vertical flange 31*b* of angle lock 31.

Means for readily interlocking the hinged sections in the encased, box-like form shown in FIGS. 1 and 4 are provided. In the form shown, the inturned flange 11*b* at the bottom of the base shell, is cut away at its rear portion 11*d* as shown in FIG. 3, accommodating the hinge mechanism 17 which interconnects table-top section 13 with the forward table-top section 14. Such hinge construction by snap action or slight relative longitudinal movement of section 13 underlies at least a portion of the flange 11*c* at the rearmost edge of the shell base, thus interlocking all of the table-top sections or casing sections in box form as shown in FIG. 4.

To set up the embodiment of my ironing table here disclosed for operation from the encased and collapsed position of the parts as shown in FIG. 4, I first disengage the locking or retaining mechanism between the hinge structure 17 of the forward section and the flange 11*c* at the bottom rear edge of the shell base, swinging table-top sections 13 and 12 outwardly into longitudinal, aligned positions as shown in FIG. 9. Thereafter, the forward section 14 is swung forwardly from its collapsed position into alignment with the other table top sections (also shown in FIG. 9). Thereafter, the slidable, rigidifying channel brace 19 with the diagonal bracing structure D collapsed as shown in full lines in FIG. 4 is slidably moved forwardly to the position shown in FIG. 9 where the brace overlies the hinge 15 interconnecting rear or base section 11 with the narrow intermediate section 12 of the table top. Thereafter, the collapsed sections 25 and 24 of the diagonal brace mechanism are swung upwardly from the dotted line position shown in FIG. 9 to the full line position and the forward channel tongue 25 of the diagonal brace is swung outwardly from the previously outwardly swung section 24 and aligned therewith and secured by detent and socket means in rigid aligned position.

Thereafter, the rigidifying channel brace 21 is slidably moved rearwardly from the position shown in FIG. 9 to interconnect and telescope its free end with the forward end of the then extended channel brace 19 and the tele-

scoping ends of said rigidifying braces **19** and **21** are further interconnected by lapping of the lip **21***a* with the lip **23***a* (see FIG. 2) angularly projecting from the base section **23** of the diagonal brace structure. Further interlocking of the two connected ends of the channel braces is accomplished by swinging the angle lock **31** into the full line position (see FIG. 3), thereby accommodating and locking one end of the pintle **23***b*.

The forward extremity of the tongue section **25** is then interfitted below the heavy retaining lip **20***b* affixed to the forward end of slideway **20** and in so doing, with the base link **23** of diagonal brace D disposed in the position shown in FIG. 2, tension is placed upon the diagonal brace sections **24** and **25** urging the top-sections **13** and **14** upwardly. Next, the hinged link brace **29** is swung to align the sections **29***a* and **29***b* and the forward end of the brace **29** is operatively applied to the cleat **30**, as shown in FIGS. 2 and 8. To limit interlocking or protruded positions of the horizontal channel slide brace members **19** and **21** and to retain these bracing members in extreme positions, suitable means may be provided but they are not essential. Thus, with respect to the horizontal channel brace **19** which is carried in the slideway **18** of stationary member or section **11**, I provide at the side of the channel **19**, an angle piece **33** affixed thereto which is adapted to engage, when section **12** is hinged therefrom to the position shown in FIG. 2, a resilient keeper member or finger **33***a* affixed to the underside of the relatively narrow table section **12**.

An angle member **34** is suitably affixed to one of the sides of the channel slide brace **21** which is adapted when the channel is horizontally protruded, to underlie the wider intermediate table section **13** to engage and be limited in movement by a resilient finger **34***a* attached to the underside of section **13**.

If the ironing table is supported upon an elongated supporting surface such as a kitchen table or the like, the hinge structure **23***c* engages the surface as well as the base shell B, with the forward portion of the diagonal brace structure D as well as the forward portion of table-top section **13** and the entire forward section **14** projecting over the forward edge of the supporting table or shelf.

If my ironing table is to be supported from a relatively narrow shelf or support such as a shelf S shown in dotted lines in FIG. 2, then the simple clamping structure including the angle bar **27** and the wing bolts and nuts **28** are employed to clamp the rear and bottom portion of the shell base to the rear edge of shelf S.

From the foregoing description, it will be seen that I have provided an extremely compact, nestable ironing board structure which lends itself to several forms for collapsing, each of which employs a plurality of tabletop sections hingedly interconnected and rigidified for unitary, full utility ironing board by slidable, horizontal brace elements **19** and **21** and further reinforced and braced by simple diagonal brace structure D, which is compactly collapsible against the intermediate and relatively wide table-top section **13**.

It will further be seen that my structure is particularly adapted to be embodied in a rectangular case structure of small dimensions which can be conveniently carried or shipped as a small handbag or which will fit within a piece of luggage and wherein the actual hinge sections forming the full utility table-top close and constitute three walls of the casing structure.

It will of course be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of my invention.

What is claimed is:

1. A portable encased ironing table having in combination a rigid base shell of box shape having an open end and an open bottom defined by rigid side walls and an end wall and of dimensions to receive therewithin hinge

portions of said table and having a rigid top which constitutes a rear and first section of the table, a second, narrow table section hinged to said top and adapted when the table is compacted to swing on said hinge and cover the open end of said base shell, a third table section hinged to said narrow section and of an area to close and cover the open bottom of said shell when the top is compacted and a fourth forward table section hingedly connected to the forward edge of said third section for folding inwardly thereon in compact relation and for confinement and housing within said shell when the device is compacted, two sets of retractable rigidifying means for underlying collectively the hinge connections and adjacent portions of all of said sections, one set being mounted upon one of said sections for positioning within the confines thereof when retracted and for protraction to underlie the hinge means connecting that section with the next adjacent section and the second set being mounted upon another of said sections for underlying when protracted, the two remaining sections of said top and retractable within the confines of the section upon which it is mounted and collapsible hinged diagonal brace structure including a post-link, hinged at its rear end to said first mentioned set of retractable rigidifying means and collapsible thereover within the confines of said base shell, and including a diagonal brace link connected to the lower end of said post-link and extending diagonally upward between a base shell supporting surface and an abutment on the underside of said forward section.

2. The structure set forth in claim 1 and cooperating means adjacent the two protractable ends of said sets for interlocking to rigidify said two sets.

3. A portable, collapsible ironing table having in combination a rigid rectangular base structure having a rigidly secured flat top constituting in use a rigid horizontal table section, a rectangular intermediate table section hingedly connected with said first section and adapted to be positioned in use substantially in horizontal alignment therewith, a forward table section having hinged relation to said intermediate section for positioning in substantially horizontal alignment with both of said sections in use, a retractable rigid member slidably mounted beneath said first table section for slidable extension to underlie both said first table section and said intermediate table section to rigidify the two, a second rigid retractable member slidably mounted beneath said forward table section for slidable extension beneath said forward table section and said intermediate table section to rigidify the two, and collapsible diagonal bracing mechanism comprising a post-link hingedly connected at its rear end with said first rigid retractable member for forward extension therewith and swinging downwardly to a substantially upstanding position therefrom and a diagonal brace link connected with said post-link for collapsing thereagainst and having its forward end when extended engagable with interlocking means carried below said forward table section.

4. A portable, collapsible ironing table having in combination a base structure adapted for support upon an elevated horizontal supporting medium and having a bottom peripheral edge defining a rigid support of large area and having an upper rigid horizontal wall of generally rectangular shape constituting in use a rear table section, a rectangular intermediate table section hingedly connected to said rear table section for compacted positioning thereof and for operative positioning in horizontal alignment therewith, a forward table section having hinged relation to said intermediate section for positioning in horizontal alignment in use with both of said rear and intermediate sections, rigid slidable retractive means attached to said first section for underlying the hinge connections and the bottom of said rear and intermediate sections in use to substantially rigidify said sections, and a collapsible brace construction comprising a link shiftably connected with the slidable means of said first section for positioning in generally upstanding relation in use be-

tween said intermediate section and said supporting medium and comprising also an elongated brace link connected with the lower end of said first link and extending diagonally from said supporting medium to a forward abutment on the underside of said forward table section and cooperating with said slidable retractive means to rigidify the entire table.

5. The structure set forth in claim 4 wherein said retractive, rigidifying means constitutes for each of said rear and forward table sections, slidably mounted, elongated plates underlying the greater portions of the lengths of said rear and forward sections when the table is collapsed and having means at opposed ends thereof for interlocking in extending and rigidifying position.

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