Dec. 18, 1928. 1,695,419

G. M. EAMES

SUPPORTING STRUCTURE FOR POWER TABLES

Filed March 19, 1926 3 Sheets-Sheet 1

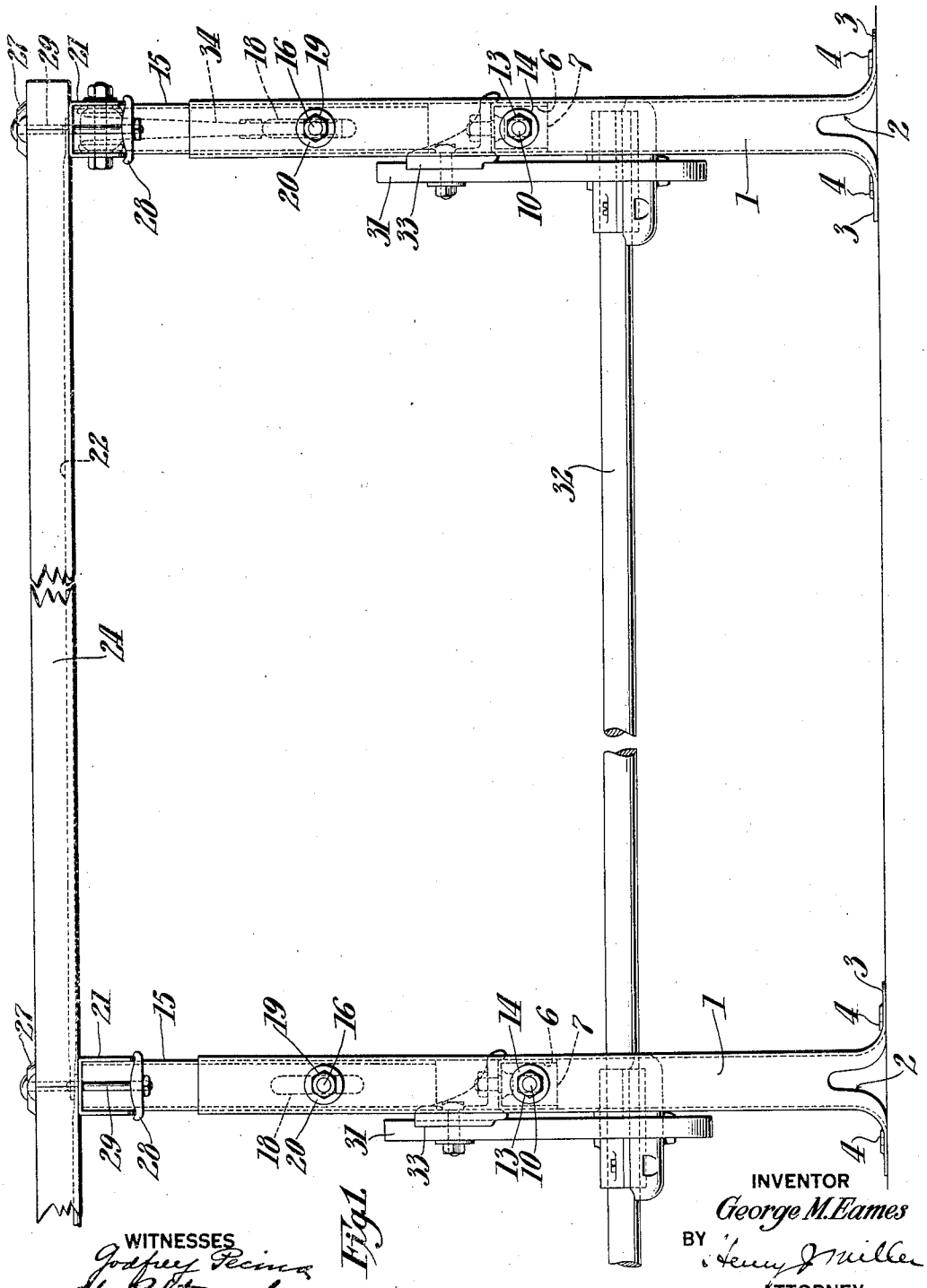


Fig. 1.

WITNESSES

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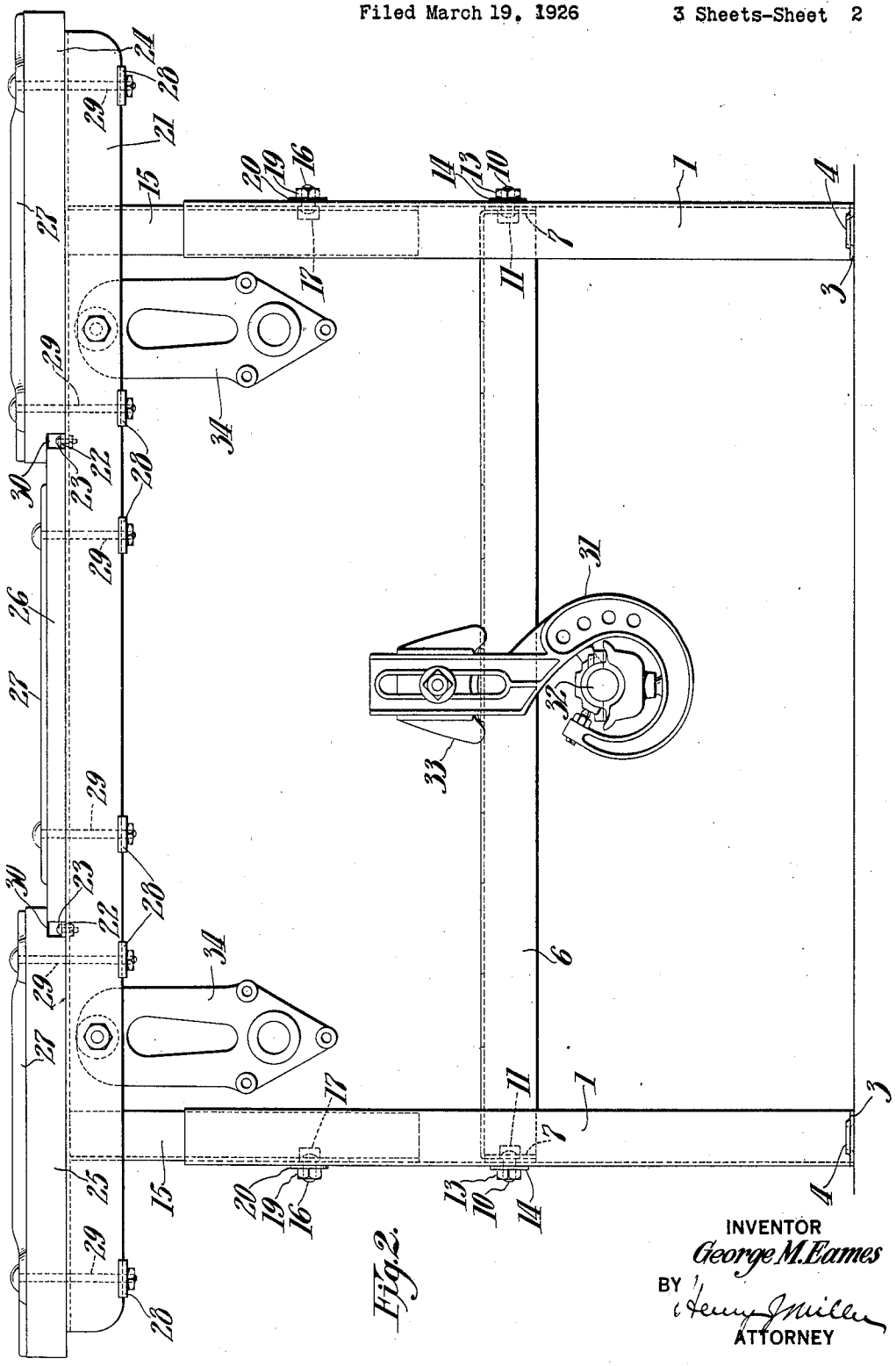


Fig. 2.

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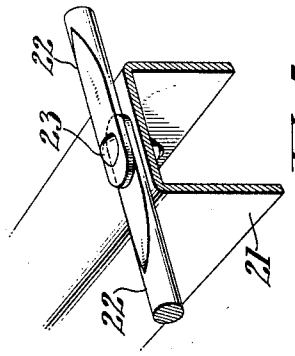


Fig. 5.

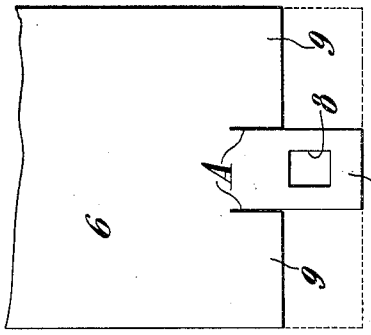


Fig. 8.

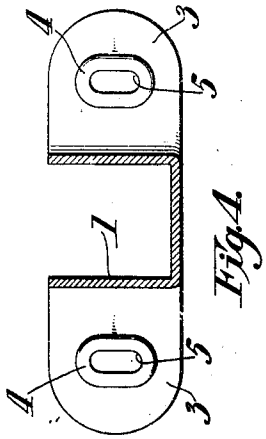


Fig. 4.

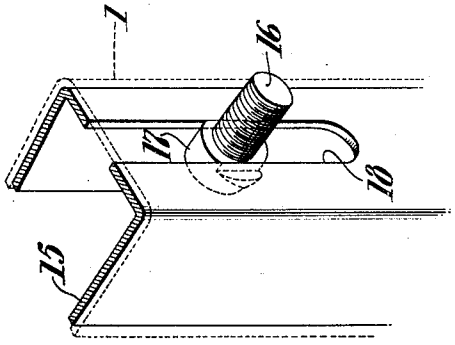


Fig. 7.

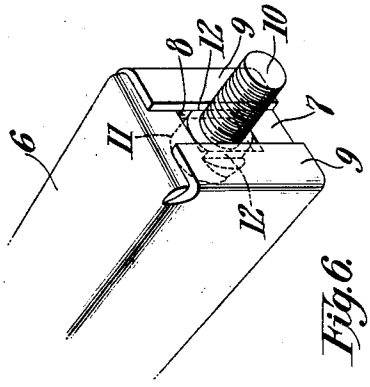


Fig. 6.

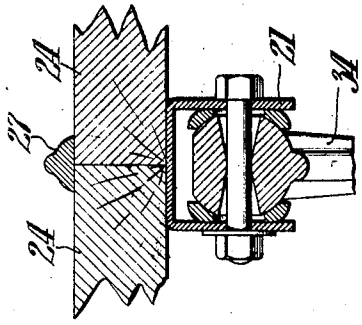


Fig. 3.

WITNESSES

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Patented Dec. 18, 1928. 1,695,419

UNITED STATES PATENT OFFICE.

GEORGE M. EAMES, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF ELIZABETH, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SUPPORTING STRUCTURE FOR POWER TABLES.

Application filed March 19, 1926. Serial No. 95,848.

This invention relates to improvements in the table-supporting structure of power-tables particularly for sewing machines and the like, and has for its primary object to provide a supporting structure of this character which may be readily assembled or set up and when so assembled meets the requirements of various types of power-transmitters at present standard in commercial use, withal comprising a structure of relatively low cost of manufacture convenient of shipment.

In its preferred embodiment, the table-supporting structure of the present invention comprises sheet-metal channel-bars which are substantially U-shaped in cross-section, and in its simplest form comprises table end-rails each sustained by two spaced, vertically adjustable legs braced by a cross-bar. The channel-bars comprising the end-rails and the cross-bars are each, in cross-section, of inverted U-shape, while the channels of the legs of each rail face each other. Each end of a cross-bar fits snugly in the channel of a leg-member and is so constructed as to obviate the use of additional webs or stay-pieces heretofore found necessary to obtain the required rigidity in a detachable construction of this character. The legs each comprise relatively adjustable members of which the upper enters, with a snug fit, the downwardly opening channel of an end rail and is rigidly secured to said rail, as for instance by welding or riveting. The upper leg-member is slidingly fitted within the lower member and is provided with an elongated, vertically disposed slot whereby said upper leg-member may be adjustably bolted to the lower. The lower end of each lower leg-member is provided with a slot in the base of the channel-bar and the adjacent side portions are bent in opposite directions at right angles to the length of the member to provide integral supporting feet disposed in the direction of the length of the table, each of said feet being formed with a slotted boss to facilitate the bolting of the leg-members to the floor. The end rails of a table-section are connected by cross-rods lodged in the table-top so as not to interfere with any type of power-transmitter construction which may be employed with the table.

In the accompanying drawings, Fig. 1 is a side view of the supporting structure for power-tables constituting the present improvement. Fig. 2 is an end view of the same. Fig. 3 is a detail sectional view illustrating the supporting means for one type of power-transmitter hanger. Fig. 4 is a top plan view of the feet of a leg-member, the channel-bar constituting said leg-member being shown in section. Fig. 5 is a detail perspective view of a portion of a rail and the rail-connecting cross-rods secured thereto. Fig. 6 is a perspective view of the end of a cross-bar, together with its securing bolt. Fig. 7 is a detail perspective view of a section of complemental leg-members, together with the securing bolt therefor. Fig. 8 is a plan view of an end of a cross-bar flattened out, to better illustrate the construction of the flanged end of said bar.

Referring to the drawings, the table-top supporting structure is shown as having vertical, primary leg-members 1 each comprising sheet-metal channel-bars of horizontal U-shape in cross-section. The lower end of each of the leg-members 1 is provided with a slot 2 in the base-portion of the channel-bar and the side-members of said channel-bar adjacent the slot 2 are bent in opposite directions substantially normal to the length of the bar to provide feet, as 3, integral with a leg-member. Each of the feet 3 is stamped to form a raised boss 4 which is provided with an elongated slot 5 for a securing bolt (not shown), the slots 5 permitting a limited adjustment of each leg-member crosswise of the length of the table.

Two primary leg-members 1 are employed at each end of a table-top section, being disposed in spaced relation with the channels facing each other so that the leg-member channels may be entered by the opposite ends of a channel-bar cross-bar 6 of inverted U-shape in cross-section. The width of the base-portion of the cross-bar 6 is such that the ends of the cross-bar have a fairly snug fit within the channels of the vertical leg-members. Each cross-bar 6 is detachably but firmly secured upon its respective leg-members by a novel construction substantially increasing the rigidity of the structure. This construction is illustrated more particularly in Figs. 6 and 8. In Fig. 8 a portion of the cross-bar is shown as flat, i. e., before it is bent into channel-form, to better illustrate a preferred method of constructing the flanged ends of the cross-bar. A tongue 7 is formed at each end of each cross-bar by parallel slits A cut in the base-portion of

the bar, which tongue 7 is provided with a rectangular aperture 8. The side members of the cross-bar are cut away, as indicated by the dotted lines in Fig. 8, a distance less than the depth of the slits A to provide lips 9. The tongue 7 and the lips 9 are preferably but not necessarily stamped out before the cross-bar is bent into channel form. The tongue 7 is then bent down crosswise of the channel of the bar, while the lips 9 of the side-members are bent over the tongue with the free edges of the lips in substantial alinement with the side walls of the aperture 8. It will be seen that by means of this construction the tongue 7 is firmly stayed by the lips 9 which in the assembled structure abut against the inner base-portion of a leg-member. The cross-bar securing means comprises a bolt 10 of which the head 11 is slabbed at opposite sides to provide flattened surfaces 12 engaging the side walls of the rectangular aperture 8. The bolt 10 projects between the lips 9 and through a suitable aperture in the leg-member 1, being secured by a nut 13 and a washer 14.

The upper ends of the primary leg-members 1 are slidingly entered by secondary leg-members 15 also comprising channel-bars facing in the same direction as the primary leg-members. Each of the leg-members 15 is adjustably secured upon a primary leg-member 1 by a bolt 16 similar to the bolt 10, said bolt 16 having its slabbed head 17 seated in an elongated, vertically disposed slot 18 provided in the base-portion of the channel-bar leg-member 15, as clearly shown in Fig. 7. The bolt 16 enters a suitable aperture in the leg-member 1 and is secured by a nut 19 and washer 20. Upon the upper ends of a pair of leg-members 15 is rigidly secured, as for instance by welding or riveting, an inverted U-shaped channel-bar 21 comprising an end rail for the table-top supported by the leg-members described. The ends of the leg-members 15 fit snugly within the channel of the rail 21 whereby sufficient rigidity is obtained to obviate the necessity of employing additional webs or other stay-pieces. A rail 21 is disposed at each end of a table-section, a pair of rails being connected by two cross-rods 22 having their flattened, overlapping ends secured upon the upper surfaces of the rails by bolts, as 23.

The machine-supporting table-top sustained by the structure hereinbefore described may be of the trough type or the flat-type, one form of the latter being illustrated in the accompanying drawings. The table-top shown comprises front and rear machine-supporting planks 24 and 25 and an intermediate plank 26. At their opposite ends, these table-top planks overlie and are secured upon the rails 21. The plank securing means comprises an upper clamp-member 27 at each end of each plank, said clamp-members 27 being disposed widthwise of the planks, i. e., substantially parallel to the rails. Underlying each rail so as to bridge the channel and engage the side member edges thereof are a plurality of grooved clamp-plates 28 opposed to each of the clamp-members 27, said clamping elements being secured by bolts, as 29, passing through suitable apertures in the planks and in the supporting rail. The front and rear planks 24 and 25 are undercut along their inner longitudinal edges to provide shoulders 30 overlying the intermediate plank 26 and also provide a clearance for the cross-rods 22. It will be observed that by means of the construction described, the cross-rods 22 extend from rail to rail within the thickness of the planks and can not in any way interfere with the power-transmitters selected for use in the tables.

One of the features of the present table-supporting structure is the capability of its use with a variety of types of commercially employed power-transmitters. Two types of power-transmitter hangers in common use are illustrated in the drawings. In Figs. 1 and 2 are shown a plurality of hangers 31 of a well-known type for a counter-shaft 32, which hangers 31 are each adjustably secured upon a bracket 33 resting upon a cross-bar 6. Another type of hanger 34 is illustrated more particularly in Figs. 2 and 3, being employed in connection with a class of power-transmitters, an improvement of which is disclosed in the patent application of G. M. Eames and I. F. Webb, Serial No. 33,261, filed May 27, 1925. The structure is also particularly adapted for supporting an electric-transmitter as disclosed in the Eames & Webb patent application Serial No. 2,540, filed Jan. 15, 1925.

Another feature of the present structure is the convenience of shipment of the unassembled parts thereof, as well as the facility with which they may be assembled. The low cost of manufacture by virtue of the simple character of the construction is another item of considerable importance and particularly as the construction may be made standard for a variety of types of power-transmitters.

Having thus set forth the nature of the invention, what I claim herein is:—

1. A supporting structure for a power-table consisting of supporting legs each comprising substantially vertical primary and secondary channel-bar leg-members slidingly disposed one within the other, means for adjustably securing said leg-members together, spaced supporting rails of inverted U-shape sustained by pairs of secondary leg-members, the supporting rails and the upper ends of the secondary leg-members having a channel-wall fitting engagement of one within the other, and a table-top secured upon said spaced rails.

2. A supporting structure for a power-

table, consisting of supporting legs each comprising substantially vertical primary and secondary leg-members of horizontal U-shape in cross-section and slidingly disposed one within the other, spaced supporting rails sustained by the secondary leg-members, the supporting rails and the upper ends of the secondary leg-members having a channel-wall fitting engagement of one within the other, a table-top secured upon said spaced rails, and channel-bar cross-bars rigidly connecting pairs of primary leg-members.

3. A supporting structure for the table-top of a power-table, comprising pairs of primary channel-bar leg-members having the channels thereof facing each other, pairs of secondary leg-members, adjustably secured upon said primary leg-members, a table-top supporting rail of inverted U-shape in cross-section having a channel-wall fitting engagement with the channel-walls of each pair of secondary leg-members, and a channel-bar cross-bar having a channel-wall fitting engagement with each pair of primary leg-members.

4. A supporting structure for each end of the table-top of a power-table, consisting of supporting legs each comprising complemental primary and secondary channel-bar leg-members slidingly disposed one within the other, one of said leg-members being provided with an elongated vertically disposed slot, a slabbed bolt seated in said slot secured in an aperture in the complemental member, spaced table-top supporting rails of inverted U-shape in cross-section sustained by the secondary leg-members, and channel-bar cross-bars rigidly connecting the primary leg-members.

5. A supporting structure for the table-top of a power-table, consisting at each end of the table-top of an inverted U-shaped channel-bar end-rail, channel-bar legs of horizontal U-shape in cross-section having the channels thereof facing each other, and a channel-bar cross-bar having its ends rigidly but detachably secured entirely within the channels of the channel-bar legs.

6. A supporting structure for the table-top of a power-table, consisting of table-top supporting rails, channel-bar supporting legs for each rail of which legs the channels face each other, inverted U-shaped channel-bar cross-bars having their ends confined entirely within the channels of said legs, and means for rigidly but detachably securing the cross-bars to said legs.

7. A supporting structure for the table-top of a power-table, consisting of table-top supporting rails, channel-bar rail supporting legs, and leg connecting cross-bars, each of said cross-bars comprising a channel-bar provided at each end thereof with an apertured tongue substantially normal to the length and crosswise of the channel of the cross-bar the ends of said cross-bars being entirely confined and rigidly secured within the channels of said legs.

8. A supporting structure for the table-top of a power-table, consisting of table-top supporting rails, channel-bar rail supporting legs, leg connecting cross-bars each comprising a channel-bar of which the base is provided at each end thereof with an apertured tongue bent inwardly crosswise of the channel of the cross-bar, said tongue being stayed by lips formed by the side members of said channeled cross-bar bent over upon said tongue, and means for securing the ends of said cross-bars entirely within the channels of said legs.

9. A supporting structure for the table-top of a power-table, consisting of table-top supporting rails, channel-bar supporting legs for each rail of which legs the channels face each other, and channel-bar cross-bars secured within the channels of said legs, the securing means for each of said cross-bars comprising a tongue provided with an angular aperture and bent inwardly from the base of the cross-bar crosswise of the channel thereof, each of said tongues being stayed by lips formed by bending the side members of the cross-bar over thereupon, and slabbed securing bolts seated in the angular apertures of said tongues.

10. A table-top supporting structure for sewing and like machines, comprising channel-bar rails of inverted U-shape in cross-section, rail-supporting legs, and leg connecting cross-bars, clamp-members overlying the table-top above said rails, clamp-plates bridging the under side of said rails, and bolts securing said clamp elements in table-top fastening position.

11. A table-top supporting structure for sewing and like machines, comprising channel-bar rails of inverted U-shape in cross-section, rail-supporting legs, and leg connecting cross-bars, a plurality of clamp-members overlying the table-top substantially parallel to said rails, a plurality of clamp-plates complemental to each of said clamp-members bridging the under side of said rails, and bolts securing said clamp-elements in table-top fastening position.

12. A supporting structure for the table-top of a power-table consisting of spaced supporting rails, oppositely facing channel-bar legs for supporting each of said rails, and channel-bar cross-bars having their ends secured within the channeled legs, the lower end of the base of each channel-bar leg being slotted and both of the adjacent sides bent normal to the length thereof to provide integral feet for said legs, extending therefrom in the direction of the length of the table-top.

13. A supporting structure for the table-top of a power-table comprising end rails of

inverted U-shape in cross-section disposed crosswise of the table-top, rail-supporting legs, and a rail-connecting cross-rod secured upon the upper surface of the rails independently of the table-top.

14. A supporting structure for the table-top of a power-table comprising table-top supporting rails, rail-supporting legs, rail-connecting cross-rods disposed between the upper and under surfaces of the table-top, and means for securing said cross-rods upon the rails independently of the table-top.

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

GEORGE M. EAMES.